



Public Chapter No. 322

Legislative Report of Study Findings

Tennessee Department of Education | January 2024



Executive Summary

This report was prepared pursuant to [Public Chapter 322](#) (hereafter referred to as the Act), now codified at T.C.A. §4-1-220; which requires the Tennessee Department of Education (department) to conduct and publish a study of best practices in other states for the use of ninth grade “on-track” indicators in state accountability systems to prevent students from dropping out of high school. In accordance with the Act, this report provides the findings from a landscape analysis of best practices in other states including a summary of how states define “on track” high school success; develop indicators to identify students at risk of dropping out of high school; develop and use statewide dropout early warning systems (EWS); utilize methods to publicly report relevant data regarding “on track” high school success indicators; set goals and monitor how many students remain “on track” in alignment with statewide graduation goals; and provide support and guidance to schools and districts to improve and increase the number of ninth grade students who are “on track.” In this report, similarities between states are highlighted, and how state practices are supported by empirical evidence is discussed when applicable.

Key findings from the landscape analysis are summarized in this executive summary, and a detailed report is discussed in this document. This report is to be provided to the House and Senate education committees no later than January 31, 2024, and published on the department’s website.

Key Findings

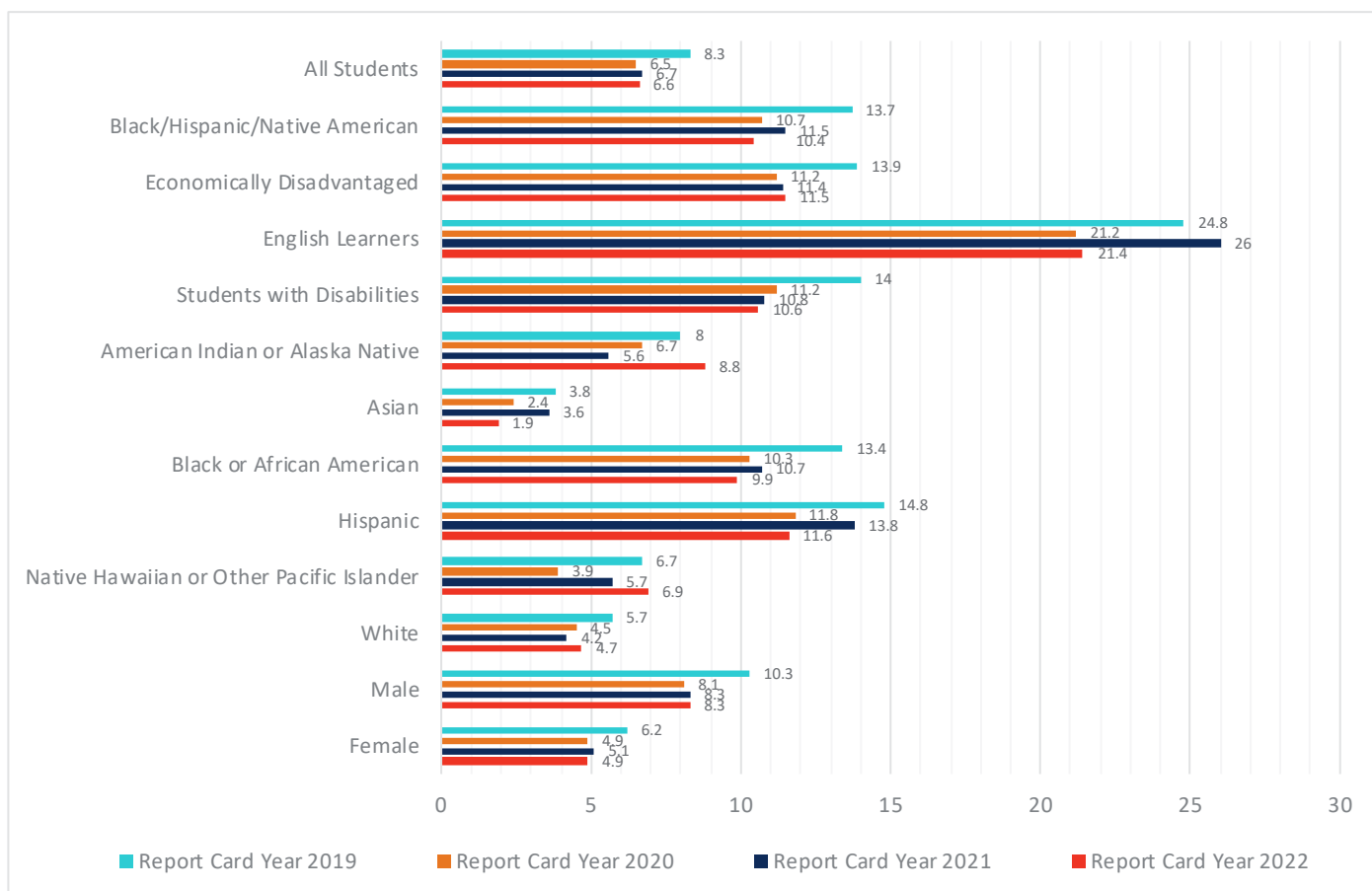
- Nine states currently use the accumulation of credits as the key ninth grade “on-track” indicator in their state accountability system; six of these states also implement a statewide early warning system (EWS) to monitor dropout indicators as early as sixth grade.
- Across all 50 states and the District of Columbia, nearly half ($n = 23$) have developed or currently use state-wide EWS or early warning intervention monitoring systems (EWIMS) to identify students at risk for dropping out of school. The design and implementation of EWS varies in complexity across states and is most often an optional tool for districts.
- The most used dropout indicators in EWS are attendance, behavior, and credit accumulation/academic performance.
- Monitoring for “on-track” status typically occurs during ninth grade; however, within EWS/EWIMS, states often begin tracking students in middle school (grades 6-8) as early tracking and identification provides the most opportunity for intervention.
- Thirty-seven states publicly release dropout data through either their ESSA-mandated state report cards ($n = 24$) or through other annually published reports or data dashboards ($n = 13$). Of those, twenty-five states report dropout data disaggregated by student groups.
- Per ESSA requirements, all states routinely set goals and monitor graduation rates; however, no states, even those that implement EWS/EWIMS, were found to intentionally set goals for dropout rates.
- Most states provide guidance for districts on the use of “on-track” or early warning indicators. Some states also provide intervention resources for district use.

