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The intent of Pathways to Adult Success (PAS) is to better the future for America's youth through education and contribute to a stronger foundation for America's economy and community life.

The PAS initiative is rooted in the long-standing research and community-building mission of the Center for Social Organization of Schools (CSOS), a unit within the Johns Hopkins University (JHU) School of Education, and previously a unit within JHU's Krieger School of Arts and Sciences.

CSOS was born in the aftermath of the 1954 Supreme Court decision *Brown v. Board of Education*, under the leadership of JHU sociology professor James Coleman. With his team of graduate students (including future CSOS director Jim McPartland), Coleman laid the groundwork for JHU's ground-breaking work illuminating the relationship of race, poverty, and educational attainment, and for pragmatic spin-offs into direct services to boost students' progress in schools and into the future.

Pathways to Adult Success (PAS) is the latest of CSOS' research and outreach endeavors. With PAS we seek to refine a set of indicators — and the thinking — that help educators figure out which students are likely to need help to continue on a path to success, and what help will be most suited for these youth.

Through PAS, we intend, with your partnership, to identify, refine, and communicate descriptors and processes for indicator and response systems that enable caring adults to intervene at crucial points in youth lives, and to guide and keep them on track towards a bright future as adults.

We invite you to join our work.

FROM THE BILL & MELINDA GATES FOUNDATION

Over the past decade, we've seen schools and systems make tremendous progress using indicators, such as Freshman On-Track and the ABCs (attendance, behavior and course-passing/credit accrual) to foster continuous improvement and increase the number of students earning a high school diploma.

The Bill & Melinda Gates Foundation is delighted to support this informal network of practitioners and researchers in taking the next steps in building effective indicator and response systems.

In particular, we're excited about the potential to accelerate the development of new approaches and implementation practices through work together across a new and more formalized national network. And, we hope that this work will enable the field to more quickly learn and develop consensus, leading to more equitable student outcomes and similar increases in students' postsecondary access, preparation, and success in the coming decade.

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PATHWAYS to **ADULT SUCCESS**



TABLE OF CONTENTS

Introduction	3
Vision and Beliefs	4
Goals	5
EWS 2.0: Building Pathways to Adult Success	7
~ Indicators	8
~ Analysis	. 14
~ Actions	. 18
~ Data	. 22
~ Teams and Leaders	. 28
Collaborations	. 33
~ Community and Family	. 34
~ Postsecondary	. 38
Frequently Asked Ouestions	. 41



INTRODUCTION

Pathways to Adult Success (PAS) is an effort by volunteer representatives from a diverse set of school districts, state departments of education, nonprofit organizations, higher education institutions, businesses, and community organizations. Its aim is to collectively determine how to support, enable, and accelerate the required changes in beliefs, practices, and structures to enable all students to graduate from high school with a clear, strong, and supported pathway to postsecondary success.

The Essential Question for our work:

What do today's youth need from their schools and communities to support them toward becoming productive adults in a fast-moving society and constantly-evolving local and global environment — in which some things have remained constant over time and other circumstances have changed dramatically?

The reason for this cross-sector work to improve students' Pathways to Adult Success (PAS):

The journey from adolescence to adult success has changed considerably over the past quarter century and continues to evolve. Once, a high school diploma signified that a young adult had acquired the formal education necessary to succeed in the workplace and society. Now the successful completion of postsecondary education or career training beyond a high school diploma is required for students to have similar odds of adult success.

This fact profoundly changes public PreK – 12 schools' role in preparing all students for their future. In short, the mission of high schools must transform from being the end of formal public education for many into the launching pad for further and more tailored schooling and training for all. This change in mission requires substantial and widespread shifts in practices and structures at many levels and in many different ways. These changes need to occur:

- across the PreK 12 public education system
- in how higher education institutions and employers work with the PreK 12 school system, and how these partners change to help strengthen the pathways from PreK 12 schooling to adult success
- in the role community institutions and the broader community around schools play in supporting youth success

Introduction 3

PAS VISION AND BELIEFS

OUR VISION

For schools, districts, and communities to enable all youth, regardless of need, circumstances, place of residence, and prior experience to obtain the competencies necessary to persist in and complete secondary schooling prepared for postsecondary success and a postsecondary pathway that leads to a family-supporting wage and adult success.

OUR EQUITY AND OPPORTUNITY STATEMENT

PAS is founded in a commitment to equity and opportunity — each child in America deserves and has an inherent right to be supported in developing the skills and knowledge necessary for specific education and life outcomes, independent of gender, race, ethnicity, and socio-economic, language or disability status. Organizations and institutions can organize themselves and their people to achieve these goals, but sorting and selecting of students and their futures is not acceptable.

ON DATA AND ACCOUNTABILITY

PAS is also founded in a commitment to data-based student support and data-mediated actions to enhance students' prospects and attainment of educational achievement and life goals. It is not directly related to federal, state or district accountability standards and actions (such as the Every Student Succeeds Act, or ESSA, of 2016 and its predecessor, the No Child Left Behind, or NCLB, of 2001). However, strategies recommended through PAS are important tools for successfully achieving ESSA goals.

ON STUDENT SUPPORT

Support is best shaped by student-centric systems in which data (converted into indicators that schools and others can use) are used to shape interventions, relationships, and responses at multiple levels.

PAS begins with the belief that the skills and knowledge needed to advance youth outcomes exist in every school, district, and community, and that community and political will can link expertise across many sectors — early childhood, PreK – 12 schools, higher education, businesses, and community and nonprofit organizations — to support children's development, students' learning in and out of school, and youth transitions into education, jobs, careers, and successful adulthood.

Support may occur directly, from families and communities, or with children in classrooms, school counseling suites, and after-school/out of school or other extra-curricular activities.

Stronger support for students also may need to occur through innovative changes to institutions to help foster the behaviors and skills in students that are essential to guide all toward a pathway to adult success.

PAS informs the support and reconfiguration of actions that schools, districts, communities, and states can take to enhance student success.

THEORY OF ACTION

Accurate numerical data lead to indicators; indicators prompt analysis; and analysis leads to responses and interventions for adult success.

GOALS FOR STUDENTS ON THE PATHWAYS TO ADULT SUCCESS

- Graduation from high school (PreK 12 education) with:
 - ~ Preparation and competencies for two or more years' persistence in postsecondary schooling/training on a degree- or credential-related pathway
 - Self-agency and self-direction: the ability to take control of and manage oneself in various changing and challenging situations over time
 - Academic and technical skills
- Achievement of an associate degree, bachelor's degree, and/or earned professional certificate/credentials that have employment value in the workplace
- Sustained mental, physical, and social well-being, and civic participation
- Attainment of a "family-supporting wage"

How We Propose to Achieve Our Goals

Through a year of deliberations, PAS collaborators determined that one of the strongest levers to achieve our goals is to extend the concept of Early Warning Systems past high school graduation into predicting and supporting students' progress toward postsecondary success. We call this extension or upgrade **Early Warning Systems 2.0 (EWS 2.0)**.

