

A “Virtual Tampa Conference” Wraparound Track

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A Summary of the Evidence Base for Wraparound: Results from a Meta-Analysis

“Virtual Tampa Conference” Wraparound Track
May 21, 2020

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WERT Wraparound Evaluation & Research Team



UNIVERSITY *of* WASHINGTON

During the past decade, our team has completed two systematic reviews

Clin Child Fam Psychol Rev (2009) 12:336–351
DOI 10.1007/s10567-009-0059-y


Effectiveness of the Wraparound Process for Children with Emotional and Behavioral Disorders: A Meta-Analysis

Jesse C. Suter · Eric J. Bruns

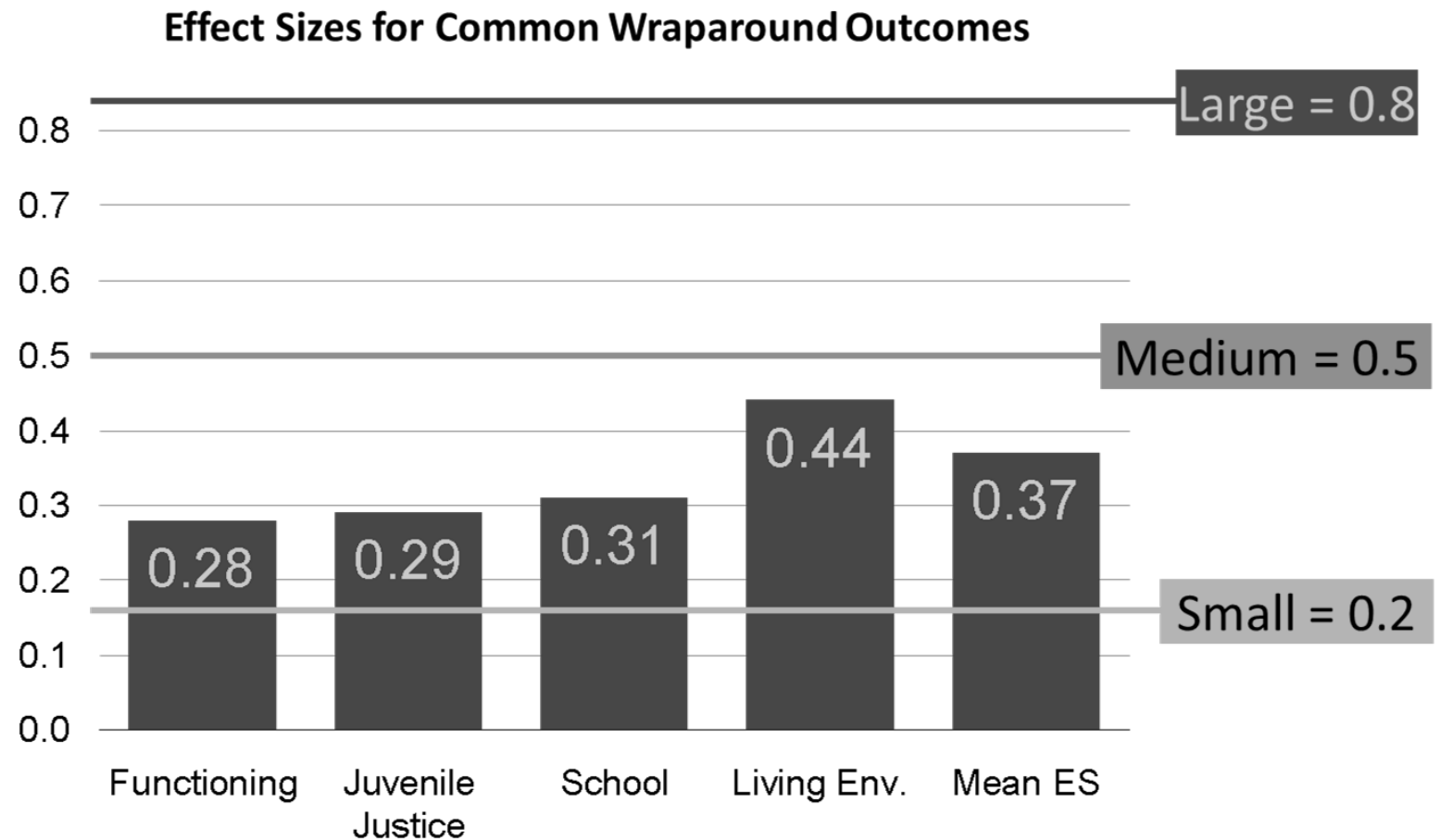
J Child Fam Stud
DOI 10.1007/s10826-016-0639-7

ORIGINAL PAPER

A Comprehensive Review of Wraparound Care Coordination Research, 1986–2014

Jennifer Schurer Coldiron ¹ · Eric Jerome Bruns¹ · Henrietta Quick¹

Our 2009 meta-analysis revealed consistent small to medium effect sizes across multiple outcomes



Suter & Bruns, 2009

Our 2017 systematic review revealed a growing Wraparound literature base

Non-experimental research designs remain the most common

- Only 22 controlled studies (15 quasi-experimental, 7 experimental)

15 of the 22 controlled studies suggested outcomes that favored Wraparound over comparison groups

- Better functioning and mental health outcomes
- Reduced arrests and recidivism
- Increased rate of case closure for child welfare involved youths
- Reduced residential placements
- Reduced costs

Few studies assessed the quality of Wraparound implementation

Methods

Wraparound
Meta-Analysis

Research questions

How many new evaluations of Wraparound have been conducted?

How many have used high-quality methods?

- RCT or quasi-experimental designs

What effects does Wraparound have on select youth outcomes as measured in high-quality evaluations?

To what degree do findings vary by peer-review status and/or implementation fidelity?

Inclusion criteria for the meta-analysis



Intervention must be Wraparound

Wraparound team, written
plan, regular meetings,
input from family



Relevant outcomes

Mental health, juvenile
justice, school, residential,
costs



High quality research design

Experimental
Quasi-experimental



Timeframe

Since 1991



Source types

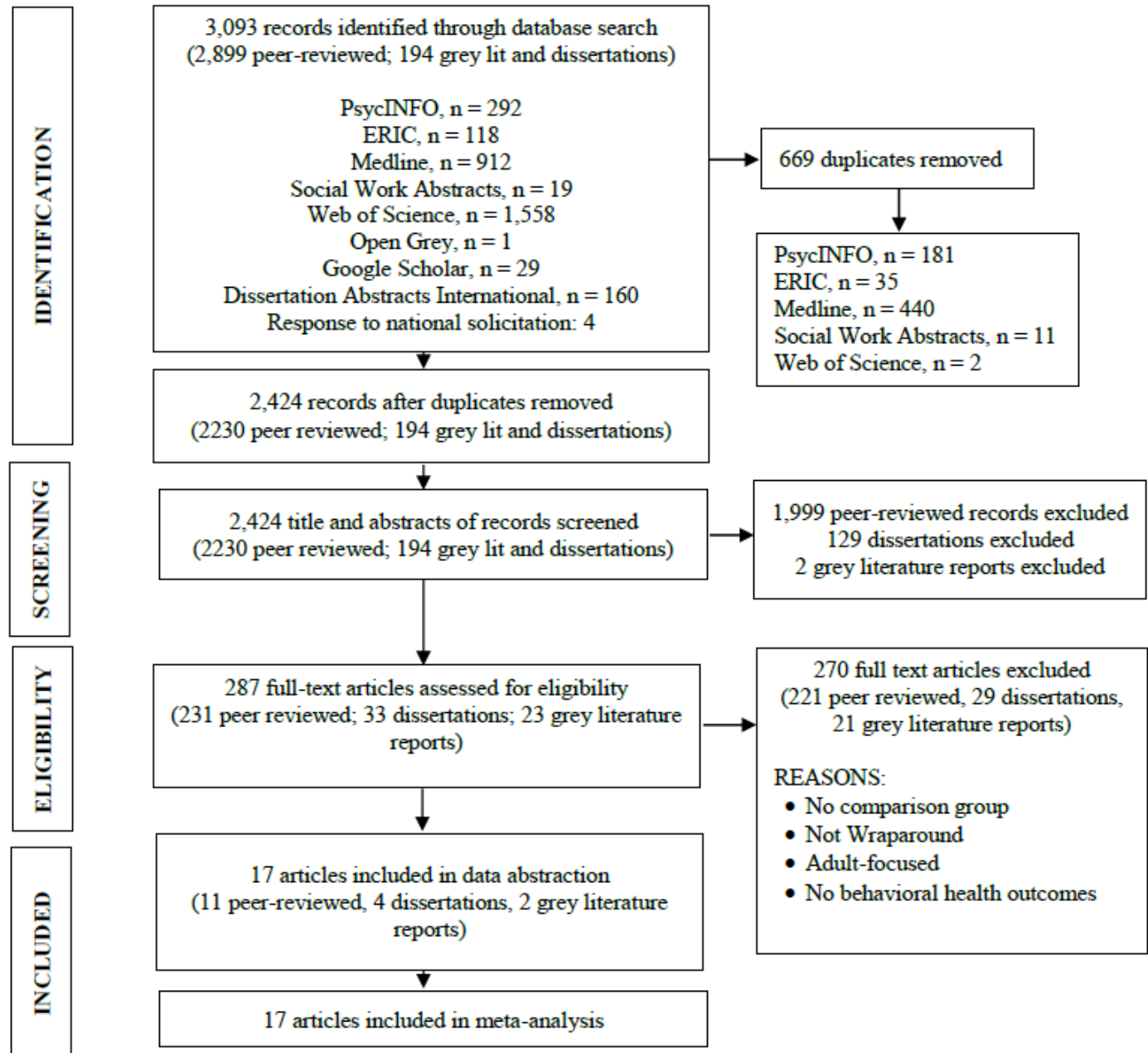
Peer-reviewed journals,
grey literature,
dissertations/theses



