



A Solution-Finding Report

Title: *Early Warning Signs*

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This Solution-finding Report provides information, requested by Tara Zuber with the Great Lakes Comprehensive Center (GLCC) at American Institutes for Research (AIR), for resources with evidence-based practices that look at the social and emotional causes that impact the lack of student learning and engagement, for GLCC’s Early Warning Signs work. Specifically, GLCC is “looking to create a list of initiatives, programs, and the like that are evidence-based and that will help schools help students who are struggling with attendance, behavior issues, or course performance problems.”

This report also contains reports on other Early Warning Systems (EWS) across the country, with an emphasis on evidence of successful outcomes.

Solution-finding Reports are intended to provide a quick response to the request for information; they are not intended to be a definitive literature survey or synthesis of the topic.

Allensworth, E. (2013). The Use of Ninth-Grade Early Warning Indicators to Improve Chicago Schools. *Journal of Education for Students Placed at Risk (JESPAR)*, 18(1), 68–83.

<http://www.tandfonline.com/doi/full/10.1080/10824669.2013.745181?scroll=top&needAccess=true>

Chicago has been in the forefront of the country in its use of ninth-grade indicators of dropout. Catalyzed by the development of the freshman on-track indicator and research around it, Chicago school administrators, central office personnel, and external partners have developed a number of mechanisms using ninth-grade indicators to stimulate school improvement. This article describes three ways in which early warning indicators are useful for improving student achievement: (1) focusing conversations and efforts on actionable problems; (2) identifying students for intervention; and (3) using indicator patterns to address low performance in a strategic way. Examples from high schools in Chicago suggest that knowledge of the on-track indicator and its use in district accountability were not enough to change practice. However, the availability of data tools that make it easy to act on information about on-track rates have changed the ways in which teachers and school staff interact with each other, students, and parents regarding improving student performance. The strategies they have developed with the data tools have provided a systematic focus to their efforts, which appears to be paying off in substantially improved ninth-grade achievement.

Allensworth, E. M., & Easton, J. Q. (2005). *The On-Track Indicator as a Predictor of High School Graduation*. Chicago, IL: Consortium on Chicago School Research.

<https://consortium.uchicago.edu/sites/default/files/publications/p78.pdf>

This report defines the on-track indicator in detail and shows that it is a better predictor of high school graduation than eighth-grade test scores or students' background characteristics. It also compares on-track rates across schools and show system-wide trends over time. The evidence presented here suggests that the on-track indicator can be a valuable tool for parents, schools, and the school system as they work to improve students' likelihood of graduating.

Allensworth, E. M., & Easton, J. Q. (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*. Chicago, IL: Consortium on Chicago School Research at the University of Chicago.

<http://consortium.uchicago.edu/sites/default/files/publications/07%20What%20Matters%20Final.pdf>

This report looks closely at students' performance in their coursework during their freshman year, how it is related to eventual graduation, and how personal and school factors contribute to success or failure in freshman-year courses. It provides evidence that teachers and schools matter for how students perform in their courses, and that efforts to reduce dropout rates are consistent with initiatives to address low achievement.

Balfanz, R., & Byrnes, V. (2012). *Chronic Absenteeism: Summarizing What We Know From Nationally Available Data*. Baltimore, MD: Johns Hopkins University Center for Social Organization of Schools.

http://new.every1graduates.org/wp-content/uploads/2012/05/FINALChronicAbsenteeismReport_May16.pdf

This report from the Johns Hopkins University Center for Social Organization of Schools discusses chronic absenteeism and the effect this has on students and schools. The authors examine the effects of absenteeism in six states: Georgia, Florida, Maryland, Nebraska, Oregon and Rhode Island. The report recommends that school, district, state, and federal agencies regularly measure and report the rates of chronic absenteeism for every school in addition to enacting policies aimed at encouraging all students attend school every day and support the use of evidence-based strategies improve student attendance.

Balfanz, R., Herzog, L., & Mac Iver, D. J. (2007). Preventing Student Disengagement and Keeping Students on the Graduation Path in Urban Middle-Grades Schools: Early Identification and Effective Interventions. *Educational Psychologist*, 42(4), 223–235.

<http://www.tandfonline.com/doi/full/10.1080/00461520701621079?scroll=top&needAccess=true>

This article considers the practical, conceptual, and empirical foundations of an early identification and intervention system for middle-grades schools to combat student disengagement and increase graduation rates in our nation's cities. It says in part, “[O]ur search for effective interventions revealed that although the fields of attendance and behavior interventions are not well developed, particularly in the secondary grades, there are interventions with solid research bases and evidence of effectiveness.”

Baltimore Education Research Consortium (2011). *Destination Graduation: Sixth Grade Early Warning Indicators for Baltimore City Schools. Their Prevalence and Impact*. Baltimore, MD: Author.

<http://files.eric.ed.gov/fulltext/ED553146.pdf>

The Baltimore Education Research Consortium examined the 2000–2001 cohort of sixth grade students (Class of 2007) from the Baltimore City Schools to ascertain whether there were indicators that predicted eventual dropout with a reasonable level of certainty, and identified enough students to justify intervention efforts. Four early warning indicators were identified for non-graduation for sixth graders: (1) Chronic absence (defined as missing 20 or more days of school); (2) Failing English, or math, or both and/or a failing average for English, math, science, and social studies; (3) Being at least one year overage (suggesting an earlier retention); and (4) Being suspended for three or more days. The report includes an appendix: Data and Methods.

Balu, R., Zhu, P., Doolittle, F., Schiller, E., Jenkins, J., & Gersten, R. (2015). *Evaluation of Response to Intervention Practices for Elementary School Reading*. Washington, DC: National Center for Education Evaluation and Regional Assistance.

<http://files.eric.ed.gov/fulltext/ED560820.pdf>

Response to Intervention (RtI) is a framework for collecting and using data to match students to interventions of varying intensity. This study examines the implementation of RtI in Grade 1–3 reading in 13 states during the 2011–2012 school year, focusing on 146 schools that were experienced with RtI. Full implementation of the RtI framework in Grade 1–3 reading was reported by 86% of the experienced schools. Fifty-five percent of these schools focused reading intervention services on Grade 1 students reading below grade level, while 45 percent of the schools also provided reading intervention services for Grade 1 students reading at or above grade level. The report includes: (1) Members of the Technical Working Group; (2) Data Collection; (3) Survey Sample Definition, Coding, and Analysis; (4) Schools' Decision Rules and Data Used for the Impact Analysis; (5) Estimation Methods; (6) Validity of the Regression Discontinuity Design; (7) Sensitivity of the Main Impact Findings; and (8) Exploratory Analyses.

Bruce, M., Bridgeland, J. M., Fox, J. H., & Balfanz, R. (2011). *On Track for Success: The Use of Early Warning Indicator and Intervention Systems to Build a Grad Nation*. Washington, DC: Civic Enterprises.

<http://files.eric.ed.gov/fulltext/ED526421.pdf>

Over the past decade, schools, districts, and states have become increasingly savvy with data collection and analysis to drive student outcomes. The development and use of Early Warning Indicator and Intervention Systems (EWS) are at the cutting edge of the data-driven, outcomes-focused, high-impact education movement. These systems can increase educators' effectiveness by helping them use data to identify those students who are on track to graduate, and those who are falling behind, far enough in advance to provide appropriate interventions. This report represents the first national assessment of EWS at the district, state, and national levels. It shares evidence from the latest research and best practices from the field so that parents, educators, administrators, business leaders, and legislators can be better equipped to keep children on track to graduate high school, prepared for college and career success.

Burke, A. (2015). *Early Identification of High School Graduation Outcomes in Oregon Leadership Network Schools*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northwest.

https://ies.ed.gov/ncee/edlabs/regions/northwest/pdf/REL_2015079.pdf

This study examined data from the 2007–2008 Grade 9 cohort in four Oregon districts to find early warning indicators of students who may drop out or fail to graduate from high school on time. The study identified four indicators that provided valuable early warning signals about students who did not graduate on time, particularly about students who dropped out of high school.

Carl, B., Richardson, J. T., Cheng, E., Kim, H., & Meyer, R. H. (2013). Theory and Application of Early Warning Systems for High School and Beyond. *Journal of Education for Students Placed at Risk (JESPAR)*, 18(1), 29–49.

<http://www.tandfonline.com/doi/pdf/10.1080/10824669.2013.745374?needAccess=true>

This article describes the development of early warning indicators for high school and beyond in the Milwaukee Public Schools (MPS) by the Value-Added Research Center (VARC) at the University of Wisconsin–Madison, working in conjunction with staff from the Division of Research and Evaluation at MPS. VARC’s work builds on prior early warning work by using both preexisting and new district data sets to build predictive models for identifying students at elevated risk of an entire series of adverse outcomes in high school and beyond, beginning with Grade 9 retention and continuing into postsecondary education. This early warning work in MPS makes at least two significant contributions to the existing base of research: (a) broadening the set of outcomes that early warning work can predict; and (b) investigating new ways of conveying early warning information to practitioners, such as probability estimates for each outcome and the total quality credits (TQC) measure.

Carr, J., & Bertrando, S. (2012). Top 10 Instructional Strategies for Struggling Students. *Leadership*, 42(1), 24–26, 38.

<http://www.iag-online.org/resources/2eGeneralResources/Professional/EdResources/Instructional-Strategies.pdf>

Given new, more rigorous content standards and expanding student diversity, how can school leaders leverage limited resources to guide teachers to effectively teach standards-aligned lessons to all learners? The authors propose that leaders leverage familiar instructional strategies but in a new way to support all students—English learners, students with learning disabilities, gifted students, and the mythical “average” student. They begin by describing a balance of teacher-led and student-led instruction within an inquiry-based approach to learning. Then, they present a specific set of “doable” instructional strategies that form an integrated approach to “good first teaching” and scaffold learning for a variety of students. They end by identifying major strategies that district and school leaders can use to ensure that these practices do not fall by the wayside, but become habits within the school culture. These suggestions highlight some key information in the guidebook *Teaching English Learners and Students with Learning Difficulties in an Inclusive Classroom: A Guidebook for Teachers*.

