Early Warning and Intervention: 
Reaching Students Before Major Negative Events Happen

PRESENTED AT:
Idaho Prevention and Support Conference
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PRESENTED BY:
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RESEARCHER – APPLIED

• 20+ years of work experience in the field of research and evaluation;

• Multiple research studies reviewed by the What Works Clearinghouse (WWC) -- all receiving the highest quality ratings possible.

• Principal investigator on numerous national, statewide, and local evaluation efforts related to at-risk learners, such as;

  • Federal SS/HS grants
  • Project Aware
  • 21st CCLC
  • School Climate Transformation Grants
  • PBIS/MTSS
  • Olweus/Bullying Initiatives
  • Dropout Prevention
  • Early Warning Systems
The Goal

CONNECT STUDENTS SHOWING SIGNS OF RISK TO SUPPORT EARLY ON, BEFORE ISSUES ESCALATE OR MAJOR NEGATIVE EVENTS HAPPEN
Tiered Support Model

Tier 1: ~75-80% of students

Universal Interventions
- All students/all settings
- Evidence-based curriculum and instruction
- Assessment system & data-based decision making

Secondary Interventions
- Some students (at risk)
- Supplemental targeted skill interventions
- Small Groups

Tier 2: ~10-15% of students

Tertiary Interventions
- Intense targeted skills
- Interventions high intensity
- Student centered planning
- Individualized intensive interventions

Tier 3: ~5-10% of students

Academic: RTI

Behavior: PBIS

- All students/all settings;
- Positive behavioral expectations taught and reinforced in class;
- Consistent approach to discipline
- Assessment system and data-based decision making
SESSION OBJECTIVES

1) Explore the nature of “RISK” ...
   ✓ **What** it is;
   ✓ **Why** it is important;
   ✓ **Where** it tends to manifest itself in educational settings; and
   ✓ **How** such information can appropriately be used & communicated to support students and promote positive student outcomes

2) Key factors contributing to students not getting connected to support/intervention

3) Strategies for promoting early identification and intervention, including emergent research on “Early Warning” systems
Increasing the Effectiveness of Intervention and Support

750 (30%) out of 2500 of HS students with substance issues

Of these, 5 out of 10 (50%) are connected to services

Of these, 10 referrals (2%) are being identified

Of these, only 3 (60%) successfully complete
Bridging the Gap
Hands-on exercise:

Looking at data from the 2015 Idaho Youth Risk Behavior Survey
Contributors to lack of identification/connection

**UNCONNECTED DOTS**
- Lots of signs – nobody putting it all together
- Perception “We know who our kids are”
- Inefficient access to data
- Lack of utilization of available data

**BURDENSOME / LACK OF TIMELINESS**
- Six degrees of separation
- Time (burdensome paperwork, record keeping)

**CONFUSION/LACK OF UNDERSTANDING**
- Lack of empowerment / role clarification
- Inconsistency in criteria used or vague criteria

**CONCERNS RE: USE OR MISUSE**
- Disciplinary versus supportive approach
- Confidentiality & Stigma
- Something must be done

**SCHOOL CULTURE / POLICY / PROCESS**
- Goals/Priority
- Gatekeepers/Only a few can report
- Concern over ‘appearances’

**SCHOOL/COMMUNITY PARTNERSHIPS**
- Awareness/Understanding of Resources
- Relationships vs Need
- Communication & feedback
What is “risk?”

The dictionary refers to “risk” as the “likelihood that something unpleasant or unwelcome is going to happen.”

The term ‘at-risk’ is often used to describe students or groups of students who are considered to have a higher probability of failing academically or dropping out of school.

“At-risk” is a concept that reflects a chance or a probability – it does not imply certainty. Risk factors raise the chance of poor outcomes, while protective factors raise the chance of good outcomes.
Plethora of potential factors that could adversely affect the educational performance and attainment of some students ...

academics
behavior
social-emotional
substance use
mental health
home factors
life circumstances
basic needs
demographics
etc...
Risk – A Highly Interrelated & Multidimensional Construct

Areas of risk for students are strongly interrelated, including: academic risk/stronger likelihood of dropping out, behavioral risk, mental health, violence, and substance abuse.
Hands-on exercise:

Exploring our conceptions of what ‘risk’ is
Diary of a Teenage Dropout: Summative Data

The data contained in this figure is based on analyses of 35,683 students and represents the profiles of students, at each grade level, who eventually dropped out in 10th grade.
Diary of a Teenage Dropout: One Student Data

3. 2.9 GPA
   • 92% attendance rate
   • No behavioral incidents

4. 2.3 GPA
   • 92% attendance rate
   • No behavioral incidents, one suspension

5. 2.8 GPA
   • 95% attendance rate
   • Five behavioral incidents, one suspension

6. 1.7 GPA
   • 93% attendance rate
   • Two minor behavioral incidents

7. 2.5 GPA
   • 91% attendance rate
   • 13 behavioral incidents, two suspensions