Target population

Ages 3 to 21,
social/emotional/behavioral difficulties,
functional impairment

Flow of Information Through Stages of Review



Categories of outcomes

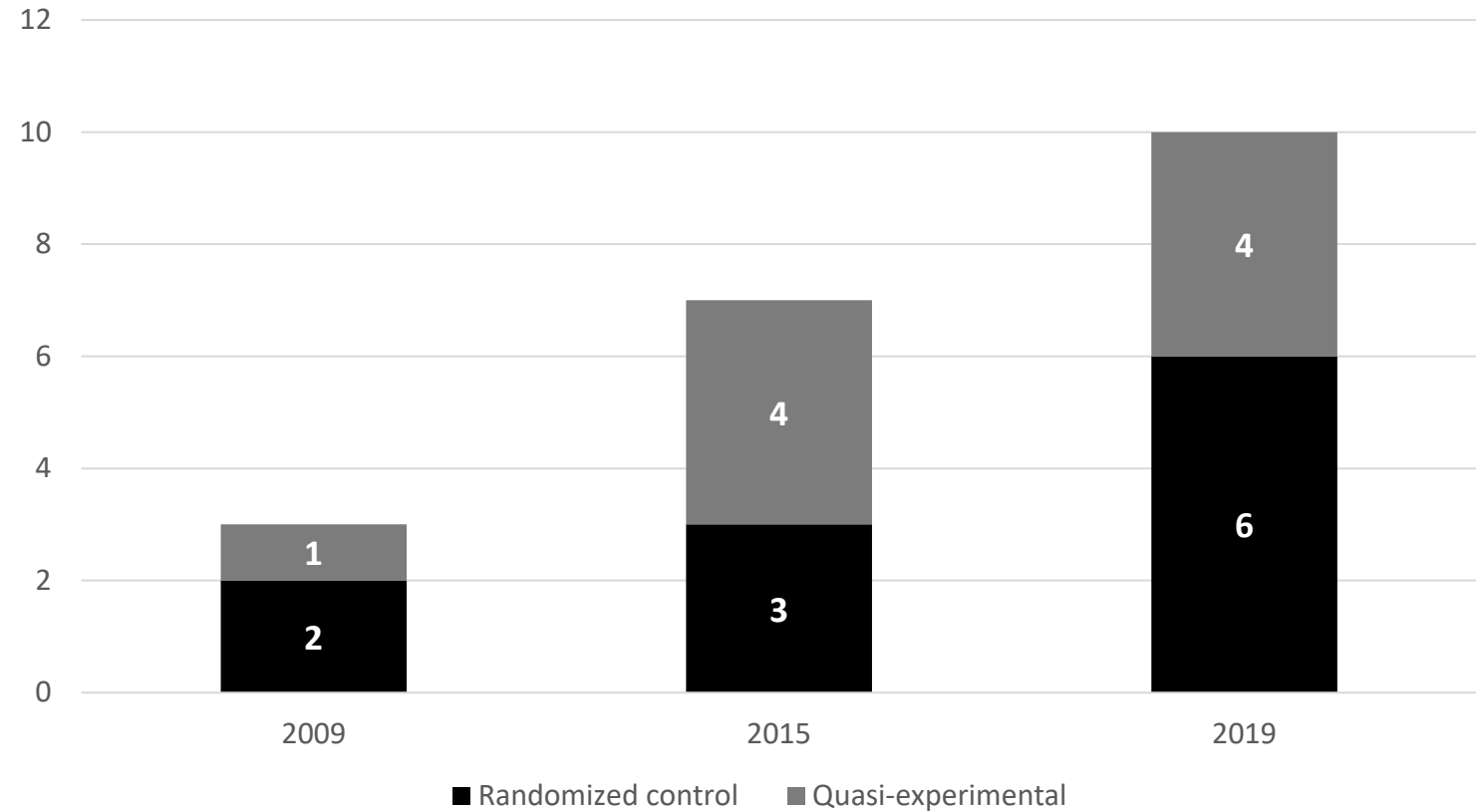
Outcome Category	Measures
Mental health symptoms	CBCL, YSR, BERS-2
Mental health functioning	CAFAS, Parent interviews
Juvenile justice	Juvenile court records, school indicators, parent interviews
School functioning	Client status report, school indicators, parent interviews
Residential outcomes	ROLES, foster care payment records, Medicaid claims, interviews
Costs	Medicaid claims data, administrative records to assess cost savings

Results

Effect sizes

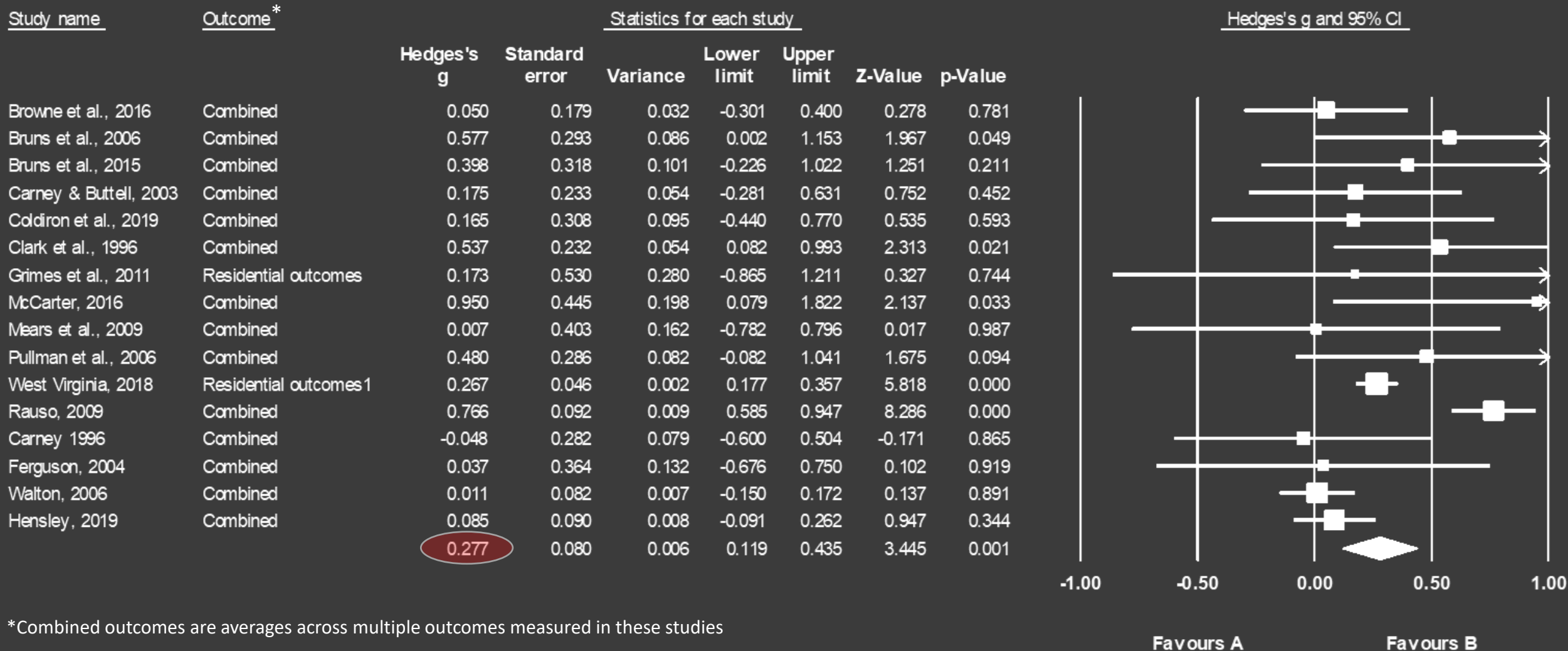
Number of
peer-reviewed
Wraparound
evaluations
has increased

Research designs that meet current inclusion criteria by year*



* Only includes peer-reviewed publications

The effect size across all studies was small but statistically significant



Average effect sizes varied across outcomes

Outcome Category	Number of studies	Hedges' g	Average effect size
Mental health symptoms	6	.358	Small
Mental health functioning	9	.315	Small
Juvenile justice	5	.127	Small
School functioning	4	.397	Medium
Residential outcomes	9	.413	Medium
Overall average outcomes	16	.277	Small

Average effect sizes higher across most outcomes in peer-reviewed studies

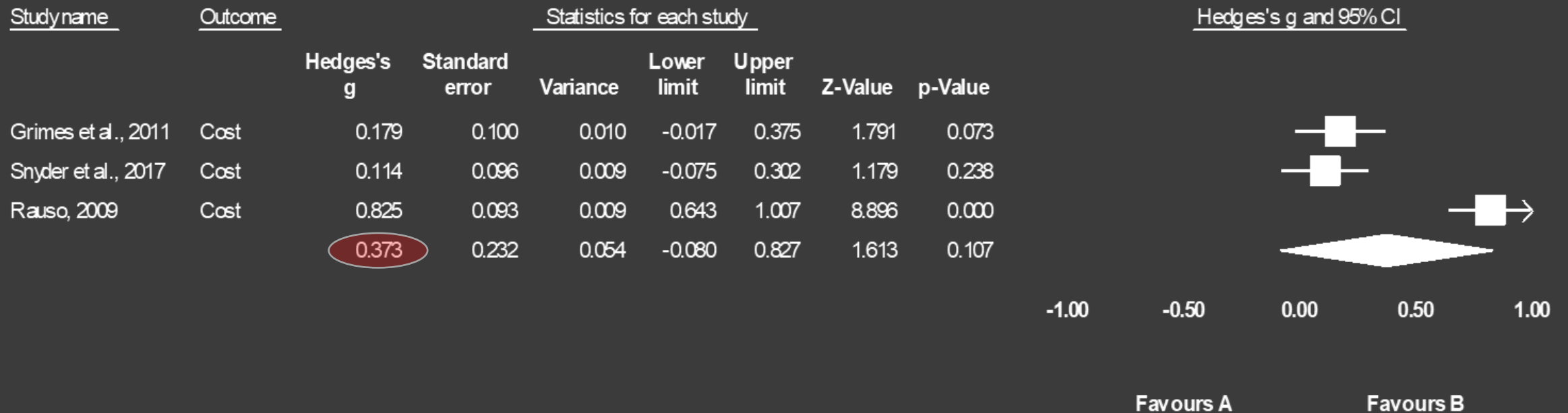
	Peer-reviewed			Grey literature		
Outcome Category	# of studies	Hedges' g	Effect size	# of studies	Hedges' g	Effect size
MH symptoms	5	.439	Medium	1	.056	Small
MH functioning	7	.486	Medium	2	.019	Small
Juvenile justice	4	.179	Small	1	-.048	Small (neg)
School functioning	4	.397	Medium	0	n/a	n/a
Residential outcomes	6	.398	Medium	3	.418	Medium
Overall average	10	.302	Small	6	.227	Small

Average effect sizes were slightly higher for “moderate fidelity” group

	All Studies			Moderate-fidelity sample*		
Outcome Category	# of studies	Hedges' g	Effect size	# of studies	Hedges' g	Effect size
MH symptoms	6	.358	Small	1	.702	Large
MH functioning	9	.315	Small	1	.247	Small
Juvenile justice	5	.127	Small	1	.177	Small
School functioning	4	.397	Medium	2	.532	Medium
Residential outcomes	9	.413	Medium	3	.384	Medium
Average all outcomes	16	.277	Small	3	.294	Small

* Moderate fidelity subsample demonstrated adequate adherence to Wraparound practice elements across most Wraparound Fidelity Index subscales.

