Monitoring Core Features of Tier 2 Systems and Practices in High Schools

Angus Kittelman
Mimi McGrath Kato

3.30.23 5:00 – 6:00 pm
River Terrance 2
Session Overview

- Describe differences between measuring *systems* and *practices* within MTSS
- Identify *core features* of Tier 2 systems and practices
- Describe how measurement of Tier 2 systems and practices are *unique in high schools*
- Share *novel research* in high schools
Acknowledgements

- Co-presenters: K. Brigid Flannery & M. Kathleen Strickland Cohen

- 3-year IES-funded development and innovation project focused on adapting a Tier 2 intervention for high schools (PI: Flannery)

- Research reported here was supported by the Institute of Education Sciences and Office of Special Education Programs, U.S. Department of Education, through Grants R305A180015 and H326S180001 to the University of Oregon. The opinions expressed are those of the authors and do not represent views of the Institute, Office, or the U.S. Department of Education
Questions

- What are the differences between implementing systems and practices within an MTSS framework?
- Which come first and why?
**Practices vs. Systems**

- Practices identify...
  - Actions of implementers
  - Populations
  - Characteristics/skills expected by implementers
  - Contexts for implementation
  - Expected outcomes

Horner & Kittelman (2021)
Practices vs. Systems

- Systems are...
  - Structural components & processes to facilitate implementation of practices
  - Build supportive infrastructures that embed practices into routines in organizations
  - Safeguards that protect against abandonment of practices

Horner & Kittelman (2021)
Systems..
Questions

- Are Tier 1 systems important for implementing Tier 2 practices and systems?
- If so, what systems are needed at Tier 1 to build supportive infrastructures for Tier 2?
Readiness for Advanced Tiers?

- Tier 1 school team trained/active
- Tier 1 implemented with fidelity for 1 to 2 years
- Tier 1 classroom systems established and used by school personnel with fidelity
- Implementing and using a data collection and decision systems
- Data indicate positive effects of Tier 1 implementation on student outcomes

WHEN DO SCHOOLS RECEIVE TIER 2 AND 3 PBIS TRAINING?

October 2022
Why Tier 2?

Tier II is an additional layer of prevention to reduce number of students in need of individualized supports

- More time and instruction for skill development
- More structure and predictability *(during a routine/subject or across the day)*
- Structured performance feedback
- Development of self-management skills *(self-monitoring, self-instruction, self-correction)*

**Universal, Tier I**
School-wide and Classroom-wide systems for all students and all staff in all settings.

**Targeted, Tier II**
For targeted or group-based interventions for students needing additional support beyond the Universal or Tier I system.

**Individualized, Tier III**
For students requiring more intensive supports for academic, social, or mental health services.
Core Features of Tier 2 Organizational Systems

- Efficient Tier 2 team with behavioral expertise
- Use of data-based decision making (fidelity and outcome)
- Student screening and identification
- Training and ongoing support (staff, students, families)
- Coordinated with Tier 1 and Tier 3 systems
  - Teaching/Training
  - Acknowledgement

www.pbis.org/pbis/tier-2
For More Information on Tier 2 Systems Components
**BEP-FIM**

- Measures core components of CICO systems
  - Tier 2 or Tier 2/3 team
  - Student identification systems
  - Data system
  - Data-based decision making

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**Check-in, Check-out Fidelity of Implementation Measure (BEP-FIM) Scoring Guide**