Public Chapter No. 322 Legislative Report of *Study Findings*

Background

Data from the National Center for Educational Statistics (NCES¹) indicates that, in 2021, 5.2 percent of 16- to 24-year-olds were either not enrolled in school or had not completed high school. Similarly, the most recently available [Tennessee State Report Card](#) reports 6.6 percent of the 2021-22 graduating cohort dropped out² of school without earning a high school diploma or equivalent. This figure has held relatively constant since 2019 when the 2017-18 graduating cohort’s dropout data was reported³. As shown in Figure 1, dropout rates were relatively similar across student groups and are highest among students who are male, English language learners, economically disadvantaged, diagnosed with a disability, or identify as Hispanic or Black/African American.

Figure 1. Tennessee Dropout Rates between 2019 and 2022⁴



¹ National Center for Educational Statistics (2023).

² Students in Tennessee are considered dropouts when they withdraw from school without receiving a regular high school diploma, alternate academic diploma, occupational diploma, special education diploma, or GED/HiSet. Dropout rates are calculated by dividing the number of dropouts by the number of students in the graduating cohort. Additional information on dropout calculations can be found in the [Graduation Cohort Protocol](#).

³ Dropout rates for 2021 reflect the 2020 graduating cohort and may have been impacted by the Covid-19 pandemic (see Moscoviz & Evans, 2019).

⁴ Data displayed in this figure is publicly available through [Data Downloads](#).

A variety of indicators may provide insight into students at risk for dropping out of school. These indicators include, but are not limited to, credit accumulation/academic performance, attendance⁵, behavior, and school engagement⁶. Nearly two decades of research conducted by the University of Chicago's Consortium on School Research details how high school graduation can be predicted by data collected when students are in lower grades. For instance, students with higher grade point average (GPA) and attendance in grades 3-8 are more likely to graduate from high school⁷. Ninth grade is a critical year for evaluating whether a student is "on track" for high school graduation, with course failure, especially in English or mathematics, being one of the strongest predictors of graduation⁸. Additionally, there are psychosocial characteristics that are relevant to understanding dropout rates including lack of school engagement, limited parent involvement, and family economic stability⁹, although these factors can be more difficult to measure and intervene upon.