Studies on cost savings are limited but suggest Wraparound is associated with lower levels of spending than TAU



Conclusions

Future directions,
Conclusions,
&
Implications

How can we continue to grow the Wraparound research base?



More studies using high quality methods



A focus on implementation processes, including fidelity measures



More consistency in measures



Future studies need to examine how Wraparound works for various subgroups

Overall, our
analyses
suggest
positive
Wraparound
outcomes:



Most studies demonstrate more positive effects for Wraparound when compared to TAU



Small to moderate effect sizes across multiple types of outcomes



Lower costs than treatment as usual



Effect sizes are larger among peer-reviewed studies and “higher-fidelity” implementations

Results of the current meta-analysis are important to the youth MH field



Confirms that Wraparound confers positive outcomes even in “real world” conditions



Confirms the theory of change for Wraparound: An emphasis on “doing whatever it takes” to keep a child in home & community



Aids federal, state, and MCO resource allocation to intensive community-based versus congregate care



Can be used in applications to federal entities (e.g., Children’s Bureau) that require evidence for services included in state plans (eg, FFPSA)

Contact us with questions
or comments!

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Medicaid Cost Savings Analysis for Connecticut's Statewide Care Coordination Program

A “Virtual Tampa Conference Wraparound Track”

Christopher Bory, PsyD ~ Krista Noam, PhD ~ Robert Plant, PhD ~ Gabrielle Hall, MS ~ Tim Marshall, MSW

May 21, 2020

Agenda

01

Background

02

Care Coordination in Connecticut

03

Methods

04

Results

05

Limitations & Conclusion



Background

Connecticut Behavioral Health Partnership (CTBHP)

- A partnership among the Department of Social Services (DSS), the Department of Children and Families (DCF), and the Department of Mental Health and Addiction Services (DMHAS)
- Beacon Health Options (Beacon) is the behavioral health Administrative Services Organization
- Beacon manages behavioral health care for over 975,000 Medicaid/HUSKY members.
- Beacon's role is to:
 - organize and integrate clinical management processes across payer streams
 - support access to community services
 - promote practice improvement
 - assure the delivery of quality services
 - prevent unnecessary institutional care
- Fee-for-service behavioral health carve-out

Care Coordination in Connecticut

History & Context of Statewide Care Coordination

- Care coordination started in CT in 2001
- There are currently 10 providers serving 169 towns and cities
- There is a strong emphasis on data driven processes since 2009 and in 2016 several new measures were added

Families served

- Typically, ~1100 families are served each year across Connecticut
- Program is targeted towards youth with serious emotional and behavioral difficulties and their families, who are not involved in either Protective Services or Juvenile Justice, and who are at risk from removal from home or community
- The average length of stay is 5.9 months

Medicaid Cost Savings Analysis

Study Objectives

1. Conduct a fuzzy match between State datasets (Medicaid and DCF)
2. Establish episodes of care and inclusion/exclusion criteria
3. Examine behavioral health Medicaid service utilization and expenditure



Methods

Conduct fuzzy match

- List of episode start dates between September 2015 – October 2018
- Matched episode list from DCF to Medicaid data
 - Matched on name, DOB, Medicaid ID (when available)
 - Combination of exact matches and SOUNDEX matches
- Limited sample to only those that matched exact in order to minimize incorrect matches
- 83.4% match rate for Rank 1 – 2.5

Rank 1		Rank 2		Rank 2.5	
Field	Match	Field	Match	Field	Match
MEMBNO	Exact			MEMBNO	Exact
LSTNAME	Exact	LSTNAME	Exact	LSTNAME	
FSTNAME	Exact	FSTNAME	Exact	FSTNAME	
DOB	Exact	DOB	Exact	DOB	Exact
Frequency	1484	Frequency	1244	Frequency	258
% (of unique episodes)	41.5%	% (of unique episodes)	34.8%	% (of unique episodes)	7.2%
Cumulative Frequency	1484	Cumulative Frequency	2728	Cumulative Frequency	2986
Cumulative Percent	41.5%	Cumulative Percent	76.2%	Cumulative Percent	83.4%
Rank 3		Rank 4		Rank 5	
Field	Match	Field	Match	Field	Match
LSTNAME	Exact	LSTNAME	Exact	LSTNAME	Soundex
FSTNAME	Soundex	FSTNAME	Exact	FSTNAME	Soundex
DOB	Exact	DOB	Month/Year	DOB	Exact
Frequency	75	Frequency	41	Frequency	104
% (of unique episodes)	2.1%	% (of unique episodes)	1.1%	% (of unique episodes)	2.9%
Cumulative Frequency	3061	Cumulative Frequency	3102	Cumulative Frequency	3206
Cumulative Percent	85.5%	Cumulative Percent	86.7%	Cumulative Percent	89.6%
BLANK (rank 6)		Original Cohort			
Field	Match				
		Duplicates		227	
Frequency	373	Total Unique Episodes		3579	
% (of unique episodes)	10.4%				
Cumulative Frequency	3579				
Cumulative Percent	100.0%				

Cumulative percentages are based on unique episodes. Members could have had more than one episode.

Methods (cont.)

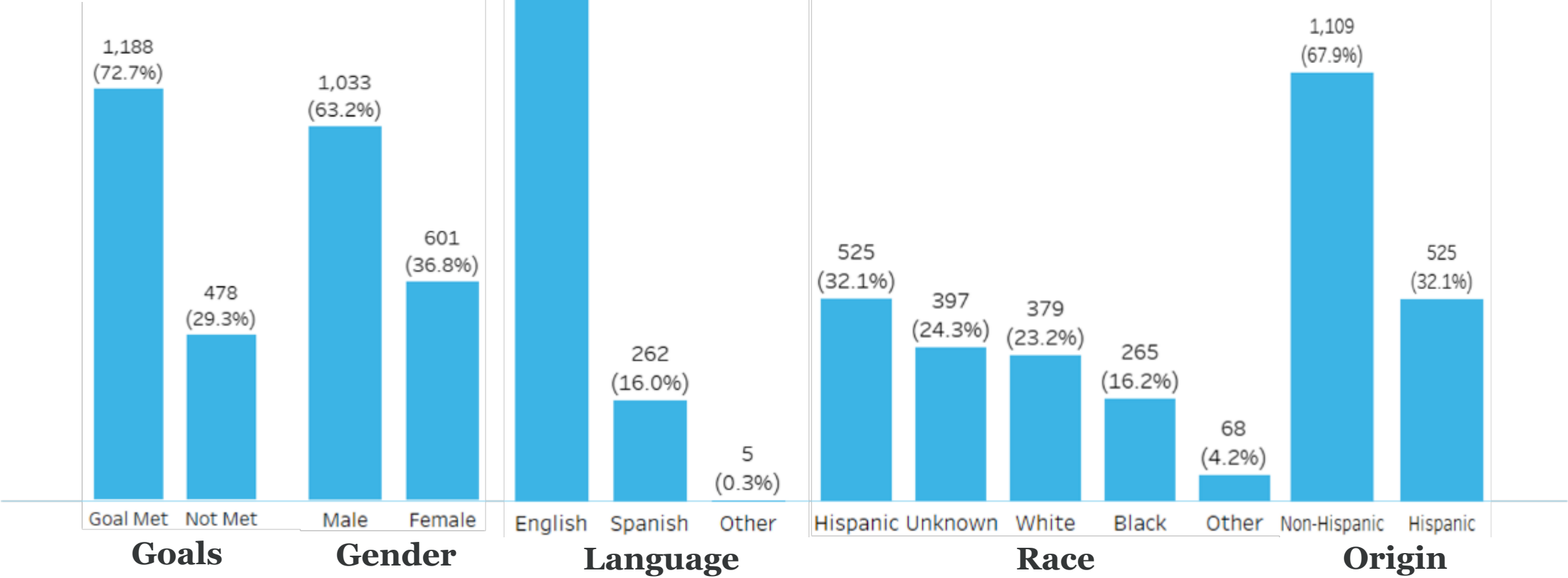
Establish Episodes

- 180-days prior to episode start date as PRE-period
- 180-days after the episode end date as POST-period
- At least one paid claim for HLOC
- Final sample size: **1,634**

Examine Medicaid behavioral health utilization PRE vs. POST

- Results by...
 - *higher vs. lower levels of care (i.e., inpatient services vs. outpatient/community-based)*
 - *specific level of care (established through claims coding process)*
 - *count of unique youth & count of unique episodes*
 - key demographics (not reviewed here)
 - diagnostic categories (not reviewed here)
 - met treatment goal vs. not met treatment goal (not reviewed here)

Demographics



Results: Youth and Families Served

65% of members utilizing **higher** level of care before CC did not utilize it after CC. There **were significantly fewer members in the post period** ($X^2 (1, N = 1,636) = 13.9$ $p < .0001$)








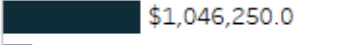
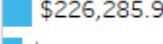
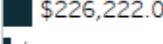
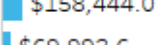
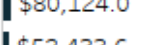
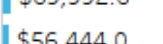
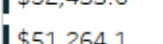

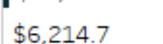



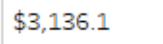
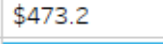
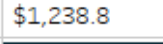



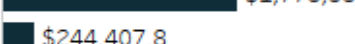
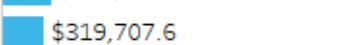



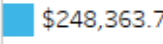

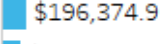
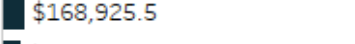
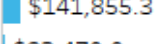
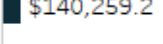
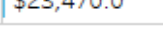




17% of members utilizing **lower** level of care before CC did not utilize it after CC. There **were significantly fewer members in the post period** ($X^2 (1, N = 1,636) = 169.4$ $p < .0001$)

		Pre-period (n=1,528)	Post-period (n=1,395)	Difference	Percent Difference
Higher ***		379	242	-137	(-36.15%)
Lower ***		1,511	1,383	-128	(-8.47%)
Higher	ED Non-BH Services	328	209	-119	(-36.3%)
	Inpatient Psychiatric Acute	157	84	-73	(-46.5%)
	Inpatient Medical Non-BH Services	124	61	-63	(-50.8%)
	ED BH Services	34	32	-2	(-5.9%)
	Observation	29	25	-4	(-13.8%)
	PRTF Community	29	20	-9	(-31.0%)
	Inpatient Medical BH Services	26	16	-10	(-38.5%)
	PNMI	11	8	-3	(-27.3%)
	Residential Rehab	1	2	1	(100.0%)
	Assisted Living Facility	1	1	0	(0.0%)
Lower	Outpatient BH Services	1,410	1,242	-168	(-11.9%)
	School Based BH Services	322	385	63	(19.6%)
	IICAPS	327	235	-92	(-28.1%)
	PHP EDT	132	90	-42	(-31.8%)
	Other Home Based Services	107	102	-5	(-4.7%)
	IOP	114	56	-58	(-50.9%)
	Autism Services	64	88	24	(37.5%)
	Home Health	28	22	-6	(-21.4%)
	Birth to Three Services	2		-2	(-100.0%)

