

Context for Early Warning Systems

- In order for students to graduate career, college, and life ready they must:
 - Successfully navigate academic transitions
 - Acquire academic enabling behaviors
 - Attend
 - Behave
 - Complete work
- Early warning systems provide a mechanism for early identification of those students who signal they are not on-track for on-time graduation (Balfanz.....)





The “Promise of Early Warning Systems”

- **Early Warning Systems (EWS):**
 - Use readily available data typically collected at the school-level
 - Allow educators to hone-in on key pieces of data to inform decisions
 - Provide “real-time” data for monitoring
 - Allow districts to identify patterns, trends and school effectiveness at keeping students on-track
 - Identify at-risk students who are likely to experience adverse outcomes early enough to alter student trajectories (Davis, Herzog, & Legters, 2013)

History and Research on Early Warning Systems



Early Warning Systems High School

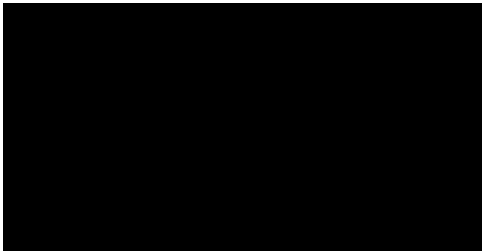
- 1999 Consortium on Chicago School Research (CCSR): On-Track Indicator (OTI) accurately predicted **80%** of those who would graduate on-time based on 9th grade:
 - Number of Fs
 - Number of credits earned (Allensworth & Easton, 2005)
- Background characteristics (race/ethnicity, SES, previous test scores, age, mobility) only predicted **65%** of on-time graduates
- Adding background characteristics to OTI only increased predictive ability by **1%** above and beyond Fs and Credits
 - Background characteristics important:
 - Relationship with course performance which impacts course failures and credits earned
- We cannot monitor or impact all the background factors students bring **BUT** we can monitor and impact course performance

Course Failures & Attendance As Predictors

- When researchers examined why students failed courses:
 - Student behaviors: attendance & study habits (engagement indicators) accounted for the majority of course failures
 - Consistent across achievement and SES levels
- 2007 CCSR found GPA and attendance as predictive as Fs and credits
 - Allowed for more timely monitoring

Outcomes

- <https://www.youtube.com/watch?v=mQqwQ1MKCRQ>



National High School Center EWS Indicators

- 2008 National High School Center created high school EWS to automatically flag students off-track for graduation based on:
 - Earning less than ¼ total credits required for graduation minus 1 per semester
 - Less than 2.0 GPA
 - Missing 10% or more absences
 - Failing two or more COURSES (Heppen & Therriault, 2008)

Middle School Early Warning Systems Background

- Researchers followed a Philadelphia cohort of almost 13,000 6th graders for 8 years to find middle school predictors of non-graduates (Balfanz, Herzog, & MacIver, 2007)
- Based on 2 pronged test- 75+% of 6th graders with indicator didn't graduate on-time AND identified substantial number of future non-graduates:
 - Failure of math or English
 - 20+% absences
 - 1 out of school suspension or failing behavior grade

Middle School EWS Background Continued

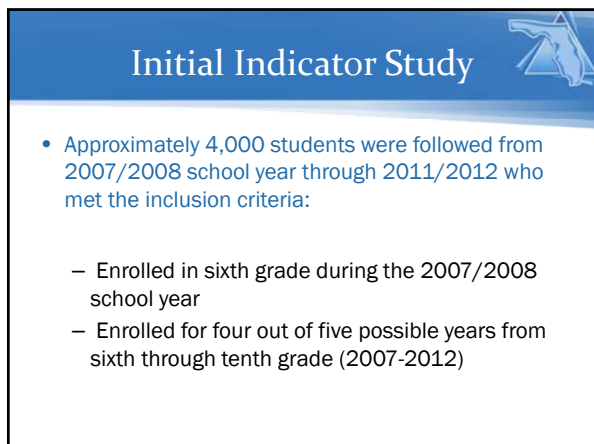
- 2011 Baltimore schools replicated the Philadelphia research with cohort of ~8,000 students
- Baltimore researchers used the following indicators that predicted 70+% non-grads:
 - 10+% absences
 - Failing English and math or failing average for core courses
 - Overage for grade
 - Suspensions of 3+ days

National High School Center Middle School EWS Indicators

- 2011 National High School Center adapted EWS for middle school utilizing following indicators:
 - Failing English or math
 - Locally defined behavior indicators
 - 20% or more absences per year (Heppen & Theriault, 2008)