Summary of The Act - Public Chapter 322

In April of 2023, the department was tasked with conducting a study of best practices in other states for the use of ninth grade "on-track" indicators in state accountability systems to prevent students from dropping out of high school. Specifically, the Act requires research into how states:

- (1) Define "on-track" high school success;
- (2) Develop specific indicators to identify students who are at risk of dropping out of high school including, but not limited to:
 - a) Credit accumulation and course completion in ninth grade;
 - b) Attendance patterns;
 - c) Failure of English language arts (ELA) or mathematics (math) courses;
 - d) Scoring below proficient on statewide assessments administered in English language arts (ELA) or mathematics (math); and
 - e) Student suspensions and expulsions
- (3) Develop and use statewide dropout early warning systems in the middle and high school grades;
- (4) Utilize methods to publicly report relevant data regarding "on track" high school success indicators and outcomes, including, but not limited to:
 - a) State report card systems;
 - b) Published reports; and
 - c) Disaggregation by student subgroups, such as economically disadvantaged students, rural students, racial and ethnic groups, students with disabilities, and English learners;
- (5) Set goals and monitor how many students remain "on track" in ninth grade in alignment with statewide graduation goals; and
- (6) Provide supports and guidance to schools and districts to improve and increase the number of ninth grade students who are "on track."

To identify states that use ninth grade "on-track" indicators in state accountability systems, the department reviewed the ESSA plans for all fifty states and the District of Columbia to identify states that currently

⁵ Roderick et al., (2021).

⁶ Reschly (2020).

⁷ Seeskin et al., (2022).

⁸ A student who fails mathematics and/or English in the eighth grade has a 75% chance of dropping out of high school (Neild & Balfanz, 2006).

⁹ Burrus & Roberts (2012).

implement a ninth grade “on-track” indicator. Additionally, the department reviewed publicly available materials, including state’s department of education websites, for evidence of monitoring through EWS.

A snapshot of the landscape analysis is summarized in the [Appendix](#) and presents the states that use at least one ninth grade “on-track” indicator in their accountability systems or provide statewide guidance for the monitoring of students through EWS in the middle or high school grades. Key findings from the landscape analysis are summarized in the following sections.

States Using Ninth Grade “On-Track” Indicators in Accountability

Nine states¹⁰ were found to incorporate a ninth grade “on-track” indicator in their federal accountability system according to their current state ESSA plan. They are:

- Connecticut
- Delaware
- Illinois
- Louisiana¹¹
- Maryland
- Nevada
- Oregon
- Washington
- West Virginia

Key findings from these nine states are summarized below.

Defining On-Track Student Success

The term “on-track” has been used to indicate a specific readiness for future success, most often as it pertains to high school graduation or college and career readiness¹². “On-track” definitions may be applied to elementary, middle, or high school students. All states that include an “on-track” indicator for accountability purposes consider the student’s credit accumulation by the end of ninth grade. However, some of these states begin tracking or flagging students during middle school (e.g., sixth grade) within a separate EWS.

Specific Indicators to Identify At-Risk Students

To determine if a student is “on-track,” all nine states’ plans evaluate whether a student has accumulated a specified minimum number of credits earned by the end of ninth grade¹³. The percentage of the school’s ninth graders deemed “on-track” is then included in the school’s overall accountability score¹⁴. Table 1 provides additional detail regarding the type and number of credits stipulated by each state for a student to be considered “on-track” for the purposes of their federal accountability system.

¹⁰ Minnesota plans to add an indicator tracking 9th grade course completion at a later date.

¹¹ Louisiana’s accountability indicator is used in accountability calculation for the sending middle school. All other states reflect ninth grade “on-track” indicators to the student’s current high school.

¹² Bruce et al. (2011)

¹³ West Virginia’s on-track indicator monitors credit accumulation over both ninth and tenth grade years.

¹⁴ Ninth grade “on-track” indicators for federal accountability range from 3.3% to 13% of a school’s overall accountability score.