Results: Total Expenditures

There was a **significant difference** in the spending on **higher levels of care** before (M=\$9,223 SD=\$19,350) and after (M=\$5,635, SD=\$15,422 care coordination; t(475)=-3.71, p<.001

There was a **significant difference** in the spending on **lower levels of care** before (M=\$3,481, SD=\$4,523) and after (M=\$2,808 SD=\$4,556) care coordination; t(1,630)=-4.86, p<.0001

		Pre-period (n=1,528)	Post-period (n=1,395)	Difference (Paid Claims)	Percent Difference
Higher	***	 \$4,781,001.8	 \$2,963,078.3	(\$1,817,923.4)	(-38.0%)
Lower	****	 \$6,119,589.5	 \$5,004,364.7	(\$1,115,224.9)	(-18.2%)
Higher					
	Inpatient Psychiatric Acute	 \$2,651,251.6	 \$1,483,895.0	(\$1,167,356.6)	(-44.0%)
	PRTF Community	 \$1,594,020.0	 \$1,046,250.0	(\$547,770.0)	(-34.4%)
	ED Non-BH Services	 \$226,285.9	 \$226,222.0	(\$63.9)	(0.0%)
	PNMI	 \$158,444.0	 \$80,124.0	(\$78,320.0)	(-49.4%)
	Inpatient Medical Non-BH Services	 \$69,992.6	 \$52,433.6	(\$17,559.0)	(-25.1%)
	Inpatient Medical BH Services	 \$56,444.0	 \$51,264.1	(\$5,179.9)	(-9.2%)
	Observation	 \$10,490.3	 \$6,214.7	(\$4,275.6)	(-40.8%)
	Residential Rehab	 \$7,800.0	 \$12,300.0	\$4,500.0	(57.7%)
	ED BH Services	 \$5,800.2	 \$3,136.1	(\$2,664.2)	(-45.9%)
	Assisted Living Facility	 \$473.2	 \$1,238.8	\$765.7	(161.8%)
Lower					
	IICAPS	 \$2,664,844.9	 \$1,473,443.1	(\$1,191,401.8)	(-44.7%)
	Outpatient BH Services	 \$1,871,337.3	 \$1,775,553.2	(\$95,784.1)	(-5.1%)
	PHP EDT	 \$373,921.9	 \$244,407.8	(\$129,514.0)	(-34.6%)
	IOP	 \$319,707.6	 \$148,028.8	(\$171,678.8)	(-53.7%)
	Autism Services	 \$279,714.0	 \$780,257.4	\$500,543.3	(178.9%)
	School Based BH Services	 \$248,363.7	 \$273,489.6	\$25,125.9	(10.1%)
	Other Home Based Services	 \$196,374.9	 \$168,925.5	(\$27,449.4)	(-14.0%)
	Home Health	 \$141,855.3	 \$140,259.2	(\$1,596.1)	(-1.1%)
	Birth to Three Services	 \$23,470.0		(\$23,470.0)	(-100.0%)

Conclusion & Limitations

Conclusion

- Successful demonstration of matching between Medicaid data and DCF program data
- Decrease in total spending on lower and higher LOC
- Decrease in expenditures of most LOC services
- Decrease in total number of youth utilizing lower and higher LOC

Limitations

- State operated inpatient hospitalization and psychiatric residential treatment facility (PRTF) claims data excluded from the current analysis
 - Coding anomalies in 2016 that would severely skew the data
 - Future iterations could remove episodes that overlap or had State expend during time period
- Time period limited to 180-days in the pre and post
 - Is that a sufficient measurement period?



Thank You

Contact Us



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From Implementation to Outcomes: Exploring How Implementation Factors Impact Fidelity and Youth-Level Outcomes in Wraparound

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UNIVERSITY OF MARYLAND SCHOOL OF SOCIAL WORK

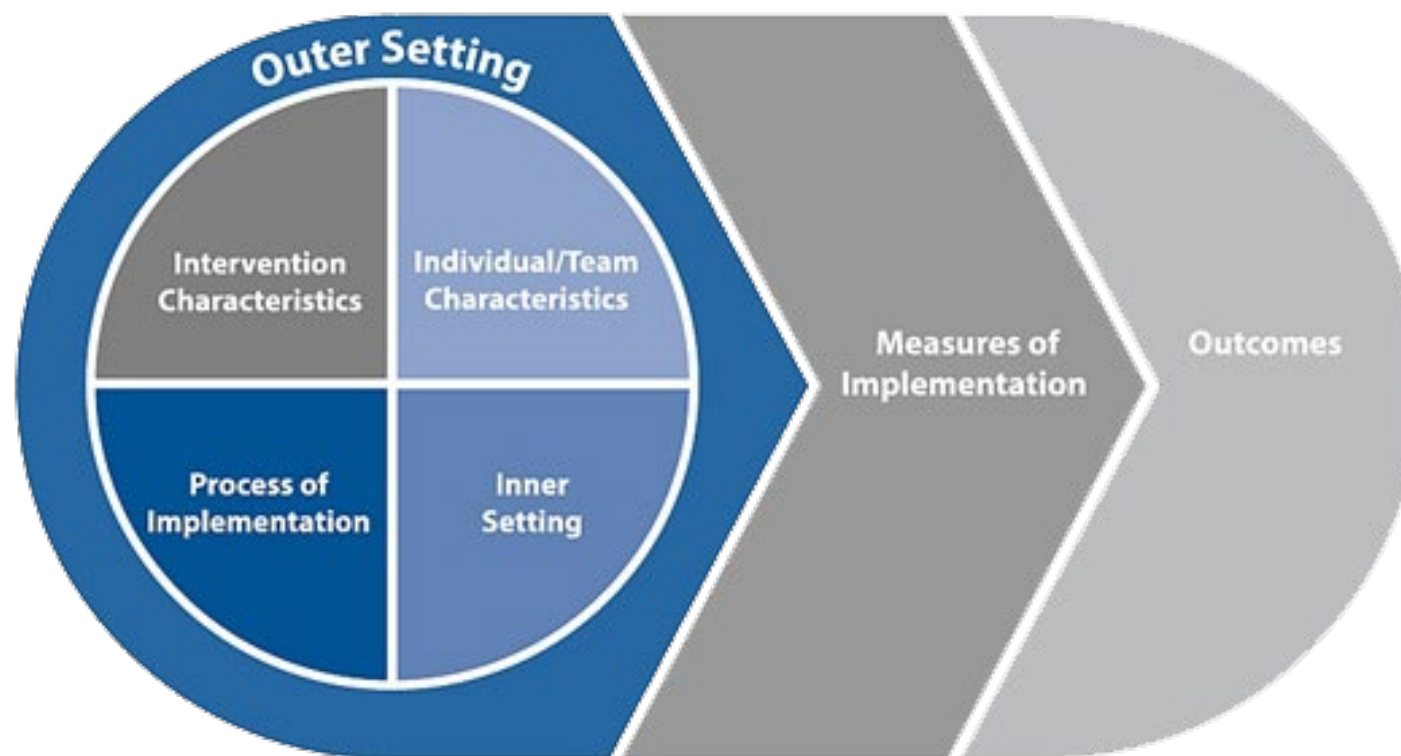


Overview

- ❑ Implementation Framework
- ❑ Implementation and Fidelity Measures: WISP and DART
- ❑ Preliminary Findings
 - ❑ Methods
 - ❑ Results
- ❑ Conclusions & Next Steps

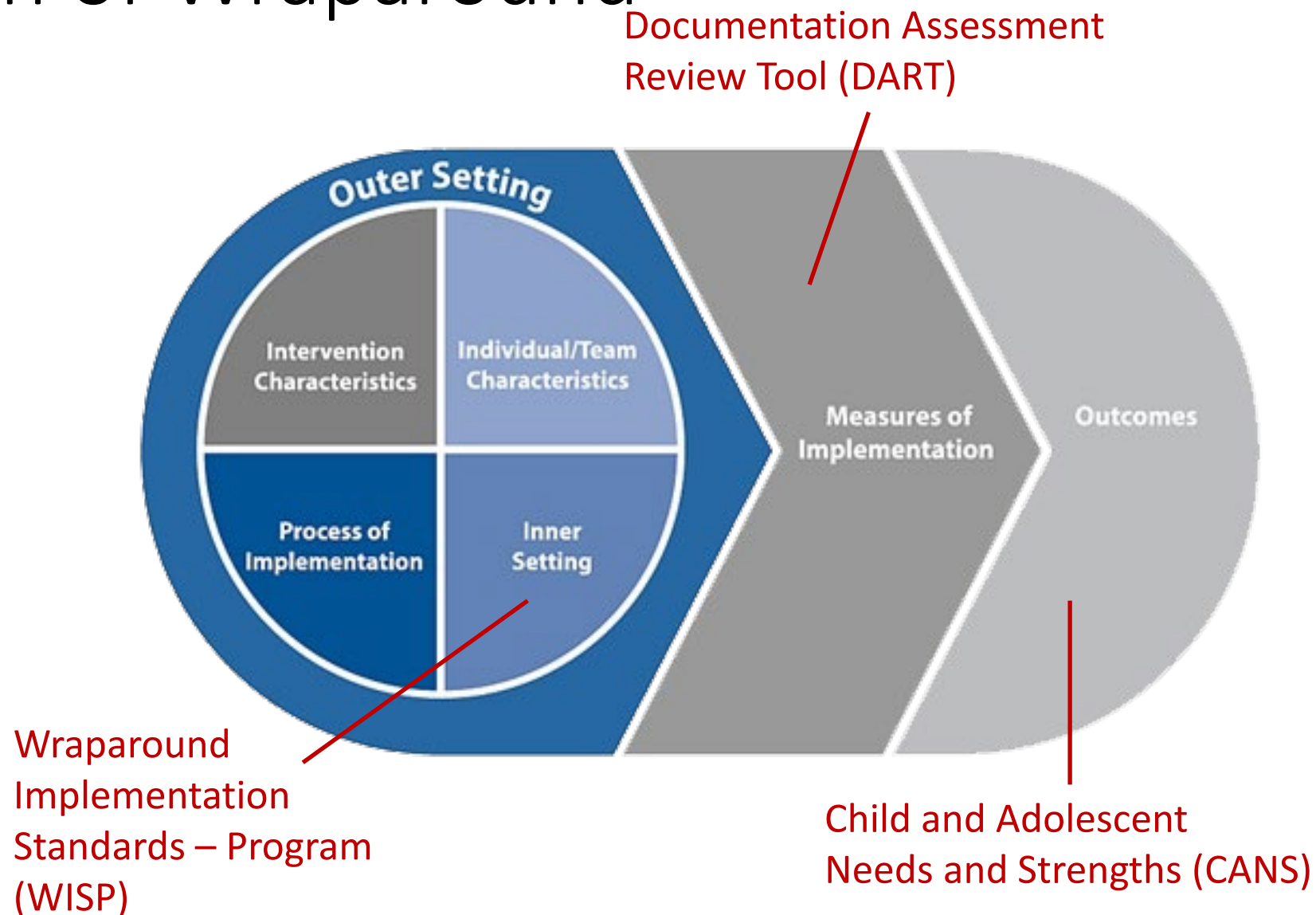
Implementation Framework (CFIR)