Results: Across Time Points

- **Background Factors**
 - *SES Level*: Eligibility for free or reduced lunch price increased likelihood of Off-track Status
 - *Racial/Ethnic Designation as Hispanic*: Designation as Hispanic was associated with increased likelihood of Off-track Status
 - Hispanic & ODRs
- **Academic/Behavioral Factors**
 - *GPA*: Every 1.0 increase in GPA was associated with decrease in likelihood of Off-track Status
 - *ODRs*: Every one unit increase in ODRs was associated with increased likelihood of Off-track Status
- **Off-track Status**
 - *Previous Off-track Status*: Previous Off-track Status increased likelihood of Off-track Status

Implications for Practice

- **Major focus on early intervention for Off-track 6th graders**
 - Off-track Status 6th (48% increased likelihood of Off-track Status in 10th)
 - Off-track Status 8th (95% increased likelihood of Off-track Status in 10th)
 - Off-track Status 9th (312% increased likelihood of Off-track Status in 10th) Balfanz, Herzog, McKeiver (2007)
- **Compute GPA every semester in middle school**
 - GPA in middle school every 1 point increase results in 51-59% reduction in likelihood of Off-track Status in 10th and 72-82% reduction of the likelihood of Off-Track Status 6th-8th

District Steering Committee

- **Tasked with the development and implementation of EWS district-wide**
 - Vision of one web-based K-12 data system to identify at-risk and off-track students
- **Multi-departmental representation**
 - Student support services
 - Professional development
 - Dropout prevention
 - Information technology
 - Research and measurement

District Steering Committee

- Investigation of various data systems/tools/platforms in use within the district
 - Surveyed all building principals
 - 4+ data systems/platforms that were in use depending on building level
 - Studied the assets, limitations and usability features of each system
 - Determined the optimal platform for the district based on EWS vision

District Steering Committee

- Development of EWS- Phase 1
 - Used combination of national benchmarks, local research and research in other counties to determine indicators and thresholds for each indicator K-12
 - Indicator versus graduation requirement
 - Collaboration with developer of data platform commonly used in middle schools to mirror usability/functionality
- Development of EWS- Phase 2
 - Added indicators/thresholds based upon FL Senate Bill 850 requirements for middle grades

EWS Indicators: High School

High School EWS Indicators					
	Course Performance	GPA	Credits	Attendance	Office Discipline Referrals
On-Track	C's or better in all classes	2.5 or higher	Meeting credits to move to next grade level	4% or less absences per year	2 or fewer ODR's per year
At-Risk for Off-Track	1 or more D's in any class	2.0 to 2.49	1 credit behind	5% - 9% absences per year	3 ODR's per year
Off-Track	Failing 1 or more classes (F's)	Less than 2.0	2 credits behind	10% or more absences per year	4 ODR's per year OR 2 ODR's per semester

Graduation Progress Bar: High School

Each Item = 1 Point Toward Total % of Graduation Progress	CREDITS by Course				
	9/10	10/11	11/12	12/13	13/14
Total Value for 24 Credit Grad Plan	27	26	27	27	28
Expected Progress by Year End	%	%	%	%	%
Off-Track Toward Grad by Year End	%	%	%	%	%
Coursework					
English	4	4	4	4	4
Math - Algebra I or equivalent	1	1	1	1	1
Math - Geometry equivalent	1	1	1	1	1
Math - Other	3	2	2	2	2
Science - Biology			1	1	1
Science - Other	3	3	2	2	2
SS - World	1	1	1	1	1
SS - US History	1	1	1	1	1
SS - Government	1 (0.5 Credits)	0.5	0.5	0.5	0.5
SS - Economics	1 (0.5 Credits)	0.5	0.5	0.5	0.5
Fine/Performance Arts	1	1	1	1	1
PE	1	1	1	1	1
Electives***	8	8	8	8	8
Online Course			Course	Course	Course
Assessments**					
Pass Gr10 ELA Common Core Assess			Test*	Test*	Test
Pass Alg I EOC Common Core Assess			Test*	Test*	Test
Pass FCAT Reading or Concordant (ACT or SAT)	Test	Test	Test	Test	
Pass FCAT Math or Concordant (ACT or SAT or PERT)	Test				

EWS Indicators: Middle School

Middle School EWS Indicators				
	Course Performance	GPA*	Attendance	Office Discipline Referrals
On-Track	C's or better in all classes	2.5 or higher	4% or less absences per year	2 or fewer ODR's per year
At-Risk for Off Track	1 or more D's in any class	2.0 to 2.49	5% - 9% absences per year	3 ODR's per year
Off-Track	Failing 1 or more classes (F's)	Less than 2.0	10% or more absences per year	4 ODR's per year OR 2 ODR's per semester