Table 1. Credit Accumulation as an Indicator of 9th Grade “On-Track” Student Success in Federal Accountability

	Definition of Credit Accumulation	Accountable School	Accountability Weighting
Connecticut	5.5 credits	Current high school	3.3%
Delaware	4+ credits (ELA, Math, Science, Social Studies, world language)	Current high school	10%
Illinois	5 full year credits (+ no failures)	Current high school	6.25-8.23% ¹⁵
Louisiana	Sliding scale based on credits earned (<4 to >7 credits)	Prior year middle school	5%
Maryland	4+ credits (ELA, Math, Science, Social Studies, world language, arts)	Current high school	5%
Nevada	5+ credits	Current high school	5%
Oregon	25% of required graduation credits	Current high school	11.1%
Washington	Pass all attempted credits	Current high school	5%
West Virginia	12 credits over 9 th -10 th grades (at least 2 credits each year must be in core content areas)	Current high school	12.5%

Development and Use of Statewide Early Warning Systems

Existing literature suggests that the use of systematic early warning systems (EWS) or early warning intervention monitoring systems (EWIMS) can have a positive impact on decreasing dropout rates, especially when identifying students and initializing targeted supports or interventions before or during ninth grade¹⁶. EWS or EWIMS are designed to provide support to districts or systematically identify students who are “off track” (i.e., at risk of dropping out).

To understand how states implement EWS/EWIMS, the department reviewed all 50 states and Washington D.C. department of education websites. Only 22 states had sufficient publicly available information regarding a statewide EWS/EWIMS aimed at middle and high school students. Six of these states also use ninth grade “on-track” indicators in their accountability systems—Connecticut, Delaware, Maryland, Washington, West Virginia, and Louisiana.

Generally, EWS/EWIMS aggregate data from a variety of off-track indicators at the state level and provide an interface to schools and districts to identify and monitor students at risk for dropping out. Although the six states specified above have both an EWS tracking off-track status and an “on-track” indicator incorporated in accountability, mandatory use of the EWS statewide was not evident.

Table 2 shows the off-track indicators used in EWS/EWIMS across 22 states; the most common indicators included in EWS/EWIMS are attendance, behavior, and credit accumulation/academic performance. Other

¹⁵ Illinois’ accountability weighting varies depending on other indicators included in the calculation.

¹⁶ Jobs for the Future (2014).

indicators include statewide assessment and a variety of demographic variables, all of which are discussed in the following section. The specific indicators that are monitored across states are specified in the [Appendix](#).

Table 2. Indicators Used in EWS/EWIMS (N = 22)

Indicator	Number of States	Percent of States
Attendance	21	95.5%
Behavior	20	90.9%
Credit Accumulation or Academic Performance/GPA	20	90.9%
State Assessments	9	40.9%
Student or Parent Engagement	2	9.1%
Mobility	5	22.7%
Demographics	8	36.4%

The development of EWS/EWIMS are typically grounded in processes developed by the National High School Center at the American Institutes for Research (AIR)¹⁷. A 2015 guide published by the U.S. department of education¹⁸ further summarizes how states, districts, and schools might use research to inform EWS. The guide claims that successful implementation of EWS includes district-level implementation, ongoing professional development, and cooperation across multiple levels of leadership. To highlight how the development of EWS may be informed by research and adjusted over time, this section summarizes the EWS developed by West Virginia.

West Virginia was ranked third in the nation for high school graduation rate in 2022 and reports higher than average graduation rates among economically disadvantaged and minority students, and the highest graduation rates in the nation for English learners¹⁹. As stated in the [West Virginia consolidated state ESEA plan](#), West Virginia has implemented an EWS which can identify students as early as sixth grade who are at risk for dropping out; earlier identification provides extended time to implement intervention and improve graduation rates. At its inception, this system relied on the ABC's of dropping out (e.g., attendance, behavior, course completion), color coding the risk level for students in grades 6-12 as yellow (low), orange (medium), or red (high) based on the number of dropout indicators on record²⁰. Guidance to LEAs included ongoing monitoring and targeted intervention for students at each level of risk. Over the years, the system evolved to include a research-based predictive algorithm that determines which factors (i.e., indicators) are the greatest drivers of dropout at specific schools for students in grades 1-12²¹. This approach allows for earlier identification, more accurate identification (up to 95 percent accuracy), and the ability to customize to unique district factors. Indicator data (i.e., academic history, attendance, behavior, and demographic characteristics) from the state's student information system (SIS) are used to determine building- and student-level dropout risk, which is available to school- and district-level personnel. EWS intervention modules are made available to educators to facilitate referral, monitoring, and follow-through for students with varied risk for dropping out.

