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Evaluation of an Intensive Truancy Reduction Program (ACT) Within Communities In Schools® (CIS)

Final Summary Overview Report to the National Institute of Justice

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Overview

Youth who drop out of school are more likely to experience negative life outcomes, such as being involved in criminal activity, substance abuse, and gang activity (Baker, Sigmon, & Nugent, 2001). There is growing recognition that chronic absences from school result in school failure, increased delinquent behavior and involvement with the justice system, and dropping out of school (Newsome, Anderson-Butcher, Fink, Hall, & Huffer, 2008).

In fact, in 2017, there were more than 2 million 16- to 24-year-olds who were not enrolled in school or earned a high school credential (U.S. Department of Education, NCES, 2019). This dropout rate is even higher for disadvantaged and minority students and those identified as experiencing additional barriers that make them more likely to dropout; these students often show disengaging behaviors in middle school (e.g., Balfanz, Herzog, & Mac Iver, 2007). Often, indicators of future dropout are present in attendance and truancy patterns earlier in school. In fact, some researchers posit that if students who live in high-poverty neighborhoods attended school every day with no other changes being made, the students would experience increased rates of academic achievement, high school completion, post-secondary educational attainment, and economic productivity (Balfanz & Byrnes, 2012).

Key strategies that have shown effective in addressing the causes of chronic absenteeism and truancy include having a caring adult who provides one-on-one mentoring (Herrera, Grossman, Kauh, Feldman, & McMaken, 2007); using case management that assesses needs; creating a purposeful plan with goals for improvement; providing frequent follow-up to monitor progress (Thomas, Lemieux, Rhodes, & Vlosky, 2011); targeting supports to re-engage youth with school such as tutors in core subjects; and providing resilience and other social and emotional learning training (Wilson, Tanner-Smith, Lipsey, Steinka-Fry, & Morrison, 2011). Communities In Schools®

(CIS) is a national school-site based program (with affiliates in 25 states) that encompasses these evidence-based strategies to support student reengagement in school.

Study Purpose

In 2010, a Southwestern CIS affiliate began piloting an intensive version of their services based on the framework of a mental health service model known as Assertive Community Treatment (ACT), with promising results over the first 5 years that included improvements in academics, attendance, and behavior (CISTMS Report, 2014). The intent of this study was to conduct a more rigorous evaluation to determine the efficacy of this intensive truancy reduction program (ACT) within five schools in a large urban district in the Southwest. Prior research on the CIS program and local CIS outcome results suggest high-dosage, high campus saturation or intensive intervention, may be more successful to re-engage truant students than current CIS truancy strategies (ICF, 2010; Corrin, Parise, Cerna, Haider, & Somers, 2015). The purpose of this study was to determine whether ACT can improve student engagement and school connectedness—as measured by attendance, behavior, and academic achievement—of highly at-risk middle school students.

Research Questions

In this study, we examine whether a more intensive version of CIS services (ACT) improves attendance, behavior, and academic achievement. In doing so, we extend the literature on CIS by considering whether ACT may improve outcomes for students in ways not currently identified in existing literature or with typical CIS services (Core). Specifically, we address the following research questions:

1. What is the impact of 1 year of students' assignment to ACT compared to Core on student attendance, behavior and academic achievement? Of 2 years of ACT compared to Core?
2. What is the impact of 1 year of students' assignment to ACT compared to Core on student on-track to graduate status at the end of 9th grade? Of 2 years of ACT compared to Core?

3. To what extent do the impacts of students' assignment to ACT on student attendance; behavior and academic achievement differ by cohort; school- or child-level factors including student gender, race/ethnicity, English language status (i.e., English language learner or ELL); or truancy (greater than 10% absences prior to implementation)?

4. To what extent do the impacts of students' assignment to ACT on student academic achievement[1] differ by variation in number, amount, or type of services received?

The ACT Intervention

The CIS Core model for case management (as defined by at least 6 months of academic and social services provided to high-risk students as defined by the state, by a CIS-trained school based case manager) focuses on supporting the needs of students with a caseload of 110-125 students per Core case manager co-located within a school site, with the expectation of 3–6 hours of service per month, or 22–48 hours per year. This is in addition to this sole case manager addressing community connections, family home-based interventions, school-based relationship building, and emergency triage as needed within the school campus itself. The ultimate goal is to improve academics, behavior, attendance, promotion, and graduation rates of those students.

The ACT Model is an adaption of a community-based psychiatric rehabilitation treatment model. By adapting the ACT client/practitioner ratio model to the needs of CIS youth, the new CIS ACT replicates a multidisciplinary team approach, with caseloads reduced from 1:110-1:125 to 1:50,[2] an increased total of 126–184 targeted service hours per year, and includes weekly progress consultations (rounds) among the team (full-time case manager, part-time tutor, part-time parent specialist; in effect two full-time staff for every one student). Every CIS ACT case manager meets weekly with the clinical supervisor and the interdisciplinary team to ensure coordination of support

[1] The fourth research question was limited to the academic outcome domain because of the timing of those outcomes compared to the timing of the other outcomes of interest. For attendance, tardiness, and discipline, outcome data is collected throughout the school year compared to reading and mathematics standardized test scores that are collected at the end of the school year. While providing these services can cause a change in these outcomes, the changes in these outcomes may also cause a change in the number of services students receive. Because of this simultaneity, an endogeneity concern arises for attendance, tardiness, and discipline outcomes.