EWS Indicators: Elementary 3-5

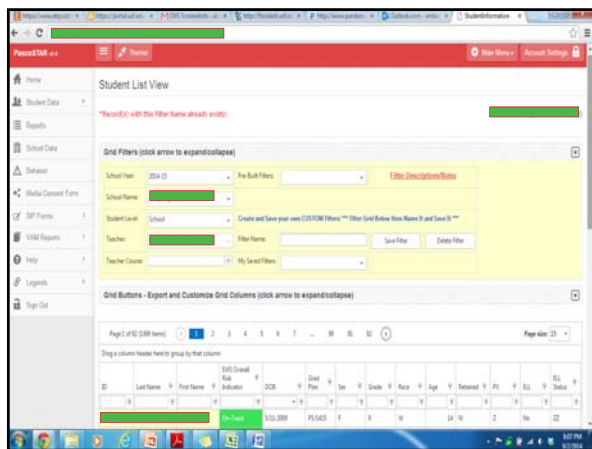
Elementary School (GRADES 3-5) EWS Indicators				
	Course Performance	Attendance	Office Discipline Referrals	
On-Track	C's or better in all classes	4% or less absences per year	2 or fewer ODR's per year	
At-Risk for Off Track	1 or more D's in any class	5% - 9% absences per year	3 ODR's per year	
Off-Track	Failing 1 or more classes (F's)	10% or more absences per year	4 ODR's per year OR 2 ODR's per semester	

EWS Indicators: Elementary K-2

Elementary School (Primary Years - GRADES K-2) EWS Indicators			
	Course Performance	Attendance	Office Discipline Referrals
On-Track	S's in all classes	4% or less absences per year	2 or fewer ODR's per year
At-Risk for Off Track	1 or more N's in any class	5% - 9% absences per year	3 ODR's per year
Off-Track	Failing 1 or more classes (U's)	10% or more absences per year	4 ODR's per year OR 2 ODR's per semester

User Group Development

- Development of cross-disciplinary user group to provide feedback on functionality and end-user desired features
- District steering committee members attended sessions with the user group to facilitate:
 - Demonstration of new features
 - Practice opportunities
 - Open discussions for ideas/desired features/issues

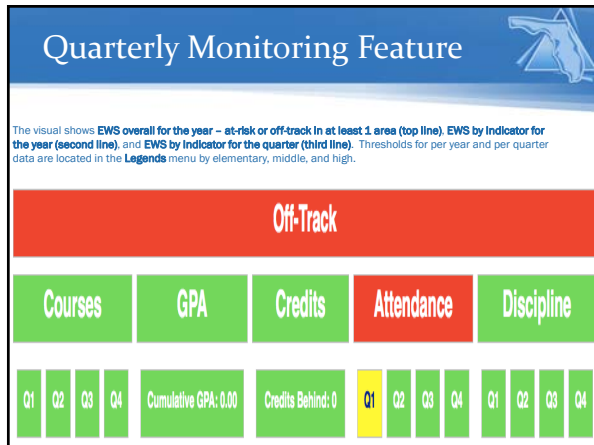


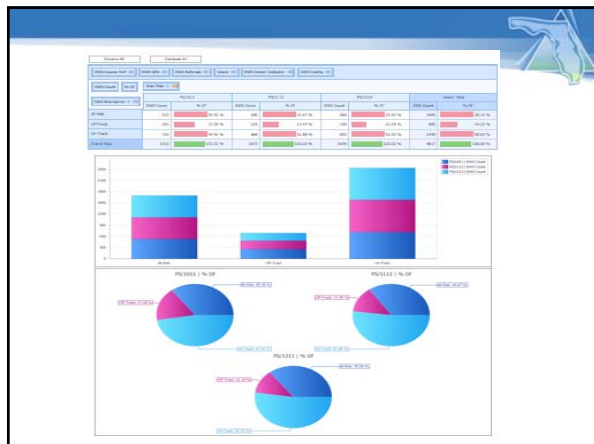
A screenshot of a web-based data grid. The grid has multiple columns with headers such as 'Last Name', 'First Name', 'SSC Course', 'SSC Course ID', 'SSC Course Title', 'Grade', 'Status', 'Start Date', 'End Date', 'Start Time', 'End Time', 'Teacher', 'Room', and 'Section'. The data rows are color-coded: red for 'Off-Track', green for 'On-Track', and yellow for 'At-Risk'. A sidebar menu on the left contains options like 'Home', 'Dashboard', 'Reports', 'Tools', 'Help', and 'Logout'. At the bottom, there are 'Quick Links' for 'PowerSchool Help System' and 'PowerSchool Support', and 'Social Media' icons for Facebook, Twitter, and YouTube.

