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at the American Institutes for Research

Using Early Warning Systems for Progress Monitoring and Dropout Prevention

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Southeast Comprehensive Center

RTI Summit

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Sobering Statistics…

- Nearly one-third of all high school students leave the public school system before graduating
- 1.2 million students drop out of high school each year – that's 12 million over the next decade
- 7,000 students drop out of high school every day
- 15% of the high schools in the U.S. produce 50% of our dropouts – schools Balfanz and Legters call "dropout factories"

Balfanz, R. and Legters, N. (2006, July 12). The graduation rate crisis we know and what can be done about it. Retrieved online from http://web.jhu.edu/CSOS/graduationgap/edweek/Crisis_Commentary.pdf

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Economic Consequences

- A new high school dropout in 2000 had less than a 50% chance of getting a job
- That job earned less than half of what the same job earned 20 years ago
- Lack of education is strongly correlated with welfare dependency and incarceration
- Cutting the number of dropouts in half would reap $45 billion in revenues and decreased costs (Levin et al., 2007)

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Early Warning Systems

- Early warning systems (EWS) use readily available data housed at the school to:
  - Predict which students are at-risk for dropping out of high school
  - Target resources at the school and district level to support off-track students while they are still in school, before they drop out
  - Examine patterns and identify school climate issues that may contribute to disproportionate dropout rates at a subset of high schools or within subpopulations of students

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9th Grade is a Critical Year

- Ninth grade is a "make or break year"
  - More students fail 9th grade than any other grade in high school
  - A disproportionate number of students who are held back in 9th grade subsequently drop out
- By the end of 9th grade or even during the first semester, powerful indicators exist that can predict whether students will complete high school:
  - Engagement
  - Course performance
  - Chicago's "On-Track" Indicator

Herlihy, C. (2007). *State and district-level supports for successful transition into high school*. Washington, DC: National High School Center.
Allensworth, E., & Easton, J.Q. (2007). *What matters for staying on-track and graduating in Chicago Public High Schools: A close look at course grades, failures and attendance in the freshman year*. Chicago: Consortium on Chicago School Research.

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Key 9th Grade Indicators

Engagement

- Attendance/ absenteeism

Course Performance

- Course grades
- Number of credits earned

Research from several U.S. school districts provides a strong foundation for defining 9th grade warning signs that students might drop out, but local adaptation is key

"On-track" Indicator

- Core course performance & accumulated credits

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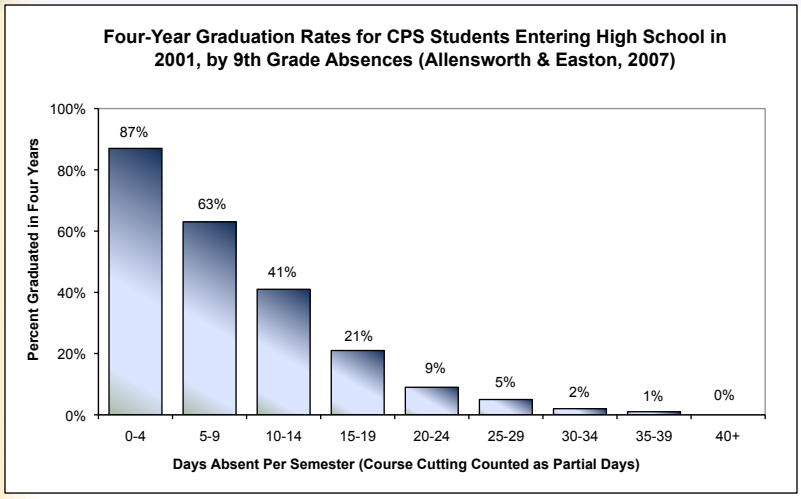
"High-Yield" Academic Indicators: Attendance



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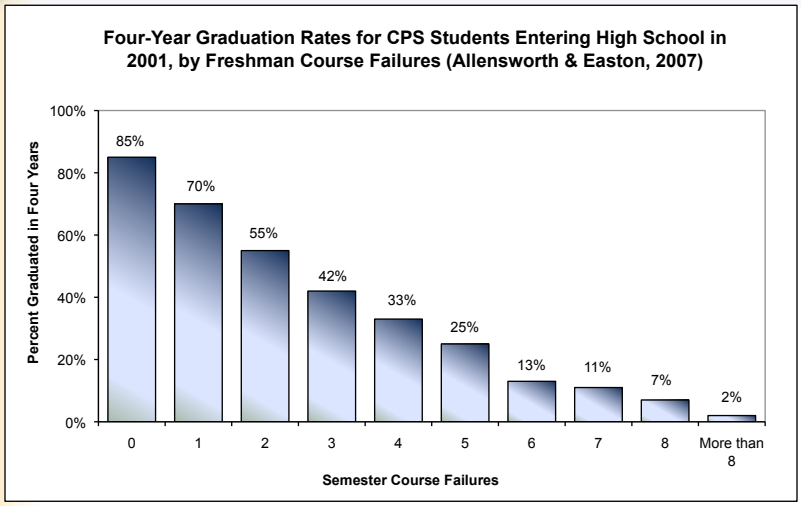
"High-Yield" Academic Indicators: Course Failures



