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

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Mimi McGrath Kato

3.30.23 5:00 – 6:00 pm  
River Terrace 2



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## 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



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## 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*



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## Questions

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

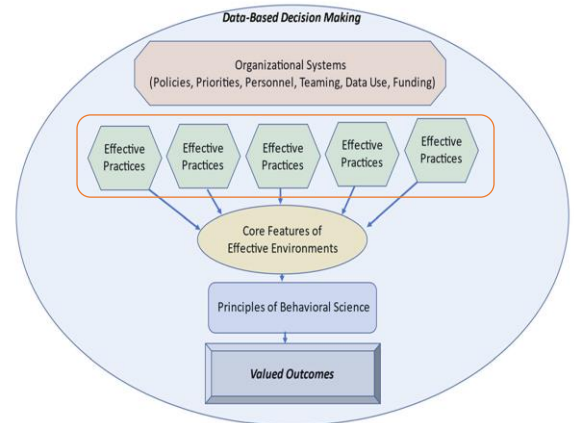
Chicken or  
egg?



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## **Practices vs. Systems**

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

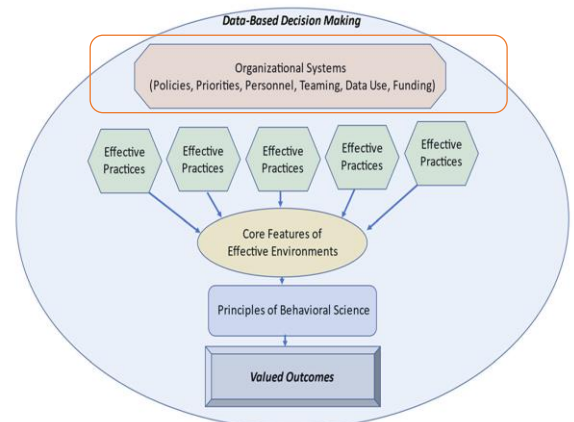


Horner & Kittelman (2021)

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## **Practices vs. Systems**

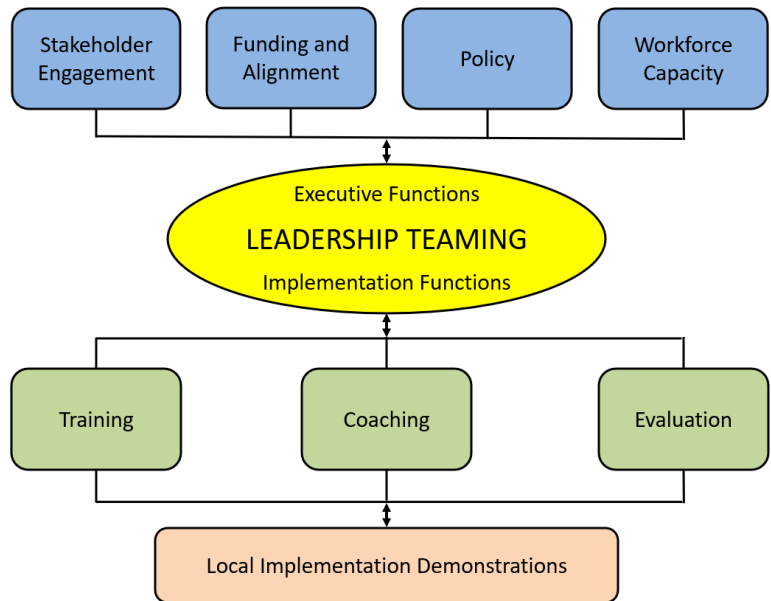
- Systems are...
  - Structural components & processes to facilitate implementation of practices
  - Build supportive infrastructures that embed practices into routines in organizations
  - Safeguards that protect against abandonment of practices



Horner & Kittelman (2021)

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## Systems..