Chorneau, T. (2012). Early Warning Systems: Re-Engaging Chronic Truants. *Leadership*, 41(5), 26–28.

<http://files.eric.ed.gov/fulltext/EJ971420.pdf>

School attendance can be an early indicator that something is going wrong with a student. Gathering, analyzing, and acting on attendance information is a first step toward school improvement. Meanwhile, the majority of the states are moving to build and enhance what are called "early warning systems," intended to flag at-risk students during their formative years to give teachers, administrators, and parents a better chance at getting them back on track toward high school graduation. While there are variations in what data states collect and how it is issued, attendance information is a key common denominator.

Corrin, W., Sepanik, S., Rosen, R., & Shane, A. (2016). *Addressing Early Warning Indicators: Interim Impact Findings from the Investing in Innovation (i3) Evaluation of Diplomas Now*. New York, NY: MDRC.

<http://files.eric.ed.gov/fulltext/ED566904.pdf>

Diplomas Now is a partnership of three national organizations—Talent Development Secondary, City Year, and Communities In Schools—collaborating in an effort to transform urban secondary schools so that fewer students drop out and more graduate ready for postsecondary education and work. This report discusses the early impacts of the Diplomas Now model on student and school outcomes at the end of the first and second years of model implementation. It focuses in particular on students during sixth and ninth grades, critical transition years into middle and high school. This report focuses on the early impacts of Diplomas Now on students' attendance, behavior, and course performance measures (the ABC outcomes), separately and in combination, during their first year in middle school or high school over the course of the first two years that the model was implemented in participating schools. This report also discusses the impact of Diplomas Now on possible precursors to the ABC outcomes, such as the climate of the school, support from parents and the community, and students' attitudes and relationships. Two appendices are included: (1) Samples, Analytic Methods, and Early Outcome Measures; and (2) Supplemental ABC Outcome Findings.

Creghan, C., & Adair-Creghan, K. (2015). The Positive Impact of Project-Based Learning on Attendance of an Economically Disadvantaged Student Population: A Multiyear Study. *Interdisciplinary Journal of Problem-based Learning*, 9(2), Online only; retrieved from:

<http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1496&context=ijpbl>

Students who do not regularly attend high school are at an increased risk of failure in the classroom and may eventually contribute to a higher dropout rate. More specifically, the attendance rates of students from economically disadvantaged backgrounds have traditionally been lower than those with average means. Therefore, the purpose of this quantitative study was to examine the effects of a project-based learning (PjBL) environment on economically disadvantaged high school students in regard to their attendance rates. Data were collected in order to compare attendance rates of a school utilizing traditional teaching methodologies with a school using PjBL as the main mode for instructional delivery. Findings suggest when considering attendance rates, there is substantial evidence to support the use of PjBL as making a positive impact on the school attendance of economically disadvantaged students. Study findings also lend positive support for teachers and administrators who are seeking to implement a PjBL environment in their school systems to assist in addressing the attendance needs of this student population.

Curtin, J., Hurwitch, B., Olson, T. (2012). *SLDS Spotlight: Development and Use of Early Warning Systems*. Washington, DC: National Center for Education Statistics.

<http://files.eric.ed.gov/fulltext/ED565705.pdf>

An early warning system is a data-based tool that uses indicators to help predict which students are on the right path towards eventual graduation or other grade-appropriate goals. Through early warning systems, stakeholders at the school, district, and state levels can view data from a wide range of perspectives and gain a deeper understanding of student data. This Statewide Longitudinal Data Systems (SLDS) Spotlight takes a look at some of the early warning system development and expansion work going on in Massachusetts, Maine, and South Carolina. It discusses some of the benefits of using an early warning system and offers tips on the development of this type of system.

Data Quality Campaign (DQC). (2013). *Using Early Warning Data to Keep Students on Track toward College and Careers: A Primer for State Policymakers*. Washington, DC: Author.

<https://2pido73em67o3eytaq1cp8au-wpengine.netdna-ssl.com/wp-content/uploads/2016/05/Using-Early-Warning-Data-June-2013.pdf>

This factsheet discusses how states use early warning systems and proactively communicate them to stakeholders, so they can examine which students are or are not on track for postsecondary success, and intervene accordingly.

Davis, M., Herzog, L., & Legters, N. (2013). Organizing Schools to Address Early Warning Indicators (EWIs): Common Practices and Challenges. *Journal of Education for Students Placed at Risk (JESPAR)*, 18(1), 84–100.

<http://www.tandfonline.com/doi/pdf/10.1080/10824669.2013.745210?needAccess=true>

An early warning system is an intentional process whereby school personnel collectively analyze student data to monitor students at risk of falling off track for graduation and to provide the interventions and resources to intervene. The authors studied the process of monitoring the early warning indicators and implementing interventions to ascertain common practices and challenges. Research questions focused on the process of collecting and reviewing student data, conducting team meetings, and designing or selecting – and following through on – student interventions. This article reports on typical practices and implementation challenges of early warning indicators meetings from 10 schools that participated in the pilot phase of the Diplomas Now School Transformation Model across the country, gathered through meeting observations and interviews.

Deussen, T., Hanson, H., & Bisht, B. (2017). *Are Two Commonly Used Early Warning Indicators Accurate Predictors of Dropout for English Learner Students? Evidence from Six Districts in Washington State*. Washington, DC: Institute of Education Sciences; and Portland, OR: Regional Educational Laboratory Northwest.

<http://files.eric.ed.gov/fulltext/ED573197.pdf>

This study compared graduation and dropout data for a particular group of students (those who were classified as English learner students at any point in their K–12 education) with data for students who were never classified as English learner students. It also compared outcomes across subgroups of the English learner student population. And it examined whether two early warning indicators used to predict dropping out (six or more absences in Grade 9 plus at least one course failure in Grade 9, and at least one suspension or expulsion in Grade 9) are accurate and useful indicators for different groups of English learner students compared with students who were never English learners.

Dewar, G. (2016). *Disruptive Behavior Problems: 10 Evidence-Based Tips for Handling Aggression, Defiance, and Acting Out*. Ann Arbor, MI: Parenting Science.

<http://www.parentingscience.com/behavior-problems-disruptive.html>

According to this article, some kids seem particularly prone to externalizing behavior. But how do you tackle their disruptive behavior problems? There isn't any single answer. Kids misbehave for different reasons, and may respond differently to the same social input. But research suggests a number of general principles one can use to check aggression and foster self-control. The author then offers 10 evidence-based tips.

Dill, V., Lopez, P., Stahlke, T., & Stamp, J. (2016). Boosting Student Attendance: Beyond Stickers, Stars, and Candy Bars. *Educational Leadership*, 74(3). Online only; retrieved from:

<http://www.ascd.org/publications/educational-leadership/nov16/vol74/num03/Boosting-Student-Attendance@-Beyond-Stickers,-Stars,-and-Candy-Bars.aspx>

Students cannot learn if they are not in school, and that students with economic challenges miss school more frequently than other students. What obstacles create this attendance gap, and how can school districts provide the supports to improve attendance for these students? The authors of this article, who work with the Texas Homeless Education Office at the Charles A. Dana Center University of Texas at Austin, describe how 135 Texas school districts have used intensive attendance tracking and targeted support to raise the attendance rates of their homeless student populations. The authors write that other districts could use these same strategies to improve attendance for other students struggling with the challenges of poverty.

Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). *Dropout Prevention: A Practice Guide* (NCEE 2008–4025). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

http://www.michigan.gov/documents/mde/IES_Dropout_Practice_Guide_293427_7.pdf

The purpose of this practice guide is to provide evidence-based recommendations on preventing dropping out. These recommendations are intended to promote student engagement with school, suggesting practical ways in which administrators can structure efforts aimed at individual students, schoolwide communities, or ideally both.

Early Warning Systems in Education at American Institutes for Research. (2017). *Evidence-Based Practice: Improving High School Graduation with AIR's Early Warning Intervention Monitoring System*. Washington, DC: Author.

<http://www.earlywarningsystems.org/wp-content/uploads/2017/01/Early-Warning-Systems-to-Improve-Student-Outcomes.pdf>

This brief describes how an early warning system (EWS) can meet Every Student Succeeds Act (ESSA) requirements for states to support the lowest performing high schools in the nation. AIR's experts have provided direct aid and support to more than 100 school districts in more than 30 states to build, implement, and evaluate a variety of EWS initiatives. This support has resulted in improved graduation rates for schools, districts, and states.

Early Warning Systems in Education at American Institutes for Research. (n.d.). *Early Warning Systems*. Washington, DC: Author.

<http://www.earlywarningsystems.org/our-work/early-warning-systems/>

This Early Warning Systems webpage from the Early Warning Systems in Education at American Institutes for Research has sections on Synthesizing Research, Validating Indicators, and Implementation and Ongoing Support.

Education Partnerships, Inc. (2012). *Successful Attendance Policies and Programs*. Research Brief. Pittsburgh, PA: Author.

<http://files.eric.ed.gov/fulltext/ED537719.pdf>

What steps can be taken to assure that high school students have the best attendance possible? It is commonly believed and well supported by research that students who attend school regularly are more successful than those who do not. The challenge for high schools is to design and implement attendance policies and programs that monitor, encourage, and reward student attendance using available resources and without burdening faculty and staff with cumbersome monitoring and reporting procedures. Most important, to be truly successful, attendance policies and procedures must be part of a comprehensive plan to create and maintain student-centered, achievement-focused learning communities.

Epstein, J. L., & Sheldon, S. B. (2002). Present and Accounted for: Improving Student Attendance Through Family and Community Involvement. *Journal of Educational Research*, 95(5), 308–318.

<http://www.attendanceworks.org/wordpress/wp-content/uploads/2016/07/Epstein-Sheldon-Present-and-Accounted-For-2002.pdf>

This study suggests that schools may be able to increase student attendance in elementary school by implementing specific family and community involvement activities. The study discusses the results of an analysis of longitudinal data collected on schools' rates of daily student attendance and chronic absenteeism and on specific partnership practices that were implemented to help increase or sustain student attendance.