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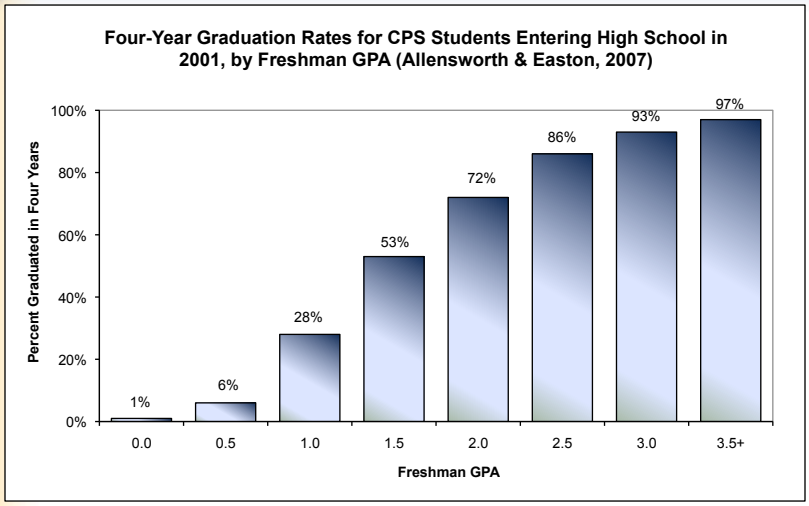
"High-Yield" Academic Indicators: GPA



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Chicago's "On-track" Indicator

Students are "on-track" if they:

1. have not failed more than one semester long core course, AND
2. have accumulated enough credits for promotion to the 10th grade.

Number of Semesters with Fs in Core Courses	# of Credits Accumulated Freshman Year	
	Less than 5	5 or more
2 or more courses	Off-track	Off-track
0 or 1 courses	Off-track	On-track

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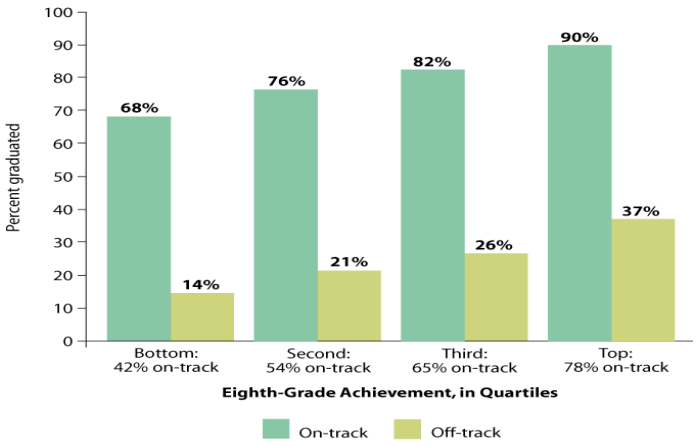
On-Track Indicator

Four-Year Graduation Rates by On-Track Status after Freshman Year and Incoming Reading and Mathematics Achievement

Students entering high school in September 2000



Source: Allensworth & Easton (2005)

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"High Yield" 9th Grade Indicators

Indicators	Benchmark (red flag)
Absenteeism	Missing 10% or more of instructional time
Course failures	One of more failed courses
Grade point average	2.0 or lower (on a 4-point scale)
"Off-track"	Fail two or more semester core courses, or accumulate fewer credits than the number required for promotion to the 10th grade

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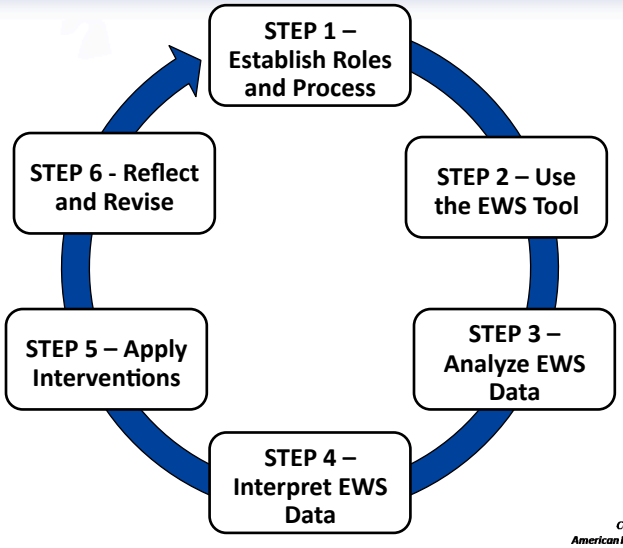
Implementing the EWS Process



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Step One: Establish Roles and Process

