**Symposium Title**: Implementation Leadership across Systems and Interventions for Autistic Children: From Research to Real World Application

**Chair**: Aubyn C. Stahmer

**Discussant**: Patricia Schetter

**Overview**: Education and mental health are two key public service sectors providing care to autistic children. However, while autism evidence-based interventions (EBIs) are available (Wong et al., 2015), they are not routinely delivered in these settings (Brookman-Frazee et al., 2010; Stahmer et al., 2005). This symposium presents findings from the multi-site, multi-sector TEAMS Study, two linked randomized Hybrid Type 3 implementation trials testing two implementation strategies on implementation mechanisms and outcomes when paired with training with two ASD EBIs (AIM HI, CPRT) and adaptation data from a subsequent extension trial. The two implementation strategies were: (1) *TLI (Teams Leadership Institute),*an adaptation of the Leadership and Organizational Change for Implementation (LOCI) leadership training, and (2) *TIPS (TEAMS Individual Provider Strategies),* a provider training protocol enhanced with motivational interviewing. These implementation strategies targeted key implementation mechanisms identified in the AIM HI and CPRT effectiveness trials (implementation leadership and climate, provider motivation; Brookman-Frazee & Stahmer, 2018). It is critical to understand the effectiveness of these implementation strategies within the inner/outer implementation contexts (e.g. service system, COVID disruption, community socioeconomic resources, provider factors) to maximize the public health impact of autism EBIs.

This symposium will illustrate key findings related to the joint impact of implementation strategies and context on implementation mechanisms and outcomes (i.e., provider EBI fidelity). First, we will present the primary outcomes and mechanisms of the TEAMS Trial (Paper 1), highlighting the effectiveness of multilevel implementation strategies on implementation outcomes. Paper 2 will provide further examination of the effect of the implementation strategies on the proposed mechanisms (e.g., implementation climate). Paper 3 will describe adaptations to TLI to enhance the effectiveness of implementation support teams in an extension trial of TLI.  The panel will end with a facilitated discussion includes leaders who participated in the team-based TLI. Our discussion, Patricia Schetter, has experience implementing TLI and is a Placer Counter Office of Education administrator. She will facilitate a discussion of the implementation strategies with administrators from a community children’s mental heal clinic and a school district. We will discuss key takeaways for enhancing the public health impact of both EBIs and implementation strategies by considering key role of leaders and implementation support teams in EBI implementation.

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**Paper 1 of 4**

**Paper Title**: Primary Outcomes of Statewide Trial Testing Multi-Level Implementation Strategies for two Evidence-Based Autism Interventions in Children’s Mental Health Services and Schools

**Authors**: Lauren Brookman-Frazee[[1]](#footnote-1)

**Introduction**: Children with autism receive are served in multiple public service systems. Evidence-based behavioral interventions (EBIs) have been developed, however, they are not routinely delivered in routine community care (Brookman-Frazee et al., 2012; Forman et al., 2013). Identifying effective implementation strategies is critical to ensuring that EBIs reach families and children. Findings from our prior effectiveness trials highlighting the importance of both leader engagement and provider engagement and attitudes in implementation. Recent research highlights the importance of leadership strategies (Aarons et alc., 2015) and provider attitudes (Reding et al., 2014) in successful implementation of practice innovations. The TEAMS project (Brookman-Frazee & Stahmer, 2018) was a cluster randomized hybrid type 3 implementation-effectiveness trial testing the effects of two implementation strategies when paired with AIM HI (An Individualized Mental Health Intervention for Autism) in mental health programs (Study 1) andCPRT (Classroom Pivotal Response Teaching) in classrooms (Study 2). The TEAMS Leadership Institute (TLI) implementation strategy targeted implementation leadership and climate, and TEAMS Individualized Provider Strategy (TIPS) targeted provider motivation and engagement.  This presentation describes the TEAMS trials and reports the effects of the implementation strategies on implementation and child outcomes.

**Method**: The combined sample included 50 programs/districts across four training cohorts (2018-2019 to 2020-2021). Organizations were randomized to receive a leader-level strategy, provider strategy, both strategies, or neither strategy (EBI provider training only). Leader and provider participants were recruited from enrolled programs/districts and child participants were recruited from providers’ caseloads or classrooms. Data from a total of 387 providers (mean age = 36.39 years; 91% female; 30% Latino/a/x) and 385 children (mean age = 9.13 years; 84% male; 60% Latino/a/x) were analyzed. Outcomes were assessed over 6 months. Provider outcome measures included provider EBI certification and observed EBI fidelity. Clinical outcome measures included the Eyberg Child Behavior Inventory™ (ECBI) (Study 1) and Pervasive Developmental Disorder Behavior Inventory (PDD-BI) (Study 2). Outcomes were analyzed using intent-to-treat models.