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## 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?*



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## 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

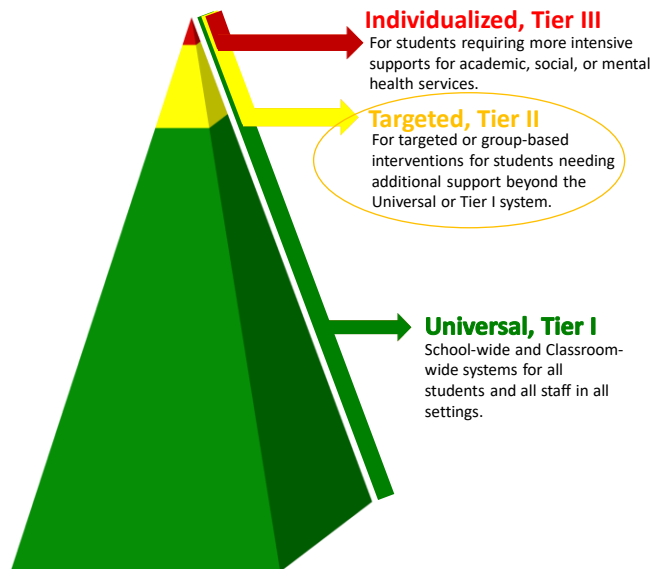


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## Why Tier 2?

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*)



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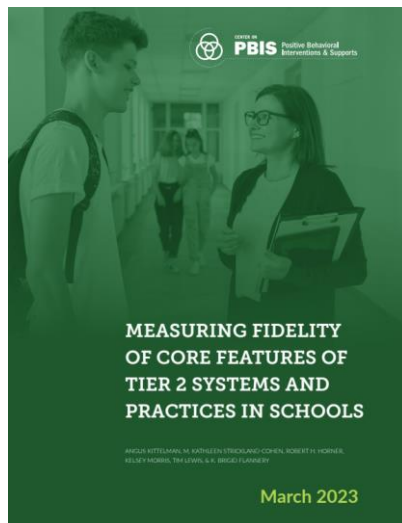


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# Core Features of Tier 2 Organizational Systems

- 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](http://www.pbis.org/pbis/tier-2)



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For More Information on Tier 2 Systems Components



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**Tier 2: Targeted SWPBIS Features**

*NOTE: This report may be completed individually or with other tiers as part of the full Tiered Fidelity Inventory.*

Feature	Possible Data Sources	Scoring Criteria
<b>2.1 Team Composition:</b> Tier 2 team consists. Tier 2 team includes a Tier 2 systems coordinator and individuals able to provide on agreed behavioral expertise, do administrative activities, or knowledge of students, and all knowledge about operation of school across grade levels and programs.	<ul style="list-style-type: none"> <li>• School organizational chart</li> <li>• Tier 2 team meeting minutes</li> </ul>	0 = Tier 2 team does not include coordinator or all 4 core areas of Tier 2 team expertise. 1 = Tier 2 team does not include coordinator and all 4 core areas of Tier 2 team expertise OR attendance of these members is below 90%. 2 = Tier 2 team is comprised of coordinator and individuals with all 4 areas of expertise, ASD attendance of these members is 90% or above 90%.
<b>2.2 Team Operating Procedures:</b> Tier 2 team meets at least monthly and has a regular meeting format/agenda, do minutes, formal agenda, or a current action plan.	<ul style="list-style-type: none"> <li>• Tier 2 team meeting agendas and minutes</li> <li>• Tier 2 meeting notes descriptions</li> <li>• Tier 2 action plan</li> </ul>	0 = Tier 2 team does not use regular meeting format/agenda, minutes, defined roles, or a current action plan. 1 = Tier 2 team has at least 3 but not all 4 features. 2 = Tier 2 team meets at least monthly and uses regular meeting format/agenda, minutes, defined roles, ASD has a current action plan.

Scoring Criteria: 0=Not implemented, 1=Partially implemented, 2=Fully implemented

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# BEP-FIM

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

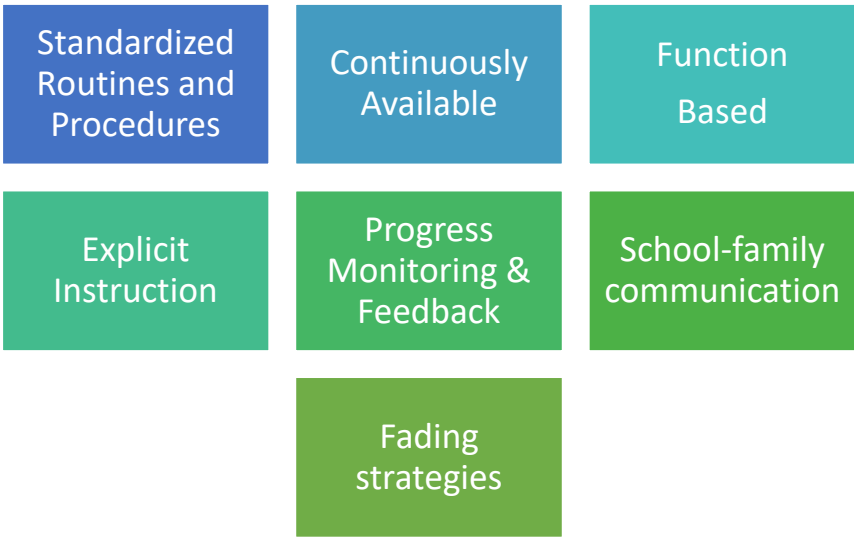
**Check-in, Check-out Fidelity of Implementation Measure (BEP-FIM)**  
Scoring Guide

