Tier Two – Intervention & Progress Monitoring

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This training is adapted from Fuchs & Fuchs: Using CBM in an RTI Framework
Purpose & Objectives

• Purpose of Tier 2 within SLD model

• Evaluating interventions in reading, writing, math

• How to determine response

Approaches to Implementing RTI: Five Dimensions

1. Number of tiers (2–5)
2. How at-risk students are identified:
   – Percentile cut on norm-referenced test
   – Cut-point on curriculum-based measurement (CBM) with and without progress monitoring (PM)
3. Nature of Tier 2 preventative treatment:
   – Individualized (i.e., problem solving)
   – Standardized research-based protocol
4. How “response” is defined:
   – Final status on norm-referenced test or using a benchmark
   – Pre–post improvement
   – CBM slope and final status
5. What happens to nonresponders:
   – Nature of the evaluation to categorize learning disability (LD), behavior disability (BD), and mental retardation (MR)
   – Nature of special education
Several Viable Approaches to Implementing RTI

The most widely researched RTI model features:

1. Three tiers
2. Designating risk with CBM benchmark + PM
3. Standardized research-based Tier 2 preventative intervention
4. Defining response in terms of CBM slope/final status
5. Nonresponders undergo evaluation to answer questions and distinguish LD, BD, and MR
   - Receive reformed Tier 3 special education

Basics of RTI

- Secondary Prevention (Tier 2):
  - Research-based tutoring
  - Provided in small groups
  - With weekly PM
  - At end of tutoring trial, PM indicates students were:
    - Responsive to Tier 2 tutoring. These responsive students return to primary prevention but PM continues.
    - Unresponsive to Tier 2 tutoring. These unresponsive students move to tertiary prevention.
Basics of RTI

- **Tertiary Prevention (Tier 3):**
  - **Individualized interventions**
  - **Level of difficulty matches student's instructional level**
  - **Goals are set:**
    - Based on national norms or end-of-year benchmarks,
    - Based on expected improvement in student performance.
  - **Weekly progress monitoring to determine:**
    - Effectiveness of instructional program
    - Appropriate movement back into secondary or primary prevention

Three Tiers of RTI

- **TIER 1: Primary Prevention**
  - General education setting
  - Research-based instruction
  - Screening to identify students suspected to be at risk
  - PM to (dis)confirm risk status

- **TIER 2: Secondary Prevention**
  - Validated or research-based tutoring
  - PM to assess responsiveness

- **TIER 3: Tertiary Prevention**
  - Can be special education
  - PM to set IEP goals
  - PM to formulate individualized programs
  - PM to assess responsiveness
So, RTI Is Embedded Within a Multi-Tier Prevention System: Analogy to Health Care

- High blood pressure (HBP) can lead to heart attacks or strokes (like academic failure can produce serious long-term negative consequences).
- At the annual check-up (primary prevention), HBP screening (like annual fall screening for low reading or math scores).
- If screening suggests HBP, then monitoring over 6-8 weeks occurs to verify HBP (like PM to confirm risk).
- If HBP is verified, second prevention occurs with relatively inexpensive diuretics, which are effective for vast majority, and monitoring continues (like small-group Tier 2 tutoring, using a standard treatment protocol, with PM to index response).
- For patients who fail to respond to secondary prevention (diuretics), then tertiary prevention occurs—experimentation with more expensive medications (e.g., ACE inhibitors, beta blockers), with ongoing monitoring, to determine which drug or combination of drugs is effective (like individualized instructional programs inductively formulate with progress monitoring).

Tier 2: Definition & Features

- Targeted, strategic instruction to support students who require additional support to meet grade level performance benchmarks
- Size of instructional group – 3 to 8
- Mastery requirements – growth and performance level
- Frequency of PM – weekly
- Duration – 8 to 12 weeks
- Frequency – 3 to 5 times/week
- Intensity – 30 – 60 minutes
- Instructor – trained specialist
Standards for High Quality Tier 2

- Interventions are research based
- Differ from materials used in core instruction
- Begin quickly after identification
- Size of group is < 8
- Tier 2 is supplemental to core
- Decisions about movement out of Tier 2 made based on PM data
- Target skill deficits that support progress in the overall academic area of concern

Features of Tier 2 Programs
- Direct Instruction
- Explicit Instruction
- Active Engagement
- Build-in Success
- Opportunity to learn
- Scaffold
- Strategic Instruction
- Organize & activate knowledge
- Teach sameness
Features of Tier 2 Programs

- Direct Instruction
- Explicit Instruction
- Technology
- SRSD
- Practice
- Connections to reading

Features of Tier 2 Programs

- Direct Instruction
- Strategy Instruction
- Practice
- Monitor performance
- Concrete
- CRA
- Error Analysis
- Review of known
- Vocabulary
## National RTI Center Intervention Chart

Use the scroll bar feature on the right to view all of the tools on the chart.