Everyone Graduates Center. (n.d.). *Early Warning and Response Systems*. Baltimore, MD: Author.

<http://new.every1graduates.org/tools-and-models/early-warning-and-response-systems/>

According to the website for the Everyone Graduates Center at Johns Hopkins University, “The mission of the Everyone Graduates Center is to develop and disseminate the know-how required to enable all students to graduate from high school prepared for college, career, and civic life. Through a systematic and comprehensive approach, EGC combines analysis of the causes, location, and consequences of the nation’s dropout crisis with the development of tools and models designed to keep all students on the path to high school graduation, and capacity building efforts to enable states, communities, school districts, and schools to provide all their students with the supports they need to succeed.” On its *Early Warning and Response Systems* webpage, it says, “An ideal early warning system for a district is developed from that district’s data. At a minimum, creating an early warning system involves: (1) Assembling longitudinal data for individual students on (a) graduation status and (b) potential predictors of dropout, such as student attendance, behavior, grades, and test scores; (2) Identifying the threshold level of each predictor that gives students a high probability of dropping out; and (3) Checking that the predictors identify a high percentage of the students in that district who drop out of school. The Everyone Graduates Center provides technical assistance and customized analyses to school districts and states that are interested in developing early warning systems. Districts with the capacity to analyze their own student data may be able to use the Early Warning Indicator tool developed by the National High School Center.” A search for “early warning” in the Search box yields articles such as “Alabama Early Warning Systems,” “Getting Back on-Track: Early Warning Indicator Analysis of High School & Post-Secondary Outcomes San Jose Unified School District,” and “New Mexico Early Warning Systems.”

Fairchild, S., Carrino, G., Gunton, B., Soderquist, C., Hsiao, A., Donohue, B., & Farrell, T. (2012). *Student Progress to Graduation in New York City High Schools. Part II: Student Achievement as Stock and Flow: Reimagining Early Warning Systems for At-Risk Students*. New York, NY: New Visions for Public Schools.

<http://files.eric.ed.gov/fulltext/ED541352.pdf>

New Visions for Public Schools has leveraged student-level data to help schools identify at-risk students, designed metrics to capture student progress toward graduation, developed data tools and reports that visualize student progress at different levels of aggregation for different audiences, and implemented real-time data systems for educators. Central to New Visions' early warning system is the point-in-time index—the four-color Progress to Graduation Metric—made possible through the greater availability of real-time student data such as graduation rates, attendance rates, credit accumulation, Regents' passage rates, student assessments, and other key indicators of student performance. Student performance benchmarks like New Visions' Progress to Graduation Metric serve as one of a school's tools for identifying at-risk students and help to inform early-warning interventions. These same student performance benchmarks, when aggregated at the school level, become one of a district's tools for identifying at-risk schools and informing interventions. Early warning systems, like New Visions' Progress to Graduation Metric, while providing a solid basis for characterizing a student, a classroom, a department, a school, or a district at a moment in time, are also limited. The primary intent of this paper is to present a new framework that will guide the next phase of New Visions' early warning data work. The goals of this paper are: (1) To illustrate how a “systems thinking” approach adds dimension and depth to the understanding of student performance, allowing to reimagine data systems; (2) To introduce the concept of “structural volatility”—and the new data tool that begins to capture this phenomenon; (3) To suggest how the terms “at risk” and “early warning,” despite the passion and urgency with which they were first introduced in *A Nation at Risk*, have become the politic, specialist language Wendell Berry cautions against; and how, by shifting the framework through which the nation understands risk, the nation restores and reclaims them.

Fairchild, S., Gunton, B., Donohue, B., Berry, C., Genn, R., & Knevals, J. (2011). *Student Progress to Graduation in New York City High Schools: Part I: Core Components*. New York, NY: New Visions for Public Schools.

http://b.3cdn.net/nvps/c7b35850eec0162736_7pm6b0gx9.pdf

Students who achieve critical academic benchmarks such as high attendance rates, continuous levels of credit accumulation, and high grades have a greater likelihood of success throughout high school and beyond. However, keeping students on track toward meeting graduation requirements and quickly identifying students who are at risk of falling off track present challenges for school leaders, teachers, parents, and students. This paper describes the core components of New Visions for Public Schools' (New Visions) early warning system—clear benchmarks and multiple tools for multiple audiences—and the movement of these tools into the DataCation platform, a web-based student information system providing real-time data delivery to 77 New York City schools.

Faria, A., Sorensen, N., Heppen, J., Bowdon, J., Taylor, S., Eisner, R., & Foster, S. (2017). *Getting Students on Track for Graduation: Impacts of the Early Warning Intervention and Monitoring System after One Year*. Washington, DC: Institute of Education Sciences; and Naperville, IL: Regional Educational Laboratory Midwest.

<http://files.eric.ed.gov/fulltext/ED573814.pdf>

This study examined the impact of the Early Warning Intervention and Monitoring System (EWIMS), a systematic approach to the early identification of and intervention with students at risk of not graduating from high school on time. The study randomly assigned 73 schools to use EWIMS or to continue with their usual practices for supporting at-risk students. After a year of limited implementation, the study findings show that EWIMS reduced chronic absence and course failure, but not the percentage of students with low grade point averages or suspensions.

Frazelle, S., & Barton, R. (2013). Implementing Early Warning Systems. *Principal's Research Review*, 8(4), 1–7.

<http://educationnorthwest.org/sites/default/files/resources/Principal%27s%20Research%20Review%2C%20July%202013.pdf>

According to this report, research offers some guidance for developing a dedicated early warning system (EWS) team, choosing and reporting accurate indicators, aligning interventions with indicators, and evaluating EWS effectiveness. To ensure a successful process, school leaders must support practitioners in learning to use multiple types of data to understand their students' progress and difficulties.

Frazelle, S., & Nagel, A. (2015). *A Practitioner's Guide to Implementing Early Warning Systems*. Washington, DC: Institute of Education Sciences; and Portland, OR: Education Northwest.

<http://files.eric.ed.gov/fulltext/ED552306.pdf>

To stem the tide of students dropping out, many schools and districts are turning to early warning systems (EWS) that signal whether a student is at risk of not graduating from high school. While some research exists about establishing these systems, there is little information about the actual implementation strategies that are being used across the country. This report summarizes the experiences and recommendations of EWS users throughout the United States. A list of references and resources is provided.

Freeman, J., Simonsen, B., McCoach, D. B., Sugai, G., Lombardi, A., & Horner, R. (2015). An Analysis of the Relationship between Implementation of School-Wide Positive Behavior Interventions and Supports and High School Dropout Rates. *High School Journal*, 98(4), 290–315.

<http://muse.jhu.edu/article/583903/pdf>

The purpose of this study was to explore the direct and indirect effects of School-Wide Positive Behavior Interventions and Supports (SWPBIS) on high school dropout rates. The authors used structural equation modeling methods to analyze the web of relationships among important high school level outcomes and SWPBIS in a large sample of high schools from 37 states. Results suggest that SWPBIS has statistically significant positive effects on attendance at the high school level and that attendance is a proximal and statistically significant indicator of high school dropout risk. The study did not find significant or consistent direct short-term effects of SWPBIS on dropout rates; however, the results suggest that schools implementing SWPBIS with fidelity for longer periods of time may see greater reductions in dropout rates. Implications for future research, practice, and policy are discussed.

Freeman, J., Simonsen, B., McCoach, D. B., Sugai, G., Lombardi, A., & Horner, R. (2016). Relationship between School-Wide Positive Behavior Interventions and Supports and Academic, Attendance, and Behavior Outcomes in High Schools. *Journal of Positive Behavior Interventions*, 18(1), 41–51.

<http://journals.sagepub.com/doi/pdf/10.1177/1098300715580992>

Attendance, behavior, and academic outcomes are important indicators of school effectiveness and long-term student outcomes. Multi-tiered systems of support (MTSS), such as School-Wide Positive Behavior Interventions and Supports (SWPBIS), have emerged as potentially effective frameworks for addressing student needs and improving student outcomes. Much of the research on SWPBIS outcomes has taken place at the elementary and middle school levels, leaving a need for a more thorough examination of outcomes at the high school level. The purpose of this study was to explore the links between implementation of SWPBIS and academic, attendance, and behavior outcome measures across a large sample of high schools from 37 states. Despite some of the difficulties of SWPBIS implementation at the high school level, evidence suggests positive relationships between SWPBIS implementation and outcomes in behavior and attendance for high schools that implement with fidelity.

Gandy, C., & Schultz, J. L. (2007). *Increasing School Attendance for K–8 Students: A Review of Research Examining the Effectiveness of Truancy Prevention Programs*. Saint Paul, MN: Wilder Research.

<http://www.wilder.org/Wilder-Research/Publications/Studies/Increasing%20School%20Attendance%20for%20K-8%20Students/Increasing%20School%20Attendance%20for%20K-8%20Students%20-%20A%20Review%20of%20Research%20Examining%20the%20Effectiveness%20of%20Truancy%20Programs.pdf>

This analysis examines several multi-faceted truancy prevention programs, which combine school-based, family-based, and community-based interventions. The study focused on programs for elementary and middle school students. Detailed descriptions are given of the studies, along with specific examples of what worked well and what methods were ineffective.

Garbacz, S. A., Lannie, A. L., Jeffrey-Pearsall, J. L., & Truckenmiller, A. J. (2015). Strategies for Effective Classroom Coaching. *Preventing School Failure*, 59(4), 263–273.

<http://www.tandfonline.com/doi/full/10.1080/1045988X.2014.942835?scroll=top&needAccess=true>

Although implementation of evidence-based behavioral and instructional practices has been identified as an educational priority, popular methods for increasing implementation of evidence-based practices (i.e., professional development) have not had the desired effect. This article aims to present frameworks and practices that coaches can use with classroom teachers to facilitate the implementation of evidence-based interventions in schools. Examples are provided to illustrate how the strategies can be implemented.