School: \_\_\_\_\_ Date: \_\_\_\_\_ Pre: \_\_\_\_\_ Post: \_\_\_\_\_  
District: \_\_\_\_\_ State: \_\_\_\_\_ Data collector: \_\_\_\_\_

Evaluation Question	Data Source P = permanent product; I = Interview; O = Observation	Score 0-2
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)	Interviews with Administrator & CICO Coordinator	I
2. Does the school budget contain an allocated amount of money to maintain the CICO (e.g. money for reinforcers, DPR forms, etc. (0 = No, 2 = Yes)	CICO Budget Interviews	P / I
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)	Interview CICO Referrals & CICO Start dates	P / I
4. Does the administrator serve on the CICO team or review CICO data on a regular basis? (0 = no, 1 = yes, but not consistently, 2 = yes)	Interview	I
5. Do 90% 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%)	Interview	I
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%)	CICO recording form	P
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%)	CICO recording form	P
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%)	Interview students on CICO	I
9. Do 90% of students on the CICO receive regular feedback from teachers? (randomly sample 50% of student DPR's across 3 days) (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)	CICO Daily Progress Reports	P
10. Do 90% of students on the CICO receive feedback from their parents? (0 = 0-50%, 1 = 51-89%, 2 = 90-100%)	CICO Daily Progress Reports	P
11. Does the CICO coordinator enter DPR data daily? (0 = no, 1 = 1-4 x a week, 2 = daily)	Interview	I
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%)	Interview	I

*Horner, Todd, Filter, McKenna, Benedict, & Hawken, 2004*

## Core Features of Tier 2 Practices



# 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

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

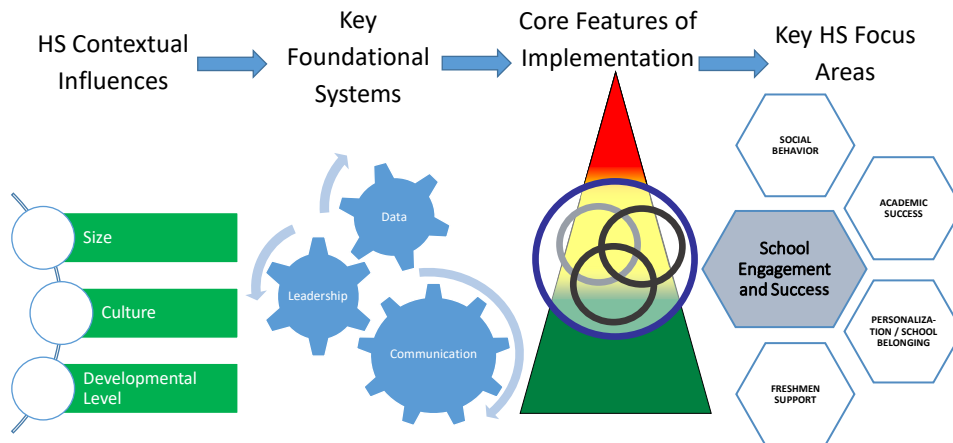
Acknowledgement: Dr. Tim Lewis

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

School: _____	Date: _____
Student: _____	Fidelity Checker: _____
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 given 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 in place for student's Check-In/Check-Out to be: (a) faded to self-management if it is effective, or (b) linked to function-based support if it is not effective.	Yes No did not observe