Development and Use of Specific Indicators to Measure On-Track and Off-Track Status

Within the accountability system and/or EWS/EWIMS, criteria for evaluating students' on-track or off-track status (i.e., indicators) must be clearly defined. Characteristics of dropouts (i.e., off-track indicators) are

¹⁷ Marken et al. (2020).

¹⁸ Frazelle & Nagel (2015).

¹⁹ National Center for Educational Statistics (2023a).

²⁰ West Virginia Department of Education (n.d.).

²¹ BrightBytes (n.d.).

typically evident one to three years prior to the student’s actual dropout date; often as early as sixth grade. When used to track students, indicators should be empirically driven, simple and easily collected, efficient and effective, and limited to only a few key variables²². Furthermore, indicators are most useful when based on longitudinal data (tracking students over time) and verified as predictive for most students using sophisticated statistical analyses. The most common indicators associated with dropout, and those most frequently used by states include attendance, behavioral elements (e.g., suspension and expulsion), credit accumulation²³, overall academic achievement such as GPA, and test scores/test proficiency²⁴. In accordance with the Act, this section reviews best practices among states for the development and use of indicators to identify students who are at risk of dropping out of high school. Table 3 summarizes common definitions of dropout indicators used across states in both EWS/EWIMS and “on-track” reporting (n = 25).²⁵

Table 3. Common Dropout Indicator Definitions

	Definitions	Number of States
Attendance	Greater than 8.5% of instructional time	1
	Greater than 10% of instructional time	15
	Patterns of attendance in the last 90 days	1
	Unspecified ²⁶	4
Behavior²⁷	One or more school incidents	6
	Two or more school incidents	3
	Three or more school incidents	2
	One or more state reportable offenses	2
	Patterns of discipline over time	2
	Unspecified ²⁸	7
Credit Accumulation/ Academic Performance^{24, 29}	One or more course failures (elementary, middle, or high school)	11
	One or more failures in English or math	6
	GPA lower than 2.0	3
	Failure to earn enough credits to promote from 9 th to 10 th grade	2
	Retention in any grade	3
State Assessments	State assessment below proficient/below grade level	3
	State assessment (20 th percentile or lower)	2
Other	Student or parent engagement	2
	Mobility (two or more school moves)	5
	Demographic indicators (age, family status, gender)	7

Attendance. As shown in Table 3, most of the states (n = 21, 84.0%) included a measure of attendance to identify students at risk of dropping out. Attendance as a flag for dropout risk is supported by research;

²² Jobs for the Future (2014).

²³ Bruce et al. (2011)

²⁴ Roderick et al., (2021).

²⁵ Twenty-two states implement EWS/EWIMS; of those, six states include a ninth grade on track measure in their accountability system. Two additional states include a ninth grade on track measure without an EWS/EWIMS.

²⁶ Guidance mentions attendance or excessive absenteeism but does not provide a specific definition or threshold.

²⁷ Some states have multiple criteria for this indicator. For example, Colorado lists three separate academic performance flags: English or math course failure in grades 6-9, failure to promote from 9th to 10th grade, and overall GPA <2.0, and so is included in the count for each definition in Table 3.

²⁸ Guidance mentions considering behavior infractions but does not provide a specific definition or threshold.

²⁹ Credit accumulation is the only indicator for “on-track” monitoring.

absences greater than 10 percent of the school year is a common recommended threshold. A study conducted in Oregon schools explored attendance rates in eighth and ninth grade as a predictor of on-time graduation. The authors reported that the largest decrease in the likelihood of on-time graduation occurred when attendance went from greater than 95 percent to less than 90 percent³⁰. Nearly all states use an attendance indicator to track attendance across the entire year and implement the 10 percent rule; however, Hawaii flags students who miss more than 8.5 percent of instructional time. Alternatively, Montana considers recent attendance trends, such as absences in the most recent 60 or 90 days. The practice of identifying absenteeism trends (e.g., two absences in the first week of school, or missing more than 10 percent of days in the first quarter) provides a more immediate opportunity for intervention³¹.