<table>
<thead>
<tr>
<th>Evaluation Question</th>
<th>Data Source</th>
<th>Score (0-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the school employ a CICO coordinator whose job is to manage the CICO (10-15 hours per week allocated) (0 = No CICO Coordinator, 1 = CICO coordinator but less than 10 hours per week allocated, 2 = CICO Coordinator, 10-15 hours per week allocated)</td>
<td>Interviews with Administrator &amp; CICO Coordinator</td>
<td>I</td>
</tr>
<tr>
<td>2. Does the school budget contain an allocated amount of money to maintain the CICO (e.g., money for reinforcement, DPR forms, etc.) (0 = No, 2 = Yes)</td>
<td>CICO Budget Interviews</td>
<td>P / I</td>
</tr>
<tr>
<td>3. Do students who are referred to CICO receive support within a week? (0 = more than 2 weeks between referral and CICO support, 1 = within 2 weeks, 2 = within a week)</td>
<td>Interview CICO Referrals &amp; CICO Start dates</td>
<td>P / I</td>
</tr>
<tr>
<td>4. Does the administrator serve on the CICO team and review CICO data on a regular basis? (0 = no, 1 = yes, but not consistently, 2 = yes)</td>
<td>Interview</td>
<td>I</td>
</tr>
<tr>
<td>5. Do 99% of CICO team members state that the CICO system has been taught/reviewed on an annual basis? (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)</td>
<td>Interview</td>
<td>I</td>
</tr>
<tr>
<td>6. Do 90% of the students on the CICO check-in daily? (Randomly sample 3 days for recording) (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)</td>
<td>CICO recording form</td>
<td>P</td>
</tr>
<tr>
<td>7. Do 90% of students on the CICO check-out daily? (Randomly sample 3 days for recording) (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)</td>
<td>CICO recording form</td>
<td>P</td>
</tr>
<tr>
<td>8. Do 90% of students on the CICO report that they receive reinforcement (e.g., verbal, tangible) for meeting daily goals? (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)</td>
<td>Interview students on CICO</td>
<td>I</td>
</tr>
<tr>
<td>9. Do 90% of students on the CICO receive regular feedback from teachers? (randomly sample 50% of student DPRs across 3 days) (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)</td>
<td>CICO Daily Progress Reports</td>
<td>P</td>
</tr>
<tr>
<td>10. Do 90% of students on the CICO receive feedback from their parents? (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)</td>
<td>CICO Daily Progress Reports</td>
<td>P</td>
</tr>
<tr>
<td>11. Does the CICO coordinator enter DPR data daily? (0 = no, 1 = 1-4 a week, 2 = daily)</td>
<td>Interview</td>
<td>I</td>
</tr>
<tr>
<td>12. Do 90% of CICO team members indicate that the daily CICO data is used for decision-making? (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)</td>
<td>Interview</td>
<td>I</td>
</tr>
</tbody>
</table>

*Horner, Todd, Filter, McKenna, Benedict, & Hawken, 2004*
Core Features of Tier 2 Practices

- Standardized Routines and Procedures
- Continuously Available
- Function Based
- Explicit Instruction
- Progress Monitoring & Feedback
- School-family communication
- Fading strategies
Measures Core Components of CICO Practice Implementation

Instructions:
- Watch the CICO Facilitator provide a morning check-in with 1 randomly selected student.
- Mark Y, N, or N/A for each of the listed indicators.
  - Y if observed
  - N if not observed
  - N/A if not applicable for the situation

<table>
<thead>
<tr>
<th>Adherence &amp; Quality Indicators</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facilitator greeted student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.a) Appropriate tone &amp; non-verbal behavior (e.g., facial expression)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.b) Smooth/automatic</td>
<td></td>
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<tr>
<td>2. Facilitator asked student for Home Report from previous day (could be N/A if student was absent the previous day)</td>
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<td></td>
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<tr>
<td>2.a) Appropriate tone &amp; non-verbal behavior (e.g., facial expression)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.b) Smooth/automatic</td>
<td></td>
<td></td>
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<tr>
<td>3. Facilitator provided a DPR and/or prompted student to get a DPR/folder.</td>
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<tr>
<td>4. Facilitator verbally reminded student of 1 or more expectations to work on or prompted student to identify 1 or more expectations to be met.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4.a) Appropriate tone &amp; non-verbal behavior (e.g., facial expression)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.b) Smooth/automatic</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Facilitator verbally identified/discussed student goal for day (e.g., % or number of points or smile faces to earn)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5.a) Appropriate tone &amp; non-verbal behavior (e.g., facial expression)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.b) Smooth/automatic</td>
<td></td>
<td></td>
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<tr>
<td>5.c) Specific (“Today your goal is set for 80%. Do you think you can earn this?”)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5.d) Responsive</td>
<td></td>
<td></td>
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<tr>
<td>6. Facilitator verbally checked that the student and/or materials were ready for class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.a) Appropriate tone &amp; non-verbal behavior (e.g., facial expression)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.b) Smooth/automatic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.c) Specific (“You’ve got your DPR, and your homework. Have a great day!”)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.d) Responsive (“If you haven’t eaten breakfast yet, go get something before class.”)</td>
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</tr>
</tbody>
</table>