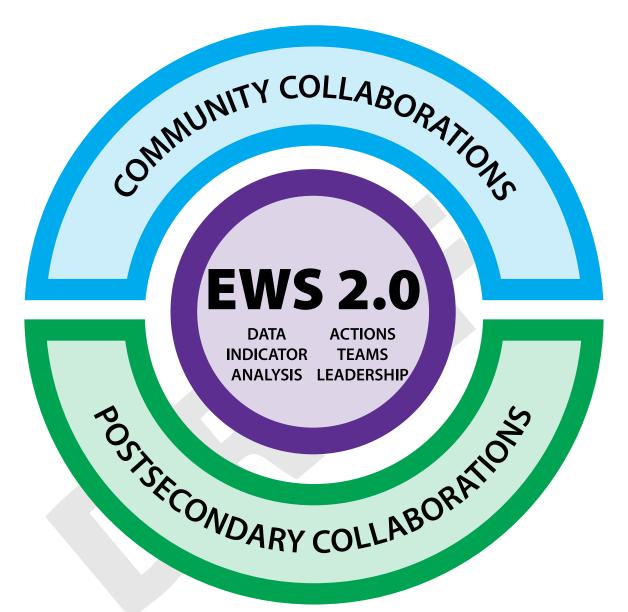
PAS workgroups have developed guidance and recommendations for how schools, districts, and states can use EWS 2.0 to put more students on the path to postsecondary success.

PAS also aims to broaden the focus of youth success well beyond the schools — and provides a structure that can lead to stronger connections between schools, businesses, the communities, and public agencies to point more students toward a more successful future.

Thus, in addition to working to create the belief system, infrastructure, and architecture for EWS 2.0, PAS also has developed recommendations for the active role of communities, higher education, and employers in working in unison to build stronger pathways to adult success for all students.

Introduction 5

PATHWAYS TO ADULT SUCCESS AT A GLANCE



THE KEY ELEMENTS OF PATHWAYS TO ADULT SUCCESS (PAS)

PAS is a system to help schools and communities provide the support middle and high school students need to graduate and then succeed in postsecondary learning of some type toward a bachelor's or associate degree, industry certification, or other meaningful career training. Early Warning Systems 2.0 (EWS 2.0) is the heart of the PAS system, allowing schools to monitor students' paths using specific indicators of progress, to gather and analyze data, and to make decisions to provide more support for students. Important solutions must be pursued through partnerships that reach outward from the school — into the community, postsecondary institutions, businesses and nonprofit organizations, all working with local students and their families.

EWS 2.0: BUILDING PATHWAYS TO ADULT SUCCESS

In this section of the Guidebook, we draw upon the wisdom of three expert PAS workgroups with broad experience in using EWS. Educators, researchers, and other experts from across the nation served as volunteer advisors, providing guidance on the topics of **DATA** (an updated system for monitoring students' progress toward preparation for postsecondary success), **INDICATORS** (recommending key factors that predict student success beyond high school graduation), and **ANALYSIS** and **ACTIONS** (how schools and many other partners can provide individuals and groups of students with additional support toward postsecondary preparation).



Over the course of a year, through multiple face-to-face and virtual meetings, the PAS team and these expert workgroups created a shared understanding of the evidence-based and field-validated practices that form the basis of EWS 2.0 to support students' path to high school graduation and postsecondary success.

On the following pages, we provide details for each step in the EWS 2.0 system: using the best indicators for student success, engaging in in-depth analysis of the data and results, and then strategically selecting, applying, and monitoring the most impactful actions to support student advancement through secondary and postsecondary schooling. We also detail how data systems can best be organized to enable schools and communities to build their own applicable forms of EWS 2.0. Finally, we share the wisdom of all PAS collaborators on how teams of adults working together to advance student success will make EWS 2.0 useful and effective.

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STANDARDS FOR EWS 2.0 INDICATORS:

WORKGROUP GUIDANCE



Students typically send strong signals to educators about whether they're on track to graduate high school ready to continue their education. Valid indicators help us identify the most important signals. PAS workgroups established the following standards to provide guidance on identifying the most important indicators needed to promote student and adult success.



- Indicators are quantifiable measures of behaviors, skills, and characteristics
 that are highly predictive of youth being on track for high school graduation,
 postsecondary readiness, and adult success.
- Indicators are the most useful when they directly measure behaviors or outcomes that are important to youth well-being and progress in school and training. This makes them actionable.
- Indicator data can be obtained easily and regularly.
 - ~ Collecting, recording, and reporting the indicators does not require substantially more effort from school-level personnel than is already required by federal and state laws, regulations, and district policies.
- · Indicators are timely.
 - ~ Patterns and trends can be quickly observed and acted on; based on feedback, outcomes can be promptly monitored, and actions revised, until desired results are attained.
- · Indicators are reliable.
 - ~ It has been demonstrated that they send dependable signals, over time and through repeated statistical analysis of large-scale, longitudinal databases in different settings.
- Indicators point to underlying conditions that are "malleable" or modifiable.
- In general, fewer indicators are more actionable than many.
- Indicators can serve both a formative function (leading to immediate actions) and a summative function (leading to monthly, quarterly, mid-year, or end-of-year redesign of action systems). Essentially, however, indicators lead to actions.
 - ~ Thresholds which indicate the type of action needed indicating whether to take action now, not yet, or not at all may vary by context, but will fall within a numerical range established by evidence.
- New indicators, beyond those already in use and meeting the above criteria, must also:
 - ~ Identify and prioritize substantially more youth in need of support than are identified by the existing indicators, and/or
 - ~ Identify behaviors, skills, and characteristics that support adult success and are not captured by existing indicators; and

~ Lead to new solutions.

Indicators 9

EXTENDING THE ABC INDICATORS TO COLLEGE READINESS AND PERSISTENCE

The ABCs — Attendance, Behavior, and Course Performance — have proven to be the most valid and reliable indicators that show when students are on track toward high school graduation. Multiple research studies in different locales have shown that levels on specific indicators (highlighted in the High School Graduation row in the table below) are consistently predictive of students' likelihood of high school graduation. These are general guides, however, that ideally are refined based on a school's and district's own analysis.

Emerging research also suggests how the ABCs can be extended to provide valid and reliable signals about whether students are on track to succeed in two-year and four-year colleges. Our current knowledge of important thresholds for students' College Readiness and Persistence ABC indicators are shown on the bottom row of the following table. Current knowledge is not sufficient to provide detailed guidance on indicators of students' workforce readiness or readiness for industry-linked certification programs.



ABC ON-TRACK INDICATORS	ATTENDANCE	BEHAVIOR IN SCHOOL	COURSE PERFORMANCE
HIGH SCHOOL GRADUATION	Above 90%	No Consistent Indicators of Major or Mild Behavior Incidents	Pass Core Courses
COLLEGE READINESS & PERSISTENCE	97% or Greater	Agency/Effort	B average for Core Courses

How the ABCs can indicate whether students are on track for college readiness and persistence:

ATTENDANCE

Current research shows that students who attend high school nearly every day have the strongest track record of college persistence. Students who attend high school 97 percent of the time or more have the highest odds of college degree attainment, in particular four-year degrees.

There is also evidence that students who attend less than 95 percent of the time and miss 10 or more days of schools begin to see diminishing odds of college degree attainment. Some schools and districts may want to initially see attendance between 95 and 97 percent as an "alert zone" in which students are more closely monitored and other indicators examined, but not as a signal for the school to take immediate action to improve the students' college readiness.