Behavior. Student behaviors such as cutting class, drug/substance use, suspension, and discipline referrals are correlated with dropping out³²; as concerning behaviors increase, so does the likelihood of dropout³³. The association between behavior and dropping out is evident for just one incident of suspension and ongoing low-level behavior (i.e., behavior that doesn't lead to suspension). In the review of current state practices, the use of behavioral indicators was found to vary, ranging from one to three (or more) out of school suspensions, a pattern of school violations (i.e., discipline referrals) over several years, or more than one state-reportable offense (see Table 3). As with absenteeism, environmental factors in conjunction with behavioral concerns facilitate dropping out (e.g., peer interactions and poor regard for school/teachers) or serve as a protective factor against dropping out (e.g., individual resiliency, social-emotional skills)³⁴. Thus, a behavioral indicator might best be applied at the school level with consideration of known environmental factors and the student's pattern of behavior over time³⁵, as exemplified in the West Virginia EWS.

Credit Accumulation and Academic Performance. As previously discussed, credit accumulation by the end of ninth grade is the measure most often used to assess whether a student is "on-track" or making sufficient progress toward graduation for purposes of school accountability. All nine states that use credit accumulation in their "on-track" accountability indicator incorporate a similar measure into their EWS when identifying students at-risk for dropout; 15 other states also incorporate some measure of academic performance (i.e., credit accumulation, course failure, GPA) into their EWS. As shown in Table 3, the specific ways that states track credit accumulation varies, with some considering the actual number of credits earned, failure of core academic courses (i.e., English or math), or overall GPA (typically 2.0 or lower). Research supports the inclusion of credit accumulation to identify students at risk for dropping out and for flagging any form of low academic performance (i.e., passing but earning a D³⁶). Study results indicate students have an increased risk of dropping out when they have poor or failing performance in core subjects (e.g., English Language Arts, Mathematics) in the eighth grade³⁷ or have not earned sufficient credits by ninth grade to be promoted to tenth grade¹⁴. Colorado and Louisiana both take a unique approach to incorporating academic performance into their EWS. The former uses multiple measures (i.e., course failure, overall GPA, retention) beginning in the sixth grade while the latter looks at trends in GPA and flags any student whose GPA drops by 0.5 or more points.

³⁰ Burke (2015).

³¹ Balfanz et al. (2013).

³² Chang & Balfanz (2013).

³³ Baker et al. (2020).

³⁴ McDermott et al. (2019).

³⁵ Bruce et al. (2011)

³⁶ National Research Council (2011).

³⁷ Neild & Balfanz (2006).

Achievement and Standardized Testing. Eight states consider performance on standardized testing as an indicator for predicting dropout. For example, Rhode Island and Massachusetts both flag any students scoring below proficient in English, math, or science while Wisconsin and Florida flag the lowest performing students (bottom 20% or level 1, respectively). Iowa's procedure is more complex; a student is considered a potential dropout if they score below grade level in math or reading for two consecutive years while also exhibiting at least one other characteristic of dropout (i.e., absenteeism, course failure, limited engagement with school). Proficiency on standardized tests is associated with school dropout; however, test scores are also correlated with student engagement, grades, and chronic absenteeism, indicators that are more accurate predictors of school dropout³⁸.

Demographic and Psychosocial Characteristics. Consistently, research reflects a combination of measurable school-based indicators (e.g., attendance, behavior, credit accumulation, grades) and demographic or psychosocial (sometimes called environmental) considerations as the best predictors of risk for dropout. Occurring in tandem with school-based indicators, student characteristics (e.g., age for grade, gender, ethnicity, level of school engagement) and family context (e.g., parental involvement, parental education, family stress, economic security, mobility) are predictive of dropping out of school³⁹ and closely tied to other indicators of dropout, such as chronic absenteeism and academic achievement. Ten states expressly include demographic or psychosocial characteristics when identifying students at risk for dropping out, the most common being age for grade (a potential marker for prior retention) and mobility (i.e., multiple moves or school transitions in a given year). Iowa and Kentucky include a measure of school engagement for students and parents, respectively. Given that environmental factors can be meaningful predictors of school dropout, it may be best practice at the district or school level to consider both data-driven school indicators (i.e., attendance, behavior, credit accumulation) in addition to known demographic or psychosocial characteristics of individual students when planning dropout intervention.