George Washington University Center for Equity & Excellence in Education. (2012). *Evidence Based Resources for Keeping Students on Track to Graduation*. Arlington, VA: Author.

http://www.doe.virginia.gov/support/school_improvement/title1/1003_g/resources/evidence_based_resources.pdf

The strongest student indicators of dropping out of school are attendance, behavior, and course failure, or the ABCs. In developing an integrated approach to keeping students in school, it is important to bring together the ABCs, comprehensive school reform, and targeted interventions. The Virginia Department of Education's Early Warning System (VEWS) offers an important starting point for developing an integrated approach to dropout prevention. The VEWS provides a tool to identify students at risk of dropping out based on the ABCs, their level of risk, and a mechanism for tracking and evaluating interventions.

Gersten, R., Compton, D., Connor, C. M., Dimino, J., Santoro, L., Linan-Thompson, S., & Tilly, W. D. (2008). *Assisting Students Struggling with Reading: Response to Intervention and Multi-tier Intervention for Reading in the Primary Grades. A practice guide.* (NCEE 2009-4045). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

<http://files.eric.ed.gov/fulltext/ED504264.pdf>

Response to Intervention (RtI) is a comprehensive early detection and prevention strategy that identifies struggling students and assists them before they fall behind. RtI systems combine universal screening and high-quality instruction for all students with interventions targeted at struggling students. This guide offers five specific recommendations to help educators identify struggling readers and implement evidence-based strategies to promote their reading achievement. Teachers and reading specialists can utilize these strategies to implement RtI and multi-tier intervention methods and frameworks at the classroom or school level. Recommendations cover how to screen students for reading problems, design a multi-tier intervention program, adjust instruction to help struggling readers, and monitor student progress. Note that this guide focuses on screening and interventions for struggling readers; it does not provide recommendations for general classroom reading instruction.

Greenberg, M. T., Domitrovich, C. E., Weissberg, R. P., & Durlak, J. A. (2017). Social and Emotional Learning as a Public Health Approach to Education. *Future of Children*, 27(1), 13–32.

<http://files.eric.ed.gov/fulltext/EJ1144819.pdf>

Evidence-based social and emotional learning (SEL) programs, when implemented effectively, lead to measurable and potentially long-lasting improvements in many areas of children's lives. In the short term, SEL programs can enhance children's confidence in themselves; increase their engagement in school, along with their test scores and grades; and reduce conduct problems while promoting desirable behaviors. In the long term, children with greater social emotional competence are more likely to be ready for college, succeed in their careers, have positive relationships and better mental health, and become engaged citizens. The authors define social and emotional learning and summarize research that shows why SEL is important for positive outcomes, both while students are in school and as they grow into adults. Then they describe what a public health approach to education would involve, and outline an effective, school-based public health approach to SEL that would maximize positive outcomes for our nation's children.

Hanover Research. (2013). *Effective Programs for Emotional and Behavioral Disorders*. Washington, DC: Author.

https://www.district287.org/uploaded/A_Better_Way/EffectiveProgramsforEmotionalandBehavioralDisordersHanover2013.pdf

In the following report, Hanover Research presents best practices and effective programs for students with emotional and behavioral disorders. This information aims to aid schools in raising levels of achievement and engagement among students exhibiting behavioral issues.

Heppen, J. B., & Therriault, S. B. (2008). *Developing Early Warning Systems to Identify Potential High School Dropouts*. Washington, DC: National High School Center at the American Institutes for Research.

<http://files.eric.ed.gov/fulltext/ED521558.pdf>

Recent research in large urban school districts, including Chicago and Philadelphia, provides information about powerful indicators that can predict, by the end of the first year of high school, or even during the first semester, whether students will complete high school. This brief guide reviews this research and uses it as a basis for providing guidance to schools and districts about using data to address the dropout problem. This guide, intended for educators and policymakers at the school, district, and state levels, is designed to provide information about: (1) Factors that contribute to a student's dropping out; (2) Research on early warning indicators; (3) School-level early warning systems; (4) District-level early warning systems; and (5) States' roles in supporting the development and use of early warning systems.

Indiana Department of Education. (2012). *Best Practice/Research-Based Prevention and Intervention Resources for Schools*. Indianapolis, IN: Author.

<http://www.doe.in.gov/student-services/student-assistance/best-practiceresearch-based-prevention-and-intervention>

This report begins, “Welcome to the site where you can access best practice/research-based prevention and intervention programs designed to meet the social/emotional/behavioral needs of all students as outlined in the Response to Intervention (RtI) process. Here, you will find information about assessment, evidence-based programs for prevention, early intervention and treatment. In addition, we have included a separate library of websites that address multiple areas of interest (specifically research and data demonstrating the effectiveness of specific programs).”

Jobs for the Future. (2014). *Early Warning Indicators and Segmentation Analysis: A Technical Guide on Data Studies That Inform Dropout Prevention and Recovery*. Washington, DC: U.S. Department of Education.

<https://www2.ed.gov/programs/dropout/earlywarningindicators.pdf>

This technical resource guide leads school districts and their staff (at both administrative and school levels) through the technical steps involved in establishing an early warning system and conducting a segmentation study. Segmentation studies identify students who are considerably off track for graduation, typically defined as two or more years off track to graduate based on age and credits.

John W. Gardner Center for Youth and Their Communities. (2011). *Developing Early Warning Indicators for the San Francisco Unified School District*. Stanford, CA: Author.

<http://files.eric.ed.gov/fulltext/ED535310.pdf>

Conversations between San Francisco Unified School District (SFUSD) staff and researchers from the John W. Gardner Center for Youth and Their Communities (JGC) at Stanford University have led to the proposed development of a three-part Early Warning System (EWS) that: (1) Identifies students at the end of the first semester of eighth grade who may benefit from participation in a summer program that helps them transition into high school; (2) Helps high schools identify incoming ninth grade students who might benefit from additional supports; and (3) Monitors students during ninth grade to ensure that they stay on track for high school graduation. This research brief focuses on the development of indicators for the first two parts of the EWS, and SFUSD and JGC have begun to co-develop a system of indicators for part three to ensure students stay on track during ninth grade.

Johnson, E., & Semmelroth, C. (2010). The Predictive Validity of the Early Warning System Tool. *NASSP Bulletin*, 94(2), 120–134.

http://scholarworks.boisestate.edu/cgi/viewcontent.cgi?article=1012&context=sped_facpubs

The Early Warning System (EWS) is a tool developed by the National High School Center to collect data on indicators including attendance, GPA, course failures and credits earned. These indicators have been found to be highly predictive of a student's likelihood of dropping out of high school in large, urban areas. The EWS tool was studied in two suburban schools. With the exception of attendance data, findings suggest that the indicators and suggested threshold for risk determination are predictive in suburban contexts.

Johnston, H. (2013). *Research Into Practice: Truancy and Attendance: Interventions for High Schools*. Savage, MN: Practical Leadership, LLC for Education Partnerships, Inc.; Corvallis, OR: Oregon GEAR UP.

<http://oregongearup.org/sites/oregongearup.org/files/research-briefs/truancyattendance.pdf>

Truancy has always been a concern of educators, but it is growing rapidly in all types of schools. Worse, as students progress through school, and the work becomes more demanding, truancy increases dramatically. Most research shows that isolated, piecemeal approaches don't work to improve attendance. It takes a school and community-wide effort that attempts to monitor attendance, get parent and community cooperation, improve school climate, and employ sanctions in a strategic, developmental manner.

Kemple, J. J., Segeritz, M. D., & Stephenson, N. (2013). Building On-Track Indicators for High School Graduation and College Readiness: Evidence from New York City. *Journal of Education for Students Placed at Risk (JESPAR)*, 18(1), 7–28.

<http://www.tandfonline.com/doi/full/10.1080/10824669.2013.747945?scroll=top&needAccess=true>

Students' engagement and performance in their first year of high school offer strong signals about their prospects for earning a diploma four years later. These performance measures can be used to construct on-track indicators to measure a school's performance and to identify needs of specific students who are at risk of dropping out. This article undertakes a systematic reanalysis of several on-track indicators that predicted the likelihood of graduating with a New York State Regents diploma in New York City. The analytic dataset contains comprehensive longitudinal information for first-time ninth graders who are enrolled in high school between 2001–2002 and 2010–2011. The results show that the current New York City Department of Education indicator (earning 10 or more course credits in the ninth grade) offers a reliable prediction of graduation with a Regents diploma. However, an indicator based on earning 10 or more credits and passing at least one Regents exam represents a substantial improvement on the current indicator and was used as the primary indicator for additional analyses. These analyses showed that this on-track indicator has been reliable and stable across seven cohorts of entering ninth graders. The analysis also shows that the substantial increase in ninth-grade on-track rates offers a reliable foreshadowing of increases in Regents diploma graduation rates in New York City. Additionally, the on-track indicator was highly predictive for a wide range of student subgroups and helps to highlight the prominent gaps in performance along racial, gender, and economic lines. Finally, the article highlights significant variation in on-track rates across schools, that should be investigated in future research.

Kennedy, M. J., & Wexler, J. (2012). Helping Students Succeed Within Secondary-Level STEM Content: Using the “T” in STEM to Improve Literacy Skills. *TEACHING Exceptional Children*, 45(4), 26–33.

<https://gseuphsdlibrary.files.wordpress.com/2013/03/helping-students-succeed-within-secondary-level-stem-content.pdf>

Literacy and other content-specific demands presented within science, technology, engineering, and mathematics (STEM) coursework can overwhelm all students and especially students with learning challenges. Although STEM content is often complex in itself, some teacher presentation styles create further difficulties for students because of the mismatch between the cognitive learning needs of students with learning difficulties and the delivery of instruction they provide. In this article, the authors discuss the source of learning mismatches introduced by content demands and instructional approaches, and highlight several evidence-based practices intended to support teachers and students as they seek pathways to improve literacy and other academic outcomes in STEM courses. An application of instructional technology called Content Acquisition Podcasts (CAPs) is offered as an example of how teachers can create multimedia-based materials that support student cognition while simultaneously helping to build literacy skills.

