Stated Briefly

Identifying early warning indicators in three Ohio school districts

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This study analyzed data on students in three Ohio school districts who had completed grades 8 and 9 to determine which data elements were the most accurate indicators of students' failure to graduate from high school on time. The most accurate indicators varied by district and grade level, which underscores the importance of having school systems verify the accuracy of early warning indicators in their local contexts. School systems consider multiple factors when designing early warning systems, including the data available on students at different grade levels, the optimal cutpoints for the data elements, the consistency and accuracy of the indicators, and the possibility of using combinations of indicators for predicting failure to graduate on time. In short, the best indicators of failure to graduate on time for one district and grade level may not be the best for other districts and grade levels.

This brief summarizes the findings of 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* (REL 2016–118). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. That report is available at http://ies.ed.gov/ncee/edlabs/projects/project.asp?ProjectID=358.

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Why this study?

Information from early warning systems can help educators target resources and interventions to students at the greatest risk of not graduating or not graduating on time (Heppen & Therriault, 2008; Jerald, 2006; Kennelly & Monrad, 2007; Neild, Balfanz, & Herzog, 2007; Pinkus, 2008). But how can districts determine which types of student data to use for their early warning systems? This study, conducted by Regional Educational Laboratory Midwest in partnership with the Midwest Dropout Prevention Research Alliance, identified valid grade 8 and 9 early warning indicators developed from datasets collected from three school districts that vary in size, urbanicity, and the characteristics of their student populations.

Analysis of data from large urban districts has enabled researchers to identify indicators that predict whether middle school and grade 9 students will graduate on time. For middle school students, attendance, course grades, and behavior such as out-of-school suspensions have been frequently identified as early indicators of high school graduation outcomes (Balfanz, 2009; Balfanz & Herzog, 2005; Neild & Balfanz, 2006). For high school students, attendance, course performance, credit attainment, and, in some cases, state assessment scores, grade retention, and behavior have frequently been identified as early indicators (Allensworth & Easton, 2005, 2007; Neild & Balfanz, 2006; Roderick, 1993; Silver, Saunders, & Zarate, 2008).

While the research literature shows a high degree of consensus on the factors that place students at risk of failure to graduate on time, there is no guarantee that a given indicator will predict failure to graduate on time with the same accuracy if it is applied to students in different school contexts. Most previous studies have focused primarily on large urban centers, and even there, indicators' value as predictors and cutpoints for indicators differ across districts (Hartman, Wilkins, Gregory, Gould, & D'Souza, 2011; Norbury et al., 2012). These findings suggest that the accuracy of indicators for predicting graduation outcomes may vary by context.

What the study examined

The three Ohio districts in this study were already implementing early warning systems to identify, provide services to, and track the progress of students in grades 8 and 9 who are at risk of failing to graduate from high school on time. The systems included the same indicators for all districts and for both grade 8 and grade 9. But as the literature suggests, indicators may not work equally well for different districts or for grade 8 and 9 students within the same district.

The purpose of this study was to develop a set of locally tailored early warning indicators for students at different grade levels in each school district and to examine the accuracy of the indicators for predicting failure to graduate on time (see box 1 for definitions of key terms used in the report). The study addressed four research questions:

1. For each indicator, what is the optimal cutpoint for accurately classifying students as on track or off track to graduate? How do these cutpoints vary across districts and grade levels?
2. Which indicators consistently predict failure to graduate on time?
3. Which indicators are the most accurate in predicting failure to graduate on time? How does the accuracy of indicators vary across districts and grade levels?
4. Is accuracy enhanced when students are identified as being at risk for not graduating on time using multiple indicators?

The study team followed a five-step process (figure 1) and used student data—attendance records, transcripts, and discipline records, as well as graduation outcomes four years after entering grade 9—for two cohorts of grade 8 students and two cohorts of grade 9 students in three Ohio school districts (referred to as Districts A, B, and C) to identify district-specific early warning indicators of failure to graduate on

Box 1. Key terms

Accuracy. A statistic that captures how well an indicator correctly identifies students who graduate on time and students who do not (see appendix B of the full report for a description of how this statistic is calculated). Accuracy statistics range from 0 to 1, with statistics greater than .50 indicating that using the indicator to identify students at risk of not graduating on time is better than randomly guessing.

