OVERVIEW AND EVALUATION OF AN EARLY WARNING INDICATOR AND INTERVENTION SYSTEM TO KEEP NINTH-GRADE STUDENTS ON-TRACK TO HIGH SCHOOL GRADUATION

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"This is the year that will set the stage for whether high school students will graduate and whether they will be ready for college."

Chicago Consortium on School Research, 2007

Early Warning and Intervention System

Over half of public high schools in the U.S. (U.S. Department of Education, 2016) now implement some type of early warning systems using early warning indicator data to identify students who are at risk of dropping out of school.

Early Warning and Intervention System

Indicators of disengagement from school, such as attendance, behavior, and course performance, can provide high levels of predictability of future dropout as early as sixth grade (Balfanz, Herzog, & MacIver, 2007; Neild & Balfanz, 2006).

Early research out of Chicago revealed that passing the ninth grade predicted graduation with 80% accuracy, which was even more predictive than test scores (Allensworth & Easton, 2005, 2007) and other student background information (Allensworth, 2013).

"The ABCs of Keeping On-Track to Graduation"

- Attendance

- Behavior

- Course Performance

Early Warning and Intervention Team Model

The "Early Warning Intervention (EWI) Team" model developed at the Center for Social Organization of Schools at Johns Hopkins University is increasingly being employed by low graduation rate high schools and their feeder middle schools as part of the Diplomas Now (DN) School Transformation/Turnaround model (Corrin et al., 2014; Sepanik et al., 2015).

CSOS has over fifteen years of experience working with schools and school districts that serve high poverty student populations to design and implement early warning and intervention systems (EWS) to increase high school graduation rates.

Overarching Research Question

To what extent can adding a half-time staff member (promotion coach) focused on building a team to monitor

- ATTENDANCE

- BEHAVIOR

- COURSE FAILURE

help keep 9th grade students on-track to high school graduation?

Theory of Change

- Early Warning Indicator data system and team organization for intervention delivery
- Better identification of students off-track to graduation
- More strategic targeting and allocation of student supports
- Improved student behaviors (including attendance and course passing)
- Increased course credit accumulation leading to on-time graduation

Key Intervention Elements

- Half-time "promotion coach" for treatment schools, as well as an embedded facilitator in the State Education Agency

- Several days of group professional development training for coaches prior to the intervention each year

- One-day professional development and network meeting for coaches bi-monthly during the school year

- Monthly coaching visits from implementation team and/or State Education Agency facilitator

Promotion Coach Focused On:

- Use of state data system to identify 9th grade students with EWI in attendance, behavior, course failure

- Building and facilitating a school "Promotion Team" which meets regularly to analyze 9th grade student data and to monitor interventions to get students on-track.

- Implementing interventions designed to improve 9th grade student outcomes

Team Interventions

- Implementing school-wide interventions (e.g., attendance competitions, report card conferences)

- Implementing group-based interventions (e.g., group tutoring, behavior groups)

- Individual interventions (e.g., individual counseling, connecting to parents)

Research Design

- Cluster randomized control trial (schools randomly assigned to T or C)

- Eligibility criteria for schools to be invited to agree to participate in randomization:

  - ❖ Graduation rate under 75%

  - ❖ Ninth grade enrollment of over 100 students

- 41 schools agreeing to participate were matched in pairs (1 pair with 3 schools), based on graduation rates and 9th grade enrollment and then randomized to treatment or control.

- Ten pairs were randomly chosen to begin participation in the study in Year 1 ; the other schools began participation in Year 2

Study Schools

41 schools (20 treatment, 21 control) from throughout a southern state

Mid-size city	11 schools
Small city/town	15 schools
Rural	15 schools

Enrollment range:	~ 340 to 2350 (Median 750)
Percent minority range:	1% to 100% (Median 40%)
Percent FRL range:	36% to 90% (Median 58%)

Research Questions: Implementation

1) What percentage of promotion coaches and Early Warning Indicator Teams met the thresholds for each characteristic of an early warning system?

2) To what extent did promotion coaches and Early Warning Indicator Teams' implementation of these practices predict students' attendance and course passing?

Data Collection: Fidelity

Examined Coach Data on Second Year in Study

1. Weekly logs completed by Promotion Coaches
2. Spring phone Interviews with coaches

Coded 11 different coach/team activities aligned to characteristics of the "Early Warning Intervention (EWI) Team" model.