[2] This reduced caseload is driven by adding a second on-site case manager. The typical CIS Core model includes one case manager per school while the ACT model includes two case managers per school. This was the case for all participating schools in the current study with one exception. One school maintained two Core case managers rather than one throughout study implementation.

and services. These services include mandatory one-on-one tutoring, small group activities to develop engagement attitudes and skills, homes visits including parenting education sessions, local field trips for enrichment, and daily interaction with trained mentors to focus on reducing truant behavior. By shifting to create intentional, focused sessions with students, the ACT enhancement parallels the clinical model by building individual resiliencies within existing life circumstances that cannot easily be changed. The additional aspect of the multidisciplinary team, spreading the caseload weight and responsibility, reduces the typical casework overload that reflects time management and best practices. A team approach to a smaller caseload increases collaboration and outcome accountability.

Conceptual Theory Behind ACT

CIS hypothesizes that by providing more time on task for each participant in the ACT group, the CIS ACT case manager is able to provide individualized attention and services to meet his or her needs. The case managers are able to engage in increased quality home contacts, consult and interact with teachers and counselors, and provide outcome-focused counseling and coaching directly to students. When students receive this level of one-on-one mentoring and relevant advocacy, this propagates trusting relationships with the CIS team, teachers, counselors, and other students. These experiences foster an affinity to improve the student's outlook, resulting in intentional behaviors that increase attendance. Improved academic performance is a fortunate by-product of these indicators, increasing the odds of students staying in school and graduating. As similar students improve across the school, students' experiences improve the campus climate and feelings of safety while in school.

Study Design and Methods

Study Design and Procedures

Students listed on the school roster as "at-risk" (per state criteria) are identified (based on recently presenting or pre-existing indicators negatively impacting core class performance, attendance and/or behavior) and assigned to CIS case management in an ongoing process through referrals and recommendations from teachers, administrators, guidance counselors, campus faculty or student, or parent self-referrals. This same process was used for both ACT and Core students. In considering the real-world context of the study, a set cut-off date for random assignment was not artificially enforced onto this process primarily due to the concern for disruption. CIS leadership indicated concerns about changing the typical process as well as the original plan of conducting random assignment after parent consent forms were obtained. Working together, the program and research teams designed a random assignment process to address these concerns whereby students were randomly assigned to either condition (Core or ACT) as they were referred, prior to their initial conversation with a CIS case manager and prior to obtaining parental consent. This way, by the time students heard about CIS services, they had already been randomly selected to speak to an ACT or Core case manager from the beginning. This assured CIS leadership that potential burgeoning mentor relationships would not be disrupted.

Analytic Sample

The primary, confirmatory sample for this study consists of students who were randomly assigned into either ACT or Core throughout the three implementation years, resulting in three cohorts of study participants.[3] Random assignment was originally planned to occur for all consented students at

[3] While the initial plan was to conduct random assignment once in the first year of implementation only on truant 7th grade students, both the participating schools and CIS wished to include all students eligible for CIS service within the participating middle schools. Therefore, the random assignment strategy was adopted and conducted for all grade levels, across all 3 years, in each of the five participating schools.

the beginning of each school year. However, to obtain consent for CIS services, it is the nature of CIS process that a student will have engaged with a CIS case manager who will explain the services and send the consent document home for review. As developing relationships and mentoring are core components of CIS's theory of change, CIS staff members voiced concern that students may have started developing a connection with the initial case manager prior to random assignment, only to be re-assigned to different personnel, breaking any initial trust in CIS or the process. As a result, random assignment was shifted to occur prior to student initial engagement and request for consent.[4] While this did introduce nonconsenters as attrition into the present study, it also allowed for more students to be included in the study as some students were referred to CIS later in the school year (after the initial planned cut-off for random assignment).[5] It is also important to note that CIS has a cut-off on case manager to student ratios and once this maximum was met in one condition (ACT or Core), any remaining eligible students were nonrandomly placed into the condition where space was available. However, those students were not included in the confirmatory analyses.[6] In total, 2,264 students participated in the study: 1,069[7] ACT and 1,195[8] Core. Of those, 1,831 students were randomly assigned to condition: 880 ACT and 951 Core. Outcome data was not available for 106 students resulting in a total of 1,725 students were randomly assigned to condition and were able to be included in the analytic sample: 808 ACT and 917 Core. We examined the

[4] Study IDs were randomly assigned to condition (ACT or Core). When students were referred to CIS, they were given the next study ID on the list by a central office CIS staff member who was not located within any specific campus and did not yet have any specific knowledge about individual students. That assigned study ID determined the treatment condition and the central office CIS staff member alerted the appropriate CIS case manager to begin the introduction of CIS with that student.

[5] Attrition due to non-consent ranged from 7 – 14 percent across the three cohorts of students. Overall, due to non-consent, attrition was nearly 13 percent (12.86%) and differential attrition between the ACT and Core conditions was 6.26 percent.

[6] Data from this full sample, regardless of random assignment, was included in the reported dosage information later in this summary to provide a more complete picture of implementation with the full sample of students. We also examined the randomized sample for baseline equivalence and found some issues with dis-equivalence between the groups on the following variables; race/ethnicity and English language learner (ELL) status. Due to this observed dis-equivalence in our randomized sample, we additionally conducted the main analyses on the full sample of participants (regardless of random assignment) using propensity score weighting to create a more baseline equivalent comparison group.