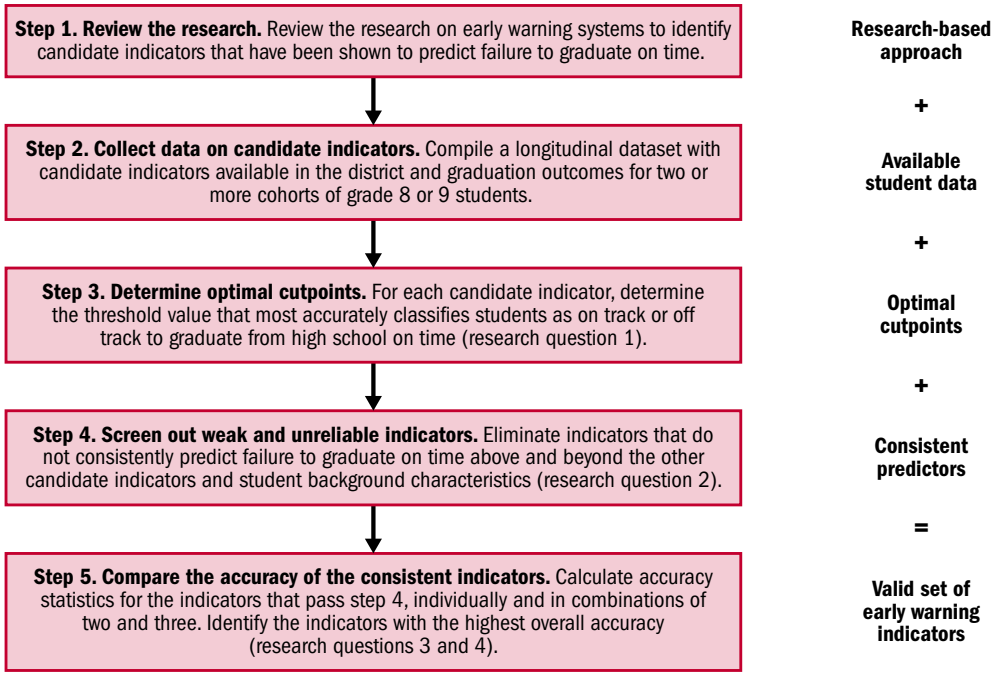
Combination indicator. One of three meta-indicators that flag students as off track to graduate on time if they are identified by at least one, at least two, or at least three consistent indicators.

Consistent indicators. Indicators from earlier grade levels (grades 8 and 9 in this study) that show statistically significant relationships with students' failure to graduate within four years of entering high school for the full sample and in the majority of iterations of regression models, each of which uses data from random samples of students (see appendix B of the full report for a description of this approach).

Failure to graduate on time. The outcome measure used in this study. Students in each grade 8 and 9 cohort were classified as not graduating on time if they did not receive a high school diploma within four years of beginning high school. Students who do not graduate within four years are classified as nongraduates even if they may later graduate.

Optimal cutpoint. A specific value on the original scale of a grade 8 or 9 indicator that separates students who are at risk of not graduating on time from those who are not at risk. For example, if 90 percent is the optimal cutpoint for the grade 9 attendance indicator, students with an attendance rate at or below 90 percent could be classified as at risk of failure to graduate on time. For each indicator, the optimal cutpoint is the value with the highest accuracy.

Figure 1. A systematic process for identifying valid early warning indicators of failure to graduate on time



Note: Details about the methodology used to validate early warning indicators can be found in appendix B of Stuit et al. (2016).

Source: Authors' compilation.

time. The three districts varied in size, demographic composition, and locale. Two of the districts serve large cities with populations greater than 250,000, while the third district serves a town near an urban area. One of the urban districts has more than 40,000 students, while the other districts each have 5,000 to 10,000 students. The percentage of students qualifying for the federal school lunch program (a proxy for low income) also varied, ranging from about 40 percent to more than 90 percent. The four-year graduation rates for the three districts ranged from 56 percent to 91 percent. The analyses were restricted to first-time freshmen in each district in 2006/07 or 2007/08 and excluded students who entered the district after grade 9. Students in the 2006/07 cohort graduated in 2010, and students in the 2007/08 cohort graduated in 2011.

What the study found

This section presents the findings for each of the study's research questions.

Optimal cutpoints for five of the eight indicators varied by district and grade level

Research question 1 asked about the best cutpoints for the candidate indicators. The optimal cutpoints for five of the eight candidate indicators varied by district and grade level within districts (table 1). The two indicators with the most consistent cutpoints across districts and grade levels are the number of suspensions (one or more) and the number of failing grades in core courses (one or more). The optimal cutpoint for number of credits earned over the school year was also the same (fewer than seven) for the two districts that provided data on this indicator.