EWS teams should include school- and district-level individuals who have:

- Authority to make decisions
- Knowledge of diverse students
- Expertise to manage and analyze data
- Information about strategies

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Step Two: Use the EWS Tool

- Routinely available data are good predictors of whether a student is likely to drop out of high school
- First-month absences, in addition to end of the semester grades, are additional strong predictors of dropout
- The goal is to effectively and efficiently allocate dropout prevention resources to change the odds for students with a high propensity to drop out
  - Not all students at-risk will need all interventions available
  - Analysis of different patterns of risk can help target appropriately
  - EWS data = knowledge to make these decisions

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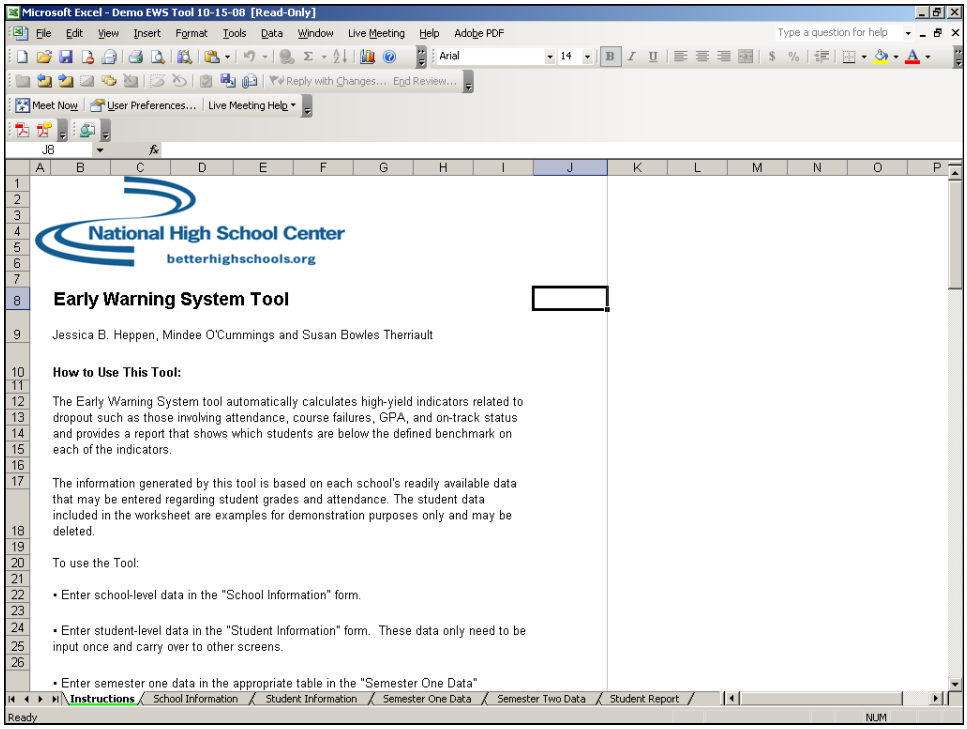
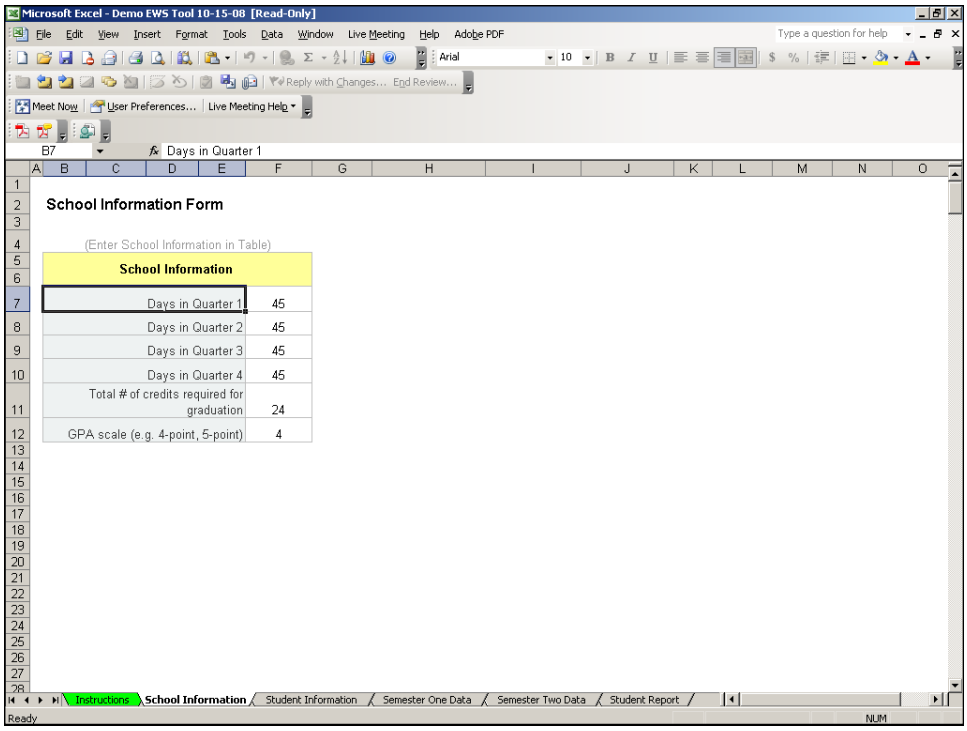
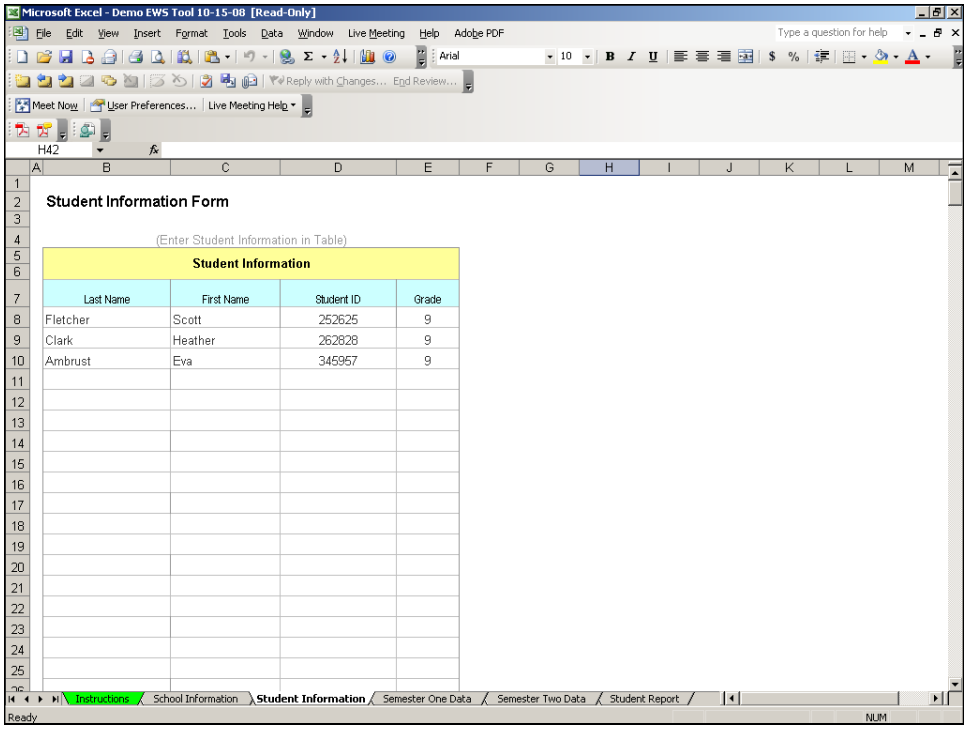
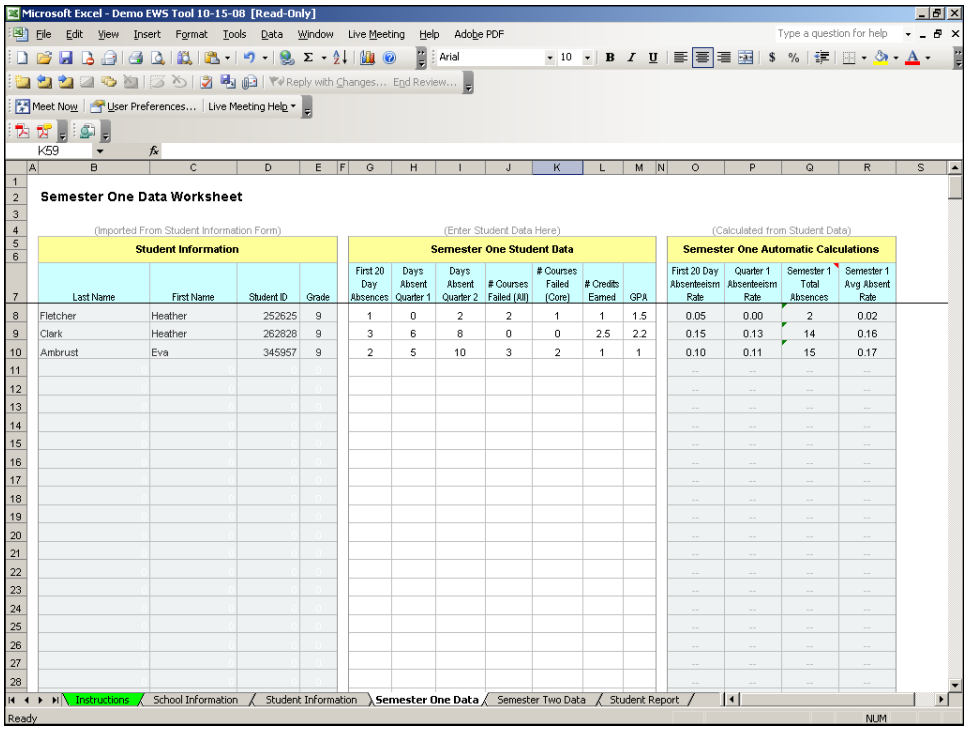
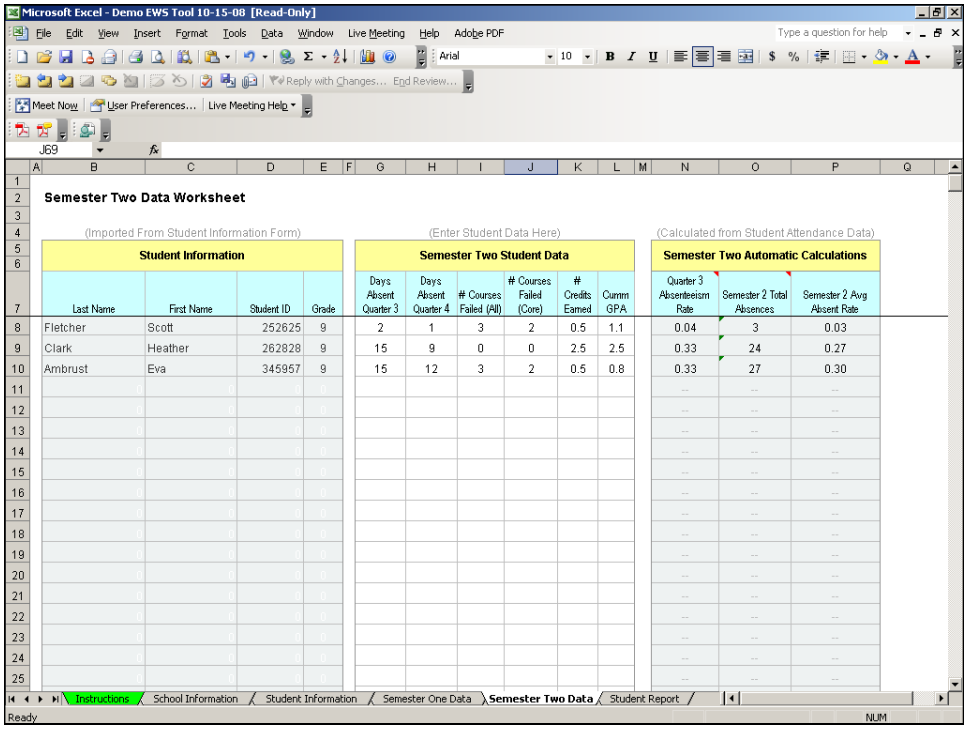
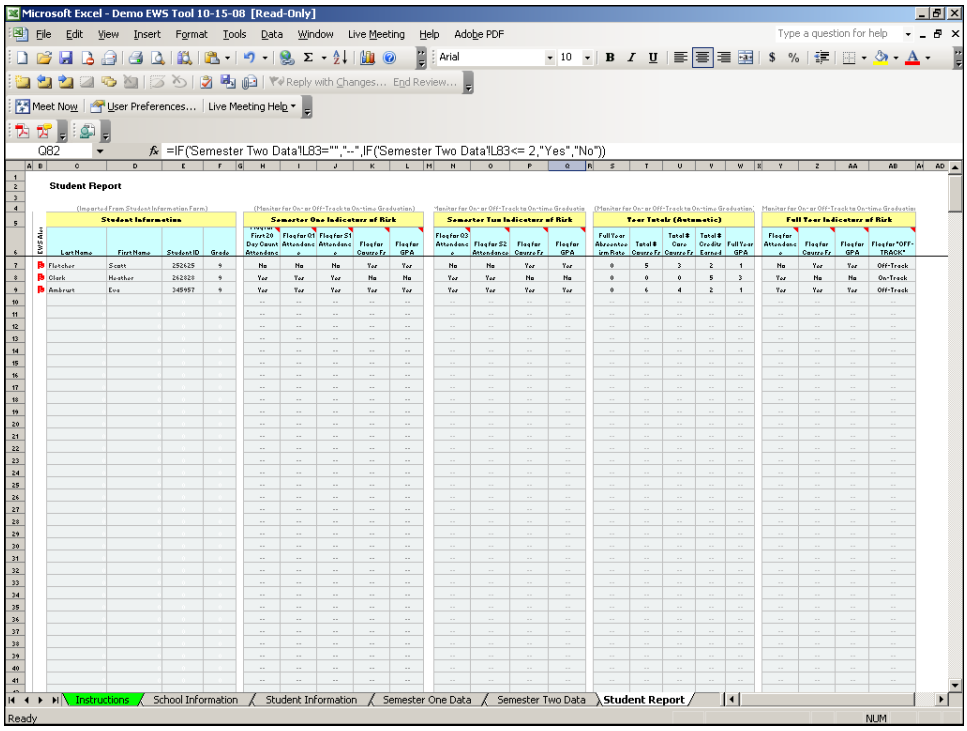