Acknowledgement: Dr. Tim Lewis

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**PBIS Check-In/Check-Out Fidelity Checklist**

<table>
<thead>
<tr>
<th>School: ___________________________</th>
<th>Date: __________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student: __________________________</td>
<td>Fidelity Checker: ________________</td>
</tr>
</tbody>
</table>

1. Student checked-in with a designated mentor before school started. | Yes | No | did not observe |
2. Check-in mentor positively acknowledged student at check-in, gave student a daily progress report, and ensured that the student had materials needed for first class. | Yes | No | did not observe |
3. Student gave daily progress report to each teacher at the beginning of designated class periods. | Yes | No | did not observe |
4. Teachers positively acknowledged student when giving daily progress report. | Yes | No | did not observe |
5. Teachers provided contingent feedback at end of class period. | Yes | No | did not observe |
6. Student checked-out with designated mentor at the end of the day. | Yes | No | did not observe |
7. Student took daily report home to get parent signature. | Yes | No | did not observe |
8. Student’s Check-In/Check-Out points have been recorded daily. | Yes | No | did not observe |
9. Student’s Check-In/Check-Out data is reviewed by the PBIS Facilitator at least every two weeks. | Yes | No | did not observe |
10. Process is in place for student’s Check-In/Check-Out to be: | Yes | No | did not observe |
    (a) faded to self-management if it is effective, or
    (b) linked to function-based support if it is not effective.
High School Implementation of SWPBIS

HS Contextual Influences → Key Foundational Systems → Core Features of Implementation → Key HS Focus Areas

- Size
- Culture
- Developmental Level

Key HS Focus Areas:
- Social Behavior
- Academic Success
- School Engagement and Success
- Freshmen Support
- Personalization / School Belonging

Flannery & Kato, 2012
CICO-Secondary (PI: K. Brigid Flannery)

Preserve Core Features

Kato, Kittelman, Lissman, & Flannery (2022)
**CICO-Secondary (PI: K. Brigid Flannery)**

Adjust for HS Context

<table>
<thead>
<tr>
<th>Developmental Level</th>
<th>School Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student as partner (goal setting, self regulation topic of training, revisited during intervention)</td>
<td>Multiple Check in/Check out locations</td>
</tr>
<tr>
<td>Self-Scoring</td>
<td>Multiple nomination pathways – utilize existing systems</td>
</tr>
<tr>
<td>Weekly caregiver contact</td>
<td>Teacher training and follow up</td>
</tr>
<tr>
<td>Core Feature</td>
<td>Tier 1 and 2 Organizational Systems Fidelity Measures</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>TFI Tier 1</td>
</tr>
<tr>
<td><strong>Tier 2 Organizational Systems</strong></td>
<td></td>
</tr>
<tr>
<td>Nomination Protocol</td>
<td></td>
</tr>
<tr>
<td>Tier 2 Team</td>
<td>X</td>
</tr>
<tr>
<td>Data System</td>
<td>X</td>
</tr>
<tr>
<td>Data Decision-Making</td>
<td>X</td>
</tr>
<tr>
<td>Professional Development</td>
<td>X</td>
</tr>
<tr>
<td>Fading Procedures</td>
<td></td>
</tr>
<tr>
<td>Coordinated with Tiers 1 and 3</td>
<td>X</td>
</tr>
<tr>
<td><strong>Tier 2 Practice Fidelity Measures</strong></td>
<td></td>
</tr>
<tr>
<td>Check-In Facilitator/Coordinator Fidelity Checklist</td>
<td>X</td>
</tr>
<tr>
<td>Check-Out Facilitator/Coordinator Fidelity Checklist</td>
<td>X</td>
</tr>
<tr>
<td>Teacher/Student Fidelity Checklist or Electronic Point Card</td>
<td>X</td>
</tr>
<tr>
<td>Caregiver Progress Reports</td>
<td></td>
</tr>
<tr>
<td><strong>Tier 2 Practices</strong></td>
<td></td>
</tr>
<tr>
<td>Continuously Available</td>
<td>X</td>
</tr>
<tr>
<td>Function Based</td>
<td></td>
</tr>
<tr>
<td>Explicit Instruction</td>
<td>X</td>
</tr>
<tr>
<td>Iterative Feedback</td>
<td>X</td>
</tr>
<tr>
<td>Corrective Consequences</td>
<td>X</td>
</tr>
<tr>
<td>Family-School Communication</td>
<td></td>
</tr>
<tr>
<td>Fading Procedures</td>
<td></td>
</tr>
</tbody>
</table>
CICO-Secondary Evaluation Studies