The cutpoints for the other candidate indicators varied across districts and grade levels. For attendance rate the optimal cutpoints ranged from below 90 percent for grade 9 students in District A (which equates to missing 18 days in the state-required 182 schooldays) to below 95 percent for students in grades 8 and 9 in Districts B and C (9 of 182 days missed).

For the number of failing grades (in core courses and overall), the cutpoint for 9 of the 10 district–grade combinations for which data were available was one or more failing grade in any course. The exception was for number of failing grades overall among grade 8 students in District B, for which the optimal cutpoint

Table 1. On five of the eight data elements examined, the optimal cutpoint for designating students as off track to graduate differed for at least one district, 2006/07 and 2007/08 data for 2010 and 2011 graduation outcomes

	District A		District B		District C	
Indicator	Grade 8	Grade 9	Grade 8	Grade 9	Grade 8	Grade 9
End-of-year attendance rate (percent)	< 92	< 90	< 95	< 95	< 95	< 95
Grade point average	—	< 1.9	< 2.3	< 2.1	< 3.1	< 2.2
Number of failing grades overall	≥ 1	≥ 1	≥ 2	≥ 1	≥ 1	≥ 1
Number of failing grades in core courses	≥ 1	≥ 1	≥ 1	≥ 1	—	—
Number of suspensions	≥ 1	≥ 1	≥ 1	≥ 1	—	≥ 1
Math score on the Ohio Achievement Assessment	< 392	na	< 406	na	< 413	na
Reading score on the Ohio Achievement Assessment	< 399	na	< 413	na	< 420	na
Number of credits earned	na	< 7	na	< 7	na	—

na is not applicable for students at the indicated grade level; — is district did not provide student data or student characteristic or data were incomplete or unusable in the analysis.

Source: Authors' analysis of data on student attendance, achievement, coursework, and discipline provided by the three Ohio school districts in the study.

was two or more failing grades. The optimal cutpoints for grade point average also varied, ranging from below 1.9 (grade 9 in District A) to below 3.1 (grade 8 in District C).

The optimal cutpoints for grade 8 reading and math scores on the Ohio Achievement Assessment also varied across districts. In District A the cutpoint was 392 for math and 399 for reading. In District B the cutpoint was 406 for math and 413 for reading. And in District C the cutpoint was 413 for math and 420 for reading.

While the study identified at least two consistent predictors of failure to graduate on time for each school district and grade level, the specific predictors found to be consistent across districts and grade levels varied

The study team addressed research question 2 by conducting separate sets of iterative logistic regression models using grade-specific data from each district.[1] The analyses identified between two and six consistent predictors of failure to graduate on time per district and grade level (table 2).

Of the eight candidate indicators examined, only end-of-year attendance rate was available in every district and grade level and consistently predicted failure to graduate on time. Specifically, when attendance rate was below the district- and grade-specific cutpoint, students were more likely to not graduate on time. Reading score on the Ohio Achievement Assessment (a candidate indicator found only in grade 8 data) was a consistent predictor in all three districts. Students with reading scores below the cutpoint were more likely to not graduate on time. Number of credits earned, an indicator found only in grade 9 data and only in two districts, also consistently predicted failure to graduate on time, so students whose credit earnings fell below the cutpoint at the end of grade 9 were less likely to graduate on time.

Other indicators were consistent predictors of failure to graduate on time for some school districts and grade levels

Other indicators' ability to consistently predict failure to graduate on time varied by grade level and district:

- For four of five grade–district combinations for which data were available, students whose grade point average was below the respective cutpoints were consistently less likely to graduate on time.
- For three of six grade–district combinations, students whose number of failing grades overall and number of suspensions were above their respective cutpoints were less likely to graduate on time.
- For two of four grade–district combinations, students whose number of failing grades in core courses was above the cutpoint were less likely to graduate on time.
- For one of the three districts, students whose math score on the Ohio Achievement Assessment was below the cutpoint were less likely to graduate on time.

The most accurate indicators of failure to graduate on time also varied by school district and grade level

Research question 3 asked about the accuracy of the consistent predictors.[2] The accuracy with which the consistent predictors identify students at risk of not graduating on time also varies by district and grade level. Attendance rate, grade point average, number of credit earned, reading score on the Ohio Achievement Assessment, and combination indicators had the highest accuracy rates (table 3; see tables 2–4 in the full report for detailed findings, including accuracy statistics for different districts and grade levels).