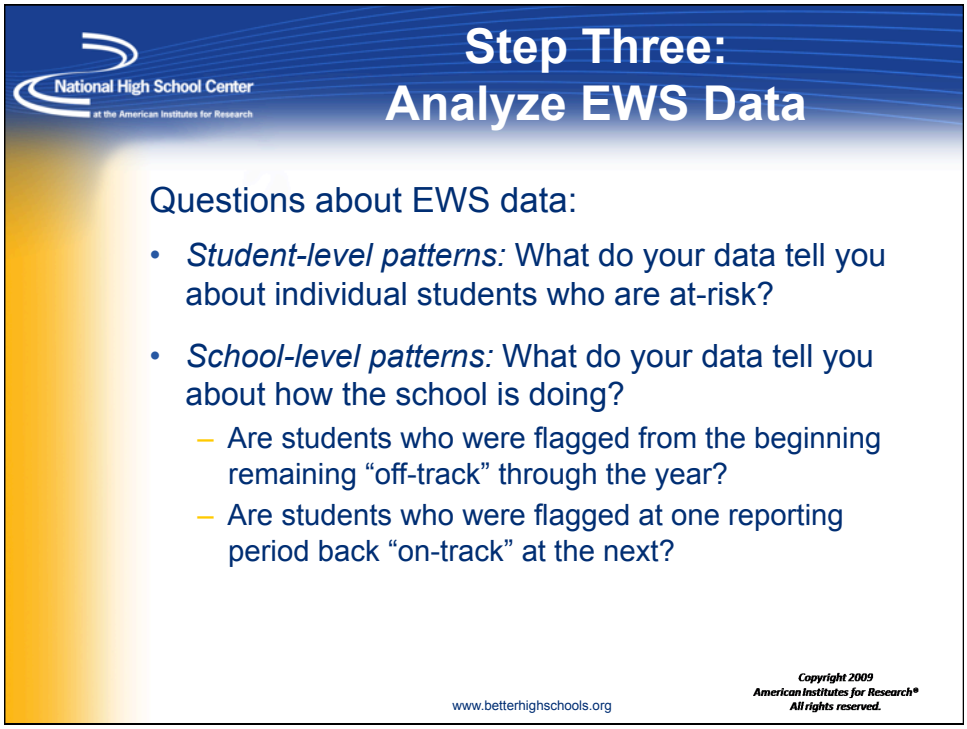

Microsoft Excel - Demo EWS Tool 10-15-08 [Read-Only]
B7
Days in Quarter 1
School Information Form
(Enter School Information in Table)
School Information
Days in Quarter 1 45
Days in Quarter 2 45
Days in Quarter 3 45
Days in Quarter 4 45
Total # of credits required for graduation 24
GPA scale (e.g. 4-point, 5-point) 4
Instructions
School Information
Student Information
Semester One Data
Semester Two Data
Student Report
Ready
NUM


Microsoft Excel - Demo EWS Tool 10-15-08 [Read-Only]
H42
Student Information Form
(Enter Student Information in Table)
Student Information
Last Name First Name Student ID Grade
Fletcher Scott 252625 9
Clark Heather 262828 9
Ambrust Eva 345957 9
Instructions
School Information
Student Information
Semester One Data
Semester Two Data
Student Report
Ready
NUM


Microsoft Excel - Demo EWS Tool 10-15-08 [Read-Only]
Semester One Data Worksheet
(Imported From Student Information Form)
(Enter Student Data Here)
(Calculated from Student Data)
Student Information
Semester One Student Data
Semester One Automatic Calculations
Last Name
First Name
Student ID
Grade
First 20 Day Absences
Days Absent Quarter 1
Days Absent Quarter 2
Courses Failed (All)
Courses Failed (Core)
Credits Earned
GPA
First 20 Day Absenteeism Rate
Quarter 1 Absenteeism Rate
Semester 1 Total Absences
Semester 1 Avg Absent Rate
Fletcher Heather 252625 9 1 0 2 2 1 1 1.5 0.05 0.00 2 0.02
Clark Heather 262828 9 3 6 8 0 0 2.5 2.2 0.15 0.13 14 0.16
Ambrust Eva 345957 9 2 5 10 3 2 1 1 0.10 0.11 15 0.17
Instructions
School Information
Student Information
Semester One Data
Semester Two Data
Student Report
Ready
NUM