Barriers and facilitators at multiple levels can impact the delivery and outcomes of evidence-based interventions
(Damschroder & Lowery, 2013)



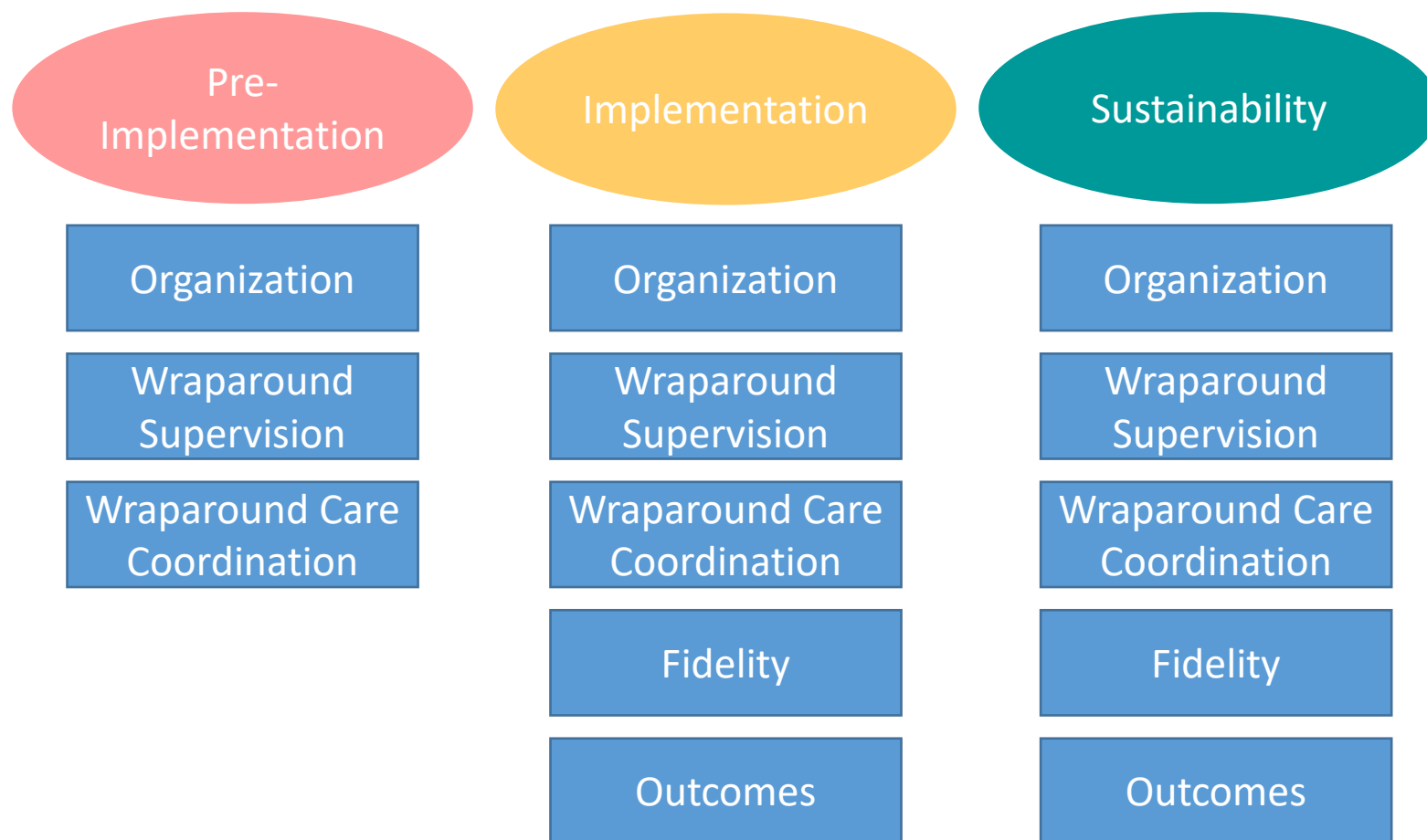
Implementation of Wraparound

- Staff and supervision support and organizational culture and leadership can impact service delivery (Ditty et al., 2014)
- Delivering high fidelity Wraparound is related to better outcomes (Effland et al. 2011)
- Developing practical methods for assessing implementation (Fernandez et al., 2018)



Wraparound Implementation Standards – Program (WISP)

- Designed to support organizational accountability mechanisms and continuous quality improvement
- Tracks indicators across 3 stages of implementation
- Collected and utilized by national coaches to provide guidance support at the organizational level



Category	Pre-Implementation	Implementation (0-9 months)	Sustainability (10-18 months)
Organization	<p>Leadership: Organization has identified an implementation team that includes executive leadership, mid management, supervisors and Care Coordinators (2B & 3E)</p> <p>Leadership brings community child serving agencies together in the beginning and at least twice a year to break down barriers to access services and foster on-going community development. (5B)</p> <p>Leadership proactively works to resolve problems that may arise as Wraparound implementation begins (2A)</p> <p>Feedback loops are established around system level change needs (3E)</p>	<p>Leadership: Executive leadership, supervisors and Care Coordinators are routinely engaged in discussion around implementation (2B & 3E)</p> <p>The organization has taken specific steps to translate the Wraparound philosophy into policies, practice elements and achievements and agency staff are informed of Wraparound practice expectations (5E)</p> <p>Leadership recognizes a Wraparound Plan of Care (POC) structures and coordinates the work of all services and providers on behalf of a youth and family and has made steps to ensure the Wraparound POC serves as the primary plan of care (5D)</p>	<p>Leadership: Clear and transparent procedures for decision making exist across the organization and leadership routinely involve supervisors and Care Coordinators in building consensus in decision making (2B & 3E)</p> <p>Supervisors and the wider organizational leadership provide well-defined performance goals, while ensuring staff have the tools and flexible policies to meet these expectations (2A)</p> <p>Accountability Mechanisms: An accountable Continuous Quality Improvement (CQI) infrastructure exists between implementation team, quality assurance, and executive Leadership (e.g. mechanisms to monitor fidelity, service quality &</p>
Wraparound Care Coordination	<p>Onboarding: Identified Care Coordinators are oriented to the expectations of their jobs by a) participating in coaching support and b) participated in training prior to partnering with families (1D)</p> <p>Care coordinators have experience and attributes that align with successful support of youth with complex behavioral needs and their families (1B)</p>	<p>Training: 100% have completed Introduction within 3 months of starting that position (1D)</p> <p>100% have completed Engagement within 2 months of completing Intro (1D)</p> <p>Engagement: Child and family team meetings held regularly (at least every 30 to 45 days) to review and modify the plan of care (F1)</p>	<p>Training: 100% have participated in Intermediate one year from completion of Intro (1D)</p> <p>Competency: 100% with two (2) or more years of Wraparound experience demonstrate 80% skill attainment as measured by the COMET (F2 – F8; 1F & 1G)</p> <p>Stable Workforce: Care Coordinator turnover is reasonably low (e.g. less than 25% per year) (1A)</p>

Wraparound Document Assessment and Review Tool (DART)

- Part of Wraparound Fidelity Assessment System (WFAS)
- 6 subscales composed of 48 items
- Coding presence or absence of indicators of Wraparound practice adherence through a document review

- **Interview:** Wraparound Fidelity Index, v. 4
- **Survey:** short form, WFI-EZ

WFI-EZ



- **Observation:** Team Observation Measure, Version 2.0

TOM 2.0



- **Chart Review:** Document Assessment and Review Tool, v.2

DART



- **Program & System Assessments:** Stakeholder Survey / Standards Assessment

CSWI/
WIPS



DART Areas Assessed

1. *Timely Engagement* (7 items)
2. *Wraparound Key Elements* (25 items)
 - a. Meeting Attendance
 - b. Driven by Strengths and Families
 - c. Natural and Community Supports
 - d. Needs-Based
 - e. Outcomes-Based
3. *Safety Planning* (3 items)
4. *Crisis Response* (3 items)
5. *Transition Planning* (3 items)
6. *Outcomes* (7 items)



Wraparound Fidelity Assessment System

Wraparound Document Assessment and Review Tool

October 2019 Version



Scoring Code (see manual for full scoring rules):

2 or Y—Fully Met

1—Partially Met

0 or N—Not Met

N/A—Not Applicable for family being reviewed

Miss—Not able to determine due to missing documentation

Section E: Wraparound Model Key Elements

Item #	Item	Response	Comments
E1 MA DSF	At least one caregiver or close family member attended every Child and Family Team Meeting.	2 1 0 N/A Miss	N/A if the youth is emancipated or the age of majority or older <u>and</u> has chosen not to have a caregiver involved in planning. Miss if no record of meeting attendance.
E2 MA DSF	The youth attended every Child and Family Team Meeting.	2 1 0 N/A Miss	N/A if the youth is 8 years or younger and/or is not developmentally able to participate. Miss if no record of meeting attendance.
E3 MA	All key representatives from school, child welfare, and juvenile justice agencies who seem integral to the plan of care attended nearly every Child and Family Team Meeting.	2 1 0 N/A Miss	N/A if no system partners should be involved. Miss if no record of meeting attendance. Please note: school personnel should not be "dinged" for lack of attendance during the summer months.
E4 MA	All other service providers who seem integral to the plan of care attended nearly every Child and Family Team Meeting.	2 1 0 N/A Miss	N/A if no other service providers are involved with the family. Miss if no record of meeting attendance.
E5 MA	All peer partners (e.g., family advocates, family support partners, youth support partners, etc.) who are working with the youth and family attended nearly every Child and Family Team Meeting.	2 1 0 N/A Miss	N/A if the family is not working with any peer partners. Miss if no record of meeting attendance.
E6 MA NCS	At least one natural support (e.g., extended family, friends, and community supports) for the family attended every Child and Family Team Meeting.	2 1 0 Miss	Miss if no record of meeting attendance.