Kennelly, L., & Monrad, M. (2007). *Approaches to Dropout Prevention: Heeding Early Warning Signs with Appropriate Interventions*. Washington, DC: National High School Center at the American Institutes for Research.

http://www.earlywarningsystems.org/wp-content/uploads/2007/10/NHSC_ApproachesToDropoutPrevention.pdf

This report outlines steps that schools can take to identify at-risk students and provide the necessary support systems and relevant interventions to assist students in obtaining a high school diploma. Further, the report discusses the use of early warning systems to target interventions for groups and individual students, offers a variety of best practice approaches undertaken by higher performing high schools, and presents effective programs that are currently being implemented to stem the dropout problem.

Kennelly, L., & Monrad, M. (2007). *Approaches to Dropout Prevention: Heeding Early Warning Signs with Appropriate Interventions*. Washington, DC: National High School Center at the American Institutes for Research.

<http://files.eric.ed.gov/fulltext/ED499009.pdf>

This report, produced by the National High School Center at the American Institutes for Research, outlines steps that schools can take to identify at-risk students and provide the necessary support systems and relevant interventions to assist students in obtaining a high school diploma. Further, the report discusses the use of early warning data systems to target interventions for groups and individual students, offers a variety of best practice approaches undertaken by higher-performing high schools, and presents effective programs that are currently being implemented to stem the dropout problem.

Knowles, J. E. (2015). Of Needles and Haystacks: Building an Accurate Statewide Dropout Early Warning System in Wisconsin. *Journal of Educational Data Mining*, 7(3), 18–67.

Go to <http://www.educationaldatamining.org/JEDM/index.php/JEDM/article/view/JEDM082>, the click on “Full Text: PDF

The state of Wisconsin has one of the highest four-year graduation rates in the nation, but deep disparities among student subgroups remain. To address this, the state has created the Wisconsin Dropout Early Warning System (DEWS), a predictive model of student dropout risk for students in Grades 6 through 9. The Wisconsin DEWS is in use statewide and currently provides predictions on the likelihood of graduation for over 225,000 students. DEWS represents a novel statistical learning-based approach to the challenge of assessing the risk of non-graduation for students and provides highly accurate predictions for students in the middle grades without expanding beyond mandated administrative data collections. Similar dropout early warning systems are in place in many jurisdictions across the country. Prior research has shown that, in many cases, the indicators used by such systems do a poor job of balancing the trade-off between correct classification of likely dropouts and false alarm. Building on this work, DEWS uses the receiver-operating characteristic (ROC) metric to identify the best possible set of statistical models for making predictions about individual students. This paper describes the DEWS approach and the software behind it, which leverages the open-source statistical language R (R Core Team, 2013). As a result, DEWS is a flexible series of software modules that can adapt to new data, new algorithms, and new outcome variables to not only predict dropout, but also impute key predictors as well. The design and implementation of each of these modules is described in detail as well as the open-source R package, EWStools, that serves as the core of DEWS.

Koon, S., & Petscher, Y. (2015). *Comparing Methodologies for Developing an Early Warning System: Classification and Regression Tree Model versus Logistic Regression*. Washington, DC: Institute of Education Sciences; and Tallahassee, FL: Regional Educational Laboratory Southeast.

<http://files.eric.ed.gov/fulltext/ED554441.pdf>

The classification and regression tree (CART) model is an emerging tool in the development of early warning systems for identifying students at risk of poor performance in reading. This study finds that CART results are consistent with those of logistic regression on all measures of classification accuracy while using fewer or the same number of variables and making fewer model assumptions.

Li, Y., Scala, J., Gerdeman, D., & Blumenthal, D. (2016). *District Guide for Creating Indicators for Early Warning Systems*. San Francisco, CA: Regional Educational Laboratory West (REL West) at WestEd.

http://www.earlywarningsystems.org/wp-content/uploads/2017/02/REL_DistrictGuide_GraduationOutcomes-Interactive.pdf

This guide is intended primarily for school districts that have experience with early warning systems and are interested in refining or expanding their own early warning indicators. The content of the guide will be most useful for audiences that are knowledgeable about student data systems and are capable of working with spreadsheets or statistical analysis software. The guide provides general advice on data and analytic techniques that districts can consider in developing and refining locally tailored early warning indicators. The steps contained in each section should be considered as guideposts to be adapted to match local capacity and data constraints.

Lovett, M. W., Lacerenza, L., De Palma, M., & Frijters, J. C. (2012). Evaluating the Efficacy of Remediation for Struggling Readers in High School. *Journal of Learning Disabilities*, 45(2), 151–169.

<http://journals.sagepub.com/doi/pdf/10.1177/0022219410371678>

Preliminary efficacy data are reported for a research-based reading intervention designed for struggling readers in high school. PHAST PACES teaches (a) word identification strategies, (b) knowledge of text structures, and (c) reading comprehension strategies. In a quasi-experimental design, 268 intervention and 83 waiting list control students meeting criteria for reading disability were assessed before and after their semester. After 60 to 70 hours of PHAST PACES instruction, struggling readers demonstrated significant gains on standardized tests of word attack, word reading, and passage comprehension and on experimental measures of letter-sound knowledge and multisyllabic word identification relative to control students. An average effect size of 0.68 was revealed across these outcome measures.

Mac Iver, M. A. (2013). Early Warning Indicators of High School Outcomes. *Journal of Education for Students Placed at Risk (JESPAR)*, 18(1), 1–6.

<http://www.tandfonline.com/doi/full/10.1080/10824669.2013.745375?scroll=top&needAccess=true>

In this article, the author introduces a special issue of the *Journal of Education for Students Placed at Risk*, which she guest edited. This issue brings together a set of articles that focus either on quantitative analyses of high school student outcomes or on the process of using early warning indicators (EWI) data to guide interventions to keep students on track to graduate. The first three articles (see Kemple, Segeritz, & Stephenson; Carl; and Mac Iver & Messel) present results of quantitative analyses of predictors of graduation outcomes in three urban settings: New York City, Milwaukee, and Baltimore. The concluding two articles (see Allensworth; and Davis, Herzog, & Legters) describe how EWI data are being used throughout the national network of Diplomas Now schools and in Chicago high schools.

Mac Iver, M. A., & Messel, M. (2012). *The ABCs of Keeping on Track to Graduation: Research Findings from Baltimore*. *Journal of Education for Students Placed at Risk (JESPAR)*, 18(1), 50–67.

<http://www.tandfonline.com/doi/full/10.1080/10824669.2013.745207?scroll=top&needAccess=true>

This study of graduation outcomes in Baltimore uses multivariate analysis of longitudinal student cohort data to examine the impact of factors identified in previous research as early warning indicators of a dropout outcome. Student cohort files were constructed from longitudinal administrative data (following all first-time 2004–2005 and 2005–2006 ninth graders forward in time until their on-time graduation year and one year past). Sequentially estimated logistic regression hierarchical linear modeling models indicated the strongest predictors of graduation were ninth-grade attendance and course failure, although gender was still significant. Multinomial logistic regression models were used to analyze the relationship between the four categories of college enrollment outcomes (enrollment in a 4-year college, enrollment in a 2-year college, graduation with no college enrollment, and nongraduation) and student-level predictor variables, including grade point average (GPA) and eighth-grade test scores. Results suggest that equipping schools to implement interventions to address chronic absenteeism and course failure in ninth grade is a crucial strategy for increasing both high school graduation and college enrollment.

Marvul, J. N. (2012). If You Build It, They Will Come: A Successful Truancy Intervention Program in a Small High School. *Urban Education*, 47(1), 144–169.

<http://journals.sagepub.com/doi/pdf/10.1177/0042085911427738>

To assess whether a 5-month program involving attendance monitoring, sports participation, and a moral character class would reduce absenteeism, 40 students in a small transitional high school were randomly assigned to intervention and control groups and assessed pre- and post-intervention on educational expectations, attitude toward education, and emotional, cognitive, behavioral engagement, and attendance. Findings indicated significant differences between intervention and control groups on all predictor variables. Absenteeism was significantly and negatively related to all predictor variables. The program successfully reduced absenteeism, increased educational expectations, attitude toward education, and engagement.

Massachusetts Department of Elementary and Secondary Education. (2014). *Early Warning Implementation Guide: Using the Massachusetts Early Warning Indicator System (EWIS) and Local Data to Identify, Diagnose, Support, and Monitor Students in Grades 1–12*. Boston, MA: Author.

<http://files.eric.ed.gov/fulltext/ED565708.pdf>

The purpose of this guide is to provide information on how to use early warning data, including the Massachusetts Early Warning Indicator System (EWIS), to identify, diagnose, support, and monitor students in Grades 1–12. It offers educators an overview of EWIS and how to effectively use these data in conjunction with local data by following a six-step implementation cycle. Because no two districts, schools, or students are alike, the guide was purposely developed as a flexible tool to help educators customize their use of EWIS to fit their individual needs, interests, and resources. It is the hope that this guide will help educators with the important work that they do every day in their classrooms, schools, and districts. The following are appended: (1) The Development of the Massachusetts EWIS Model; (2) Accessing EWIS Data and Reports in Edwin; (3) Sample Early Warning Implementation Timeline; and (4) Targeted and Schoolwide Intervention Resources.

Massachusetts Department of Elementary and Secondary Education. (2016). *Early Warning Indicator System: Supporting K-12 Educators in the Identification, Support, and Monitoring of At-Risk Students*. Boston, MA: Author.

<http://files.eric.ed.gov/fulltext/ED565700.pdf>

A rise in data availability gives educators the opportunity to tailor instructional practices and interventions to student needs and invest resources in areas where students require the most support. Massachusetts developed the Early Warning Indicator System (EWIS), which synthesizes the wealth of student data available in the state, including assessment scores, attendance rates, course grades, and other measures to support educators in identifying struggling students. EWIS allows educators to influence a student's academic trajectory by supporting early intervention for students in need. This document provides a summary of the Early Warning Indicator System, highlighting the EWIS theory of change and the process of turning data into action by engaging in pattern analysis.

Massachusetts Department of Elementary and Secondary Education & American Institutes for Research. (2013). *Massachusetts Early Warning Indicator System (EWIS) Technical Descriptions of Risk Model Development: Early and Late Elementary Age Groupings (Grades 1–6)*. Malden, MA: Massachusetts Department of Elementary and Secondary Education; Washington, DC: American Institutes for Research.