adapted from Horan, Todd, Fildes, McKinnis, Brondino, & Hinkley, 2006

# High School Implementation of SWPBIS

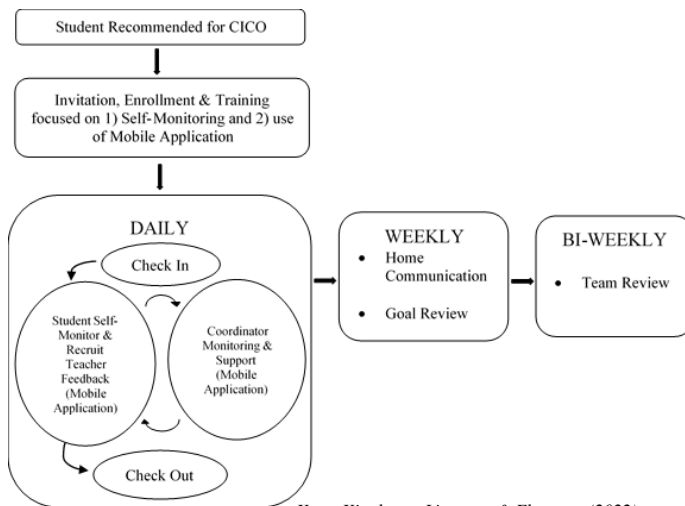


Flannery & Kato, 2012



## CICO-Secondary (PI: K. Brigid Flannery)

### Preserve Core Features



Kato, Kittelman, Lissman, & Flannery (2022)

## CICO-Secondary (PI: K. Brigid Flannery)

### Adjust for HS Context

Developmental Level	School Size
Student as partner (goal setting, self regulation topic of training, revisited during intervention)	Multiple Check in/Check out locations
Self-Scoring	Multiple nomination pathways – utilize existing systems
Weekly caregiver contact	Teacher training and follow up



Core Feature	Tier 1 and 2 Organizational Systems Fidelity Measures			
	TFI Tier 1	TFI Tier 2	CICO-Secondary Intervention Development Checklist	CICO Fidelity of Implementation Measure (CICO-FIM)
<b>Tier 2 Organizational Systems</b>				
Nomination Protocol		X	X	X
Tier 2 Team		X	X	X
Data System	X		X	X
Data Decision-Making	X	X	X	X
Professional Development	X	X	X	X
Fading Procedures			X	
Coordinated with Tiers 1 and 3	X	X		
<b>Tier 2 Practice Fidelity Measures</b>				
	Check-In Facilitator/Coordinator Fidelity Checklist	Check-Out Facilitator/Coordinator Fidelity Checklist	Teacher/Student Fidelity Checklist or Electronic Point Card	Caregiver Progress Reports
<b>Tier 2 Practices</b>				
Continuously Available	X	X	X	
Function Based			X	
Explicit Instruction	X	X	X	
Iterative Feedback	X	X	X	X
Corrective Consequences		X	X	
Family-School Communication				X
Fading Procedures				

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## CICO-Secondary Evaluation Studies



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### 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

*“Great turnaround, thanks for working hard after your break!”*

### 3. Kittelman et al. (under review)

- Single-case experimental study with 3 student (2 w/IEPs)

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# Single-Case Study: CICO-Secondary

*(Kittelman, Lissman Cohen, Kato, Flannery, Horner, Izzard, St. Joseph, & Mowery., under review)*

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## Single-Case Study



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### 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

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

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## Measurement of Systems and Practice Fidelity Part 1.



- 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)

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## Setting and Questions



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

Student	Grade	Gender	Race	IEP	A-Day	B-Day
Tracy	9	F	White	No	English	Science
John	9	M	White	Yes	Algebra	Science
Dan	9	M	White	Yes	Social Studies	Science

- 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?*

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## 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

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

CICO Points SAVE

**Period 2**

Hello, Bryan Adams,  
Please rate Mimi Acorn

Did the student greet you?

Yes No

Ready  
On time

2 1 0 2  
Great Okay Needs Work

Responsible  
Stay on task

2 1 0 2  
Great Okay Needs Work

Successful  
Complete work

2 1 0 2  
Great Okay Needs Work

Did you provide verbal feedback to the student?