What is the variation in the WISP across a statewide system of care using Wraparound?



What is the relationship between program-level factors and Wraparound fidelity?

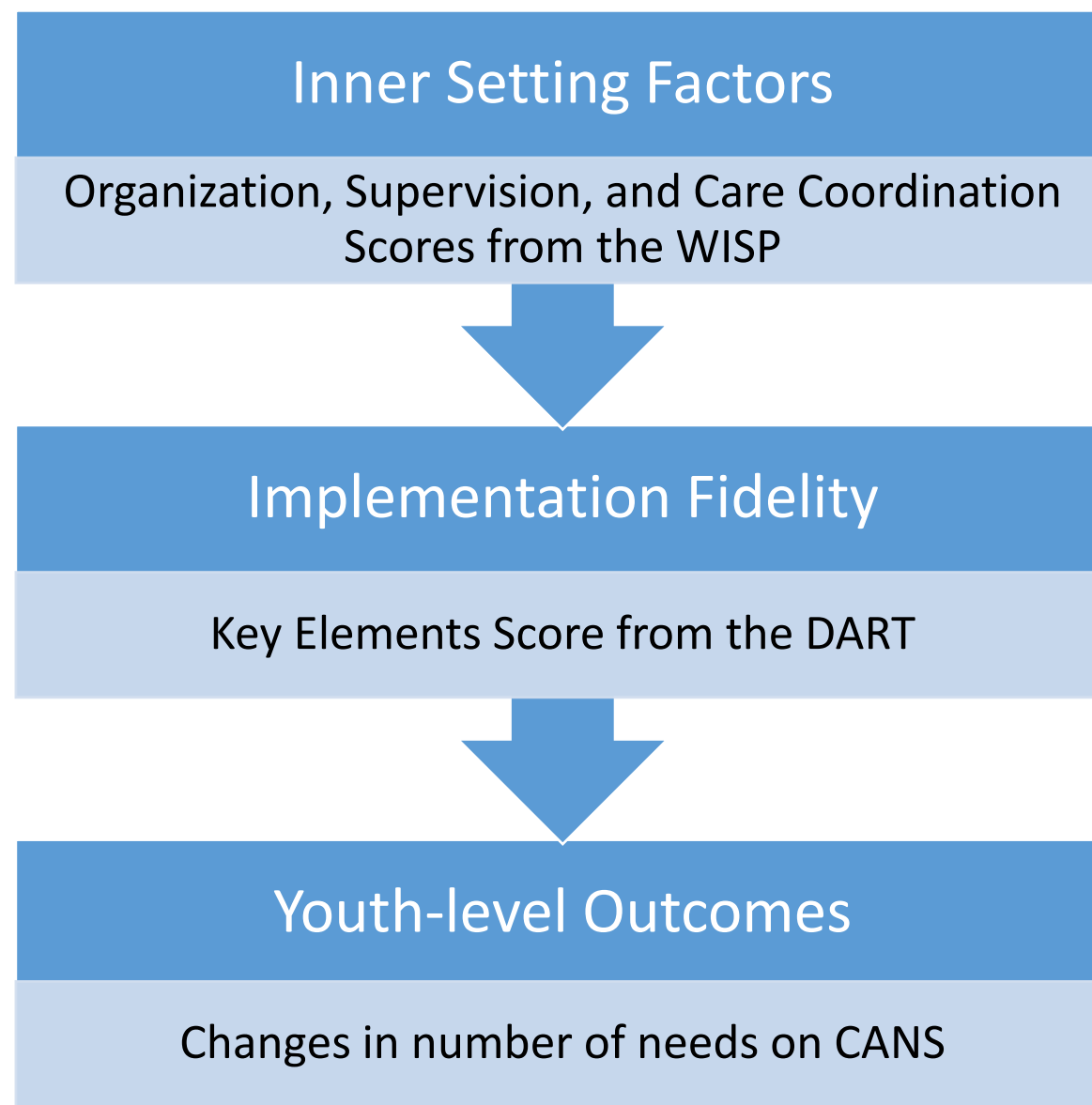


How do program-level variables impact youth-level outcomes?

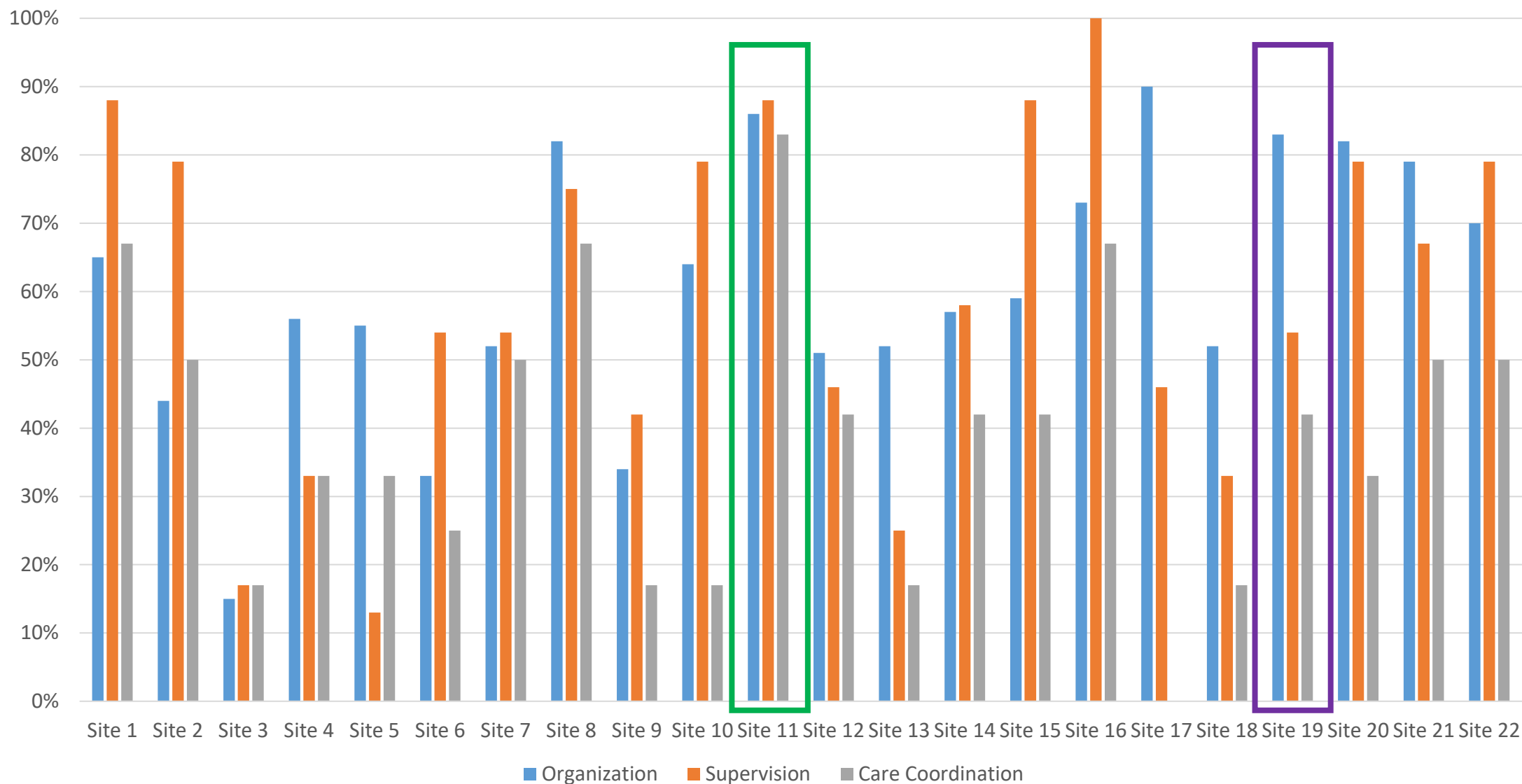
Methods

- Sample: 355 youth and families from 22 WPOs
- Measures
 - Inner Setting: WISP
 - Fidelity: DART
 - Outcomes: CANS
- Analyses

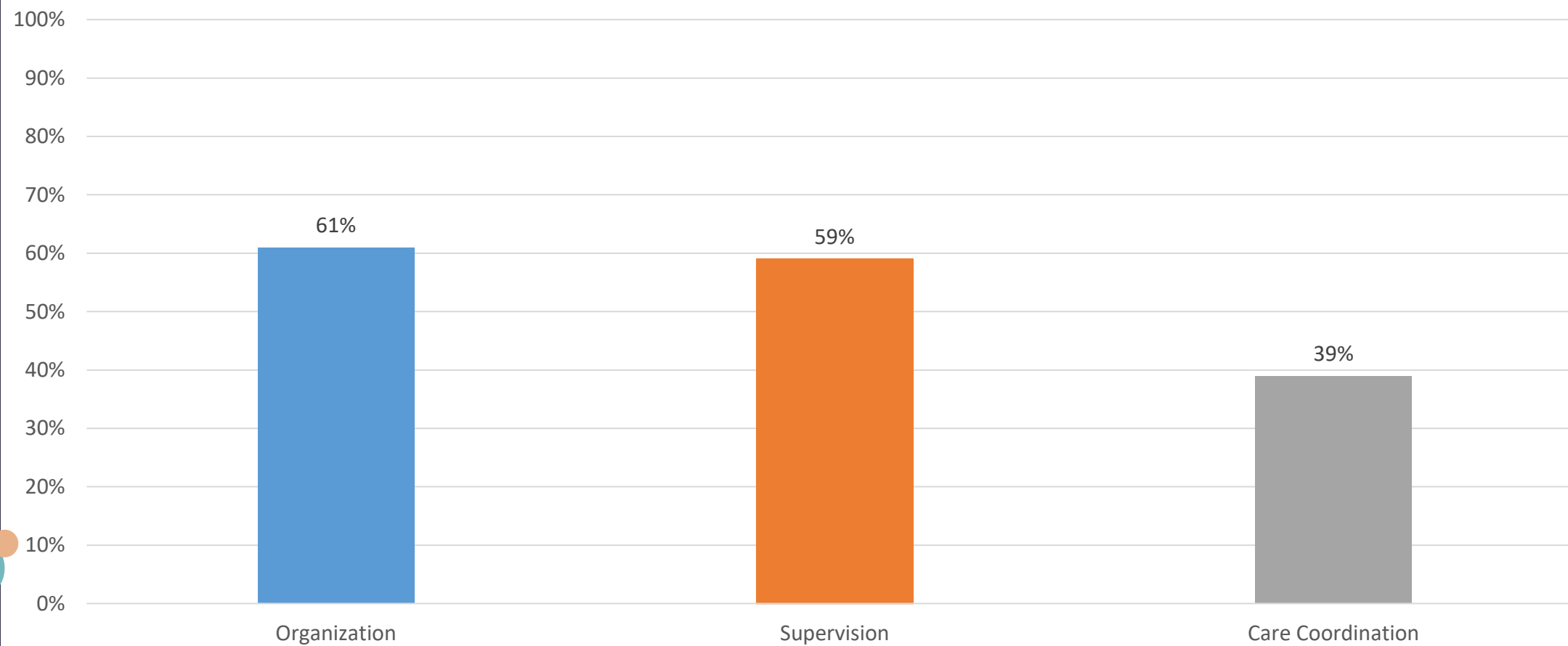
WPOs classified as high or low implementers for each domain