**Results**: TLI was associated with significantly higher EBI fidelity compared to non-TLI (B=.37, p=.04). Moreover, a statistically significant TL IX Time interaction was found for child outcome T-scores (B=-10.47, p=.03), with a significant reduction in T-scores across time only for those in the TLI condition. There was no significant effect of TLI on EBI Certification or of TIPS on any outcomes.

**Discussion**:  This project represents the first large scale trial examining the effectiveness of implementation strategies on the use of autism EBIs in two public service systems. Findings support the effectiveness of leader focused strategies to promote implementation and clinical outcomes of autism EBIs in multiple public service systems and for multiple EBIs.  Importantly, the current data highlight the importance of leadership support for EBI training and use even when the EBIs were originally developed for use in routine practice settings. This work highlights the roles of leaders in outer service system context and inner organizational context through implementation phases (Crable, Sklar, Kandah et al, 2024). Thus, our work not only provides a rigorous test of the leader-level strategy to implement evidence-based autism interventions in schools and mental health programs, it is also advances implementation science theories, models, and frameworks more broadly. This adds to the empirical research for implementation strategies which is critical to inform the process of selecting and tailoring implementation strategies.

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**Paper 2 of 4**

**Paper Title**: Identifying Mechanisms of Multi-Level Implementation Strategies for two Evidence-Based Autism Interventions in a Statewide Trial in Children’s Mental Health Services and Schools

**Authors**: Aubyn C Stahmer[[2]](#footnote-2)

**Introduction**: Testing the effectiveness of strategies to implement evidence-based interventions (EBIs) in routine, publicly-funded care is critical to ensuring the quality and effectiveness of care. The TEAMS project (Brookman-Frazee & Stahmer, 2018) was a cluster randomized hybrid type 3 implementation-effectiveness trial testing the effects of two implementation strategies when paired with AIM HI (An Individualized Mental Health Intervention for Autism) in mental health programs (Study 1) andCPRT (Classroom Pivotal Response Teaching) in classrooms (Study 2). The TEAMS Leadership Institute (TLI) adapted the Leadership and Organizational Change for Implementation (LOCI; Aarons et al., 2015) to target components linked to mechanisms identified in the AIM HI and CPRT community effectiveness trials (i.e., implementation leadership and climate modules). TEAMS Individualized Provider Strategies (TIPS) for Training embeds motivational interviewing strategies into the recruitment and provider training process to increase provider engagement in EBI training and implementation. Results indicated that a leader level implementation strategy (TEAMS Leadership Institute) was associated with improved provider fidelity and child outcomes. There were no significant effects of a provider-level strategy targeting provider motivation and engagement. Next steps in this research are to assess mechanisms of the effects of implementation strategies on provider and child outcomes. This is key to understanding how and why these implementation strategies might work. Studying the processes responsible for change is crucial for advancing implementation science and facilitating practice change (Lewis et al., 2024).  Presentation objectives include:(1) Examine the impact of the TEAMS strategies, TLI and TIPS, on leader and provider level mechanisms of change (implementation climate, Implementation leadership, implementation support strategies, provider attitudes and engagement). (2) Identify whether any of the target mechanisms mediate the effects of TLI on provider EBI fidelity and child outcomes.

**Method**: The sample included 50 programs/districts across four training cohorts (2018-2019 to 2020-2021). Organizations were randomized to receive a leader-level strategy, provider strategy, both strategies, or neither strategy (EBI provider training only). Leader and provider participants were recruited from enrolled programs/districts and child participants were recruited from providers’ caseloads or classrooms. Data from a total of 387 providers (mean age = 36.39 years; 91% female; 30% Latino/a/x) and 385 children (mean age = 9.13 years; 84% male; 60% Latino/a/x) were analyzed. Outcomes were assessed over 6 months. Provider outcome measures included provider EBI certification and observed EBI fidelity. Clinical outcome measures included the Eyberg Child Behavior Inventory™ (ECBI) (Study 1) and Pervasive Developmental Disorder Behavior Inventory (PDD-BI) (Study 2). Implementation mechanisms assessed included the Implementation Leadership Scale, Implementation Climate Scale, and the Implementation Support Strategies scale, the Evidence-base Practice Attitudes Scale, and Provider Motivation for Training Scale.