8. 1.6 GPA
   • 89% attendance rate
   • Six behavioral incidents, one suspension

9. 2.0 GPA
   • 77% attendance rate
   • Nine behavioral incidents, one suspension

10. Drops out of high school
Diary of a Teenage Dropout: District “A”

- 95% attendance rate
- 1 minor behavioral incident
- 35th percentile rank – state reading assessment

- 95% attendance rate
- 1 minor behavioral incident
- 35th percentile rank – state reading assessment

- 93% attendance rate
- 2 minor behavioral incidents
- 34th percentile rank – state reading assessment
- 1 suspension

- 90% attendance rate
- 4 minors
- 34th percentile rank – state reading assessment

- 89% attendance
- 4 minors
- 37th percentile rank – state reading assessment
- 2 suspensions
- District assessment reading score - 41
- 34th PR – state reading assessment

- 89% attendance
- 4 minors
- 37th percentile rank – state reading assessment
- 1 suspension
- District assessment reading score - 41
- 34th PR – state reading assessment

- 84% attendance
- 4 minors, 2 suspensions
- District reading assessment-27
- 31st PR – state reading assessment
- 90% attendance – first 30 days

- 87% attendance
- 4 minors
- 2 suspensions
- 1.73 GPA
- 70% course pass rate
- District assessment reading score - 32

- Drops out of high school; before leaves has
  - 77% attendance
  - 86% attendance – first 30 days
  - District reading assessment - 22
Diary of a Teenage Graduate: District “A”

- 97% attendance rate
- 0 minor behavioral incidents
- 54th percentile rank – state reading assessment

4

- 97% attendance rate
- 0 minor behavioral incident
- 54th percentile rank – state reading assessment

5

- 96% attendance rate
- 0 minor behavioral incidents
- 55th percentile rank – state reading assessment
- 0 suspension

6

- 95% attendance
- 1 minor
- District assessment reading score - 71
- 56th PR – state reading assessment

7

- 95% attendance
- 1 minor
- District assessment reading score - 67

8

- 94% attendance
- 1 minor
- District reading assessment 58
- 56th PR – state reading assessment
- 96% attendance – first 30 days

9

On Track To Graduate

- 90% attendance
- 96% attendance – first 30 days
- 1 minor
- District reading assessment 55
- 2.92 GPA

10

- 94% attendance
- 1 minor
- 0 suspensions
- 3.27 GPA
- 70% course pass rate
- District assessment reading score - 69

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“Risk”—some common elements:

• It virtually always shows up before a major negative event happens: While there are not direct measures readily available for some key dimensions of risk, it eventually and virtually always starts to show up in information readily available to schools.

• One size does not fit all: “Risk” differs tremendously across grade levels – the profile of what is risky for a 3rd grader is much different, and more subtle, than that of a risky 10th grader;

• Multi-dimensionality of risk (multiple domains/multiple indicators!): Risk tends to manifest itself in subtle ways at first, typically within a single domain. If unaddressed, however, risk factors spread in breadth, intensity, and frequency over time;

• Critical windows for intervention: Dropping out is ultimately the end result of a long process of disengagement with roots in the elementary grades. Notably, the middle school years consistently emerge as pivotal in the student’s trajectory.
Observed patterns when we’ve looked longitudinally at students who eventually drop out...

- **Attendance** is highly important across all grade bands – it is in the top 10 predictors across 100% of districts;

- **Academic indicators** add A LOT – they typically take on increasing importance as of the 4\(^{th}\)/5\(^{th}\) grade onward as more information becomes available;

- We see a lot of variability in the relative importance of behavior – main issue is quality of underlying data. Implication: **better behavioral data (e.g., minors!) = better identification early on**;

- **Local settings are important:** Dramatic increases in % accuracy when predictive models trained locally or according to “similar” types of districts;

- As of 7\(^{th}\) grade and continuing upward into the higher grade levels, **suspensions/expulsions** takes on **greater importance** in predicting likelihood of dropping out;

- 9\(^{th}\) grade – GPA, pass rate are always very important predictors;

- If a student makes it to 12\(^{th}\) grade, their likelihood of graduating increases substantially.
Given the nature of risk and how it typically shows up in educational settings, what are the implications for:

- Early warning and detection
- Communication
- Promoting the timely and appropriate use of such information?
Evolution of Early Warning Systems...

First Generation: Traditional Checklist Model

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 20/30 days absence rate</td>
<td>10%</td>
</tr>
<tr>
<td>Grading period absence rate</td>
<td>10%</td>
</tr>
<tr>
<td>Annual absence rate</td>
<td>10%</td>
</tr>
<tr>
<td>GPA</td>
<td>2.00</td>
</tr>
<tr>
<td># of course fails (per grading period)</td>
<td>1</td>
</tr>
<tr>
<td># of fails (annual)</td>
<td>2</td>
</tr>
<tr>
<td># of credits earned (annual)</td>
<td>4</td>
</tr>
<tr>
<td>Major behavioral incidents (per grading period)</td>
<td></td>
</tr>
<tr>
<td>Major behavioral incidents (annual)</td>
<td></td>
</tr>
</tbody>
</table>

**Characteristics**

- Focus on proactive rather than reactive
- Research-based
- Systematic, consistent criteria
- Threshold-based (dichotomous yes/no)
- Primarily applicable to higher grade levels (8th/9th grade and above)
- Limited to a few indicators
- One size fits all
- Communication – often spreadsheets
- Accuracy – better than before, but still limited (e.g., ‘false positives’)

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[Table content continued...]