<http://files.eric.ed.gov/fulltext/ED565709.pdf>

The following research question guided the development of the EWIS statistical model that helps identify risk levels for individual students: What are the indicators (or combination of indicators) that predict whether students are at risk of missing key educational benchmarks in Massachusetts that are above and beyond student demographic characteristics, based on predefined student clusters and appropriate outcome variables? Identification of at-risk students through the risk model developed for each age group served as the foundation of the EWIS, which aims to support practitioners in schools and districts to identify children/students who may be at risk. To develop the early elementary risk model, which is presented in this report, a multilevel modeling framework was used to control the clustering of students within schools and obtain correct robust standard errors. To develop the late elementary, middle and high school risk models, developers used a logistic regression modeling framework.

Maynard, B. R., McCrea, K., T., Pigott, T. D., & Kelly, M. S. (2013). *Indicated Truancy Interventions: Effects on School Attendance among Chronic Truant Students*. Oslo, Norway: The Campbell Collaboration.

<http://files.eric.ed.gov/fulltext/ED535217.pdf>

The main objective of this systematic review was to examine the effects of interventions on school attendance to inform policy, practice, and research. The questions guiding this study were: (1) Do truancy programs with a goal of increasing student attendance for truant youth affect school attendance behaviors of elementary and secondary students with chronic attendance problems? (2) Are there differences in the effects of school-based, clinic/community-based, and court-based programs? and (3) Are some modalities (i.e., family, group, multimodal) more effective than others in increasing student attendance?

McConnell, B. M., & Kubina, R. M. (2014). Connecting With Families to Improve Students' School Attendance: A Review of the Literature. *Preventing School Failure: Alternative Education for Children and Youth*, 58(4), 249–256.

<http://www.tandfonline.com/doi/full/10.1080/1045988X.2013.821649?scroll=top&needAccess=true>

School attendance is a rising issue in public schools. Students regularly absent from school can end up involved in destructive behaviors and dropout of school. Family characteristics are strong determining factors in students' school attendance. This presents the question, "Can family involvement improve public school students' attendance?" One way to do this is through phone calls from the school faculty to students' caregivers. Promoting attendance early in a student's life can encourage attendance and maintain this habit throughout his or her school career. The studies reviewed—using parent involvement—show promise to improving students' attendance. When parents or caregivers are regularly apprised of their child's attendance, they can provide appropriate feedback at home. Other findings and implications for phone call interventions and attendance are discussed.

McCurdy, B. L., Thomas, L., Truckenmiller, A., Rich, S. H., Hillis-Clark, P., & Lopez, J. C. (2016). School-Wide Positive Behavioral Interventions and Supports for Students with Emotional and Behavioral Disorders. *Psychology in the Schools*, 53(4), 375–389.

<http://onlinelibrary.wiley.com/doi/10.1002/pits.21913/full#references>

This investigation employed a participatory action research method involving school psychology consultants and educators to design and evaluate the impact of school-wide positive behavioral interventions and supports in a self-contained school serving students with emotional and behavioral disorders. The traditional practices of a universal system, including teaching and acknowledging expected behaviors and responding to disruptive behaviors, were adapted to better accommodate the needs of a more challenging student population. In addition, system-wide practices, including various teaming and professional development strategies, were instituted to promote sustainability. Results, after implementation of Tier 1, showed reductions in the frequency of discipline referrals and the number of emergency safety interventions, with a sustained impact across the next 3 years. Limitations included the lack of experimental control in evaluating the intervention. Discussion includes recommendations for an expanded role for school psychologists in promoting evidence-based practices for high-risk student populations.

McGaughey, T. A., Wade, J. H., & Zhao, H. (2013). *Academic Supports Provided for Struggling High School Students. Evaluation Brief*. Rockville, MD: Montgomery County Public Schools.

<http://files.eric.ed.gov/fulltext/ED557667.pdf>

This brief describes an evaluation of academic intervention supports available to high school students in Montgomery County (MD) Public Schools (MCPS) during the 2012–2013 school year. A website review identified information about academic supports available to students or parents within each high school’s webpages. A survey of school staff gathered information about the purpose, course subject, target populations, successful aspects, and major challenges for academic intervention support courses offered. Based on the findings, the following recommendations are proposed: (1) Explore ways to increase “buy-in” for students enrolled in the academic intervention support courses; (2) Do not repeat middle school reading programs for high school students; (3) Encourage schools to continue to maintain a small class size for these intervention courses; (4) Encourage continuing communication among administrators and all school staff members involved with students enrolled in academic support intervention courses; and (5) Encourage schools to form a team of school staff members who participate in the selection, monitoring, and continued support of these students.

Miles, A. C. (2013). *Effects of Positive Behavioral Interventions and Supports on Attendance, Grades, and Discipline Referrals*. Minneapolis, MN: Walden University.

<https://search.proquest.com/docview/1427854195>

Suspension from school removes students from the educational environment and interferes with school progress by decreasing prospects of gaining academic and social skills. Suspension also negatively affects school attendance and is an indicator of future disciplinary problems. To address problem behaviors that can lead to school suspensions, Positive Behavioral Interventions and Support (PBIS) was developed as an empirically-based approach to effect meaningful behavior change through providing positive reinforcement and modeling appropriate behavior. The purpose of this quantitative study was to determine if grades, attendance, and number of discipline referrals of suspended high school students changed after participation in PBIS. The results of the paired-samples t tests indicated that grades did not change after participating in PBIS, but attendance and the number of discipline referrals did significantly improve after participating in PBIS.

Mitchell, B. S., Hirn, R. G., & Lewis, T. J. (2017). Enhancing Effective Classroom Management in Schools: Structures for Changing Teacher Behavior. *Teacher Education and Special Education*, 40(2), 140–153.

<http://journals.sagepub.com/doi/pdf/10.1177/0888406417700961>

Effective classroom instructional and behavior management is essential to ensure student academic and social success. Foundational strategies such as clear expectations and routines, specific feedback, and high rates of opportunities to respond have strong empirical support, yet are often missing from educator repertoires. In this article, the authors provide a brief rationale for the inclusion of evidence-based practices accompanied with recommended resources to identify current and future practices. In addition, they also provide an overview of effective in-service educator professional development, to ensure evidence-based practices are implemented with fidelity, and recommended systemic strategies that schools and school districts can adopt to support teacher learning. Implications for teacher preparation programs also are discussed.

Morgan, E., Salomon, N., Plotkin, M., & Cohen, R. (2014). The School Discipline Consensus Report: Strategies from the Field to Keep Students Engaged in School and Out of the Juvenile Justice System. New York, NY: The Council of State Governments Justice Center.

https://csgjusticecenter.org/wp-content/uploads/2014/06/The_School_Discipline_Consensus_Report.pdf

This report provides a comprehensive set of strategies for policymakers, practitioners, and advocates across systems seeking answers to these questions: What can local, state, and federal officials do to support educators and minimize school systems' dependence on suspension, expulsion, and arrest to manage student behaviors? And how can this be accomplished while promoting safe and productive learning environments that improve academic outcomes for all students while reducing their involvement in the juvenile justice system?

Moussa, W. S. (2017). Closer to the Finish Line? Compulsory Attendance, Grade Attainment, and High School Graduation. *Education Finance and Policy*, 12(1), 28–53.

http://www.mitpressjournals.org/doi/10.1162/EDFP_a_00216

High school graduation rates are a central policy topic in the United States and have been shown to be stagnant for the past three decades. Using student-level administrative data from New York City Public Schools, the author examined the impact of compulsory school attendance on high school graduation rates and grade attainment, focusing the analysis on ninth and tenth grade cohorts. He exploited the interaction between the school start-age cutoff and compulsory attendance age requirement to identify the effect of compulsory schooling. He found that an additional year in compulsory attendance leads to an increase of 9% to 12% in the probability of progressing to Grades 11 and 12, and raises the probability of graduating from high school by 9% to 14%, depending on the specification.

National High School Center at the American Institutes for Research. (2011). *National High School Center Early Warning System Tool v2.0: Technical Manual*. Washington, DC: Author.

<http://files.eric.ed.gov/fulltext/ED521687.pdf>

The Early Warning System (EWS) Tool v2.0 is a Microsoft Excel-based tool developed by the National High School Center at the American Institutes for Research in collaboration with Matrix Knowledge Group. The tool enables schools, districts, and states to identify students who may be at risk of dropping out of high school and to monitor these students' responses to interventions. The intended purpose is to support students with an increased risk of disengagement, in order to get them back on track for graduation.

National High School Center at the American Institutes for Research. (2011). *Using an Early Warning System to Identify and Support Students at Risk for High School Dropout*. Washington, DC: Author.

<http://files.eric.ed.gov/fulltext/ED521554.pdf>

This brochure details what early warning systems are and how they can be used to identify and support students who are at risk of dropout, and provides a brief overview of the EWS Tool v2.0 and early warning system implementation process.

Nauer, K. (2016). Battling Chronic Absenteeism. *Phi Delta Kappan*, 98(2), 28–34.

<http://journals.sagepub.com/doi/abs/10.1177/0031721716671903>

While the principal of a New York elementary school (P.S. 48) took on chronic absenteeism from 2011 to 2013, a research team at the Center for New York City Affairs followed her efforts. The school drove down chronic absenteeism almost 10%. School staff routinely touched base with students, outside “success mentors” worked with those with attendance issues, and staff reached out to families to help them get their kids to school. But maintaining this level of effort has proven tough for principals in high-needs schools.

Neild, R. C., Balfanz, R., & Herzog, L. (2007). An Early Warning System. *Educational Leadership*, 65(2), 28–33.

http://new.every1graduates.org/wp-content/uploads/2012/03/Early_Warning_System_Neild_Balfanz_Herzog.pdf

According to this article, policymakers and educators face several challenges in devising early intervention strategies. The first is to figure out which signals to look for and when to look for them. These signals form an early warning system that schools can use to identify students who are at risk of dropping out. The second challenge is to develop a set of structures and practices within schools that enable educators to review data and pinpoint those students who are sending signals. The third challenge is to determine the help that students need, on the basis of the signals they send and their responses to previous interventions.