1. Kittelman et al. (2019)
   - Piloted with 5 students in 1 high school
   - Positive effects for student who participated with high fidelity
     - Increased academic engagement; decreased disruption

2. Kato et al. (2023)
   - Implemented with 23 students (44% w/IEP) in 2 high schools
   - Significant correlation between student/teacher fidelity and behavioral expectations (88% fidelity overall)
   - Majority of teacher comments were positive or positive/corrective

3. Kittelman et al. (under review)
   - Single-case experimental study with 3 student (2 w/IEPs)
Single-Case Study: CICO-Secondary

(Kittelman, Lissman Cohen, Kato, Flannery, Horner, Izzard, St. Joseph, & Mowery., under review)
Single-Case Study

Research Questions:
1. Can CICO-Secondary be implemented with fidelity?
2. Is there a functional relation between implementation of CICO-Secondary and improved student outcomes?
3. Do students and school personnel perceive CICO-Secondary to be socially acceptable?

Setting
- One public high school in the pacific northwest
- Implemented CICO-Secondary during 2019-20, 2021-22 school years

<table>
<thead>
<tr>
<th>Participant</th>
<th>Characteristics</th>
<th>A-Day</th>
<th>B-Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy</td>
<td>9th grade, White, female, no IEP</td>
<td>English</td>
<td>Science</td>
</tr>
<tr>
<td>John</td>
<td>9th grade, White, male, with IEP</td>
<td>Algebra</td>
<td>Science</td>
</tr>
<tr>
<td>Dan</td>
<td>9th grade, White, male, with IEP</td>
<td>Social Studies</td>
<td>Science</td>
</tr>
</tbody>
</table>

- Systems and CICO fidelity
  - Systems fidelity
    - 2019-20 TFI Tier 1 fidelity = 83%
    - 2019-20 TFI Tier 2 fidelity = 77%
    - CICO-Secondary Intervention Development Checklist = 80%
  - CICO fidelity
    - Check-in (x1)
      - Greet teacher (x4)
      - Self-rate (x4)
      - Teacher-rate (x4)
    - Check-out (x1)
Setting and Questions

- 1 high school in Pacific Northwest (1,391 students)

<table>
<thead>
<tr>
<th>Student</th>
<th>Grade</th>
<th>Gender</th>
<th>Race</th>
<th>IEP</th>
<th>A-Day</th>
<th>B-Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy</td>
<td>9</td>
<td>F</td>
<td>White</td>
<td>No</td>
<td>English</td>
<td>Science</td>
</tr>
<tr>
<td>John</td>
<td>9</td>
<td>M</td>
<td>White</td>
<td>Yes</td>
<td>Algebra</td>
<td>Science</td>
</tr>
<tr>
<td>Dan</td>
<td>9</td>
<td>M</td>
<td>White</td>
<td>Yes</td>
<td>Social Studies</td>
<td>Science</td>
</tr>
</tbody>
</table>

- Personnel
  - 5 teachers (2 per student): John, Dan same science teacher but different periods
  - 3 coordinators: 2 White females, 1 Black male

- RQs
  - CICO-Secondary implemented with fidelity?
  - Functional relation between CICO-Secondary and improved student outcomes?
  - Students and staff perceive CICO-Secondary as socially acceptable?
Method

- **Observation**
  - 2 school years due to COVID-19 (2019-20 & 2021-22)
    - John and Dan (Feb 2022 – March 2020)
    - Tracy (April 2022 – June 2022)

- **Measures**

<table>
<thead>
<tr>
<th>Fidelity</th>
<th>Behavior</th>
<th>Acceptability</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 components per class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Student greet</td>
<td>Academic engagement</td>
<td>9-item self-report measure (1 = strongly disagree; 6 = strongly agree)</td>
</tr>
<tr>
<td>2) Student self-rate</td>
<td>1. 7/10-s whole interval</td>
<td></td>
</tr>
<tr>
<td>3) Teacher self-rate</td>
<td>Disruptive behavior</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. 10-s partial interval</td>
<td></td>
</tr>
<tr>
<td>2 components per day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Morning check-in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Afternoon check-in</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Method