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**First Generation: Traditional Checklist Model**
Evolution of Early Warning cont...

**Next Generation: Predictive analytics**

- Research-based & data driven – based on patterns of risk that have historically been associated with an increased likelihood of dropping out in your setting
- Multiple indicators/multiple domains
- Greater accuracy
- Earlier identification
- Customized/flexible - takes into account differences across districts/grade spans
- Advances in communication of early warning information:
  - Risk as a continuum
  - Different levels
Second Generation: Predictive Models

![Graph showing the relationship between Hits (% of actual dropouts predicted correctly) and False Alarm (% of actual graduates predicted incorrectly). Different colored dots represent different models: Full set of indicators (modeled), Academic Only (modeled), Behaviors Only (modeled), Attendance Only (modeled), and Checklist (one or more flags).]
### Indicators

**Timeframe is Prior 12 months**

<table>
<thead>
<tr>
<th>Data</th>
<th>Checklist Model</th>
<th>Predictive Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Indicator Risk</td>
</tr>
<tr>
<td>Attendance Rate</td>
<td>91.0%</td>
<td>No</td>
</tr>
<tr>
<td>First 30 Day Attendance Rate</td>
<td>80.0%</td>
<td></td>
</tr>
<tr>
<td>Tardy Rate</td>
<td>3.7%</td>
<td></td>
</tr>
<tr>
<td>Suspensions</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td># of Major Behavioral Incidents</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td># of Minor Behavioral Incidents</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Academic Indicator (GPA)</td>
<td>2.80</td>
<td>No</td>
</tr>
<tr>
<td>Courses Passed</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>State Assessment: Math*</td>
<td>Slightly Below</td>
<td></td>
</tr>
<tr>
<td>State Assessment: Reading*</td>
<td>Far Below</td>
<td></td>
</tr>
<tr>
<td>State Assessment: Science*</td>
<td>Below</td>
<td></td>
</tr>
<tr>
<td>State Assessment: Social Studies*</td>
<td>Below</td>
<td></td>
</tr>
<tr>
<td>Grade Retention</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Real Life Example: “Jack” 5th Grader

Overall Risk is **High**
What happens next?
Early Warning: Key Features Needed

✓ Accurate
✓ Early
✓ Multi-dimensional
✓ Personalized & adaptive (grade spans/local settings)
✓ Research-based
✓ Useful/user-friendly communication of information
  ➢ Risk as a ‘continuum’
  ➢ different ‘levels’ of risk
  ➢ Differentiation is key (e.g., yields manageable #’s of students)
✓ Connected to action
✓ Built-in referral & follow-up
✓ Ongoing monitoring of changes/patterns over time
ACTIVITIES
Strengthening early identification & connection to services of at-risk youth
- Early Warning & Identification
- Referral & follow-up
- Evidence-based interventions (TIERED)
- Ongoing Monitoring

INITIAL OUTCOMES
- Early, accurate identification of youth at-risk
- Increased access & connection to services & support
- Monitoring of services received/ increased implementation fidelity

INTERMEDIATE OUTCOMES
- Improvement in student academic performance
- Improvement in school attendance
- Reduction in frequency/severity of behavioral infractions
- Reduction in suspensions/expulsions
- Improvement in student well-being

LONG-TERM OUTCOMES
- Increased Grad Rates
- Safe Schools
- Improved Academic Performance
- Reduced Violence
- Positive School Climate
- Positive student outcomes & student well-being

Moderating Variables & Factors
(Potentially influencing outcomes)
- Effective, evidence-based interventions in place
- School policies/culture (zero tolerance, support)
- School philosophy/culture regarding early, proactive intervention
Thank you!
Things to be aware of...

- **VARIABILITY**
  Variability across individuals in identification, referral, response and criteria used;

- **ANY NOTICEABLE CHANGES IN BEHAVIOR**
  Good at identifying kids that act out, more likely to miss the kids who act in.

- **EARLY WARNING SIGNS MAY OR MAY NOT INDICATE A SERIOUS PROBLEM**
  Just want to check out any concerns.

- **STAFF USE EARLY WARNING FOR ID AND REFERRAL PURPOSES ONLY**
  The appropriate trained service providers/professionals should investigate further.

- **DO NO HARM**
  Intent is to get help for a child early. Not to be used in a punitive manner, stereotyping, etc.

- **CONFIDENTIALITY AND PROCESS**
  Information appropriate to the role, appropriate consent & referral procedures, security of technology environment