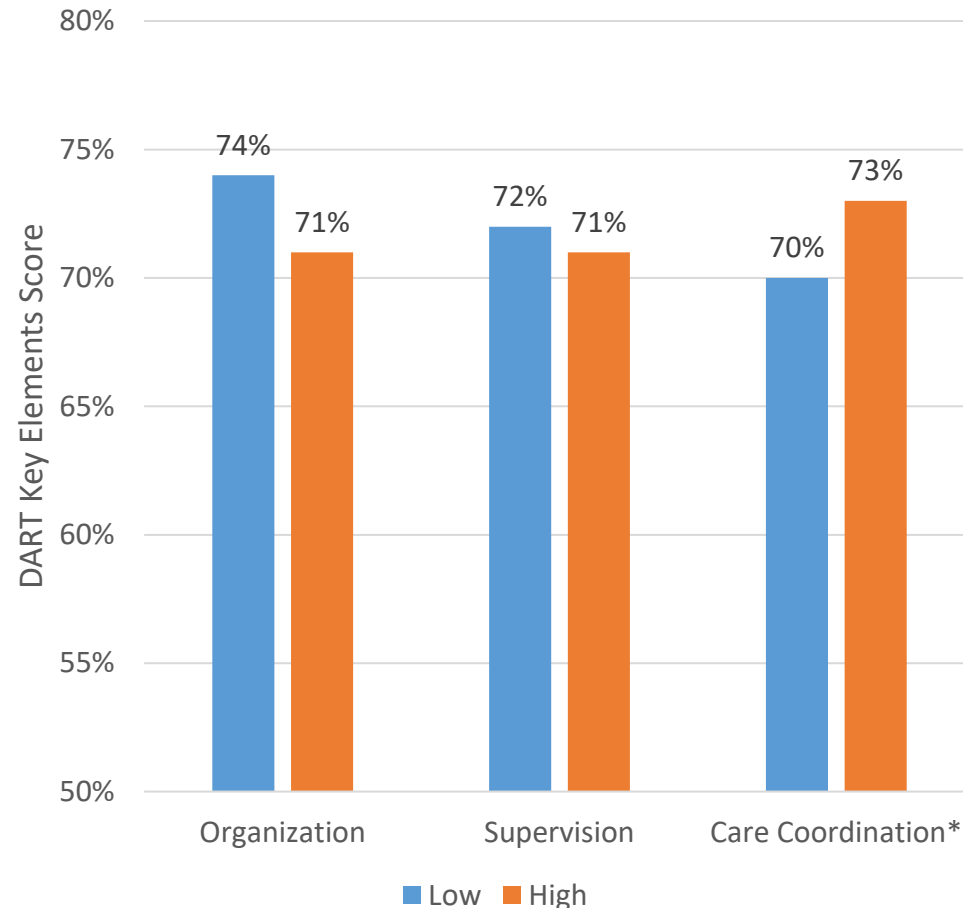
Variation in WISP Scores



Variation in WISP Scores



Impact of Program-level Factors on Wraparound Fidelity



- Low vs. High implementers for each of the WISP scales
- Organizations with higher levels of support for Care Coordinators showed significantly higher fidelity scores.

Impact of Program-level Variables on Youth-level Outcomes

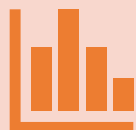
- Higher WISP scores on the Organization and Care Coordinator subscales predicted more needs on the last CANS scores when accounting for fidelity.
- Fidelity scores predicted fewer needs on the last CANS assessment

Table 1. Regression Analysis Predicting last CANS Score

Variable	Unstandardized B	SE	Standardized β
Intercept	3.12	1.60	
CANS-Ever*	0.47	0.04	.55
Fidelity Score*	-0.06	0.02	-.14
Organization*	1.52	0.73	.10
Supervision	-0.46	0.77	-.03
Care Coordination*	1.52	0.67	.12

* $p < .05$

Summary



What is the variation in the WISP across a statewide system of care using Wraparound?

There is significant variation across and within WPOs.



What is the relationship between program-level factors and Wraparound fidelity?

WPOs with well-trained and supported supervisors have higher fidelity scores.



How do program-level variables impact youth-level outcomes?

Program-level factors did not predict improved outcomes after accounting for fidelity.

Conclusions & Future Research

- There is a complex relation between organizational-level factors that may impact both fidelity and youth-level outcomes.
 - Better trained care coordinators may identify more needs on the CANS
- Well-supported care coordinators are related to improved fidelity, and fidelity predicts improved youth-level outcomes.

Future Research

- A more nuanced analysis of the interactions of Inner Setting factors
- Longitudinal approach
- Interactions between Inner and Outer Setting factors

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Integrating Systems • Improving Outcomes



Thank you to the
awesome team who
contributed to
collecting and
preparing these
data!

Questions or comments?

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Examining Outcomes of Wraparound Using the Child and Adolescent Needs and Strengths (CANS): Results from a Matched Comparison Study

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University of Washington

Overview

- ▶ Explores the use of the Child and Adolescent Needs and Strengths (CANS) assessment as an outcomes measure for Wraparound Care Coordination
- ▶ Study compares CANS data for 122 Wraparound-enrolled youth to a matched sample of 122 youth served by the same agency via other service modalities
- ▶ Primary purpose of this research was to conduct a controlled study that advances our understanding of Wraparound effectiveness on youth functioning.
- ▶ A secondary purpose was to ask how best to apply the CANS as an outcome measure in the context of a controlled (quasi-experimental) study

Wraparound Effectiveness Research

- ▶ Effectiveness research is growing but controlled studies remain scant
- ▶ Quasi-experimental studies are more common than pure experiments
 - ▶ Reflects that Wraparound's research base is exclusively based on "real world" evaluations of Wraparound at scale in public systems
- ▶ Important for providers and systems to know how best to use common standardized measures to evaluate impact
 - ▶ For the CANS there are a number of considerations

The Child and Adolescent Needs and Strengths (CANS) Assessment

- ▶ Prioritizes the communication of actionable information for use in clinical decision-making
- ▶ Covers wide domains of youth needs
 - ▶ This specific version included 68 items across 7 domains
- ▶ Each strength and need is scored between 0-3
 - ▶ A score of 2 or 3 indicates an “actionable need”

CANS Domains with Item Examples

Domains

Behavioral and Emotional Needs

Life Functioning

Child Risk Behaviors

Cultural Factors

Caregiver Resources and Needs

Child Strengths

Traumatic Adverse Childhood
Experiences

Items

- ▶ Psychosis, Depression
- ▶ Family Relationships, School Functioning
- ▶ Self-Injurious Behavior
- ▶ Discrimination/Bias
- ▶ Involvement with Care, Knowledge
- ▶ Optimism, Community Life
- ▶ Physical Abuse, Medical Trauma

Research questions

1. What changes in CANS actionable needs are found for Wraparound versus other services at 6-months?
2. Are more actionable needs resolved for youth in wraparound?
3. Are there group differences in new needs “discovered” at 6 months?
4. What do these results tell us about wraparound effectiveness - and use of CANS in outcomes studies?



Method

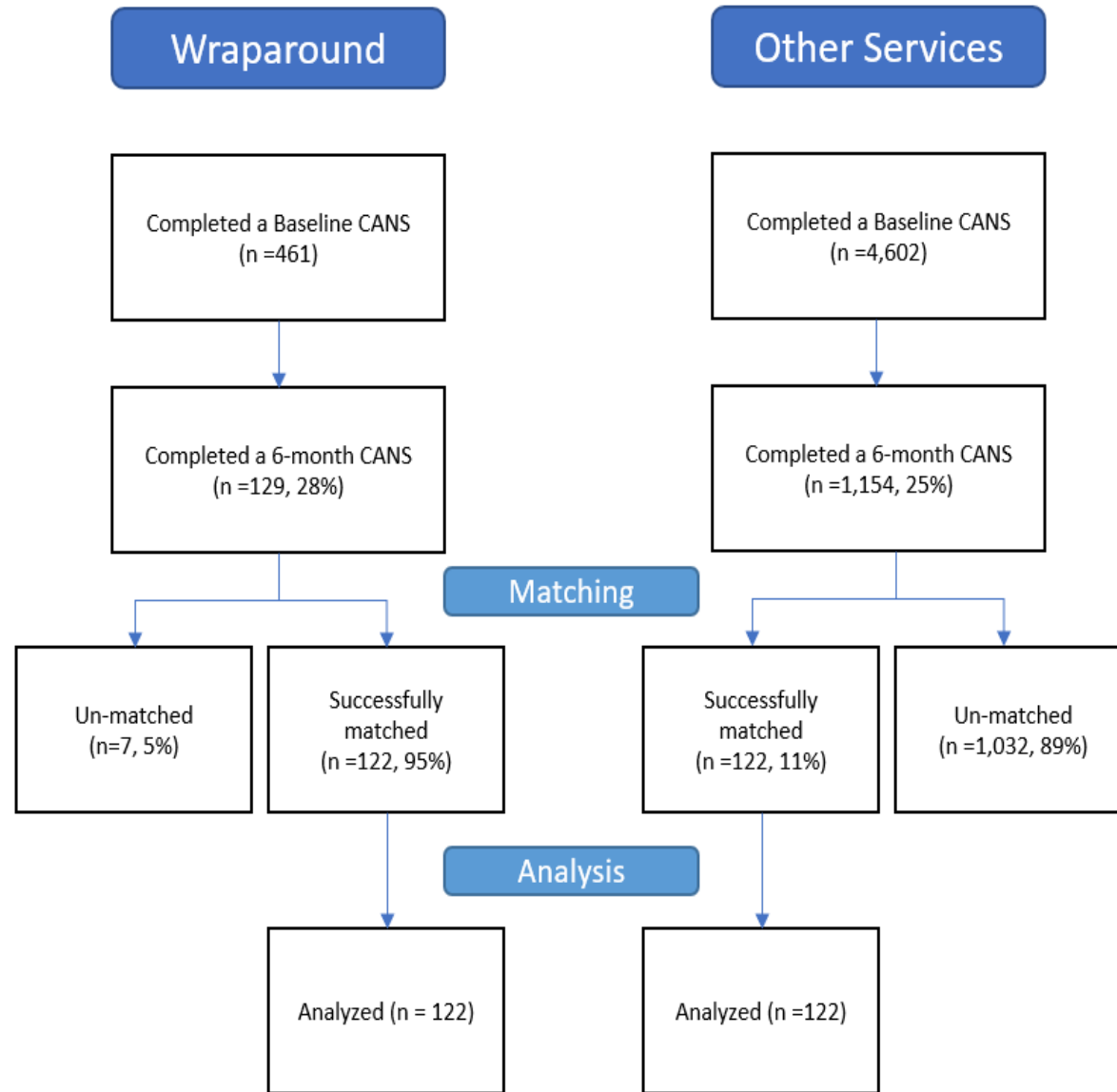
Study Participants

Wraparound Group: Received Wraparound from a large behavioral health provider agency from October 1, 2015 through December 17, 2018