BEHAVIOR

We continue to gain a deeper understanding of social-emotional learning measures and students' likelihood of college success. The behavior category in the ABC indicators is where states, districts, and schools can employ social-emotional indicators as they become sufficiently reliable and valid.



In the meantime, all available evidence suggests that for students to succeed in college or career training, students need to develop the ability to self-manage their learning in such settings.

Thus, adults observing and assessing students' success in self-managing their learning could prove an effective means to monitor and support the development, in lieu of established indicators, of behaviors important for students' college success.

COURSE PERFORMANCE

While this EWS indicator for high school graduation is whether students are passing core academic courses (English and mathematics in middle school, and required credit bearing classes in high school), students' GPA or grade-point average is the most predictive indicator of college readiness and persistence.



Research suggests that a B or higher average or 3.0 GPA for core academic courses is a dependable threshold for when students are more likely to succeed in college studies. Studies at the local and state levels, however, have shown GPA thresholds ranging from 2.7 to 3.2 as being the most predictive of college success. This indicates that districts and states should conduct their own analysis and set levels appropriate for their students. Such analysis, however, is not always possible, so PAS recommends using a GPA of 3.0 or a B average as the starting point.

Just as with attendance, districts and schools may want to first more closely monitor students near the cut point — i.e., those with 2.9 GPAs — and consider how they fare on the other ABC indicators before devoting resources to improve students' odds of college success.



EWS 2.0 INDICATORS:WORKGROUP RECOMMENDATIONS



- 1. Continue to use a limited number of valid, powerful indicators. Resist the temptation to add indicators simply because the outcome seems of some value to postsecondary success, which risks adding complexity without improving indicators' usefulness.
- 2. Extend the most proven EWS for high school graduation indicators (the ABCs of Attendance, Behavior, and Course Performance) to predict students' on-track status for college readiness and persistence.
- 3. Add two additional types of indicators to effectively monitor whether youth are on track for success in twoand four-year higher education institutions.
 - First, a checklist of students' key postsecondary preparation milestones. These are the navigation steps students need to take in secondary school to keep all their postsecondary options open. They include
 - ~ visits to postsecondary institutions
 - ~ meeting with a college adviser or counselor
 - ~ taking required courses for admission into the state university system
 - ~ test-taking as required (SAT and/or ACT)
 - ~ applying to appropriate postsecondary institutions
 - ~ completing financial aid forms
 - ~ accepting an offer to a postsecondary institution

Many students also need additional support once admitted to college to help them register for classes and campus housing, and navigate other challenges in the postsecondary transition.

Colleges, community partners, and nonprofit organizations can contribute to such a support system, and schools need to be involved in developing these partnerships. (See section on Postsecondary Navigation, pages 36 and 37).

- Second, a composite measure or checklist that shows the postsecondary preparation "intensity" of
 a student's high school experience. This may include
 - ~ taking such courses as computer science and foreign languages
 - ~ developing stronger writing skills
 - ~ participation in Advanced Placement (AP), International Baccalaureate (IB), dual-enrollment college courses, and/or three or more linked career electives
 - ~ performance on state achievement assessments

A separate checklist may be kept for middle grades students, with an emphasis on the rigor of their courses, because course selection, sequence, and performance in grades 6 – 8 can influence high school and postsecondary paths.

12 Pathways to Adult Success Guidebook

MEASURING STUDENTS' SOCIAL-EMOTIONAL LEARNING ON THE PATHWAY TO ADULT SUCCESS

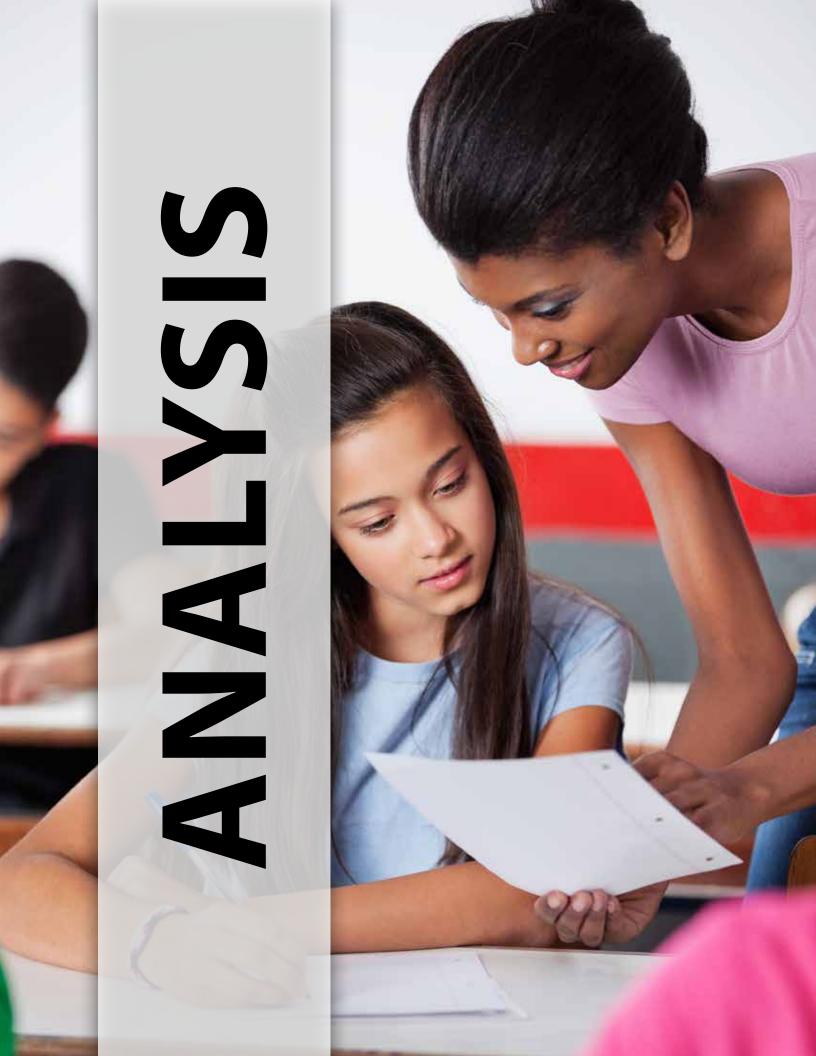
The many educators, researchers, and other advisors involved in PAS broadly agree that students' integrated social-emotional-academic development is important for postsecondary and adult success. They also recognize that social-emotional learning in education is a relatively young but rapidly advancing area of research.

Therefore, PAS does not currently recommend that specific social-emotional skill levels should be used as indicators in EWS 2.0. When a state or district decides that research has determined how to measure social-emotional skills with sufficient reliability and validity, such measures can be included in "Behavior" in the ABCs indicator system — referring not only to students' behavior or school discipline but also their decisions and preparedness for postsecondary education and career training.



PAS further believes that student surveys and data from teachers' observations of students' socialemotional learning can be helpful in the analysis phase of EWS 2.0, when teams of educators work to understand why students may be off track for postsecondary success and decide on the action(s) schools should take to provide additional support.

PAS participants recommend that schools regularly administer student and teacher school-climate surveys and include key outcomes in the data reviewed by EWS 2.0 teams. This will help identify situations where actions at the class, grade, school, or district level may help multiple students with indicators, and show where preventative and generative actions can and must occur at the systems level.