- Interobserver agreement (IOA)
  - Collected across 27% of students/phases
    - IOA 94% for academic engagement
    - IOA 96% for disruption

- Procedures
  - Baseline (A), CICO-Secondary training, intervention (B)

- Design and analysis
  - Nonconcurrent multiple baseline design
  - Visual analysis
  - Between-case standardized mean difference (BC-SMD) (Pustejovsky et al., 2014)
Results

- RQ1: Procedural Fidelity
  - Overall mean/range
    - Tracy = 70.9%; rng = 50 - 100%
    - John = 77.5%; rng = 50 - 100%
    - Dan = 86.9%; rng = 50 - 100%

<table>
<thead>
<tr>
<th>Student</th>
<th>Days of Participation</th>
<th>Check-In</th>
<th>Greet Teacher</th>
<th>Self-Rate</th>
<th>Teacher Rate</th>
<th>Check-Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy</td>
<td>13</td>
<td>100%</td>
<td>62%</td>
<td>60%</td>
<td>73%</td>
<td>100%</td>
</tr>
<tr>
<td>John</td>
<td>12</td>
<td>100%</td>
<td>62%</td>
<td>75%</td>
<td>79%</td>
<td>100%</td>
</tr>
<tr>
<td>Dan</td>
<td>6</td>
<td>100%</td>
<td>72%</td>
<td>83%</td>
<td>83%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Results

- **RQ2: Student Outcomes**
  - **Academic engagement**
    - Tracy: Baseline = 55.6%; Intervention = 75%
    - John: Baseline = 53.2%; Intervention = 72.2%
    - Dan: Baseline = 45.1%; Intervention = 80.1%
  - **Disruption**
    - Tracy: Baseline = 4.3%; Intervention = 2.6%
    - John: Baseline = 9.8%; Intervention = 7.2%
    - Dan: 86.9: Baseline = <1%; Intervention = 5.1%
  - **Effect size**
    - BC-SMD: 1.05, $SE = 0.21$; CI [0.63, 1.47]
Recommendations for Implementation of Tier 2 Systems in High Schools

- Ensure core components of Tier 1 system are in place
- Take time to build buy in with implementing staff
- Ensure sufficient FTE available and provide thorough training
  - Protected time (check ins/outs)
  - Flexible time (student/teacher/caregiver follow up as needed)
- Remember to progress monitor ... ask, “is it working?”
- Regularly assess and work to improve/maintain fidelity (TFI, BEP-FIM)
Recommendations for Implementation of Tier 2 Practices in High Schools

- Train teachers in person (email is insufficient)
- Adjust for your context but keep core features in place
- Ensure teams have system to summarize fidelity and outcome data
- Respond quickly to low fidelity (have an available list of strategies)
  - Peer support
  - Re-training
  - Adjust acknowledgements as needed
- Establish decision rules to evaluate whether implementation/adaptions are effective
  - Increase in performance
  - Increase in fidelity
Resources of Installation of Tier 2 Organizational Systems & Practices

References


Session Review

✓ Identified differences between measuring systems and practices within MTSS

✓ Identified core features of Tier 2 systems and practices

✓ Described how measurement of Tier 2 systems and practices are unique in high schools

✓ Shared novel research in high schools (CICO Secondary Single Case study)
The National PBIS Leadership Forum is a technical assistance activity of the Center on PBIS

Mark your calendar now for the 2023 National PBIS Leadership Forum!

This two-day forum is designed to support school, state, regional, and local educational leaders, together with community and family partners, to increase the effectiveness of school environments through PBIS. Sessions and topic-specific strands will provide guidance and tools for strengthening prevention-based systems that support the social, emotional, and behavioral needs of students to ensure engagement in learning.

Registration opens in May!
Thank you!

- Angus Kittelman: angusk@uoregon.edu
- Mimi McGrath Kato: mmkato@uoregon.edu
- K. Brigid Flannery: brigidf@uoregon.edu
- Kathleen Strickland-Cohen: kathleen.strickland@utah.edu