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Screening for Reading Problems in an RTI Framework
Evelyn Johnson, Ed.D.
Juli Pool, Ph.D.
Boise State University

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Agenda
• An overview of the process of screening
• Grade specific issues:
  – What are predictors of reading?
  – What are the limitations of these predictors?
  – Resources
• Q & A

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What is Screening?

Brief assessment of ALL students

<table>
<thead>
<tr>
<th>Screens identify an initial risk profile</th>
<th>All Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Screen</td>
<td>- Screen</td>
</tr>
</tbody>
</table>

Screening results are confirmed by further testing

<table>
<thead>
<tr>
<th>True Positive</th>
<th>False Positive</th>
<th>No further testing</th>
</tr>
</thead>
</table>
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What is Screening?

- Universal Screening occurs for all students, 3 times per year
- For reading, screening measures tap constructs that are highly predictive of later reading ability

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Identifying an Initial Risk Pool

<table>
<thead>
<tr>
<th>At-risk on Outcome</th>
<th>Not At-risk on Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ on Screen</td>
<td>True Positive</td>
</tr>
<tr>
<td></td>
<td>False Positive</td>
</tr>
<tr>
<td>- on Screen</td>
<td>False Negative</td>
</tr>
<tr>
<td></td>
<td>True Negative</td>
</tr>
</tbody>
</table>

At-risk kids we've missed

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Managing the Risk Pool

<table>
<thead>
<tr>
<th>At-risk on Outcome</th>
<th>Not At-risk on Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ on Screen</td>
<td>True Positive</td>
</tr>
<tr>
<td></td>
<td>False Positive</td>
</tr>
</tbody>
</table>

The goal is to identify all or nearly all of the students at-risk (True Positives). This limits the number of students who fall through the cracks (False Negatives). At the same time, we have to minimize the over-identification of students (False Positives).
Managing the Risk Pool

• **Direct Route Models** – In this approach, students identified as at-risk on the screen are automatically placed into intervention
  – **Advantages**: expedient, simple to follow decision rules
  – **Disadvantages**: very few screening measures are accurate enough to effectively manage the risk pool

Managing the Risk Pool

• **Multiple Measure Models** – In this approach, multiple screening instruments are given at one point in time.
  – **Advantages**: decisions made on more comprehensive data, greater accuracy
  – **Disadvantages**: difficult to interpret multiple cut scores and decision rules, less efficient

Managing the Risk Pool

• **Progress Monitoring Models** – In this approach, the initial risk pool is followed for a series of weeks to see if they ‘self-correct’
  – **Advantages**: decisions made on multiple points over time, greater accuracy
  – **Disadvantages**: logistics of progress monitoring can be challenging for schools
Managing the Risk Pool

- **Multiple Gate Keeping Models** – In this approach, the initial risk pool is assessed further
  - **Advantages**: initial screening results are confirmed by further testing, greater accuracy
  - **Disadvantages**: time

Effective Screens ...

- Are easy to administer, score & interpret;
- Significantly improve the accuracy with which we identify at-risk students
- Identify all or nearly all at-risk students while limiting the number of false positives
- Have 'face validity' for teachers

What to look for in a screening measure

<table>
<thead>
<tr>
<th>Criteria</th>
<th>What to look for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>Sensitivity should be high, &gt; 0.95%</td>
</tr>
<tr>
<td>Specificity</td>
<td>Specificity should also be high, &gt; 0.5%</td>
</tr>
<tr>
<td>Classification-Accuracy</td>
<td>A screen should significantly improve the accuracy with which we identify students. Classification accuracy is affected by base rate,</td>
</tr>
<tr>
<td>Validity</td>
<td>Construct, content, and predictive validity should be high</td>
</tr>
<tr>
<td>Reliability</td>
<td>Screening results should have high reliability, especially for schools employing life saving</td>
</tr>
</tbody>
</table>
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Grade Specific Issues

- Reading constructs and purposes differ across age/grade levels
- Recommendations for screening

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Limitations to Screening Reading Components

- Amount of time between screening and administration of outcome measure
- Complex nature of reading
- Reliance on brief measures to predict outcomes

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Big 5 Reading Components

- Phonemic Awareness
- Decoding
- Vocabulary
- Comprehension
- Fluency
Predictors of Reading: PreK – K

- Phonological awareness
- Alphabet knowledge
- Concept of word
- Grapheme-phoneme correspondence

Limitations of these predictors PreK – K

- Children’s rapidly changing phonological and literacy skills
- Influence of instruction

Predictors of Reading: 1st – 3rd Grade

- 1st Grade
  - Word identification fluency (WIF)
- 2nd Grade
  - WIF
  - Oral reading fluency (ORF)
- 3rd Grade
  - ORF
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Limitations of these predictors
1st – 3rd Grade
- Measures tend not to result in high levels of classification accuracy
- Students respond to instructional program at different rates
- Overidentification

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Categories of Struggling Readers in Grades 4-12
- Late-emergent struggling reader
- Instructional causalities
- English Language Learners
- Students requiring ongoing intervention

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Reading constructs needed in 4th – 12th Grade
- Comprehension
- Decoding
- Fluency
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Limitations of screening for these constructs in 4th – 12th Grade

• Cessation of formal reading instruction
• Reading to learn instead of learning to read

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Suggested Screening Process for 4th – 12th Grade

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Resources

• National Center on Response to Intervention

• RTI Action Network
  http://www.rtinetwork.org/Essential/Assessment

• SEDL Reading Resources
  http://www.sedl.org/reading/tap/