[7] As analyses were based on intent-to-treat (ITT), these numbers include all unique students who were originally assigned to ACT regardless of how many years they participated or whether they switched conditions during the study.

[8] As analyses were based on ITT, these numbers include all unique students who were originally assigned to Core regardless of how many years they participated or whether they switched conditions during the study.

randomized sample for baseline equivalence and found some issues with dis-equivalence between the groups on the following variables; race/ethnicity and English language learner (ELL) status as seen in Table 1. More specifically, the Core students were more likely to be Hispanic and ELL compared to ACT students.

Table 1. Analytic sample demographic characteristics

Demographic characteristics		ACT		Core	
		N	Percent	N	Percent
English Learner	No	469	58.04	400	43.62
	Yes	339	41.96	517	56.38
Ethnicity	African American	286	35.40	204	22.25
	Hispanic	512	63.36	691	75.35
	All other ethnicities	10	1.24	22	2.40
Gender	Female	444	54.95	450	49.07
	Male	364	45.05	467	50.93
Special Education	No	708	87.62	814	88.77
	Yes	100	12.38	103	11.23

Source: Study records.

Note. Grade level demographic information was not included in this table because during multiple imputation, grade level became, and was treated, as a continuous variable.

Measures

Student Attendance. One of our primary outcomes of interest (student attendance) was based on administrative district data indicating the number of days missed by each student for the year prior to study participation as well as every year of study participation. Data was also collected, through

administrative district data, on the number of tardy instances by each student for the year prior to study participation as well as every year of study participation.

Student Behavior. The second primary outcome of interest (student behavior) was based on administrative district data indicating the number of disciplinary infractions incurred by each student for the year prior to study participation as well as every year of study participation.

Student Achievement. Student achievement was measured by scale score results of standardized testing in both reading and mathematics. This information was provided through administrative district data, for each student, for the year prior to study participation as well as every year of study participation.

Service Counts, Hours, and Type. Fidelity information was captured in the form of CIS service instances (service contacts), hours (rounded to the nearest 15-minute interval), and service category type. The nine types of services included 1) administrative, 2) academic, 3) attendance, 4) behavior, 5) social and life skill, 6) basic needs, 7) college and career preparation, 8) enrichment, and 9) family-related services.[9] Data was collected from CIS service records for ACT and Core students, individually by service and student, for each year of study participation. Total number of services, total service hours, and the type of services a student received were calculated and used in the present analyses.

Covariates

In all analyses, we controlled for a range of student-level covariates. Student information was collected from existing CIS and district data systems for each year of implementation. Student-level covariates included child grade level, gender, race/ethnicity, and English language learner (ELL)

[9] The service categories have been used in other evaluations of CIS programs (e.g., Parise, Corrin, Granito, Haider, Somers, & Cerna, 2017).

status. It is important to note that an economic disadvantage covariate was not provided.[10] However, this is not a concern in the present sample because the overall rate of economically disadvantaged students across the five participating schools ranged from 89-100 percent throughout the 3-year implementation. Because the overwhelming majority of students within these campuses participate, or qualify, as economically disadvantaged, it is not a source of variability in this sample. We also included a series of indicators for each of the five sites in which the study occurred.

Analytic Plan

RQ1 and RQ2. Impacts of ACT on Student Absenteeism, Behavior, Academic Achievement, and On-track to Graduate Status

To examine whether ACT impacted students absenteeism, behavior, and academic achievement, we estimated a series of ITT models that predicted each outcome as a function of student assignment to participate in either of the CIS programs (ACT or Core) and included a series of student-level covariates. Specifically, we estimated the following model:

$$Outcome_i = \beta_0 + \beta_1 ACT_i + \beta_2 PreOutcome_i + \Sigma^{l}_{k=3}\, \beta_k BeqCov_i + \beta_3 School1_j + \beta_4 School2_j + \beta_5 School3_j + \beta_6 School4_j + e_i$$

where $Outcome_i$ = student outcome in one of five outcomes for student i and ACT_i was an indicator for whether student i was randomly assigned to the ACT or Core group. $PreOutcome_i$, represents the respective pretest measure of each outcome of interest. $BeqCov_i$ is the value of the student characteristic (as described above) for student i in the sample when measured at baseline produced a difference greater than 0.05 but less than 0.25 standard deviations; that is, the baseline covariate adjustment for group nonequivalence on measured student characteristics in the analysis sample.

[10] Economic disadvantage was not provided by the district or CIS in a reliable way. As part of eligibility to participate in CIS, one criterion is free-reduced price lunch status. However, CIS indicated case managers do not always inquire about the full list of eligibility criteria. That is, once at least one criterion is identified, some case managers stop as the CIS eligibility question has been answered. Because of this, the free-reduced price lunch information available is likely incomplete and not valid for use in analyses.

Finally, School1$_j$, School2$_j$,…, School4$_j$ represent the respective site location (campus) student *i* belongs. In our main analysis, we focused on a single indicator for whether students were randomly assigned to participate in ACT or Core.