Microsoft Excel - Demo EWS Tool 10-15-08 [Read-Only]
Semester Two Data Worksheet
(Imported From Student Information Form)
(Enter Student Data Here)
(Calculated from Student Attendance Data)
Student Information
Semester Two Student Data
Semester Two Automatic Calculations
Last Name
First Name
Student ID
Grade
Days Absent Quarter 3
Days Absent Quarter 4
Courses Failed (All)
Courses Failed (Core)
Credits Earned
Cumm GPA
Quarter 3 Absenteeism Rate
Semester 2 Total Absences
Semester 2 Avg Absent Rate
Fletcher Scott 252625 9 2 1 3 2 0.5 1.1 0.04 3 0.03
Clark Heather 262828 9 15 9 0 0 2.5 2.5 0.33 24 0.27
Ambrust Eva 345957 9 15 12 3 2 0.5 0.8 0.33 27 0.30
Instructions
School Information
Student Information
Semester One Data
Semester Two Data
Student Report
Ready
NUM


Microsoft Excel - Demo EWS Tool 10-15-08 [Read-Only]
Student Report
Instructions
School Information
Student Information
Semester One Data
Semester Two Data
Student Report
Ready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Step Three:
Analyze EWS Data
Questions about EWS data:
• Student-level patterns: What do your data tell you about individual students who are at-risk?
• School-level patterns: What do your data tell you about how the school is doing?
– Are students who were flagged from the beginning remaining "off-track" through the year?
– Are students who were flagged at one reporting period back "on-track" at the next?
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Step Four: Interpret EWS Data

Digging deeper than the indicators:

- Indicators are just observable signals, not root causes
- Understanding the characteristics of students who are flagged can further help target interventions at the appropriate intensity

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Interpreting EWS Data

Understanding Characteristics of Students At-Risk

- Decisions to persist or drop out are affected by multiple contextual factors - family, school, neighborhood, peers.
- Personal and school factors contribute to success or failure during the freshman year
- Attendance and course performance problems are distinct indicators in the EWS but are highly interrelated, and both can signal disengagement
- Student background characteristics are less important in explaining failures than behaviors in high school

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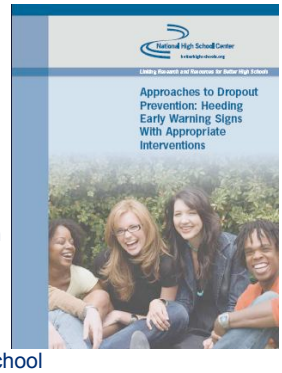
Step Five: Interventions

- Attendance and behavior monitoring
- Focus on achievement in core courses
- Content recovery courses
- Tutoring as an academic support
- Advisories and team teaching
- Counseling and mentoring
- Small learning communities and school-within-a-school for greater personalization
- Partnerships between high schools and feeder middle schools
- Ninth grade transition programs
- Support for students with disabilities outside of school
- Career and college awareness
- Family engagement
- Community engagement



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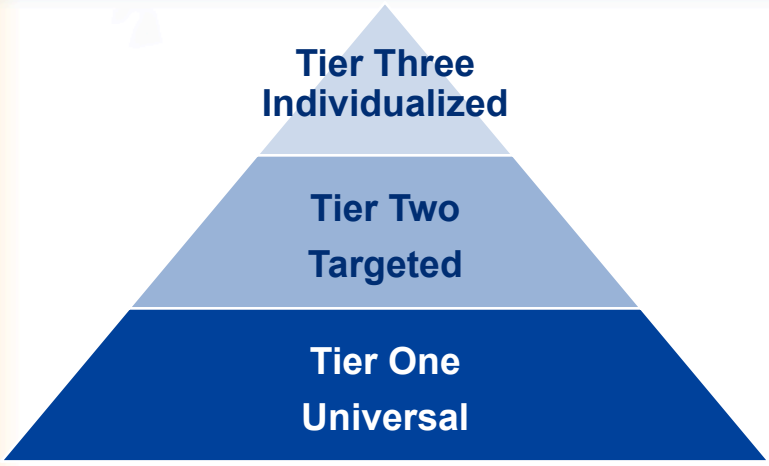
Tiered Approach to Dropout Prevention