Single indicators generally outperformed combined indicators

Research question 4 asked whether accuracy was enhanced if the focus was on combination indicators instead of on a specific indicator. Accuracy was greater for combination indicators in only one of the six grade–district combinations (grade 9 in school district C). In all other cases, one can maximize the accuracy of prediction by looking at a single specific indicator (see bottom of table 3).

Table 2. The indicators that consistently predicted failure to graduate on time varied by school district and grade level, 2006/07 and 2007/08 data for 2010 and 2011 graduation outcomes

	District A		District B		District C	
Indicator	Grade 8	Grade 9	Grade 8	Grade 9	Grade 8	Grade 9
End-of-year attendance rate	*	*	*	*	*	*
Grade point average	—	*	*	*		*
Number of failing grades overall	*		*		*	
Number of failing grades in core courses	*	*			—	—
Number of suspensions	*	*		*	—	
Math score on the Ohio Achievement Assessment	*	na		na		na
Reading score on the Ohio Achievement Assessment	*	na	*	na	*	na
Number of credits earned	na	*	na	*	na	—

* Statistically significant at $p < .05$ in 50 or more of the 100 simulated cohorts of students.

na is not applicable for students at the indicated grade level; — is district did not provide student data or student characteristic or data were incomplete or unusable in the analysis.

Note: Indicators were classified consistent if they were statistically significant when other candidate indicators were included in models and when they predicted failure to graduate on time in 50 or more simulated cohorts of students in that grade level. Simulated cohorts represented a random selection of students from the cohorts studied for that district. Blank cells indicate that the indicator did not consistently predict failure to graduate on time.

Source: Authors' analysis of data on student attendance, achievement, coursework, and discipline provided by the three Ohio school districts.

Table 3. The overall accuracy of indicators also varied by district and grade level, 2006/07 and 2007/08 data for 2010 and 2011 graduation outcomes

	District A		District B		District C	
Indicator	Grade 8	Grade 9	Grade 8	Grade 9	Grade 8	Grade 9
Consistent indicators						
End-of-year attendance rate	.67	.69	.64	.67	.69	.71
Grade point average	—	.73	.70	.70		.75
Number of failing grades overall	.65		.68		.70	
Number of failing grades in core courses	.62	.70			—	—
Number of suspensions	.57	.60		.68	—	
Math score on the Ohio Achievement Assessment	.62	na		na		na
Reading score on the Ohio Achievement Assessment	.64	na	.66	na	.72	na
Number of credits earned	na	.68	na	.74	na	—
Combination indicators						
Off track on at least one consistent indicator	.62	.64	.63	.70	.66	.74
Off track on at least two consistent indicators	.66	.66	.67	.72	.69	.78
Off track on at least three consistent indicators	.66	.71	.70	.72	.67	

na is not applicable for students at the indicated grade level; — is district did not provide student data or data were incomplete or unusable in the analysis.

Note: Proportions in the cells represent the accuracy with which indicators predicted failure to graduate on time. The greater the proportion, the greater the percentage of students who were correctly classified as off track to graduate on time. Blank cells indicate that the indicator did not consistently predict failure to graduate on time.

Source: Authors' analysis of data on student attendance, achievement, coursework, and discipline provided by three Ohio school districts.

Implications of the study findings

This analysis was intended to help three Ohio school districts make well-informed choices about which indicators to use in their early warning systems and to provide the districts with clear expectations about the accuracy of their early warning indicators when applied to current and future cohorts of students. The process of identifying grade 8 and 9 indicators that consistently predict failure to graduate on time can serve as a model for other states and district eduation agencies when they are designing their own early warning systems.

Applying indicators that are based on analysis from a different school district may lead to the wrong students being identified as off track for graduating

The indicator cutpoints that most accurately identified students as off track to graduate on time varied by school district. When the optimal cutpoints were used, some indicators were found to be consistent and accurate predictors of failure to graduate on time in one district but not in the others. These findings underscore why it is valuable for districts to analyze their own data and identify the best indicators for their early warning system or at least to verify that the indicators used are valid for their student population. For example, if District A's 90 percent optimal cutpoint for attendance in grade 9 were applied to grade 9 students in District B instead of District B's optimal cutpoint of 95 percent, it would reduce the number of students who are correctly flagged as off track to graduate on time from 67 percent to 25 percent.

Availability and accuracy of indicators also vary by grade level

Because of the timing of data collection at different points in students' grade-level progressions, the candidate indicators that are the most consistent and accurate predictors will inevitably vary by grade level. The most obvious example involves math and reading scores on the Ohio Achievement Assessment in grade 8. This assessment was not administered to students in grade 9 and thus was not included in prediction models using candidate indicators in the grade 9 data. Likewise, the accumulation of credits toward high school graduation does not begin until grade 9, making it a grade-specific indicator as well.