EWS 2.0 ANALYSIS/ROOT CAUSES & STRATEGIC ACTIONS: WORKGROUP RECOMMENDATIONS

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When a valid indicator shows that a student needs additional support, further analysis will help determine the best course of action. This section details our EWS 2.0 workgroup recommendations for how to conduct a root cause analysis of student needs, and the most effective strategies for supporting students toward high school graduation and postsecondary learning.



Identify the Reason(s) for an Indicator: Root Cause Analysis

EWS 2.0 asks adults in the school, district, or community to consider **why** students or groups of students show a need for additional or different types of support. This is called root cause analysis.

Two Levels of Root Cause Analysis

- For the individual student and groups of students with common indicators
 - ~ A team of school or grade-level adults familiar with the student(s) should investigate reasons for the indicators and how best to provide support. This is the most common type of analysis in an EWS 2.0 system.
 - ~ An adult with a positive relationship with the student should have a conversation with the student about the reason(s) underlying the indicator(s).
- For an entire grade, school, or group of schools
 - ~ A similar investigative process can help identify school, district, and community practices and/or policies that result in large numbers of students having indicators.
 - A root cause analysis expanded to grades or schools can be considered a systems analysis and a means to identify the best preventative strategies.

What Should Root Cause Analysis Include?

- Consider all easily accessible, appropriate student and school data relevant to the indicator(s) and student(s). This may include any of the following, among others:
 - ~ Academic outcomes
 - ~ Demographic factors
 - ~ Social-emotional observations
 - ~ Daily interactions
 - ~ Out-of-school challenges
 - ~ School policies and practices
- · When expanded to system-level analysis also consider
 - ~ Whether students are provided universal access to conditions for success in such areas as quality

Analysis 15

- instruction, course selection, counseling, college process navigation, extra academic help, school climate, extracurricular activities, health care, etc.
- ~ Whether students or groups of students confront constraints in or out of school that undermine the pathway to adult success. These can be explicit or implicit, intended or unintended, including social and cultural norms, racial/gender/ethnic bias, direct/indirect effects of poverty, etc.

Determine the Most Strategic Response Given the Identified Cause of the Indicator(s)

- What patterns and trends are there among students with the same indicator(s)?
- Will the student(s) require direct support(s) at either the small-group or case-managed level? Can students' needs best be addressed at classroom, grade, school, district, community, or state levels? Can partnerships with postsecondary institutions and employers help?
- Which action(s) will have the greatest effect for the time and energy invested?
- Would one of the most effective actions be to rethink or change institutional practices or policies at school, district, community, state, or federal levels?

Select the Best Action (Short- and Long-term)

- Consider and build on the student's strengths.
- Start with actions that can be carried out with resources on hand, while developing new capacity or finding additional resources if current ones are not sufficient.
- If the root cause is a systems issue, a two-stage response may be needed:
 - ~ What short-term steps can enable the student(s) to overcome system challenges?
 - ~ What can be done in the mid- to long-term to change the system?
- What can be enacted promptly? What will take a few months to implement? What might be done in the next year or two?

Summary

Bring together all elements of the analysis — root cause and systems analysis, determination of the most strategic action level(s), and consideration of existing capacities and resources — to identify appropriate immediate and long-term action(s).







STANDARDS FOR ACTIONS:

EWS 2.0 WORKGROUP GUIDANCE



How can a school that uses EWS 2.0 ensure that actions to help both individual students and larger groups of students will be effective? These guidelines developed by the EWS 2.0 workgroups can help.

For the purposes of PAS, "actions" comprise both interventions and responses.

- Each action is spurred by analysis of indicators.
- Actions may be immediate or long-term.
- Actions may take place at the individual, school, community, district, or state
 level. They may focus on entire populations at the school or institutional level, at regular intervals in a
 preventative manner; be tailored to groups of students with common characteristics and/or identified
 needs; or be case-managed for individual students.
- Take an expansive view of what action can be. Create a resource map/list identifying student supports
 currently available, and those that can be developed or expanded, within the school and community.
 Also consider policy changes.
- Implementation of the actions and supports can be made visible and measurable.
- The outcomes of the targeted actions can be systematically monitored and measured against progress benchmarks.
- Ongoing evaluation leads to continuous improvement. Actions can be changed if they are not working as intended, or when intended actions produce unintended consequences.



ACTIONS

Actions



TAKING ACTION TO SUPPORT STUDENTS: STRATEGIES FOR SUCCESS

Under EWS 2.0, raising expectations for all students' postsecondary preparation can lead to the identification of more students who need support than educators may perceive existing resources will accommodate. Rather than allowing such a situation to overwhelm a school and hinder any progress toward providing students with greater support, schools can take a number of steps as they begin.

· Be proactive.

Look for ways that a school's actions can help prevent large numbers of students from falling off track. Examine policies and practices carefully to identify which ones may be counter-productive.

• Be strategic.

Concentrate actions at high-leverage locations and times. Look for the classrooms or grade levels or times during the school day or academic year when an action will impact multiple off-track students.

· Focus on building supportive relationships.

Supportive, developmentally-appropriate relationships between adults in the school and students are one of the most powerful and affordable actions schools can take to support and guide students better. Research shows that effective adult-student relationships need to provide support without pity and help develop practical solutions for students.

· Mitigate what you can't yet solve.

Ideally, EWS 2.0 indicators combined with a school's root cause analysis can lead to lasting solutions. But this is not always possible in the short term. Instead, schools can help to mitigate the impact when indicators show students are not on track. Attendance is a good example: while a school works on a long-term improvement strategy, educators and the community can help students learn material they missed and complete their assignments.

· Adopt a continuous improvement approach.

Small improvements accomplished continually over time can make a major impact. If your school's situation or a specific challenge seems overwhelming, start with an attainable, short-term goal. Try something. If it doesn't work, learn from it and try another approach.

Actions 21

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BUILDING EWS DATA SYSTEMS:

EWS 2.0 WORKGROUP GUIDANCE & RECOMMENDATIONS



A PAS workgroup of leading education data, research, and technology experts from school districts, state departments of education, technology companies, and nonprofit organizations developed the following guidance for EWS 2.0 data systems, and the considerations for districts, states, and other entities as they develop and improve their data systems.



Key Characteristics of Effective EWS 2.0 Data Systems:

- Any early warning data system should provide educators with easily accessible data on validated indicators that are predictive of high school graduation and postsecondary success of their students.
- The indicators provided should give educators timely, actionable insight into the students who may
 need additional support and in which ways toward high school graduation and postsecondary
 success. Ideally, EWS data systems should identify individuals and groups of students who need
 additional support, and help provide information for broader school and district policy decisions that
 will result in greater support for students.
- Early warning data systems should enable educators to record, track, and analyze the impact of the
 actions also called interventions and responses they take in response to information from the
 indicators.
- EWS 2.0 data provided should be able to be aggregated at the individual, classroom, grade, school, and
 district level (and state level for statewide systems), and disaggregated by different student sub-groups,
 including customized sub-groups created by schools and districts.

To achieve these characteristics, PAS makes the following recommendations:

RECOMMENDATION 1:

Validate indicators and thresholds for accuracy and usefulness in supporting students' success in middle and high schools and students' readiness for postsecondary success.