- ▶ Ages 5-18
- ▶ All youth who completed a baseline and six-month follow up were eligible (N = 461)

Comparison Group: Received alternate community services (e.g., kinship care, foster-family based services) at the same behavioral health agency

- ▶ Identified using propensity score matching
- ▶ Similar demographic characteristics and baseline levels of impairment



Used propensity scores to identify a matched comparison group

Covariate Balance

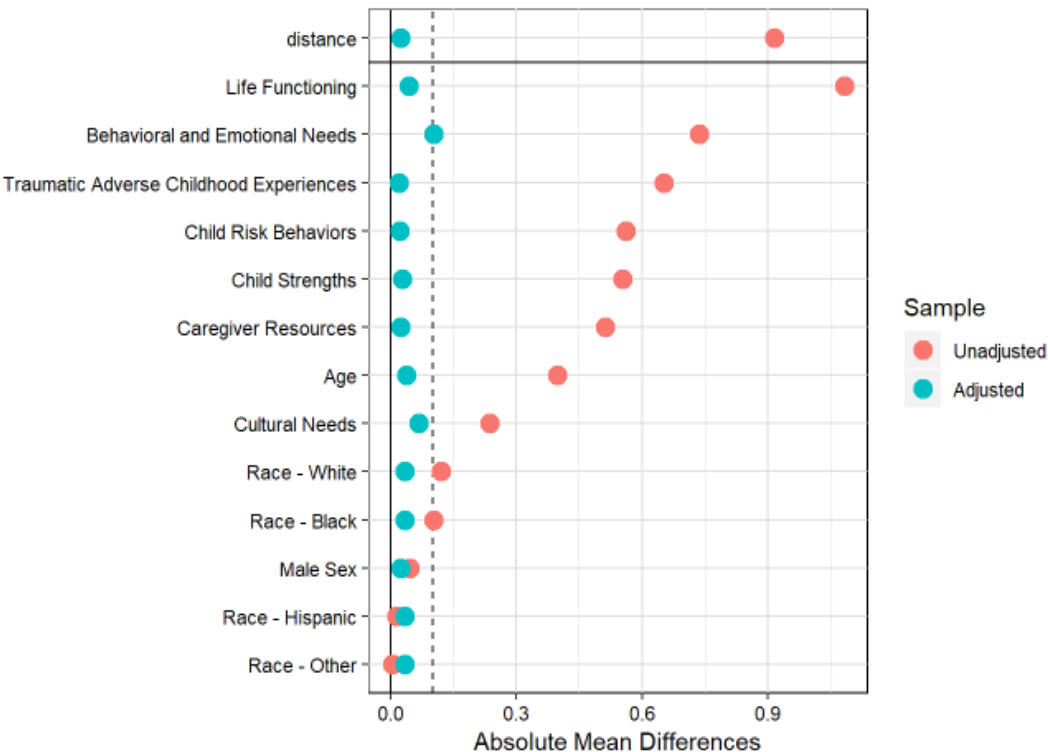


Table 2: Balance of matching covariates

Covariate	Wraparound	Non-Wraparound	Cohen's d
	Mean	Mean	
Behavioral and Emotional Needs	3.20	3.05	0.103
Caregiver Resources and Needs	2.52	2.46	0.022
Life Functioning	4.34	4.25	0.046
Child Risk Behaviors	1.15	1.18	0.021
Cultural Factors	0.37	0.33	0.073
Traumatic Adverse Childhood Experiences	2.58	2.54	0.019
Child Strengths	6.34	6.26	0.027
Male Sex	0.55	0.53	0.049
Age	13.64	13.53	0.037
Race			
White	0.27	0.3	0.072
Black	0.23	0.2	0.079
Hispanic	0.38	0.35	0.067
Other	0.12	0.15	0.094

Estimating the Effect of Wraparound

Looked at group differences in...

1. The average change in actionable needs from baseline to six-months
 - ▶ General linear regressions
2. The number of actionable needs “resolved”
3. Number of actionable needs “discovered”
 - ▶ Negative binominal regressions

Results

The background of the slide is composed of several overlapping geometric shapes. On the right side, there is a solid dark blue vertical band. To its left, there are several overlapping triangles and polygons in shades of yellow, gold, and purple. A thin, light blue line runs diagonally across the lower-left portion of the slide, intersecting some of the geometric shapes.

Both groups saw a decrease in mean number of actionable needs from Baseline to 6 mos.

	Wrap Mean	Non-Wrap Mean	Mean Difference	95% CI	p
Total CANS	-1.46	-1.11	-0.36	-2.03, 1.32	0.68
CANS Domains					
Behavioral and Emotional Needs	-0.59	-0.36	-0.24	-0.62, 0.14	0.23
Caregiver Resources and Needs	0.49	0.39	0.10	-0.46, 0.66	0.73
Child Strengths	-0.85	-0.45	-0.41	-1.01, 0.20	0.19
Life Domain	-0.50	-0.41	-0.10	-0.57, 0.38	0.69
Child Risks and Behaviors	-0.18	-0.18	0.00	-0.21, 0.21	0.99
Traumatic Adverse Childhood Experiences	0.16	-0.07	0.23	-0.01, 0.47	0.06
Cultural Factors	0.02	-0.04	0.06	-0.02, 0.14	0.16

Note: Negative change scores indicate fewer actionable needs at six months, compared to baseline.

Wraparound youth experienced a larger mean number of resolved needs

	Wraparound Mean	Non-Wraparound Mean	IRR	95% CI	P
Total CANS	4.63	3.50	1.32	0.98, 1.79	0.07
CANS Domains					
Behavioral and Emotional Needs	0.95	0.70	1.36	0.91, 2.05	0.14
Caregiver Resources and Needs	0.57	0.50	1.15	0.60, 2.19	0.67
Child Strengths	1.43	0.94	1.52	0.99, 2.33	0.06
Life Domain	1.09	0.83	1.31	0.88, 1.97	0.19
Child Risks and Behaviors	0.39	0.29	1.33	0.80, 2.23	0.27
Traumatic Adverse Childhood Experiences	0.16	0.21	0.77	0.37, 1.58	0.48
Cultural Factors	0.03	0.03	1.00	0.24, 4.23	0.99

But... Wraparound youth also had a larger number of mean “discovered needs” at 6 mos.

	Wraparound Mean	Non- Wraparound Mean	IRR	95% CI	P*
Total CANS	3.28	2.67	1.23	0.92, 1.65	0.16
CANS Domains					
Behavioral and Emotional Needs	0.33	0.36	0.91	0.57, 1.45	0.69
Caregiver Resources and Needs	1.11	0.94	1.17	0.80, 1.73	0.42
Child Strengths	0.20	0.12	1.11	0.67, 1.85	0.69
Life Domain	0.59	0.45	1.31	0.86, 2.00	0.21
Child Risks and Behaviors	0.34	0.20	1.67	0.78, 3.66	0.19
Traumatic Adverse Childhood Experiences	0.66	0.59	1.75	0.89, 3.48	0.11
Cultural Factors	0.07	0.01	8.00	1.37, 152.25	0.05

* Negative binomial regression



What Does this
Mean?

Findings

- ▶ Approximately one more need resolved in Wraparound group
 - ▶ Borderline Significant; small effect size ($d = 0.2$)
- ▶ More needs are discovered at 6-month follow up
 - ▶ The appearance of new needs after six months may indicate Wraparound's ability to engender trust in families and uncover new needs

Limitations

- ▶ Not experimental. An array of unobserved differences may exist.
 - ▶ Type of insurance
 - ▶ Specific mental health diagnoses for each youth
 - ▶ Youth's involvement with child serving systems (i.e., justice system, child welfare system)
 - ▶ Parental preferences for type of care
- ▶ Comparison group received services from same agency (which could have ranged from 1x/week outpatient to Intensive Case Management or Intensive Services Foster Care)
 - ▶ If some non-Wrap programs generated particularly positive change in CANS scores, it could obscure the effect of the Wrap intervention.

Limitations

- ▶ No information on Wraparound quality or fidelity
 - ▶ All staff did undergo a four-day Wraparound training and regular supervision
- ▶ Limited to change after 6 months
 - ▶ Problematic given mean Length of stay is 9 months
 - ▶ More ideally, would analyze change in CANS over the course of clients' entire service episode, possibly controlling for duration of treatment

Implications / Future Directions

- ▶ Many ways to score/interpret the CANS. Potential alternative approaches:
 - ▶ Compare groups on change in “ever actionable” (i.e., score of 2 or 3) - at any point during treatment - to discharge for individual clients.
 - ▶ Compare groups only on needs targeted for treatment or strengths identified to build on in plans (Potentially most meaningful)
 - ▶ Compare groups on the number of items where youth's score decreased by at least 1 (Potentially most sensitive).
- ▶ Use alternative baseline assessment point
 - ▶ Tight turnaround time and lack of relationship with family may make CANS scores at “true baseline” less reliable
- ▶ Control for fidelity and/or other MH services received

Takeaways

- ▶ Contributes to growing effectiveness research
- ▶ Novel methodology for future replication
- ▶ Propensity-scores provide a powerful and intuitive method
 - ▶ Reduce bias of observational studies
- ▶ Demonstrates important dynamics around using the CANS in research / evaluation
 - ▶ Focusing on change in mean number of actionable needs over time may obscure what's actually going on...
 - ▶ A wealth of options for evaluating CANS change - continued examination of options needed.

Hensley, S., Vander Stoep, Ann, & Bruns, Eric. (2019).
*Outcomes of Wraparound Care Coordination for Youth
with Complex Behavioral Health Needs*. ProQuest
Dissertations and Theses.

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