The data suggest that accuracy is higher for indicators found in grade 9 student records than for those found in grade 8 student records. This is evident in the higher accuracy for the combination indicator off track on at least one consistent indicator. The difference in accuracy between indicators for grade 8 and 9 students was 0.02 for District A, 0.07 for District B, and 0.08 for District C. The higher accuracy rates reflect the increased stakes for grade 9 students, since grade 9 students' academic performance counts toward graduation, whereas grade 8 students' academic performance is less likely tied to graduation requirements. Grade 8 students also have an additional year to improve on past poor performance.

This grade-level differential in accuracy does not imply that districts' early warning systems should rely solely on indicators taken from student's grade 9 records. Instead, the accuracy statistic reflects only the percentage of students who were correctly classified as off track to graduate. Indeed, districts using grade 8 data to identify at-risk students will have more time to intervene with those students and get them back on track to graduate.

When selecting indicators, school districts need to consider the risk of over- or underprediction

In the three district- and grade-specific datasets for which one or more suspensions was a consistent predictor, the indicator had the lowest rate of misclassification of students as off track to graduate on time (9–15 percent; see tables 2–4 in the main report). This may make the indicator attractive for districts with limited resources that want to target a subgroup of students who are at high risk of failure to graduate on

time. However, the drawback of suspension indicators is that they greatly underpredict the number of students who are off track because they miss those who are staying out of trouble but still failing academically. Across all three districts, fewer than 50 percent of nongraduates were correctly designated as off track by these indicators.

Using a combination indicator that flags all students who are off track on any one or more indicators captures the most students who are truly off track to graduate, but it comes at the cost of incorrectly flagging a high percentage of students who are not at risk of failure to graduate on time. This catch-all approach may make sense for districts that desire to intervene with all students who are truly at risk of failure to graduate on time, even if it means that a higher percentage of the students who receive dropout prevention services may not need them. Districts that want to focus on students who are most at risk may want to use a combination of at least two or three indicators.

Because districts operate within budget and human resource constraints, selecting indicators that overpredict the number of students who will not graduate on time will result in supplemental services being provided to students who do not need them. However, if an early warning system's goal is to catch as many at-risk students as possible, districts might want to avoid underprediction and identify as many potentially at-risk students as possible, even if it means including some students who are not actually at risk. Choosing an early warning system that balances these values ultimately depends on the local context and the system's intent.

Limitations of the study

This study has several limitations.

First, the analysis focused on indicators that were consistently identified as predictive of failure to graduate on time in the research literature on early warning systems and were based on data elements that a typical school district routinely collects and stores. Other data elements on grade 8 and 9 students—such as whether students are over-age for grade, are eligible for special education services, are English learner students, or participate in extracurricular activities—also may accurately predict failure to graduate on time. School districts can follow the analytic process outlined in this report to determine whether these other candidate indicators consistently predict failure to graduate on time.

Second, this study used only the four-year graduation rate as the outcome because it was of most interest to the members of the Midwest Dropout Prevention Research Alliance and is the accountability measure for high schools tracked by the state of Ohio. Some studies suggest that indicators predicting four-year graduation rates may be equally good at predicting five-year graduation rates (Allensworth & Easton, 2005). Additional data and analysis would be needed to verify whether the indicators of four-year graduation rates also predict five-year graduation rates for these Ohio districts.

Third, the analysis was restricted to students who were first-time freshmen within the districts in 2006/07 or 2007/08 and excluded students who entered the district after grade 9. Thus, this study does not present a full portrait of the graduating classes of 2010 and 2011. Furthermore, findings based on retrospective cohorts might not apply to current and future cohorts.

Fourth, results from the three participating districts (which were not randomly selected) may not generalize to other districts in Ohio or other states. Although the methods presented here for validating early warning indicators are applicable to other districts, the specific findings on the candidate indicators may not apply to other districts.

Finally, this study has two conceptual caveats. First, the study focuses on indicators of failure to graduate on time rather than on indicators of whether students identified through early warning systems respond positively to the interventions designed to get them back on track. Additional research is needed to identify indicators of whether students respond to graduation-focused interventions. Second, the relationships between indicators and students' graduation outcomes are only correlational. The findings say nothing about a causal connection between indicators and later outcomes. Early warning indicators only distinguish students who have a low probability of on-time graduation.