O’Cummings, M., & Therriault, S. B. (2015). *From Accountability to Prevention: Early Warning Systems Put Data to Work for Struggling Students*. Washington, DC: Early Warning Systems in Education at American Institutes for Research.

http://www.earlywarningsystems.org/wp-content/uploads/2015/05/EWS-Lessons-Learned_Final-6-1-15.pdf

This issue paper from the Early Warning Systems in Education team at American Institutes for Research includes lessons learned from more than seven years of working with individual schools, school districts, and state education agencies as they design, develop, implement, and refine early warning systems. The paper provides practical lessons for educators at all levels and backgrounds – whether considering starting a statewide EWS for the first time or revisiting the structure of practices at a school that has been implementing an EWS process for many years, valuable insights and considerations can be found. Lessons are grouped by levels that include schools, districts, and states.

Pfannenstiel, K. H., Bryant, D. P., Bryant, B. R., & Porterfield, J. A. (2015). Cognitive Strategy Instruction for Teaching Word Problems to Primary-Level Struggling Students. *Intervention in School and Clinic*, 50(5), 291–296.

<http://journals.sagepub.com/doi/pdf/10.1177/1053451214560890>

Students with mathematics difficulties and learning disabilities (LD) typically struggle with solving word problems. These students often lack knowledge about efficient, cognitive strategies to utilize when solving word problems. Cognitive strategy instruction has been shown to be effective in teaching struggling students how to solve word problems that employ specific word problem types. The cognitive strategy, Math Scene Investigator (MSI), is an example of a cognitive strategy for word problem solving. The MSI strategy described in this paper is suitable for primary-level students with mathematics difficulties and LD. Instructional steps are provided along with an example of an interactive lesson.

Rafa, A. (2017). *Chronic Absenteeism: A Key Indicator of Student Success. Policy Analysis*. Denver, CO: Education Commission of the States.

<http://files.eric.ed.gov/fulltext/ED574526.pdf>

Research shows that chronic absenteeism can affect academic performance in later grades and is a key early warning sign that a student is more likely to drop out of high school. Several states enacted legislation to address this issue, and many states are currently discussing the utility of chronic absenteeism as an indicator of school quality or student success (SQSS) in their accountability systems under the Every Student Succeeds Act (ESSA). This policy brief provides information for policymakers and state education leaders on the research, key issues, and policy options available to address chronic absenteeism and improve attendance.

Railsback, J. (2004). *Increasing Student Attendance: Strategies From Research and Practice*. Portland, OR: Northwest Regional Educational Laboratory.

<http://educationnorthwest.org/sites/default/files/increasing-student-attendance.pdf>

This report looks at practices and outcomes of attendance programs across the country. Although promising practices exist across the country, there are no “silver bullet” approaches proven to keep children in school. Other research has investigated how school disengagement relates to decreased attendance. In addition to asking “How can we help students deal with their problems in coming to school?” many researchers, schools, and community members are also asking, “How are the schools contributing to absenteeism and how can schools work with communities and parents to keep youngsters engaged, in school, and learning what they need to know to be successful?”

Reardon, R. T. (2008). *An Analysis of Florida's School Districts' Attendance Policies and their Relationship to High School Attendance Rates*. Boca Raton, FL: Florida Atlantic University.

<http://files.eric.ed.gov/fulltext/ED502216.pdf>

The purpose of this correlational study was to determine the relationship between the type of attendance policies in the high schools of the 67 Florida school districts, the size of the school district (number of high school students), the socioeconomic status (SES) of the school district, and the average daily attendance rate of the district. Additionally, the study determined if the relationship between policy type and attendance rate was moderated by SES and size. To test the research questions, high school attendance policies were examined and coded into one of three predetermined categories: punitive, reward, or affective. The conclusion of this study was that, while a heavy emphasis was placed on the implementation of punitive policy, when measured at the district level, average daily attendance rates were not significantly related to the variables of policy type, SES level, or district size, nor was the relationship between policy type and average daily attendance rate moderated by SES or district size. The study found that, while attendance policies are typically created at the district level, schools should be given the autonomy to create and implement attendance programs conducive to their individual needs.

Regional Educational Laboratory Southeast. (2009). *Evidence Based Education Request Desk*. Tallahassee, FL: Author.

<http://files.eric.ed.gov/fulltext/ED537059.pdf>

This paper provides web sites of interest with specific information on dropouts/early warning indicator systems as well as recent conferences discussing early warning indicator systems. This paper is a response to a request asking for early warning indicator systems research for secondary schools. A bibliography is included.

RMC Research Corp. (2017). *North Carolina Read to Achieve: An Inside Look*. Tampa, FL: Author.

<http://files.eric.ed.gov/fulltext/ED574423.pdf>

In 2012, the North Carolina General Assembly established the “Read to Achieve Program” (RtA), a K–3 comprehensive reading policy that focuses on improving early reading development with the goal of all students reading on grade level by the end of third grade. Since the passage of RtA, North Carolina has seen a number of positive gains among its young readers. Foundation for Excellence in Education (ExcelinEd) contracted with RMC Research Corporation to conduct a study to better understand stakeholders’ perceptions of RtA. In particular, ExcelinEd wanted to know: (1) What support strategies and technical assistance did the North Carolina Department of Public Instruction (DPI) and school districts provide? (2) How was information about RtA shared with districts, schools, teachers, parents and communities? (3) What recommendations do stakeholders have for improving the implementation process? (4) In addition to improved student outcomes, what impact has RtA had on districts and schools? The report provides methodology and results.

Roderick, M., Kelley-Kemple, T., Johnson, D. W., & Beechum, N. O. (2014). *Preventable Failure: Improvements in Long-Term Outcomes when High Schools Focused on the Ninth Grade Year*. Chicago, IL: University of Chicago Consortium on Chicago School Research.

<http://www.attendanceworks.org/wordpress/wp-content/uploads/2014/04/Preventable-Failure-CCSR-April-2014.pdf>

Research shows that students who end their ninth-grade year on track are almost four times more likely to graduate from high school than those who are off track. In response, Chicago Public Schools launched a major effort in 2007 centered on keeping more ninth-graders on track to graduation. The district initiative promoted the use of data to monitor students’ level of dropout risk throughout the ninth-grade year, allowing teachers to intervene before students fell too far behind. The diversity of strategies was notable—from calls home when students missed a class to algebra tutoring to homework help. Since that time, the CPS on-track rate has risen 25 percentage points, from 57 to 82 percent. This report shows that improvements in ninth grade on-track rates were sustained in tenth and eleventh grade and followed by a large increase in graduation rates.

Ross, T. (2016). The Differential Effects of Parental Involvement on High School Completion and Postsecondary Attendance. *Education Policy Analysis Archives*, 24(30), 1–38.

<http://files.eric.ed.gov/fulltext/EJ1100143.pdf>

Previous studies have shown the impact of parental involvement on a number of student achievement, motivation, and engagement outcomes, but the extent to which parental involvement influences high school completion and postsecondary attendance has received less attention in the literature. Filling that gap, this study replicates and extends previous research by examining the influence of various dimensions of parental involvement on high school completion and postsecondary attendance (with particular interest in dropouts who later earned GEDs and went on to college). Results show that parents' educational expectations for their children play a significant role in whether students from all backgrounds persist toward completion of high school and whether they attend a postsecondary institution. This study also finds parent participation in school functions to be a significant positive predictor of both high school completion and postsecondary enrollment, while communication between parent and school about children's school problems is negatively associated with both outcomes. The implications for expanding developmentally appropriate and culturally sensitive policies for family and school engagement are discussed.

Ryan, M. (2011). *Early Warning Indicator Systems*. Denver, CO: Education Commission of the States.

<http://files.eric.ed.gov/fulltext/ED522158.pdf>

States have made notable progress collecting longitudinal information that follows individual students over time. Access to such student data has prompted state and school district officials across the country to develop “early warning indicator systems” to efficiently identify students who are at risk of dropping out and provide targeted supports to get them back on track and graduate. The summaries in this paper highlight the statewide early warning indicator systems in Louisiana, South Carolina, and Alabama, and the Philadelphia Public Schools district-wide system.

Sarlo, R. (2011). *Early Warning Systems: Moving From Reaction to Prevention*. New York, NY: National Center for Learning Disabilities.

<http://www.rtinetwork.org/learn/rti-in-secondary-schools/early-warning-systems-moving-from-reaction-to-prevention>

Response to Intervention (RTI) is a multi-tiered approach to help struggling learners. Students' progress is closely monitored at each stage of intervention to determine the need for further research-based instruction and/or intervention in general education, in special education, or both. Successfully implementing RTI in secondary settings requires a strong plan for addressing dropout prevention. This article details how developing early warning sign programs within RTI models can generate real change for students on the path to dropping out. The article shares two examples from real programs and offers suggestions for strengthening existing early warning programs.

Scott, T. M., & Alter, P. J. (2016). Examining the Case for Functional Behavior Assessment as an Evidence-Based Practice for Students with Emotional and Behavioral Disorders in General Education Classrooms. *Preventing School Failure*, 61(1), 80–93.

<http://www.tandfonline.com/doi/full/10.1080/1045988X.2016.1196645?scroll=top&needAccess=true>

This article is a review of functional behavior assessment (FBA) studies in general education setting for students with emotional and behavioral disorders. The studies were assessed in accordance with published standards for evidence-based practices. Overall, few studies met criteria for inclusion in this review and even fewer studies included all three parts of a complete FBA. Results indicate that there are few studies of FBA that specifically address students with behavior problems in general education. Although FBA may have future promise for the described setting and population, there currently is too little information available and lack of consistency in practice to yet claim it is an evidence-based practice.