RQ3. Differential Impacts on Student Absenteeism, Behavior, Academic Achievement, and On-track to Graduate Status by Cohort, School, and Student Factors

To examine potential interactions of the impacts of ACT on student absenteeism, behavior, and academic achievement, we estimated a series of models using the main impact model and adding interaction terms. Interactions explored included interactions between treatment group (ACT v. Core) and cohort, school, and student-level characteristics. We focused on four student characteristics that have been found to relate to the outcomes of interest in this study: gender (female v. male), race/ethnicity (Black v. Hispanic), whether the student was an ELL (current or ever v. never), or whether a student was truant in the year prior to participation in CIS (greater than 10% absences). As with the main impact analyses, we conducted these analyses separately for each outcome of interest.

RQ4. Differential Impacts on Student Academic Achievement by Number, Amount, and Type of Services Received

To examine the role that dosage may have on the impacts of ACT on student academic achievement, we estimated a series of models using the main impact model and adding interaction terms. Interactions explored included those between treatment group (ACT v. Core) and the number of total services, total amount of service hours, and the total number of services by the different service categories a student received during the implementation year[11]. For example, we

[11] Six of the nine service types were explored in the analyses to address this research question. Administrative services were not explored as these occurred for all students and included things like the initial intake assessment and/or reassessments. College/Career Preparation and Enrichment/Motivation services happened infrequently within the study data and were, therefore, excluded from analyses.

explored whether the amount of academic services (split by high and low amount of services) interacted with treatment group to impact reading and mathematics outcomes.

Missing Data

Within our analytic sample, there were rates of missingness that ranged from 0-32 percent depending on the data element. We used multiple imputation to handle missing outcomes and covariates. Specifically, we completed analyses with 20 imputed datasets with complete covariate information generated using a two-level regression model with random intercepts with fully conditional specification method in Blimp Version 2.2.2 (Enders, Du, & Keller, 2019).

Cost Analysis

In addition to the main impact and exploratory analyses, a cost analysis and cost-effectiveness analysis were intended to be conducted. Only a cost analysis was conducted because no main impact analyses were statistically significant and positive.[12] The cost analysis, focused on incremental costs between ACT and Core during the middle year of implementation (2017-18)[13], and was conducted using the "ingredients" method (Levin, McEwan, Belfield, Bowden, & Shard, 2018), which defines "costs" by the concept of opportunity cost. This means all resources should be (and were) counted as costs if they contribute to potential program impact, even if the costs are offset through in-kind donations, like volunteer time, donated books, contributions from households, or parents' time. This is especially important in evaluations of programs such as CIS as many supports and resources are through these types of in-kind donations.

[12] Without a statistically significant and positive impact finding, there are no primary benefits from which to compare effectiveness.

[13] The 2017-18 year was selected as this was the year that the most information was available to most accurately estimate yearly costs of implementation of both ACT and Core.

Implementation of ACT

Five urban, high-need middle schools participated in the study. Unsurprisingly, implementation of ACT varied greatly across the five schools. Evidence of the variability was available in two ways; through site differences in dosage (number of services and total service hours) and staff turnover/vacancies throughout implementation.[14]