**Results**: TLI engaged the hypothesized mechanism of implementation climate, but not implementation leadership. Additionally, TLI was associated with significantly greater use of implementation support strategies used by programs and school districts. TIPS did not engage the hypothesized mechanism of provider motivation for training, actual training engagement, or general EBP attitudes. None of the targeted mechanisms mediates the effects of TLI on provider fidelity or child outcomes.

**Discussion**: Findings support the effectiveness of targeting implementation climate and implementation support strategies in efforts to implement autism EBIs in different service systems. This is consistent with other recent studies of the full LOCI model which improved both implementation leadership and implementation climate (Williams et al., 2024). Understanding the role of implementation climate, which is likely affected by over change in the organization’s implementation support, compared to implementation leadership, or changes in individual leader use of support strategies, may provide clearer methods for individualizing leadership training. Because TIPS did not engage the proposed mechanisms, it may be that the intervention itself was not of high enough dosage to impact provider engagement. There may be unmeasured mechanisms to explain the effects of different implementation strategies.  Reasons TLI did not serve as a mediator for provider or child outcomes will be discussed (Williams, 2016).

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**Paper 3 of 4**

**Paper Title**: Implementation Leadership Across Systems and Interventions for Autistic Children

**Authors**: Amanda R. Johnson[[3]](#footnote-3), Cynde K Josol[[4]](#footnote-4)

**Introduction**: Evidence-Based Autism Interventions (EBIs) are often not used in routine services. The TEAMS Leadership Institute (TLI) is an implementation strategy designed to improve implementation leadership and climate in public service systems (education, mental health) to support EBI use. A state-wide implementation trial of TLI found significantly greater provider EBI fidelity and child outcomes in TLI-trained programs compared to those that did not receive TLI. However, for autism services, TLI required the involvement of multiple team members rather than individual leaders.  We collaboratively developed TLI2 which incorporates a Team Charter Approach derived from team effectiveness research (TER) designed to increase team functioning related to shared cognition (i.e., common understanding of tasks and objectives) and team cohesion (i.e., commitments to each other and the group purpose).  This presentation will (1) describe the collaborative approach to adapt TLI1 to include team-based enhancements to TLI2, and (2) characterize team-based mechanisms hypothesized to improve implementation in a scale-out trial of TLI2.

**Method**: We used an iterative approach to collaborate with community stakeholders and team effectiveness research experts to co-design a generalizable team charter approach to integrate with TLI. Community partners familiar with TLI participated in focus groups to provide suggestions on the integration of team charters and provided feedback on a subsequent version of TLI2. Using a scale-out trial design (Aarons et al., 2017) 37 implementation support team members from seven programs and school districts participated in the TLI2 trial. They completed a card sort task at baseline to identify alignment in perceptions and roles of key autism EBI implementation support tasks.

**Results**: Aim 1. Community partners and team-effectiveness research experts emphasized the importance of team composition and systematically identifying implementation support team members. They also recommended fostering open communication within hierarchical systems and collaboratively defining each team member’s responsibilities for EBI-specific tasks, ensuring time for task completion and clear role specification. Key adaptations included (1) development of a team charter or implementation plan outlining team goals, roles, and processes; (2) inclusion of team members across the organization, not just leaders; (3) identification of team resources and consultants (e.g., IT); (4) a focus on implementation climate with reduced focus on implementation leadership; (5) use of a card sort assessment to identify implementation tasks and roles.

Aim 2. Baseline data from the TLI2 trial indicated poor initial agreement between team members on potential EBI-specific tasks and roles, indicating an absence of a shared mental model of implementation support tasks. All seven programs developed a team-based implementation plan with role specification across members. We anticipate the integration of the team charter and card sort activities enhances shared understanding of tasks and supports task completion. Implementation process data over six months, including changes in role specification agreement, team processes, and adherence to the implementation support plan, will be presented.

**Discussion**: This study highlights a community-partnered approach to developing and adapting organizational-level implementation strategies and the value of integrating team-effectiveness mechanisms. Developing and testing implementation strategies is essential to ensure EBIs reach the intended recipients.

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