Shealy, L. (2011). *Building an Early Warning System to Identify Potential High School Dropouts*. Tucson, AZ: University of Arizona.

http://arizona.openrepository.com/arizona/bitstream/10150/145278/1/azu_etd_11486_sip1_m.pdf

The intent of this research was to determine if there were statistically significant differences between dropouts and graduates in the variables collected and which variables yielded the highest effect sizes and should be included in the early warning system for a large school district in southern Arizona. Two analyses were used to determine significance differences between dropouts and graduates. Then four analyses were performed to determine the highest-yield variables for this district. Consistent with recent research in the field, the variables of ninth grade attendance, ninth grade English and Math grades, and GPA were the strongest predictors of student dropouts. Local educators can use this early warning information to help identify potential high school dropouts as early as possible and intervene more efficiently and effectively with these students.

Smink, J., & Reimer, M. S. (2005). *Fifteen Effective Strategies for Improving Student Attendance and Truancy Prevention*. Clemson, SC: National Dropout Prevention Center/Network.

<http://files.eric.ed.gov/fulltext/ED485683.pdf>

Researchers at the Nation Dropout Prevention Center have completed a review of practices in place to combat declines in student attendance. This document provides a look at 15 of the most salient practices focused on graduation rate improvement. Although each of the 15 effective strategies for increasing the graduation rate can stand alone, an effective program will use several, if not all of the strategies.

Stormont, M., Reinke, W., & Herman, K. (2011). Teachers' Knowledge of Evidence-Based Interventions and Available School Resources for Children with Emotional and Behavioral Problems. *Journal of Behavioral Education*, 20(2), 138–147.

<https://link.springer.com/content/pdf/10.1007%2Fs10864-011-9122-0.pdf>

School professionals need to be prepared to support children with emotional and behavioral problems. Teachers in particular should be aware of the resources provided by their school as well as the evidence-based practices available to support children with behavioral problems. This study explored general education teachers' knowledge of 10 evidence-based interventions as well as resources and data collected at their schools to support children with mental health problems. Participants included 239 general educators from 5 school districts. Overall, most teachers had not heard of 9 out of 10 of the evidence-based programs presented. Teachers were also not sure whether their schools provided specific assessments and interventions to support children. One particularly noteworthy finding was that 57% of teachers were not sure whether their schools provided functional behavioral assessment and intervention planning. Findings illuminate a need for continued work in this area.

Stuit, D., O'Cummings, M., Norbury, H., Heppen, J., Dhillon, S., Lindsay, J., & Zhu, B. (2016). *Identifying Early Warning Indicators in Three Ohio School Districts*. Washington, DC: Institute of Education Sciences, and National Center for Education Evaluation and Regional Assistance.

<http://files.eric.ed.gov/fulltext/ED566958.pdf>

In partnership with the Midwest Dropout Prevention Research Alliance, the team for this study used student-level data and a five-step process to identify the most accurate indicators of students' failure to graduate from high school on time. Student-level data came from attendance records, transcripts, and discipline records of Grade 8 and 9 students in three Ohio school districts. The study found that the most accurate early warning indicators of students being off track for graduating on time vary by school district and grade level. Overall, the most accurate indicators in both grades were based on coursework (grade point average and number of credits earned). On average, indicators were more accurate in Grade 9 than in Grade 8. Other districts may be able to use the methods described in this report to identify early warning indicators for their Grade 8 and 9 students. Two appendices are included: (1) Literature Review; and (2) Student samples, data elements, and methodology.

Tableau Software. (2016). *Early Indicators: Using Data to Keep High-Risk Students in the Classroom*. Seattle, WA: Author.

<https://fs24.formsite.com/edweek/images/WP-Tableau-Using-Data-to-Keep-High-Risk-Students.pdf>

While educators have an obligation to keep students in school, it isn't their job to spend hours building reports in Excel. That's why empowering educators to quickly see and understand the right data is imperative. The Spokane School District uses data to track students at risk of dropping out, determine early warning signs, and take action to help.

Therriault, S. B., Heppen, J., O'Cummings, M., Fryer, L., & Johnson, A. (2010). *Early Warning System Implementation Guide: For use with the National High School Center's Early Warning System Tool v2.0*. Washington, DC: National High School Center at the American Institutes for Research.

<http://files.eric.ed.gov/fulltext/ED521686.pdf>

This Early Warning System (EWS) Implementation Guide is a supporting document for schools and districts that are implementing the National High School Center's Early Warning System (EWS) Tool v2.0. Developed by the National High School Center at the American Institutes for Research (AIR), the guide and tool support the establishment and implementation of an early warning system for identifying and monitoring students who are at risk of dropping out of high school.

Therriault, S. B., O'Cummings, M., Heppen, J., Yerhot, L., & Scala, J. (2013). *High School Early Warning Intervention Monitoring System Implementation Guide For Use with the National High School Center's Early Warning System High School Tool*. Washington, DC: National High School Center at the American Institutes for Research.

<http://www.earlywarningsystems.org/wp-content/uploads/2013/03/EWSHSImplementationguide2013.pdf>

This guide is designed to build the capacity of school- and district-level practitioners to implement the National High School Center's EWS High School tool. The guide and tools support the establishment and implementation of an early warning system (EWS) for identifying and monitoring students who are at risk of dropping out of high school.

Therriault, S. B., O’Cummings, M., Heppen, J., Yerhot, L., Scala, J., & Perry, M. (2013). *Middle Grades Early Warning Intervention Monitoring System Implementation Guide for Use with the National High School Center’s Early Warning System Middle Grades Tool*. Washington, DC: National High School Center at the American Institutes for Research.

<http://www.earlywarningsystems.org/wp-content/uploads/2013/02/EWSMGImplementationguide.pdf>

This guide is designed to build the capacity of school- and district-level practitioners to implement the National High School Center’s EWS Middle Grades tool. The guide and tools support the establishment and implementation of an early warning system (EWS) for identifying and monitoring students who are at risk of dropping out of the middle grades.

U.S. Department of Education. (2016). *Issue Brief: Early Warning Systems*. Washington, DC: Author.

<https://www2.ed.gov/rschstat/eval/high-school/early-warning-systems-brief.pdf>

This brief on early warning systems is the first in a series of briefs based on the National Survey on High School Strategies Designed to Help At-Risk Students Graduate. These systems are based on student data to identify and intervene for students who exhibit behavior or academic performance that puts them at risk of dropping out of school.

U.S. Departments of Education, Health and Human Services, Housing and Urban Development, and Justice. (2015). *Every Student, Every Day: A Community Toolkit to Address and Eliminate Chronic Absenteeism*. Washington, DC, Authors.

<https://www2.ed.gov/about/inits/ed/chronicabsenteeism/toolkit.pdf>

This Toolkit offers information, suggested action steps, and lists of existing tools and resources—including evidence-based resources—for individuals, leaders, and systems to begin or enhance the work of effective, coordinated community action to address and eliminate chronic absenteeism, including actions steps for: youth; parents and families; mentors and volunteers; school district superintendents and staff, and school personnel; early learning providers; health care, public health and human service agencies and providers; public housing authorities; juvenile justice and law enforcement; homeless services providers; mayors and local government; and community, faith-based, and philanthropic organizations.

U.S. Department of Health and Human Services. (2011). *Evidence-Based and Promising Practices: Interventions for Disruptive Behavior Disorders*. Washington, DC: Author.

<https://store.samhsa.gov/shin/content/SMA11-4634CD-DVD/EBPsPromisingPractices-IDBD.pdf>

This booklet has in-depth information about each intervention for disruptive behavior disorders, to help stakeholders identify and select evidence-based practices that might best fit the needs and preferences of communities, providers, practitioners, families, and youth.

West, T. C. (2013). *Just the Right Mix: Identifying Potential Dropouts in Montgomery County Public Schools Using an Early Warning Indicators Approach*. Rockville, MD: Montgomery County Public Schools (MCPS), Office of Shared Accountability.

<http://files.eric.ed.gov/fulltext/ED557733.pdf>

Each school year, roughly a thousand students drop out of Montgomery County (Maryland) Public Schools (MCPS). However, unlike other large, urban school districts where students who drop out skip school and are suspended often, students who drop out of MCPS are present in school; they just are not doing well academically. Fortunately, students who drop out of school exhibit a pattern of behaviors that are generally identifiable in advance of them dropping out of school completely, and these behaviors are referred to as Early Warning Indicators (EWIs). Because EWIs are signs of students disengaging from school, they provide MCPS with the opportunity to not only intervene with potential dropouts, but to also provide supports to students who are struggling with school that may not eventually drop out. By applying the EWIs approach to Montgomery County Public Schools' student data, this report identifies the attendance, behavior, and coursework indicators of MCPS dropouts, along with recommendations. The report includes an appendix of additional tables.

Wexler, J., Reed, D. K., Pyle, N., Mitchell, M., & Barton, E. E. (2015). *A Synthesis of Peer-Mediated Academic Interventions for Secondary Struggling Learners*. *Journal of Learning Disabilities*, 48(5), 451–470.

<http://journals.sagepub.com/doi/pdf/10.1177/0022219413504997>

A synthesis of the extant research on peer-mediated reading and math interventions for students in regular or alternative education settings with academic difficulties and disabilities in Grades 6 to 12 (ages 11–18) is presented. Interventions conducted between 2001 and 2012 targeting reading and math were included if they measured effects on at least one academic outcome measure. A total of 13 intervention studies were synthesized in which 10 studies employed an experimental or quasi-experimental design and three studies used a single-case design. Findings from the 13 studies revealed mostly moderate to high effects favoring peer mediation, particularly when implementing a peer-mediated feedback component. In addition, findings suggest such interventions have social validity among adolescents and teachers. Implications for peer-mediated instruction for academically struggling adolescents are discussed.

Wilkins, J., & Bost, L. W. (2016). Dropout Prevention in Middle and High Schools: From Research to Practice. *Intervention in School and Clinic*, 51(5), 267–275.

<http://journals.sagepub.com/doi/pdf/10.1177/1053451215606697>

Based on work with state and local education agencies in dropout prevention for students with disabilities, successful research-based interventions are described along with details of how these interventions have been implemented in middle and high schools across the country. The interventions that have helped students with disabilities graduate from school include early warning systems, mentoring programs, student engagement, family engagement, academic remediation and enrichment, career-focused curricula, interpersonal skills instruction, a focus on the transition to high school, and class/school restructuring initiatives.