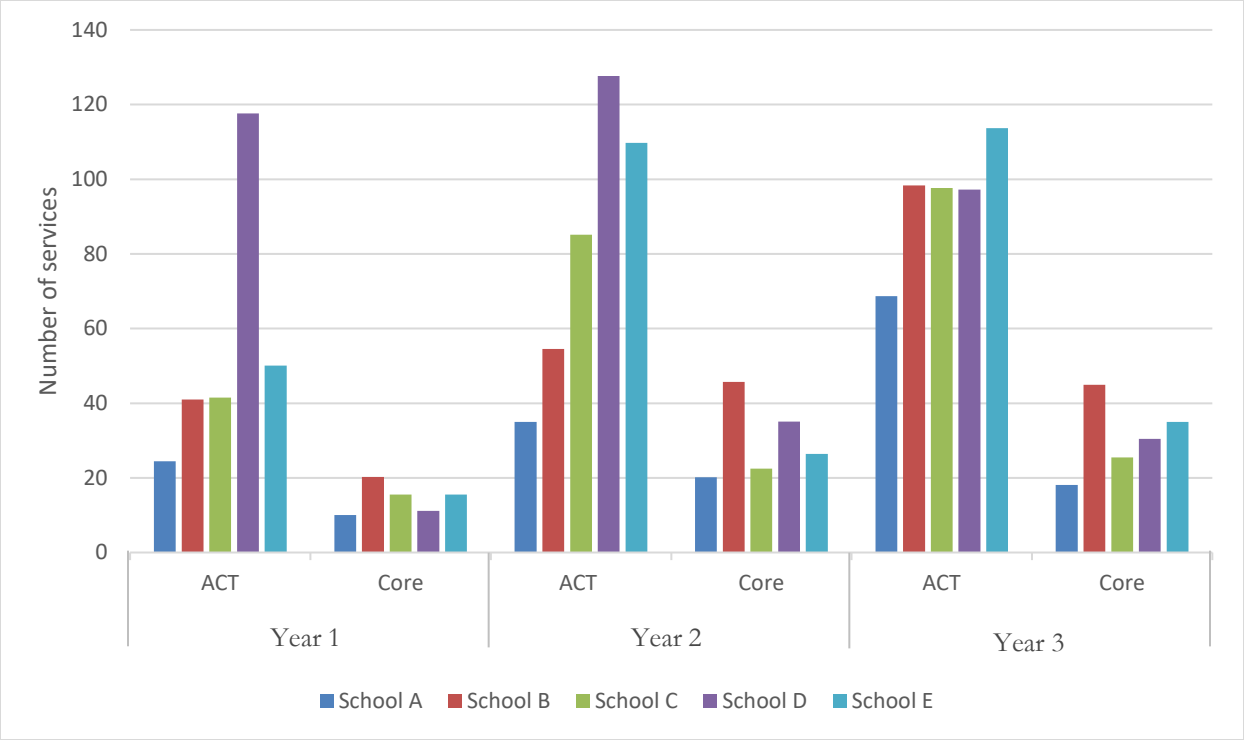
Service Instances and Hours

Within the CIS theory of change, explicit expectations are included for a key dosage indicator between ACT and Core; the number of hours students spend engaging in or receiving CIS services. While there are other indicators of program intensity between ACT and Core, they all result in additional time, which is captured within the service hours (and documented in the service notes from which the hours were derived). Although no explicit expectations about the number of services is included in the theory of change, it is understood that with increased intensity and the difference in components listed in the theory of change, another way to capture how students are engaged with CIS is to examine the total number of services a student received.

T-tests revealed statistically significant differences in both the number of services and amount of service time ACT students received in comparison to Core students in all five campuses in all three study years (t-values ranging from 4.08 – 30.06; all significant at $p < .000$). This indicates that, as intended, ACT students did receive substantially more services and spent more time receiving services from CIS than Core students. Although variability was observed across school sites, and across implementation years, both number of services and amount of service time were significant at each school site as shown in Figure 1.

[14] It is important to keep in mind that multiple positions make up the turnover and vacancy information for ACT while typically, only one position was counted for Core based on differences between the models as discussed earlier.

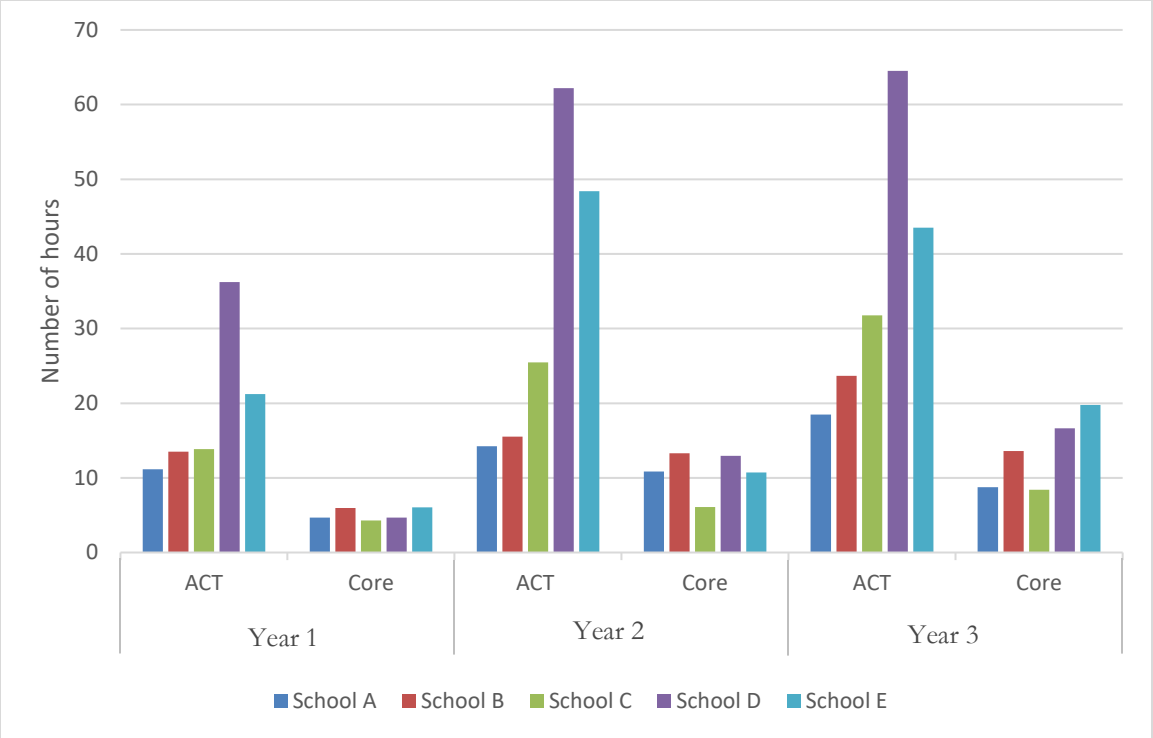
Figure 1. Average number of services per student by school, treatment condition, and year



However, it is important to consider the planned differences in expected service hours for ACT and Core. As described earlier, CIS's intention was for Core and ACT students to receive 22-48 hours and 126-184 hours per year, respectively. Even though ACT students received significant more services than Core students, almost no students obtained this threshold. In fact, no ACT students reached the minimum of 126 hours of service in the first implementation year. Additionally, in years 2 and 3 only one (0.10%) ACT student each year, reached the minimum of 126 hours. In terms of Core students, similar to ACT, no students reached the 22-hour threshold in year 1. Additionally, in years 2 and 3 only nine (0.99%) and 105 (12.93%) Core students, respectively, reached the minimum of 22 hours of service for the year.[15] (For the average number of service hours by treatment, school and implementation year, see Figure 2.)