Publicly Available Data and Reports

The Act requires the department to report on best practices in utilizing methods to publicly report relevant data regarding “on-track” high school success indicators and outcomes. This section summarizes how dropout data is made publicly available including, but not limited to, state report card systems, published reports, and disaggregation by student subgroups, such as economically disadvantaged students, rural students, racial and ethnic groups, students with disabilities, and English language learners.

[ESSA sec. 1111\(h\)\(1\)\(a\)](#) mandates the reporting of school-level graduation rate data disaggregated by subgroup; however, states are not required to publicly report data specific to dropouts. Nevertheless, most states publicly report dropout data at the state-, district-, and school-level, as shown in Table 4. Of the states that report dropout statistics, most report them directly on their ESSA-mandated report card or on a related webpage; other states report dropout data in the form of a report or on its own special dashboard. Additionally, most states disaggregate dropout data by student group, with nearly all states following ESSA-mandated accountability and reporting subgroups (e.g., students with disabilities, English learners, racial and ethnic groups, economically disadvantaged, homeless, students from military families). Furthermore, while all states restrict access to individual- and school-level EWS dashboards to school officials, one state was found to provide some publicly available data: Massachusetts reports key indicators for dropouts (i.e., attendance, behavior, credit accumulation) for all students and student subgroups at the district level on a publicly accessible dashboard.

³⁸ Stempel et al. (2017).

³⁹ Gubbels et al. (2019).

Table 4. Dropout Rate Reporting Across 50 States + District of Columbia (N = 51)

Dropout Reporting	Number of States	Percent of States
Reports Dropout Data	37	72.5%
Reports Dropout Data at School Level	34	66.7%
Reports Dropout Data on School Report Card	24	47.0%
Reports Dropout Data Disaggregated by Subgroup	26	51.0%

Providing Support and Guidance to Schools and Districts to Monitor Students and Reach Goals

This section summarizes best practices regarding how states set goals and monitor how many students remain “on-track”, in alignment with statewide graduation goals, as well as how states provide support and guidance to schools and districts to improve and increase the number of students considered to be “on-track”.

One reason states implement “on-track” indicators for accountability purposes and/or EWS/EWIMS is to support districts and schools to improve graduation rates to attain statewide graduation rate goals. All state educational agencies must comply with the Every Student Succeeds Act (ESSA) including the recommendation to implement supports and interventions for dropout prevention⁴⁰. Aligned with this guidance, all states include a graduation rate improvement goal within their ESSA plan, although they may not share publicly the development of or justification for these goals. Although states occasionally publish graduation rate goals, none were found to share specific goals for dropout rates. Published graduation rate goals range in specificity. On one hand, Delaware and Michigan both mention graduation improvement, but do not include a specific graduation rate percentage goal. On the other hand, [Mississippi’s strategic plan](#) includes the goal “every student graduates from high school and is ready for college and career.” To make progress toward this long-term goal, they set an interim goal of a 90 percent graduation rate by 2027. West Virginia credits their current 90 percent 4-year graduation rate, and prior increases in the 5-year cohort graduation rate to the use of the state’s EWS⁴¹. As discussed previously, West Virginia’s EWS tracks multiple indicators and provides educators with statewide supports and resources to facilitate intervention efforts. Building on this success, West Virginia recently set a goal of a 95 percent graduation rate by 2030.

States that provide the best opportunity to use EWS for intervention typically follow similar practices, all of which are supported in the empirical literature reviewed within this report. Such practices include monitoring students prior to the ninth grade, evidence- or research-based indicators, and EWS easily accessible or navigable by school personnel. One approach might be to build EWS flags into existing student information systems (SIS). Furthermore, if EWS is to be implemented for monitoring students for intervention and the ultimate goal of improving graduation rates, district and school personnel should have sufficient training on the use of the system. Additionally, intervention guidance and resources should be provided to districts for use with students found to be at risk of dropping out. For example, in their [Persistence to Graduation Toolkit](#), the Kentucky Department of Education provides helpful videos, demonstrations, and suggestions for tiered intervention.

Conclusion

This report summarizes best practices across states regarding use of a ninth grade on-track indicator for accountability purposes as well as implementation of EWS to identify students at risk for dropping out.

⁴⁰ U.S. Department of Education (2017).

⁴¹ West Virginia Department of Education (2017).