- EWS 2.0 data should be based on validated indicators that are strongly predictive of high school graduation and postsecondary success. For these indicators, data systems should provide thresholds for action that show users whether a student is on track, falling off track, or entirely off track.
- While there are national recommendations around specific thresholds for attendance, behavior, and course performance that suggest when students are off track for high school graduation and postsecondary preparation, our research and experience also suggests that the predictive power of the ABCs can vary by district. Given this, we recommend that districts locally validate their indicators wherever feasible. Alternatively, states can validate a set of EWS 2.0 indicators based on statewide data while giving districts the flexibility to adjust thresholds based on local circumstances. In states, districts, and schools where neither option is viable, start with the nationally recommended thresholds and adjust them as needed, based on local experience over time.

Data 23

Additional considerations:

- Indicators, or thresholds for action, should be based on accurate data sets. Data collected by schools
 and districts can be messy, with many different definitions, standards, collection methods, entry and
 processing procedures, time stamps, and more. Thus, district or state data analysts will need time to
 organize and clean up data before schools and districts conduct analysis. School staff involved with data
 reporting and entry also may need training in the use of common data definitions and accurate data
 entry.
- District and state capacity and state roles in serving districts can vary based on size of district and the nature of each state: U.S. school districts range in size from about 100 students to 1.1 million. Thirteen states each have fewer students than the country's four largest school districts. Local and state decisions must be made about the location and design of EWS 2.0 data systems and training for their use. States with large numbers of small or rural districts may need to take responsibility for validating data and action points, technical details of setting up systems, and helping schools use the systems. States with large variation in size and nature of school districts will need to determine their areas of greatest need and how technical and human capacities and resources need to be deployed.
- States should explore whether to develop a cloud-based, self-service model that will allow districts to
 upload their data for analysis. The program could then validate the indicators, set action-points, and
 provide real-time reports back to the school or district. This type of solution may be critical for small
 and rural districts. It would also allow districts to experiment with different variables that may influence
 graduation or postsecondary readiness rates and provide better information on student success. Since
 cloud-based technology requires sending data back and forth, these channels should be rigorously
 verified for security. We also strongly recommend that such data be used for student-support purposes
 only not for states' school accountability systems.
- Some researchers have found different thresholds for different groups of students, such as Englishlanguage learners. Ensuring indicators and thresholds work well for all student populations will help users target interventions more carefully and efficiently.

RECOMMENDATION 2:

Develop both individual and composite indicators.

As technology and digital storage capacity continue to evolve, so do possible strategies for gathering and monitoring EWS data. Initial EWS were based on data in teachers' gradebooks, attendance rolls, and disciplinary referrals. Later, Excel enabled digital sorting and analysis. Such approaches were based on only a single or few easily collected and validated indicators (like those that formed our ABC system). Later, more advanced programs allowed schools and districts to consider many different indicators of students' needs, as well as composite indicators that rate or issue scores on students' status toward graduation.

- Ideally, EWS 2.0 data systems should contain both valid individual indicators to help schools identify effective actions to keep students on track to postsecondary success, and composite measures that provide guidance for prioritizing student-support strategies.
- Whether schools or districts have a composite indicator or not, EWS 2.0 data systems should provide
 easily accessible data on individual indicators that show directly whether students are on track to high
 school graduation and postsecondary success.

These guidelines can help districts, states, and those who will build or adjust data systems determine how to organize their EWS 2.0 indicators:

Strengths and Challenges of Individual and Composite On-Track Indicators

INDIVIDUAL INDICATORS	COMPOSITE INDICATORS	
Strength: Based on limited set of easily collected, understandable and validated data.	Strength: Based on a wider range of data, which can improve the strength of the prediction. Automated data collection and use of algorithms simplify the work and messiness of data collection and analysis to provide one overall strong indicator.	
Strength: Students' performance on separate indicators directly linked to high school and postsecondary outcomes (the ABCs) is readily actionable. Eases users' ability to examine root causes, design interventions.	Strength: Can help teams focus on broader continuum of students, prioritize students' needs. Helps to decide which students may need different levels of focus.	
Strength: Determining which students and indicators to prioritize is based on adults' individual and collective knowledge of/relationships with students.	Challenge: To take action, educators still need to unpack the factors causing a student to show up in the composite indicator. Thus, two steps are required before action is taken. Also, individual indicators are still needed.	
Challenge: If resources are limited, a school or district may stress one indicator over another, in ways that are less strategic and not data-based.	Challenge: The system assigns "weights" to different data elements that form the composite. The composite may be less accurate if the student population differs from those upon whom the composite indicator was validated.	
Challenge: If more individual indicators are added for accuracy and context, too many indicators may be overwhelming and discourage schools' use of the systems.		

RECOMMENDATION 3:

Track interventions for students

- EWS 2.0 must include an intervention monitoring system.
- The EWS 2.0 data system should help users clearly see which students need additional support, which interventions or supports they have received, and whether student outcomes improve as a result.
- EWS 2.0 data systems also should include the type of intervention, how often a student participates, and the indicator the intervention will address, so that results can be aggregated and analyzed to determine which interventions help students the most.
- In addition to common types of interventions, the system should also allow school or district teams of educators to add customized interventions.



RECOMMENDATION 4:

Data displays and reports.

- Data displays should be developed for different user groups, since school-based teams that will
 determine support for individual or groups of students may need different reports from those needed
 by principals or district/state officials for entire schools or districts.
- Additional reports for students and families could help communicate students' areas of need and strength, provide students more agency in their own improvement, and help them monitor their own progress.
- For each report, the team should only provide the needed data for each group, ensuring the reports are useful and compliant with student privacy laws.

Additional consideration:

Align EWS 2.0 with other district priorities so that reports can serve a variety of purposes.

RECOMMENDATION 5:

Disseminate reports and meaningful uses for the data.

- EWS data system developers should consider how they will disseminate reports and encourage
 meaningful use of the displays. A collaborative approach should include an iterative process of asking
 educators for their needs in student support monitoring, leading to mutual ownership of the system
 design.
- Careful consideration should be taken on how data are disaggregated. Professional development should be provided for school/district teams with respect to the discussion of diverse groups of students.

Additional considerations:

- Build champions in the district who can advocate for EWS 2.0 systems as an essential resource. Design systems to be sustainable through staff turnover or technology changes.
- Ground the data in individual stories to make the work compelling. EWS 2.0 also may motivate students to take actions or seek help if they can see the indicators for themselves. They should be partners in identifying solutions and their own education goals.