A screenshot of a web-based data grid, similar to the one above. It shows a grid of student performance data with color-coded cells (red, green, yellow) and a sidebar menu on the left. The grid headers and data structure are consistent with the first screenshot.

A screenshot of a 'Student Detail Information' page. At the top, a red banner reads 'Off-Track'. Below it are four tabs: 'Courses', 'GPA', 'Credits', 'Attendance', and 'Disciplinary'. The 'GPA' tab is selected. The page displays 'Student Information' including Name, Date of Birth, Age, Race, Grade, School, and Teacher. A 'Contact Info' section is also visible. The page has a sidebar menu on the left with options like 'Home', 'Dashboard', 'Reports', 'Tools', 'Help', and 'Logout'. At the bottom, there are 'Quick Links' for 'PowerSchool Help System' and 'PowerSchool Support', and 'Social Media' icons for Facebook, Twitter, and YouTube.

Course Year	Course ID	Course Name	SmpstID	Student Grade	Grade	Credit Earned	Course Code	Course ID
2014	08000002	FORS CAR 300-201	09	C	0.0	1	11	
2014	08000100	FORS CAR 300-201	09	C	0.0	2	12	
2014	10004102	INT'NL REAS	09	A	0.0	2	12	
2014	10004102	INT'NL REAS	09	D	0.0	1	12	
2014	10034402	ENG 2	09	F	0	1	12	
2014	10034402	ENG 2	09	F	0	2	12	
2014	12080902	US ARTS 2	09	D	0.0	1	12	
2014	12080902	US ARTS 2	09	F	0	2	12	
2014	20000102	BD 1	09	F	0	1	12	
2014	20000102	BD 1	09	F	0	2	12	
2014	21000102	HICAL-HIST	09	F	0	1	12	
2014	21000102	HICAL-HIST	09	F	0	2	12	
2013	10004104	INT'NL REAS	09	D	0.0	1	12	
2013	10004109	INT'NL REAS	09	D	0.0	1	12	
2013	10031102	ENG 1	09	F	0	1	12	





Targeted Professional Development

- High school administrators
 - Rationale
 - Development
 - Demonstration
 - Opportunity to practice with their data
 - Opportunity to provide feedback
 - Assigned a case-manager

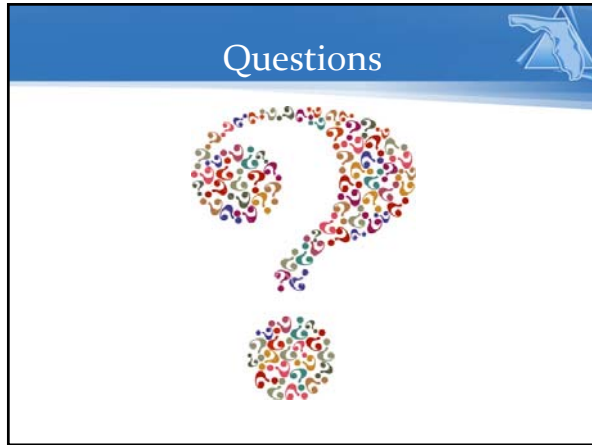
Targeted Professional Development

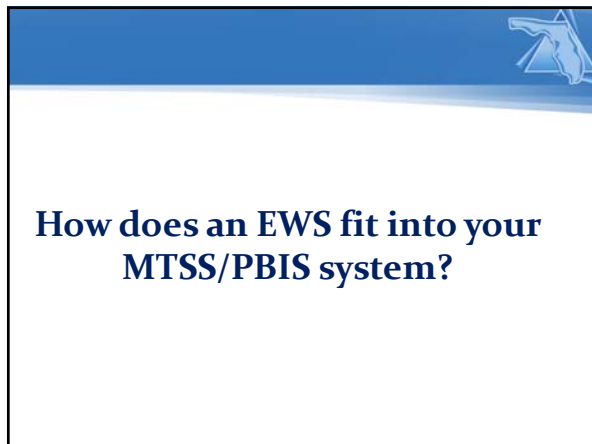
- Elementary and secondary administrators
 - Rationale
 - Development
 - Demonstration
 - Opportunity to practice with their data
 - Opportunity to provide feedback