Additional information regarding the development and use of EWS, development and use of indicators, making data publicly available, and providing support to districts to monitor students and improve graduation rates is also included in this report. The term “on-track” is used to designate students who are making sufficient progress toward the goal of high school graduation and to flag students who are not making such progress. Measured differently across states, students who are not considered “on-track” are typically identified before or during ninth grade and exhibit high rates of absenteeism, concerning behavior (e.g., suspension/expulsion), or a failure to accumulate sufficient credits for grade promotion. Despite only nine states currently incorporating an “on-track” indicator in their federal system of accountability, most states collect data on students that can be used to determine if students are “on-track,” and nearly half of all states have developed or currently use EWS aimed at dropout prevention.

The level of publicly available data reported by states varied, with most providing dropout rates on the state report card and others providing specific dropout analyses and reports. Only one state (Massachusetts) was found to publicly disseminate data on specific dropout indicators. Regardless of format, disaggregating by student group provides opportunity to identify which student groups may most benefit from additional support or intervention.

Of the states that are implementing EWS or “on-track” indicators, all relied on empirical evidence to develop indicators and systems, while some conducted advanced statistical analyses using state-specific data to further refine predictive ability. At a minimum, the indicators used to identify students at risk for dropping out should include attendance, grades, and course failures beginning as early as sixth grade and continuing through ninth grade or beyond. With a focus on intervention to support student success and improve graduation rates, measurable school-level indicators might be considered within the landscape of the student’s background (e.g., demographics and family context), recognizing trends over time.

Many commonly used indicators (i.e., attendance, course completion) are available at the state-level; thus, the creation of a statewide rudimentary EWS is straightforward. In such a system, students may simply be classified as low, medium, or high risk for dropping out dependent upon the number of indicators they have accrued. More complex EWSs reflect careful consideration of how indicators might function differently across a state and within varied contexts. When implemented appropriately, EWS lend themselves to continual monitoring of students at risk for dropping out, providing ample opportunity for intervention efforts. At the same time, to apply such practices, districts must have sufficient training, statewide support, and intervention resources available.

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Appendix. Use of On-Track Indicators in Accountability and Statewide Dropout Early Warning System

State	Use in Ninth Grade "On-Track" Indicator for Accountability					Considered in Statewide EWS/EWIMS				
	Credit accumulation in the ninth grade	Attendance patterns	Failure of ELA or math courses	Below proficient on statewide math or ELA	Suspensions or expulsions	Attendance	Behavior	Credit accumulation or academic performance	State Assessments	Other
Alabama						✓	✓	✓		
Alaska										
Arizona										
Arkansas										
California										
Colorado						✓	✓	✓		
Connecticut	✓					✓	✓	✓		✓
Delaware	✓					✓	✓	✓		
District of Columbia										
Florida						✓	✓	✓	✓	
Georgia										
Hawaii						✓	✓	✓		
Idaho										
Illinois	✓									
Indiana						✓	✓	✓	✓	
Iowa								✓	✓	✓
Kansas										
Kentucky						✓	✓	✓	✓	✓
Louisiana	✓					✓		✓		✓
Maine										
Maryland	✓					✓	✓	✓		✓
Massachusetts						✓	✓	✓		
Michigan						✓	✓	✓		
Minnesota						✓	✓	✓		
Mississippi						✓	✓	✓	✓	
Missouri										
Montana						✓	✓	✓		✓
Nebraska										
Nevada	✓									
New Hampshire										

State	Use in Ninth Grade “On-Track” Indicator for Accountability					Considered in Statewide EWS/EWIMS			State Assessments	Other
	Credit accumulation in the ninth grade	Attendance patterns	Failure of ELA or math courses	Below proficient on statewide math or ELA	Suspensions or expulsions	Attendance	Behavior	Credit accumulation or academic performance		
New Jersey										
New Mexico										
New York										
North Carolina										
North Dakota										
Ohio										
Oklahoma						✓	✓	✓	✓	✓
Oregon	✓									
Pennsylvania						✓	✓	✓		
Rhode Island						✓	✓	✓	✓	
South Carolina										
South Dakota										
Tennessee										
Texas										
Utah										
Vermont										
Virginia										
Washington	✓					✓	✓		✓	✓
West Virginia	✓					✓	✓	✓		✓
Wisconsin						✓	✓		✓	✓
Wyoming										