Yes No

ADD COMMENT

SAVE

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## 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)



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## Results

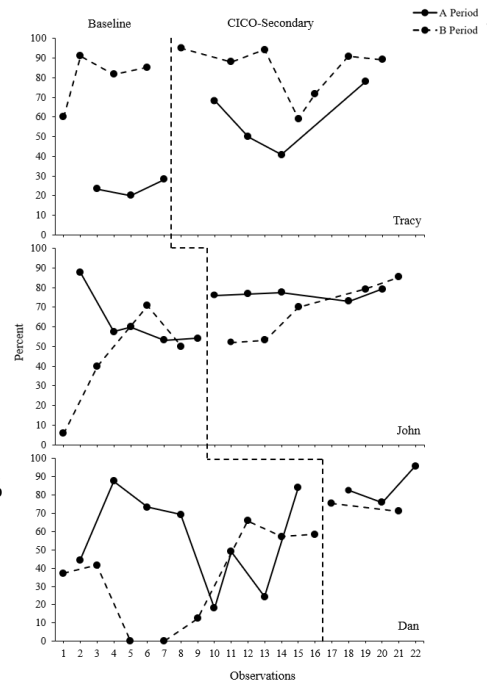
- RQ1: Procedural Fidelity
  - Overall mean/range
    - Tracy = 70.9%; rng = 50 - 100%
    - John = 77.5%; rng = 50 - 100%
    - Dan = 86.9%; rng = 50 - 100%

Student	Days of Participation	Check-In	Greet Teacher	Self-Rate	Teacher Rate	Check-Out
Tracy	13	100%	62%	60%	73%	100%
John	12	100%	62%	75%	79%	100%
Dan	6	100%	72%	83%	83%	100%

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## 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]



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## 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)

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## 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/ adaptations are effective
  - Increase in performance
  - Increase in fidelity

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## Resources of Installation of Tier 2 Organizational Systems & Practices



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1. <https://www.pbis.org/resource/check-in-check-out-a-targeted-intervention>
2. <https://www.pbis.org/resource/social-skills-instruction-at-tier-2>
3. <https://www.pbis.org/resource/classroom-integrated-academics-and-behavior-brief>
4. <https://www.pbis.org/resource/tier-2-systems-readiness-guide>
5. <https://www.pbis.org/video/tier-2-overview-readiness-data-decisions-and-practices-sctg-webinar>
6. <https://www.pbis.org/video/session-i1-pbis-forum-2021-overview-logic-of-district-wide-implementation>
7. <https://www.pbis.org/video/session-f1-pbis-forum-2021-essential-features-of-tier-2-supports-reflections-from-district-wide-implementation>
8. <https://www.pbis.org/resource/tiered-decision-guidelines-for-social-behavioral-and-academic-behavior-guidance-for-establishing-data-based-teams-across-the-tiers>
9. <https://www.pbis.org/video/session-f2-pbis-forum-2021-small-group-social-skills-instruction-self-management>

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## References



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- Horner, R. H., Kittelman, A. (2021). Advancing the large-scale implementation of applied behavior analysis. *Behavior and Social Issues*, 30, 94-105. <https://doi.org/10.1007/s42822-021-00049-z>
- Kittelman, A., McIntosh, K., Mercer, S. H., Evanovich, L, Gulbrandson, K., Nantais, M., Norton, J., Way, G., Izzard, S., & Nese, R. N. T. (2022). When do schools receive Tier 2 and 3 SWPBIS training? Center on PBIS, University of Oregon. [www.pbis.org](http://www.pbis.org)
- Kittelman, A., Strickland-Cohen, M. K., Horner, R. H., Morris, K. M., Lewis, T., & Flannery, K. B. Measuring Fidelity of Core Features of Tier 2 Systems and Practices in Schools. Center on PBIS, University of Oregon. [www.pbis.org](http://www.pbis.org)
- Kato, M. M., Kittelman, A., Flannery, K. B., & Cohen Lissman, D. (2022). Adapting and monitoring daily CICO implementation in high schools. *Preventing School Failure*, 67(1), 48-57. <https://doi.org/10.1080/1045988X.2022.2106933>
- Nese, R. N. T., Kittelman, A., Strickland-Cohen, M. K., & McIntosh, K. (2021). Examining teaming and tier 2 and 3 practices within a PBIS framework. *Journal of Positive Behavior Interventions*, 25(1), 16-27. <https://doi.org/10.1177/10983007211051090>

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## 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)

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**save the date**

**National PBIS  
Leadership Forum**

[www.pbisforum.org](http://www.pbisforum.org)

**October 26-27, 2023**  
Hilton Chicago, Chicago, IL



## 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!**



*The National PBIS Leadership Forum is a technical assistance activity of the Center on PBIS*

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## Thank you!



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