[15] These numbers include the random sample of students used in primary analyses. When expanded to the full sample, these numbers increase to one and two ACT students for years 2 and 3, respectively, as well as 11 Core students in year 2 and 115 Core students in year 3.

Figure 2. Average number of service hours per student by school, treatment condition, and year



Within service hours and instances, the types of services provided also varied. On average, across schools and conditions, two categories of services were most common: social/life skills and academic. More specifically, average social/life skills services ranged from 9.65 to 17.95 services depending on the implementation year while academic services ranged from 7.47 to 14.68 services. While attendance services were also prevalent in the ACT group they were less so in Core. Variability in number and prevalence of services was also seen between schools as well as over time. For example, for ACT students the average number of attendance services ranged from 3.25 to 21.04 in year 1 of the study (compared to a range of 1.71 to 5.74 for Core) and 11.00 to 28.46 in the last year of the study (compared to a range of 2.11 to 12.38 for Core).

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Staff Turnover

In examining program fidelity for CIS, it is important to consider turnover rates for key staff personnel as supportive adult mentor relationships are part of the CIS program theory. Even with the expected level of service hours, turnover in key staff positions such as school site case managers and tutors may mean the deeper mentoring relationship would not be realized and could also have implications for potential results.

Turnover and the difficulty in filling vacant positions was apparent throughout study implementation across key school staff (both ACT and Core school site case managers and ACT tutors). With regard to turnover, the single Core case manager position at each school saw between 33 and 67 percent turnover during the 3-year study. The three ACT key positions (two case managers and a tutor) at each school saw even greater turnover rates between 100 and 200 percent through the course of the 3-year study. Considering the rates of turnover observed throughout the study, there is a question as to whether the sufficient implementation of ACT (and Core) could have been realized.

In addition, some positions remained vacant for a few months before a suitable replacement could be identified and trained. Within the Core case manager position, full staffing occurred for 94.44 – 97.22 percent of the 3-year study. For ACT case managers, and tutors, full staffing occurred for 77.8 – 88.9 percent of the 3-year study depending on school.

Results

RQ1. Confirmatory Impacts of ACT on Student Absenteeism, Behavior, and Academic Achievement

To assess the extent to which student outcomes were impacted by participation in ACT as compared to Core, the confirmatory analysis investigated the results from a single year of ACT services, compared to Core. Overall, for a single year of CIS services, no statistically significant effects were found between ACT and Core students for attendance, behavior, reading, or mathematics test scores. One significant result was found for truancy. Contrary to the hypothesis, ACT students were found to have significantly greater truancy instances compared to Core students after 1 year of the intervention.[16] This difference translated into a little more than one extra truant instance, on average. However, as shown in the further analyses, this significant result appears to be driven predominantly by the final cohort of students.

Additionally, we investigated the results of 2 years of CIS services on the outcomes of interest. Similar to the results for 1 year of participation, there are no statistically significant findings between ACT and Core. Moreover, the negative truancy finding was not maintained and, although not significant, was instead trending in the opposite direction (in favor of the ACT group).[17]

RQ2. Impacts of ACT on Student On-track to Graduate Status

To assess the extent to which student OTI status was impacted by participation in ACT as compared to Core, the analysis investigated the results from a single year of ACT services, compared to Core. Overall, for a single year of CIS services, no statistically significant effects were found between ACT and Core students for attendance, behavior, reading, or mathematics test scores nor

[16] This significant finding was consistent in both the random sample and the full sample using propensity score weighting.

[17] As with the 1-year results, the 2-year results were also consistent in both the random sample and the full sample using propensity score weighting.

on-track status.[18] Additionally, we investigated the results of 2 years of CIS services on student OTI status. Similar to the results for 1 year of participation, there are no statistically significant findings between ACT and Core.

RQ3. Differential Impacts on Student Absenteeism, Behavior, and Academic Achievement by Cohort, School, and Student Factors

To assess the extent to which student outcomes might vary by cohort, school, and/or student factors, interaction terms were added to the main analysis. In regard to differences by cohort, one[19] interaction was significant for the third cohort (participants in the 2018-19 school year). More specifically, the final cohort of ACT students were found to have significantly greater truancy instances compared to the final cohort of Core students. No significant interactions were found for either of the first two cohorts of students. It is important to note the 2018-19 tardy data included a range and average values that were substantially higher than the other years of tardy data acquired for this study.[20] While this fact does not explain a different result between ACT and Core, caution may be warranted in interpreting this finding as the difference does raise questions about the validity of the tardy data for this school year.

No other significant interactions were found between school[21] and treatment condition or for student factors (gender, race/ethnicity, ELL status, or prior truancy).

[18] The on-track indicator analysis was only appropriate for students who had reached ninth grade within the 3-year study timeframe.

[19] Initially, an additional significant interaction was found for the first cohort of students; however, after the adjustment for multiple comparisons, this finding became nonsignificant.

[20] Neither CIS nor the school district had a direct explanation for the overall increase in tardiness reported for this year. District staff did indicate some district-wide data tracking changes; however, it was not clear these changes would expain the difference observed.