<table>
<thead>
<tr>
<th>Program</th>
<th>Study</th>
<th>Scale-Quality</th>
<th>Unit of Analysis</th>
<th>Measures</th>
<th>Full Sample</th>
<th>Design</th>
<th>Sample Size</th>
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</thead>
<tbody>
<tr>
<td>Academics of Learning</td>
<td></td>
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</tbody>
</table>

**Currently NOT Responding to treatment**

Determining Response

What does it mean to be a responder? To be a non-responder?
Progress Monitoring

- PM is an essential tool for RTI.
- With PM, student academic performance is assessed using brief measures.
- PM takes place frequently (generally weekly) using alternate forms.
- CBM is one form of progress monitoring.

Benchmarks are used for screening.
- Slopes are used to confirm or disconfirm student risk status in Tier 1.
- Slope and final status defines RTI in Tier 2.
- Slope and final status is used to:
  - Set clear and ambitious goals,
  - Inductively formulate effective individualized programs, and
  - determine when students should return to less intensive levels of the prevention system.
Basics of CBM

- Assesses student academic competence at one point in time to screen or evaluate final status
- Assesses progress frequently so that slope of improvement can be quantified to indicate rate of improvement
- Produces accurate and meaningful information about levels of performance and rates of improvement

Basics of CBM

- Assesses student performance at one point in time:
  - Two alternate forms are administered in same sitting.
  - Average score is calculated.
- Alex:
  - \[(42 + 38) / 2 = 40\]
  - 40 is Alex’s average CBM score for screening.
Graphs allows teachers to quantify rate of student improvement:

- Increasing scores indicate responsiveness.
- Flat or decreasing scores indicate unresponsiveness.
Graphing CBM Scores

**Step 1:** Divide the data points into three equal sections by drawing two vertical lines. (If the points divide unevenly, group them approximately.)

**Step 2:** In the first and third sections, find the median data point and median instructional week. Locate the place on the graph where the two values intersect and mark with an “X.”

**Step 3:** Draw a line through the two Xs, extending to the margins of the graph. This represents the trend-line or line of improvement.

Calculating Slope: Draw a Trend-Line
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Step 3: Draw a line through the two Xs, extending to the margins of the graph. This represents the trend-line or line of improvement.
Calculating Slope: Quantify Weekly Rate of Increase

3rd median point – 1st median point
# of data points – 1
(50 – 34) ÷ 7 = 2.3

Calculating Slope: Next, for the Trend-Line, Quantify Weekly Rate of Increase

3rd median point – 1st median point
# of data points – 1
Calculating Slope: Next, for the Trend-Line, Quantify Weekly Rate of Increase

3rd median point – 1st median point

# of data points – 1

(40 – 20) ÷ 8 = 2.5 slope

Sarah’s Graph: Primary Prevention

Sarah’s slope:

(16 – 3) ÷ 7 = 1.9 slope
Jessica’s Graph: Primary Prevention

Jessica’s slope:
\[
\frac{6 - 6}{7} = 0.0\text{ slope}
\]

Jessica’s Graph: Secondary Prevention

Jessica’s slope:
\[
\frac{28 - 6}{11} = 2.0\text{ slope}
\]
### Tier 2—Secondary Prevention: Determining Response in Math

<table>
<thead>
<tr>
<th>Grade</th>
<th>Computation</th>
<th>Concepts and Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; Slope</td>
<td>&lt; End level</td>
</tr>
<tr>
<td>Grade 1</td>
<td>&lt; 0.50</td>
<td>&lt; 20 digits</td>
</tr>
<tr>
<td>Grade 2</td>
<td>&lt; 0.40</td>
<td>&lt; 20 digits</td>
</tr>
<tr>
<td>Grade 3</td>
<td>&lt; 0.40</td>
<td>&lt; 20 digits</td>
</tr>
<tr>
<td>Grade 4</td>
<td>&lt; 0.70</td>
<td>&lt; 20 digits</td>
</tr>
<tr>
<td>Grade 5</td>
<td>&lt; 0.70</td>
<td>&lt; 20 digits</td>
</tr>
<tr>
<td>Grade 6</td>
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Note: These figures may change pending additional RTI research.