26 Pathways to Adult Success Guidebook

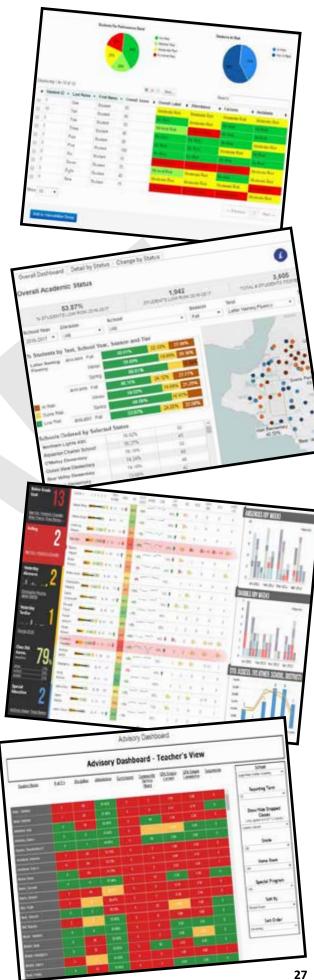
RECOMMENDATION 6:

Assemble an effective state-/district-level EWS 2.0 data system development and support team

- District/state-level EWS 2.0 data system teams should consist of technology experts who will build the system and can make changes based on the team's feedback, administrators who can support the initiative and align the work with other school/district initiatives, and an EWS 2.0 manager or coach(s) who will train schools on the system and EWS 2.0 more broadly.
- In large school districts and at the state level, the divide between leaders of information technology and research/assessment is a common challenge, so build relationships across departments and have a district/state leader prioritize the work and help build collaboration.

Additional considerations:

- Build constituency and usability. Provide presentations across the state/district to get feedback and build educator support and interest.
- Help districts tie EWS 2.0 into existing priorities and develop metrics so that teams can identify when reports need to be updated and data improved. Align technology with student support needs rather than allowing technology to shape the work.
- Many times, only a few professionals in a district/ state can provide programming for the EWS 2.0, and these experts often must address other urgent issues. Developing high-level champions for the project and a direct line of communication with the superintendent or another leader will help make EWS 2.0 sustainable. Provide clear links between EWS 2.0 and all other data initiatives such as RTI, PBIS, and MTSS; do not make EWS 2.0 a standalone project.





THE ROLES OF SCHOOL/DISTRICT LEADERS AND TEAMS IN EWS 2.0

One of the strongest recommendations from PAS members who have substantial experience working with EWS at the school, district, and state levels is that to be effective, EWS needs both strong and supportive leadership from principals and districts to organize the adults in schools into effective EWS teams. Thus, one of the key differences between EWS and other student support strategies is the essential role played by teams of adults working together to use predictive indicators, and then taking strategic actions to keep all students on track to high school graduation and postsecondary success. This section provides guidance on organizing effective EWS teams, based on the insights of PAS workgroup members.

In schools, having standing team(s) of adults who meet regularly and frequently to review student data and indicators is a central part of EWS 2.0. The team(s) should analyze the indicator data, determine which students to focus on and how, and then take action to set more youth on the path to postsecondary persistence. Team(s) also should evaluate their actions over time so they can improve school practices and policies. Each team should bring together knowledge and experience from multiple sources to forge a collective response for individual students, groups of students, or the entire school. Decisions should not depend on a single adult in a classroom or counseling suite. Instead, adults should collaborate to support each other as they address issues facing students.

An EWS 2.0 team can be an expansion or retooling of existing team(s) or entirely new, depending on the school and district. An EWS 2.0 team should focus on the needs and possibilities for supporting students to graduate from high school and to persist and succeed in the first two years of postsecondary education (including college or career/technical training). The team(s) should help the school review and streamline existing practices. The team(s) should be able to pursue solutions for students who are struggling, who need to elevate aspirations and effort, and/or who are high-achieving but could aim higher. Teams should include at least one key decision maker who can help put decisions into action.

An EWS 2.0 team(s) should build on strengths and capacities in the school. A team may already exist that can take on EWS 2.0 — perhaps a new version of the current EWS team. A school may already have one or more teams in place, such as:

- School leadership team
- Existing EWS, dropout prevention, or graduation enhancement team
- Response to Intervention (RTI) team, focused primarily on students with disabilities
- Positive Behavior Intervention System (PBIS) team
- Multi-Tiered Student Support team (MTSS)
- Advanced Placement (AP) access team

Far fewer schools, however, have teams focusing on topics that impact students' success after high school, such as college and career readiness, academic intensity, civic engagement, or health and well-being.

Teams & Leadership 29



In designing and implementing EWS 2.0 student support team(s), a school should determine

- Who should serve on the team? Classic EWS teams focused primarily on ninth graders often include an administrator, a counselor, teachers of core subjects, and others who interact frequently with students. However, data may show that 10th and 11th graders are floundering, that the entire school has a challenge with mathematics, or that college and career readiness is an issue. The team should be composed of the adults with the most relevant knowledge to address the challenges, and may include non-educators, including social workers, coaches, support staff, school resource officers or others. Involving district-level representatives may also help to inform policy or large-scale decisions.
- How large should teams be?
 We suggest a team size of six to 10 members. In a large school, multiple teams and/or additional educators or other professionals may be needed to help address the large number or diversity of students in need of supports.
- How many students can a team support, and as a result, how many teams are needed?
- How will the EWS 2.0 team(s) be integrated into the fabric of the school, and what training and preparation might the team need to handle this responsibility?
- If there are multiple teams in a school serving different but related functions (e.g., EWS 2.0, school leadership teams, instructional teams, RTI or MTSS teams, and/or multiple EWS teams), how can they be integrated, with clearly defined information flow, decision-making, monitoring, and impact on students?
- How will a schedule and/or sub-teams be created to perform the key functions of EWS 2.0 teams?
 - a) continual monitoring of all students on the EWS 2.0 predictive indicators and responding with individual or group-level actions as necessary
 - b) looking for systems-level solutions for the classroom, grade, school, district, community, etc.
 - c) using EWS 2.0, together with other data, to monitor how well the school/district/community is providing key supports to keep all students on the path to adult success

30 Pathways to Adult Success Guidebook

SAMPLE TEAM SCENARIOS

Building on the traditional EWS-team model already in use by many schools, EWS 2.0 teams may need a broader focus. In addition to school administrators, counselors, teachers of core subjects, and others who interact frequently with students, EWS 2.0 teams may also include social workers, coaches, support staff, school resource officers, and community representatives, depending on schools' needs. Involving district-level representatives may also help to inform policy or large-scale decisions.









COMMUNITY

- d) focusing particularly on critical areas as identified by the data (e.g., academic intensity, mathematics, ELL, etc.)
- How will the team make decisions? What criteria will be used?
- How will teams ensure they apply the EWS 2.0 guidelines for Data, Indicators, Analysis, and Action?

When engaging in system-level analysis, teams should keep in mind that some solutions or improvements, in areas such as academic intensity or those involving schedule changes, must be done at the right time to mesh with the planning, budget, and hiring cycles of the school.

Implementing a functional EWS 2.0 team and a student support/progress-monitoring process can be a challenge for some schools. One common stumbling blocks is that data is not collected, organized and presented in a timely way. Solutions or options?

- The principal can designate one or more adults with responsibilities to gather, record, and organize data
 at specific intervals of time. The principal or another leader may also need to establish protocols for data
 collection and organization for the team's use. Options include:
 - ~ Responsibilities may be divided among adults.
 - ~ A school or district "data coach," "promotion coach," or other professional can review the indicator data and make "student watch-list" recommendations for team meetings.



COMMUNITY & FAMILY



COMMUNITY/FAMILY COLLABORATIONS

Building on the EWS 2.0 data indicators and school-based analysis and actions, PAS provides a larger framework to help schools reach outside their campuses to build stronger collaborations in the community, with students' families, and with postsecondary institutions and employers.