[21] One school interaction between treatment status and school was originally found to be significant for the discipline outcome; however, after the adjustment for multiple comparisons, this finding became nonsignificant.

RQ4. Differential Impacts on Student Absenteeism, Behavior, and Academic Achievement by Number, Amount and Type of Services Received

To assess the extent to which student reading and mathematics assessment scores might vary by the number of services, hours of services, or amount of specific types of services received, interaction terms were added to the main analysis. No significant interactions were found.[22]

Cost Analysis Results

Costs analysis results indicated an estimated incremental cost of $455,130, per year, to provide the ACT model of CIS services compared to the Core model. This incremental cost translated into an additional $900 per case managed student cost above the Core model.[23]. When broken down by the typical "ingredients method" categories, the personnel category included the largest proportion of costs (more than 98 percent) as well as the greatest incremental cost difference between the two program models (more than $448,000). This is not surprising considering the additional personnel included in the ACT model (additional case manager, tutors and parent specialist).

Discussion and Implications

Programs and interventions that aim to reduce truancy and reengage students in school prior to dropping out have the potential to improve not only the trajectories of individual students but increase school climate and decrease participation in the criminal justice system (Baker, Sigmon, & Nugent, 2001; Henry, Knight, & Thornberry, 2012; Thapa, Cohen, Guffey & Higgins-D'Alessandro, 2013). This rigorous study investigated one such intervention; an intensive model of CIS services referred to as ACT. In comparing the results for high-risk middle school students who were supported by typical CIS services compared to those supported by ACT, no significant main results

[22] One interaction between treatment status and attendance services was originally found to be significant for the mathematics outcome; however, after the adjustment for multiple comparisons, this finding became nonsignificant.

[23] These values are represented in 2018 dollars and rounded to the nearest $10 to avoid false prevision.

were found with the exception of a negative result for tardiness after 1 year of services. While this result appears to be driven by the last cohort of study participants (and the validity of the tardy data from this year is somewhat in question), it is still a result counter to the hypothesis that ACT would produce positive results for students above and beyond the typical CIS service model (Core).

Several potential explanations warrant investigation. First, lack of fidelity and variability in implementation was evident across the participating schools and implementation years. Second, key staff turnover and vacancies suggest the program could not be implemented to full efficacy. Third, the participating schools themselves (the context for the study) were exceptionally challenged with their own faculty turnover, and reassessment of the CIS program as a whole (re-educating new staff, teachers, faculty) that added pressure to CIS staff and contributed to the lack of effective implementation.

Implementation Fidelity and Variability: As stated in the intended differences between ACT and Core, ACT students were intended to receive at least 126 hours of service per year while Core students were intended to receive at least 22 hours of service per year. However, we found that very few students actually received the minimum number of intended service hours. While ACT students were found to receive significantly more service hours, neither group achieved the intended service time. This lack of implementation fidelity suggests the program implemented here was not the true intended ACT program. Therefore, it should not be surprising there were a lack of significant findings from the current study. Another interesting point related to this lack of fidelity is the one negative main effect for truancy. We found this effect appeared largely driven by the last cohort of students (year 3; 2018-19 school year). It is important to note this year also had the most Core students of any year who reached the minimum number of service hours (12.93% of the randomized Core sample). The fact that nearly 13 percent of the Core students, while only 0.10 percent of ACT

students reached this fidelity threshold, it becomes less surprising to see a negative effect that favors the Core group.

Additionally, with regard to implementation, while some variability was expected across the five participating schools, the amount observed in number of services, hours of service, and service type raises the question of whether the difference was driven by differing student needs or differing implementation roll out on the part of staff. Due to this inconsistency, in both ACT and Core implementation, the achieved relative strength of the implementation difference also varied by school. While training happened throughout the study, further refinement of training and communication with staff should be considered to improve consistency across locations where possible.

One last point pertaining to fidelity requires mention. CIS leadership voiced concern that not all services were being captured and the data may not fully reflect the amount of services students truly received. In discussions with CIS leadership, it appeared to them (in review of implementation and anecdotal evidence) that services provided by tutors and the parent specialist were not tracked as consistently as services provided by case managers. This lack of data regarding tutor and parent specialist services could amount to as much as 50-60 hours of services not documented in the fidelity service log data for ACT students. However, as no concrete data exists within the available datasets to support this belief, we cannot be sure what proportion of services are accounted.

Staff Turnover: We are also aware of the effects of turnover on interventions to support high need students, especially in low-performing schools. One of the tenants of the CIS ACT model is the aspect of mentoring; that students are able to develop and maintain a mentor relationship with a stable adult who provides CIS services. However, with the rate of turnover, and resulting vacancies in key positions, it is probable the full potential value of ACT was not realized. Similar challenges

with retention are found within the literature concerning turnover of low-paid staff in other challenging roles (teachers in high needs schools, early care and education workforce, nurses, etc.). For example, literature suggests that factors such as workload and supervision are related to turnover (e.g., Mor Barak, Nissley, & Levin, 2001). Additionally, when staff begin to encounter negative outcomes for well-being (such as stress, burnout, and secondary trauma) this can also lead to higher rates of lower levels of job satisfaction and eventual turnover (Faller, Garbarek, & Ortega, 2010; Gibbs, 2001; Mor Barak et al., 2006). While some turnover might allow for higher quality staff to enter the program (desirable turnover, normal attrition), we are more concerned with the high likelihood of undesirable turnover in this case (Ellett, Ellis, Westbrook, & Dews, 2007; Gibbs, 2001; Shim, 2010). For example, one of the tenants of CIS is that students are able to form meaningful, mentoring relationships with case managers. However, with turnover in the case manager position like that of the present study, new case managers must start from scratch with established caseloads and that relationship may not be possible.