Results

Threshold	Number of Coaches Implementing
1. Biweekly EWI Meetings	9
2. Teacher Conversations	15
3. Early Access to Data	15
4. Examine Data Weekly	18
5. Teacher Mentoring	5
6. Classroom Talks	14
7. Report Card Conference	7
8. Attendance Incentive	15
9. Student Groups	7
10. Talk with Parents	8
11. Talk with Students	15

Results

Findings indicated variability in the frequency and scale of the interventions initiated and monitored by the promotion coaches and early warning indicator teams.

This study further demonstrates that higher levels of implementation of early warning and intervention components in the treatment schools were associated with improved levels of ninth grade student attendance and course performance even after controlling for prior attendance.

Analytic Approach for the Outcome Analysis

- Two-level HLM model

- Student level covariates (race/ethnicity, gender, FRL status, 8th grade prior attendance) grand-mean centered

- Matched pair fixed effects

- Student level random error terms assumed to be normally distributed with mean of zero

- School level error term with mean of 0

- Binary outcomes estimated with multi-level logistic regression with two-level pair fixed effects

Baseline Equivalence Established on Prior Measures of:

- Graduation rate
- 9th grade enrollment
- 9th grade attendance rate
- 9th grade chronic absence rate
- Total school enrollment
- School % FRL
- School % African American
- School % White
- School % Latino/a

School Level Descriptive Statistics for Outcome Variables

	Control Mean (SD)	Treatment Mean (SD)
9th Grade Attendance Rate	93.7 (7.3)	93.8 (6.8)
Pct. Missing More than 10% of Days (Chronically Absent)	16.6	16.5
Pct. of 9th Grade Course Credits Earned	91.4 (20.1)	92.3 (16.3)
Pct. of Students Failing No Courses	73.3	70.2
Pct. of Students Failing No More than One Course	85.3	84.7

Intervention Impacts

- Small significant treatment effect on chronic absenteeism (E.S. = -.12)

- No significant effects on course passing rates

Treatment Effects on 9ᵗʰ Grade Outcomes

	Att. Pct.		Chr. Abs.[a]		Pct. Credits		Fail <1 [a]	
Intervention	0.583	+	0.806	**	1.900		0.845	
	(0.305)		(0.074)		(0.017)		(0.175)	
Constant	94.771	***	0.074	***	95.186	***	19.863	***
	(0.169)		(0.018)		(1.088)		(9.678)	
School Avg Prior Outcome	Yes		Yes		Yes		Yes	
Student Covariates	Yes		Yes		Yes		Yes	
Pair Fixed Effects	Yes		Yes		Yes		Yes	
Schools	41		41		41		41	
Students	7,985		7,985		7,985		7,985	

Factors Potentially Associated with Small or Null Treatment Effects

- Intervention implementation fidelity
- Potential "John Henry" effects from having T & C schools in close proximity
- State-level Early Warning System data available to all schools
- Widespread dissemination of practices associated with the intervention
- Need for an intervention with more person-power and/or school staff buy-in

Case Study

We examined the activities of three top coaches using the EWI team modeling in rural, urban, and suburban schools to do a deep dive into their activities to identify important lessons for developing new early warning systems.

Professional Development

- Getting an early start
- Building connection among promotion coaches
- School Administration needs to be involved from the start
- Coaches wanted information on team meetings
- Developing an early warning system may take three years

Examination of Data

- Having early administrative access to data is key.
- Many of the coaches needed to learn the school data systems.
- The data needs to be up to date.
- Important to examine data weekly/daily.
- Monitoring students with two early warning flags was most productive.

Team Meetings

- Effective meetings were held every 2 weeks.
- Core teachers and school staff should be in attendance.
- Resource and intervention lists should be compiled early in the year.
- Someone needs to take notes at the meeting.
- Finding time to hold the meetings was challenging.
- Building trusting relationships was important.

Whole Grade Interventions

- Attendance initiatives
- Ninth grade orientation
- Coach classroom visits
- Report card conferences
- Teacher professional development

Group Interventions

- Tutoring Groups
- Visiting other student groups

Individual Student Interventions

- Focus on missed schoolwork.
- Ask students to list short and long-term goals.
- Inform students about graduation requirements.
- Tutor individual students
- Keep notes on visits.
- Provide students with needed materials.
- Reach out to parents.

Next Steps

- Focus on Social Emotional Learning Interventions

- Tracking Mental Health

- Tracking and Improving Post-Secondary Outcomes (College and Career)

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For more information or to be added to our email blast on newly funded studies please email Marcy and Martha at the addresses below.

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Questions