Many schools already have partnerships with community or religious groups, businesses, and civic groups. PAS recommends more meaningful collaborations, however, than most schools currently pursue. These collaborations will need to be built or strengthened over time, but our



participants believe strongly that significant progress in preparing more students to succeed in postsecondary education will require these new steps — and the involvement of many adults and institutions beyond PreK – 12 school campuses.

PAS aims to raise the bar for what schools and communities can accomplish together to strengthen and support students for success after high school. This puts even more of a premium on schools and communities being able to provide all their students with generative experiences and supports that prepare them for postsecondary and adult success. These include good teachers, a strong curriculum built around college and workplace competencies, equitable access to enriching after-school, summer, and workplace-based experiences, etc. An effective support strategy builds on these universally-provided experiences and supports.

See pages 36 and 37 on Improving Navigation of Postsecondary Options for an example of the generative supports communities will need to provide, in collaboration with schools, to provide more effective pathways to adult success.

Another example of the generative supports that will be needed to ensure the postsecondary success of all students is improving schools' and communities' ability to address health barriers to school success. The Children's Health Fund has identified seven common "Health Barriers to Learning" that schools may need to address with the help of partner organizations or medical professionals in their community: uncontrolled asthma, uncorrected vision problems, unaddressed hearing loss, dental problems, persistent hunger, certain untreated mental health and behavioral problems, and effects of lead exposure. These factors often directly affect students' success in school by impacting their attendance, behavior, and course performance. Further, they meet the PAS criteria as additional indicators: they're measurable, malleable, and may identify students for support not flagged by other indicators. PAS recommends, as a stretch goal to be achieved over time, that all states and districts provide universal health screening in schools for these key factors in students' pathways to adult success.

Community & Family 35

BUILDING A CHECKLIST FOR POSTSECONDARY NAVIGATION

PAS considers youth navigation into postsecondary opportunities is a key component in student success. At this point, it appears that youth in grades six – 12 should encounter and complete a general set of exposures, experiences, and steps to keep personal options open for the future, make wise decisions for after high school, and embark and persist on their individualized path to adult success. Although many of these meet the conditions for indicators outlined earlier, it's not yet known which combinations are optimal. For this reason, for the present we recommend a "checklist" approach rather than an "indicator" approach.

Many youth do not know, in their heart and head, "what college is and what it makes possible"; "what a career is and what it makes possible"; and "what steps do I need to take" and "what skills do I need to gain" to make a quality adult life attainable. For youth, understanding the layout of this new post-high school world is the foundation for successfully navigating it. Youth without families who have had success in education and career need additional co-navigators beyond parents, guardians and other family members and neighbors.

Adult, near-peer, and peer "co-navigators" can help to broaden youth experiences, knowledge, and skills. Having a checklist will enable co-navigators in many roles and walks of life to ask and act on college and career navigation for all:

- What are the steps students need to take to be college- and career-ready?
- What can I do as an individual to ensure that students are supported toward this goal?
- What can I do, as a member of a community or group, to make sure that students are supported?

SUGGESTED STEPS FOR STUDENTS' POSTSECONDARY NAVIGATION

College awareness and motivation

- Organize day trips to college campuses of all types, beginning in sixth grade and continuing. Day trips should offer exposure to the "why" and the "what" of college; types of colleges; admission requirements for the different types of colleges; the course names, sequences, and pacing in middle and high school that enable college access; and the skills and abilities that colleges value.
- For high school students, organize more complex college visits that provide exposure to and experience with the different types of living choices, transportation, etc.

Career awareness and motivation

- Organize day trips to local businesses, agencies, non-profit organizations (zoos, museums) beginning in grade seven and continuing, with engaging presenters and age-appropriate choice of locations and formats. Day trips should be designed to answer the questions, What does a 'career' mean? What is available in our community? 30, 60, 100 miles away? Out of state?" and teach the course names, sequences, and pacing in middle and high school that facilitate career access, as well as the skills and abilities required in careers that enable a quality wage and life.
- Organize and manage middle and high school job shadowing, internships, and experience-based learning opportunities. These must be carefully designed and overseen.

Preparing students for next steps in colleges and careers, high schools should seek to

• Require that youth meet with college and career counselors beginning no later than 9th grade and annually thereafter; organize schedules and supporting materials.

- Require that youth develop a plan for their future (some states and districts already require this beginning in middle grades).
- Teach students to take course sequences that maintain their options for achieving future college and career goals.
- Organize and distribute guidance materials to facilitate students' understanding of "match,"
 "undermatch" and "stretch" between high school skills and knowledge and college expectations; do the same for the local and regional labor market
- Teach students to manage schedules, finances, requirements, and time related to assessments,
 especially in states that require SAT, ACT, ACT Benchmarks, Work Keys, ASVAB and/or other "gatekeeper"
 assessments for entry into college and/or careers, and sign up for, prepare for, take and pass
 assessments.
- Assist students in becoming financially literate, monitor progress, reinforce, nag, nurture, and support.
 Outcomes should include: learning FAFSA requirements and applying on schedule; understanding
 student loans; learning strategies for making decisions regarding loan debt and securing additional
 scholarships, tuition aid, work-study, etc.
- Guide students through the college-going process, including meeting all application, acceptance, and registration deadlines, and related decisions.
- For immediately career-bound students, provide guidance and practice with work-place opportunities, choices, unions, apprenticeships, needed skills, and innovative education/work combinations increasingly available in some communities.

Preparing for persistence in postsecondary occupations and life

There is limited data beyond local wisdom on the combinations of collective actions that will lead to the best outcomes for youth after high school graduation. However, the general consensus is that there are important actions which need to be undertaken by the community, educational institutions, and employers after high school graduation and through the first two years of postsecondary life. Here we share a short list of these recommended actions. We also strongly suggest that community collaborators not only collect and analyze related data and hold themselves and students accountable for outcomes, but also apply the same types of analysis used in EWS 2.0. Communities and youth will benefit when root cause and systems analysis is applied to the first two postsecondary years and improvement actions monitored, undertaken iteratively, and analyzed in a cycle of continuous community and young adult enhancement. For the future of the community:

- Support students through "summer melt," e.g., the transition from high school into college: attending all information and orientation sessions; familiarizing themselves with tutoring, mentoring and credit opportunities; and learning about majors.
- Support immediately career-bound students in the transition into work-force expectations.
- With community, education, and business collaborators, learn about youth experiences during their first and second years after high school. Align with higher education and business organizations to gather valid statistical data and, as a community, work to develop indicators of college and career persistence in the first two years.

Community & Family 37

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POSTSECONDARY COLLABORATIONS

Moving the outcome from high school graduation to postsecondary and ultimately adult success requires integrated and complementary actions across multiple systems: the PreK – 12 system, higher education (two- and four-year institutions), and employers.