It is proposed that the high turnover was in correlation to several factors, including but not limited to school conditions (the high-risk campus environment and difficulty engaging school personnel in the CIS model), additional clinical and administrative support required to address the ongoing crisis state of students and families, and challenges in obtaining sustainable third-party resources to support families outside of school. Over 3 years, the nonprofit climate in the urban area in which the study took place witnessed an annual average 10 percent drop in the number of service providers of basic needs (clothes closets, medication/prescription assistance, housing assistance and food pantries). This created an additional stressor as CIS case managers were forced to engage new resources, while maintaining time on task within the student facing relationships.

High-Risk Schools: Lastly, for this study, the selection of schools was based on the high number of reported truancy cases via the County Juvenile Court, reports of violence on school campuses, and those schools willing to accept the interventions of the CIS program. The five school sites selected for this project were high-risk choices, not just due to the presenting issues, but the range of complications that could ensue due to low performance percentages, and high possibility of district reorganization, or state-mandated intervention to force improvement. In fact, during the 3-year project, four of the five sites witnessed turnover rates in school leadership (those who originally agreed and engaged in the study were gone by the start of the final implementation year). Additionally, between year 2 and year 3 of the study, one campus was shut down and students were migrated to the feeder high school for the final school year. Conditions on the school campus also impacted CIS's ability to retain project staff, with a 57 percent turnover in the multidisciplinary team members. While project leadership remained consistent, the stressors of timely staff recruitment, training, and placement of unique staff with no previous CIS experience proved to be an ongoing challenge throughout the study.

Turnover with school faculty and leadership is another impediment to sustaining CIS staff and case manager teams. With the absence of the original principal, grade-level district directors and local campus social workers, the initial procedural conversations and agreements in support of this project were continually disrupted when school staff changed and CIS staff and administration must explain the purpose and process again. This challenge is compounded by new district faculty and staff engendered with their own preferred projects, while allowing the current CIS partnership/work to continue, they may not have the same supportive fervor as their predecessor.

Nonprogram Student: It is also important to note that all students in the present study were supported by CIS services. Compared to the typical operating budget for CIS, an additional 1,069

students were able to be served due to the funding for this study. Because there was not an opportunity to observe students within the same schools who were equally at risk but not served by CIS, we cannot know how these outcomes compare to students who did not receive any CIS services. As administrators had agreed to include CIS in their schools, they were not amenable to only selecting some of the qualifying students to participate (and having some receive no services). Additionally, because the mission of CIS is to serve all eligible students, CIS staff were also not amenable to a true control group. Because of this unknown, it may be the case that both CIS models support student attendance, behavior, and academics but do so equally. If that is true, the additional more than 1,000 students who were able to be served with funding from this study, might be enjoying benefits that they otherwise would not have had access to; however, without a true control group, that is unknown. Taken together, considering the additional costs required to operate the ACT model, the findings from this study would suggest those additional costs are not warranted. However, this conclusion, based on the version of ACT implemented in the current study, may not hold if the evaluation could have investigated the fully implemented model without the various challenges listed here.

There are two implications from the present study. First, turnover (and retention) continues to be high interest in the literature and appear to have been a factor in the present study. For programs, initiatives, and interventions targeting students who could benefit from multiple supports, staff members may also need additional supports. The current study revealed that schools took advantage of CIS staff members being on campus in ways that were not part of the CIS job description. For example, during year 2 of the study (2017-18 school year), schools used CIS staff over 40,000 times for "other tasks" outside of their CIS duties (ranging between less than 300 and more than 5,500 times depending on school and whether the staff were ACT or Core). Examples such as these additional burdens on staff speak to the challenge of maintaining high-quality personnel in a position

with relatively low pay compared to the amount of work (both CIS and non-CIS work). Continued efforts to raise wages, benefits, and other supports for staff in positions such as social work, education, and healthcare are essential for increases program impacts where connections with staff have the potential to interact with outcome success.

Second, the challenges of conducting research in highly challenged settings still prevent knowledge development and progress towards understanding what works, for whom, and under what conditions. It is likely that variability in implementation seen in the present study was somewhat related to additional demands of school staff (taking CIS staff focus away from their intended activities), as well as potential effects of school staff and administrative turnover that continues to disrupt the development of the students who are most in need of stable supportive adults. Moving a study like this from a large urban-centered district and the most challenged schools to urban communities outside the city center (within the county, but outside the city) may lessen some of the many challenged faced in the present study. Districts with a history of greater administrative stability, system supports and infrastructure that can be relied upon to maintain continuity would set the backdrop for greater focus on the students and implementation fidelity. Many students and families in those districts are in need of the kind of support CIS delivers. Such district and school conditions and allowances are important in the consistency needed to explore this hypothesis.

Taken together, this study continues to shed light on some of the most challenging aspects of research attempts to study the effectiveness of potential interventions on those students and schools that are most in need of support.

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