### Tier 2—Secondary Prevention: Determining Response in Reading

<table>
<thead>
<tr>
<th>Grade</th>
<th>CBM Probe</th>
<th>&lt; Slope</th>
<th>&lt; End Level</th>
</tr>
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<tbody>
<tr>
<td>Kindergarten</td>
<td>Letter Sound Fluency</td>
<td>&lt; 1</td>
<td>&lt; 30</td>
</tr>
<tr>
<td>Grade 1</td>
<td>Word Identification Fluency</td>
<td>&lt; 1.8</td>
<td>&lt; 30</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Passage Reading Fluency</td>
<td>&lt; 1</td>
<td>&lt; 60</td>
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<tr>
<td>Grade 3</td>
<td>Passage Reading Fluency</td>
<td>&lt; 0.75</td>
<td>&lt; 70</td>
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<tr>
<td>Grade 4</td>
<td>Maze Fluency</td>
<td>&lt; 0.25</td>
<td>&lt; 25</td>
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<tr>
<td>Grade 5</td>
<td>Maze Fluency</td>
<td>&lt; 0.25</td>
<td>&lt; 25</td>
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<td>Maze Fluency</td>
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Tier 2—Secondary Prevention: Inadequate Response

- If student response to secondary prevention is inadequate:
  - **First:**
    - Student participates in more small-group tutoring while weekly PM continues.
  - **Second:**
    - Student moves to Tier 3 (tertiary prevention).
    - Multidisciplinary assessment to determine disability.
### Tier 2—Secondary Prevention:

#### Determining Response With PM

![Graph showing progression of words read correctly over weeks of instruction.]

#### Confirming Risk Status With PM

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Tier 2—Secondary Prevention: Determining Response With PM

David's slope:
\[(54 - 24) \div 8 = 3.75\]

Weeks of Instruction

Tier 2—Secondary Prevention

Case B
Tier 2—Secondary Prevention: Determining Response With PM

![Graph showing points correct over weeks of instruction.]

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</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>&lt; Slope: 0.50, &lt; End level: 20 digits</td>
<td>&lt; Slope: 0.40, &lt; End level: 20 points</td>
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<tr>
<td>Grade 2</td>
<td>&lt; Slope: 0.40, &lt; End level: 20 digits</td>
<td>&lt; Slope: 0.40, &lt; End level: 20 points</td>
</tr>
<tr>
<td>Grade 3</td>
<td>&lt; Slope: 0.40, &lt; End level: 20 digits</td>
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<td>Grade 4</td>
<td>&lt; Slope: 0.70, &lt; End level: 20 digits</td>
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<td>&lt; Slope: 0.70, &lt; End level: 20 digits</td>
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</tr>
<tr>
<td>Grade 6</td>
<td>&lt; Slope: 0.70, &lt; End level: 20 digits</td>
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</tr>
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Tier 2—Secondary Prevention: Determining Response With PM

Martha’s slope:

\[(10 - 6) / 8 = 0.5\]
Tier 2—Secondary Prevention: Review

- Suspected at-risk students with inadequate CBM performance in Tier 1 are tutored in small groups.
  - Tutoring uses research-based interventions taught by school tutors.
- Student progress is monitored weekly:
  - Students with adequate slopes return to primary prevention, with continued PM.
  - Students with inadequate slopes move to tertiary prevention (Tier 3).

### Tier 2—Secondary Prevention: Other Ways to Define Response

<table>
<thead>
<tr>
<th>Grade</th>
<th>AIMSWEB Computation</th>
<th>AIMSEB Concepts &amp; Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ROI*</td>
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<tr>
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<td>&lt; 24 digits</td>
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<td>&lt; 0.80</td>
<td>&lt; 54 digits</td>
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<td>Grade 5</td>
<td>&lt; 0.50</td>
<td>&lt; 47 digits</td>
</tr>
<tr>
<td>Grade 6</td>
<td>&lt; 0.30</td>
<td>&lt; 34 digits</td>
</tr>
</tbody>
</table>

Note: *Based on 90th percentile; **Based on 50th percentile
Another Look: Health Care Analogy

- High blood pressure (HBP) can lead to heart attacks or strokes (like academic failure can produce serious long-term negative consequences).
- At the annual check-up (primary prevention), HBP screening (like annual fall screening for low reading or math scores).
- If screening suggests HBP, then monitoring over 6-8 weeks occurs to verify HBP (like PM to (dis)confirm risk).
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Thank You!