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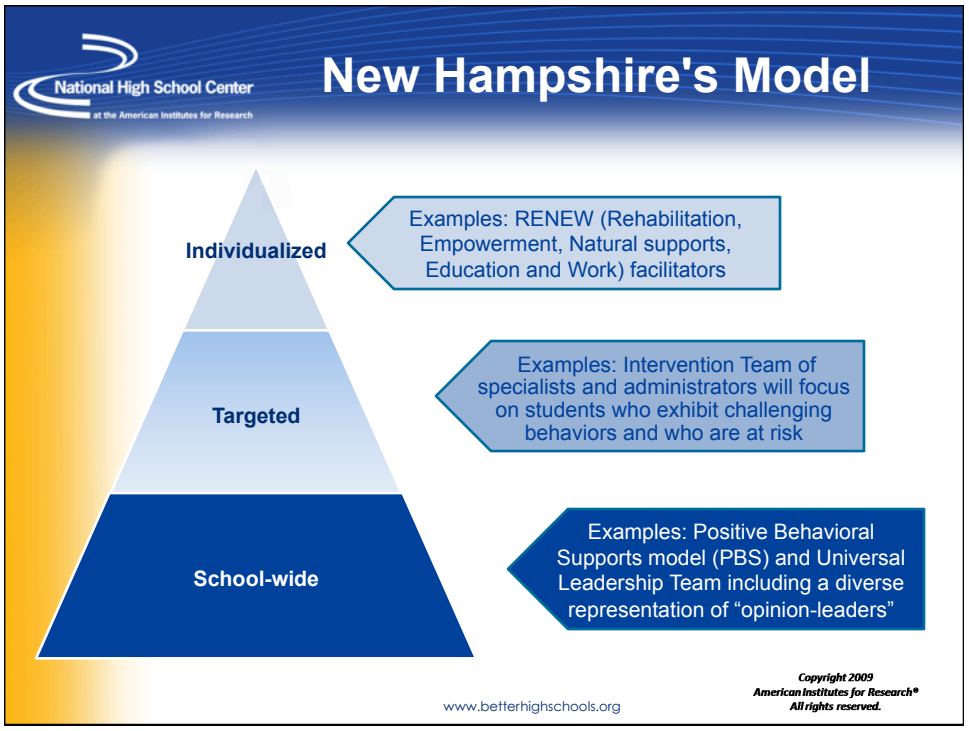
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New Hampshire's Model
Individualized
Targeted
School-wide
Examples: RENEW (Rehabilitation, Empowerment, Natural supports, Education and Work) facilitators
Examples: Intervention Team of specialists and administrators will focus on students who exhibit challenging behaviors and who are at risk
Examples: Positive Behavioral Supports model (PBS) and Universal Leadership Team including a diverse representation of "opinion-leaders"
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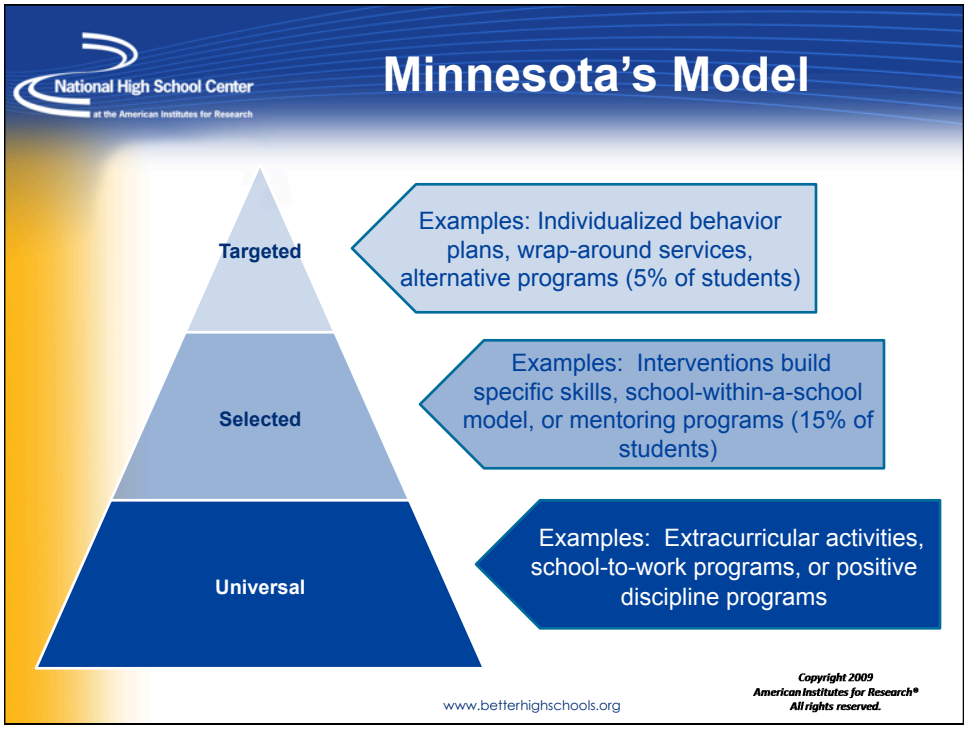
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Minnesota's Model
Targeted
Selected
Universal
Examples: Individualized behavior plans, wrap-around services, alternative programs (5% of students)
Examples: Interventions build specific skills, school-within-a-school model, or mentoring programs (15% of students)
Examples: Extracurricular activities, school-to-work programs, or positive discipline programs
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Step Six: Reflect and Revise

- During the school year: Regularly, collectively, and systematically
- Over multiple school years: Validate the indicators to maximize predictive power of the system, e.g.

	Displayed Early Warning Sign in 9th Grade?	
Graduated in 4 (or 5) Years?	**YES**	**NO**
YES	*False Positive (or Effective Intervention)*	**Accurate Prediction**
NO	**Accurate Prediction**	*False Negative*

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More Information:

Dropout Prevention Resources:
www.betterhighschools.org/topics/DropoutPrevention.asp

Contact Information:

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