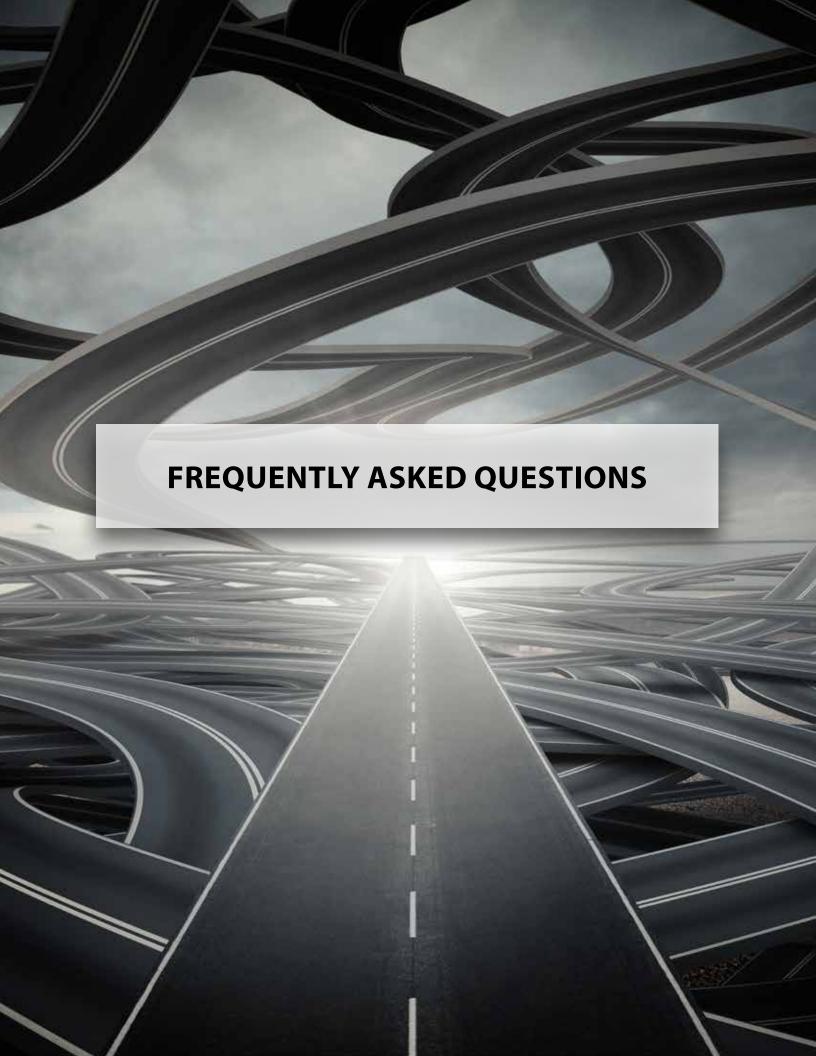
Substantial improvements in students' postsecondary outcomes can be achieved when institutions ask themselves this critical question: "How do current policies and practices, often unintentionally, create constraints and barriers that prevent some students from successfully navigating the transition from high school to postsecondary education and the workplace?"



As an EWS 2.0 system is developed in the PreK – 12 sphere, major institutions controlling key transitions from high school to adult success must work to eliminate such constraints and enable students moving through each system to succeed. Various means can help to achieve this, such as community compacts, mayoral and civic leadership, business roundtables, and local educational organizations or collaborations.

Postsecondary 39





What is the vision of Pathways for Adult Success (PAS)?

"To enable all youth, regardless of their needs, circumstances, and prior experiences to reach their full potential, obtain the competencies needed to graduate from high school with a standards-based diploma, and enroll and persist for at least two years in a postsecondary pathway that leads to a family-supporting wage and adult success."

What is an Early Warning System (EWS)?

An EWS is a system of data-based indicators predictive of student outcomes related to high school graduation and postsecondary success. The key indicators in the original EWS formulation are the ABCs: Attendance, Behavior and Course Performance (credits earned). The second component of EWS is action prompted by the indicators to help students get back and stay on track, be promoted in each grade, and graduate.

What is the role of EWS 2.0?

The PAS vision enlarges the purpose of schools' and districts' work to include PreK – 12 preparation for youth persistence through at least two years of postsecondary learning. An EWS remains central to achieving this new goal. However, PAS will enhance EWS with additional indicators and an updated theory of action.

What might an enhanced version of the Early Warning System (EWS) be called?

This is to be determined. Currently, we are provisionally using "EWS 2.0" as a placeholder.

Why not use an entirely new name, or just "PAS"?

Many educators are already familiar with Early Warning Systems. Establishing the term "Pathways to Adult Success" would take time and resources and most likely encounter resistance. Therefore, we propose to identify the overall initiative to accomplish additional outcomes for youth as "Pathways for Adult Success" (PAS). EWS 2.0 is a key component of PAS' work.

What is the purpose of EWS 2.0?

Many schools use some form of the current EWS. EWS 2.0 provides an additional set of indicators that identifies students at risk of not graduating from high school ready to pursue and persist in their next step in education competently. EWS 2.0 focus is on helping every student graduate from high school well-prepared to complete two years of college or career training, whereas the previous version focused primarily on helping students be promoted and graduate from high school. Also, EWS 2.0 places a stronger emphasis on educators' analysis of and response to indicators that show when a student is in danger of not finishing high school ready to persist and succeed afterward, and places greater emphasis on students' strengths and assets as a foundation for responses.

How has the Theory of Action changed?

The EWS Theory of Action is that

- 1. accurate numerical data lead to
- 2. indicators, and indicators point to
- 3. responses and interventions to help students.

The EWS 2.0 Theory of Action includes these components, but replaces step three with a two-step process

- 1. accurate numerical data lead to
- 2. indicators, and indicators point to
- 3. analysis, leading to
- 4. responses and interventions, now termed "actions" to avoid confusion with other well-known educational programs.

How should schools use EWS 2.0?

Teams of adults in schools should meet regularly to

- · Review which students' data indicates they are off track for adult success
- Carry out a root cause analysis (at the individual and/or system level)
- Determine actions to help individual students and groups of students better prepare for graduation and life after graduation
- Review short-, intermediate-, and long-term outcomes
- · Modify actions, strategies, and policies as needed

Large schools might have multiple teams, each handling a grade level or academy. The team approach enables information sharing among adults and prevents one person from carrying the entire workload or addressing student-support issues alone. Different teams of adults are necessary at the district and state levels to determine large-scale strategies or policy changes that may be needed.

How will we introduce and spread the use of EWS 2.0?

PAS will work with existing and new networks of schools and educators to share EWS 2.0 and provide guidance for implementation. With the help of many advisors and partners, we will develop and provide materials, professional development, and technical assistance on using EWS 2.0 to support more students in the successful postsecondary transition and persistence. PAS will also conduct a national communications campaign to announce EWS 2.0 and show its potential impact via coverage in the news media, social media, education associations, advocacy groups, and public and online presentations.

Which types and sizes of schools can use EWS 2.0?

All sizes of schools can use EWS 2.0, but the size and demographics of schools using EWS 2.0 can affect how they use the system. Smaller schools may have a limited number of adults who serve as the EWS 2.0 team, while larger schools may have both the capacity and the need to form multiple EWS 2.0 teams.

Which grade levels or school levels should use EWS 2.0?

EWS 2.0 is designed for middle and high schools, but a similar approach may be helpful for elementary schools. Possible indicators might include students' 3rd grade reading levels, 5th grade math skills, and classroom grades — plus the attendance and behavior indicators used for older students (although these indicators may show more about the student's out-of-school challenges). Another important indicator for elementary schools is whether students are on track to leave English-language learner programs. Social-emotional learning indicators may also be used as they are developed.

Frequently Asked Questions 43