Notes

1. Whether indicators were consistent predictors was determined through a two-step process, each involving logistic regression. First, for each district and grade level, indicators had to show a statistically significant relationship with failure to graduate on time, even when all other candidate indicators were included in the statistical model (statistical significance was set at $p < .05$). Second, the indicator had to show statistical significance for at least 50 of the 100 randomly drawn subsamples of students. Additional details on analytic methods are available in the full report.
2. An indicator's accuracy was calculated by first calculating the correct off-track prediction rate (the proportion of students who were identified as at risk and actually failed to graduate) and the false alarm rate (the proportion of students who were identified as at risk but actually graduated on time). A high accuracy rate for an indicator (close to 1.00) suggests a combination of a higher correct off-track prediction rate and a lower false alarm rate. See the full report for more details.

References

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. Retrieved February 20, 2015, from http://ccsr.uchicago.edu/sites/default/files/publications/p78.pdf.

Allensworth, E., & 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. Retrieved February 20, 2015, from http://ccsr.uchicago.edu/sites/default/files/publications/07%20What%20Matters%20Final.pdf.

Balfanz, R. (2009). *Putting middle grades students on the graduation path: A policy and practice brief.* Baltimore, MD: Everyone Graduates Center & Talent Development Middle Grades Program, Johns Hopkins University. Retrieved February 20, 2015, from http://new.every1graduates.org/wp-content/uploads/2012/09/policy_brief_balfanz.pdf.

Balfanz, R., & Herzog, L. (2005, March). *Keeping middle grade students on-track to graduation: Initial analysis and implications.* Presentation at the second Regional Middle Grades Symposium, Philadelphia, PA.

Hartman, J., Wilkins, C., Gregory, L., Gould, L. F., & D'Souza, S. (2011). *Applying an on-track indicator for high school graduation: Adapting the Consortium on Chicago School Research indicator for five Texas districts* (REL 2011–100). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. http://eric.ed.gov/?id=ED514377

Heppen, J. B., & Therriault, S. B. (2008). *Developing early warning systems to identify potential high school dropouts* (Issue Brief). Washington, DC: American Institutes for Research, National High School Center. Retrieved February 20, 2015, from http://www.betterhighschools.org/pubs/documents/IssueBrief_EarlyWarningSystemsGuide.pdf.

Jerald, C. D. (2006). *Identifying potential dropouts: Key lessons for building an early warning data system.* Washington, DC: Achieve. http://eric.ed.gov/?id=ED499838

Kennelly, L., & Monrad, M. (2007). *Approaches to dropout prevention: Heeding early warning signs with appropriate interventions.* Washington, DC: American Institutes for Research, National High School Center. http://eric.ed.gov/?id=ED499009

Neild, R. C., & Balfanz, R. (2006). An extreme degree of difficulty: The educational demographics of urban neighborhood high schools. *Journal of Education for Students Placed at Risk, 11*(2), 123–141. http://eric.ed.gov/?id=EJ736311

Neild, R. C., Balfanz, R., & Herzog, L. (2007). An early warning system. *Educational Leadership 65*(2), 28–33.

Norbury, H., Wong, M., Wan, M., Reese, K., Dhillon, S., & Gerdeman, R. D. (2012). *Using the freshman on-track indicator to predict graduation in two urban districts in the Midwest Region* (Issues & Answers Report, REL 2012–134). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. http://eric.ed.gov/?id=ED531421

Pinkus, L. (2008). *Using early-warning data to improve graduation rates: Closing cracks in the education system* (Policy Brief). Washington, DC: Alliance for Excellent Education. http://eric.ed.gov/?id=ED510882

Roderick, M. (1993). *The path to dropping out: Evidence for intervention.* Westport, CT: Auburn House.

Silver, D., Saunders, M., & Zarate, E. (2008). *What factors predict high school graduation in the Los Angeles Unified School District* (California Dropout Research Project Report 14). Retrieved February 20, 2015, from http://cdrp.ucsb.edu/dropouts/researchreport14.pdf.

REL 2016–207

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September 2016

This report was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-12-C-0004 by Regional Educational Laboratory Midwest administered by American Institutes for Research. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Stuit, D., Lindsay, J., & Loney, E. (2016). *Stated Briefly: Identifying early warning indicators in three Ohio school districts* (REL 2016–207). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved from http://ies.ed.gov/ncee/edlabs.

This report is available on the Regional Educational Laboratory website at http://ies.ed.gov/ncee/edlabs.

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