Targeted Professional Development

- School based teams as part of 3 session series on PLC's
 - PLCs and problem-solving in context of MTSS
 - Functional Teams
 - Using EWS to assess the overall health of a school







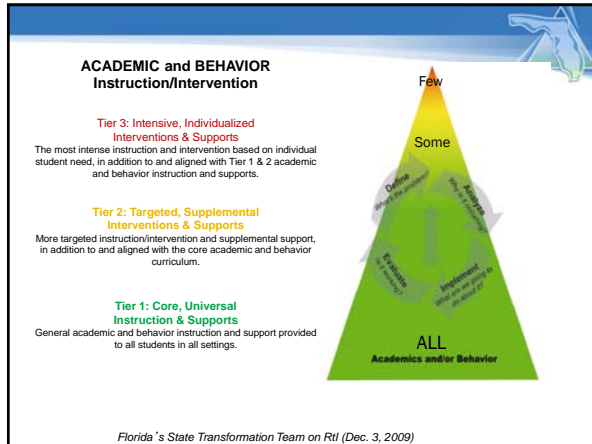
Critical Elements of MTSS

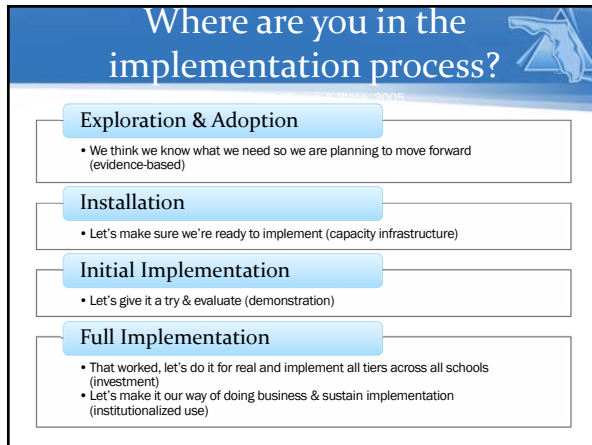
- Curriculum Standards
- Assessments to inform instruction
- Multiple tiers of instruction/intervention
- Data-based problem solving to make decisions

The screenshot shows the MIBLSI interface with a table of 'Student Assessments'. The table is divided into two sections: 'Universal Screening' and 'Progress Monitoring'. Under 'Universal Screening', the items listed are: Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Next, AIMSweb, Student Risk Screening Scale (SRSS), Early Warning Signs (circled in red), and Discipline Referrals (SWIS). Under 'Progress Monitoring', the items listed are: Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Next, AIMSweb, Early Warning Signs (circled in red), and SWIS/ CICO SWIS/ ISIS SWIS.

It's an Early Warning SYSTEM

- The determination of *predictors* of student academic failure and student disengagement should better equip you to plan effective *intervention* services to help maximize student graduation rates.
- Data - Screening
- Using with other data sources/structures
- Leading to Intervention and monitoring








Contact Information



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Additional Readings



Allensworth, E. (2013). The use of ninth grade early warning indicators to improve Chicago schools. *Journal for Education of Students Placed at Risk*, 18(1), 68-83. doi:10.1080/10824669.2013.745181


Allensworth, E. M., & Easton, J. Q. (2005). *The on-track indicator as a predictor of high school graduation*. Consortium on Chicago School Research, University of Chicago. Retrieved from <http://ccsr.uchicago.edu/publications/p78.pdf>

Allensworth, E. M., & Easton, J. Q. (2007). *What matters for staying on track and graduating in Chicago public high schools*. Consortium on Chicago School Research, University of Chicago. Retrieved from <http://ccsr.uchicago.edu/publications/07%20What%20Matters%20Final.pdf>

Balfanz, R. & Byrnes, V. (2010). Early indicator analysis for Metro Nashville Public Schools. Everyone Graduates Center, Johns Hopkins.

Davis, M., Herzog, L., Legters, N. (2013). *Organizing schools to address early warning indicators (EWIs): Common practices and challenges*. *Journal for Education of Students Placed at Risk*, 18(1), 84-100. doi:10.1080/10824669.2013.745210

Additional Readings Continued



Balfanz, R., Herzog, L., MacIver, D., (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: Early identification and effective interventions. *Educational Psychologist*, 42(4), 223-235.

Brundage, A. J. (2013). *Middle and High School Predictors of Off Track Status in Early Warning Systems* (Doctoral Dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3589378)

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

National High School Center. (2012). *National high school center early warning system middle grades tool technical manual*. Washington, DC: Author. Retrieved from http://www.betterhighschools.org/documents/NHSC_EWSMiddleGradesTechManual.pdf
