



Research on Promoting School Safety by Addressing School Mental Health

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School Safety and School-Based Mental Health Project



- Funded by the National Institute of Justice
 - Comprehensive School Safety Initiative 2015
 - Developing Knowledge About **What Works** to Make Schools Safe
- Conducted by RTI International
- In partnership with Charlotte-Mecklenburg Schools (CMS) Student Services Department

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Violence victimization and perpetration in schools

- Exposure to violence in schools can have significant concurrent and long-lasting impact on victims
 - Continuing victimization is associated with higher rates of internalizing and externalizing behaviors (Sullivan, Farrell, & Kliewer, 2006)
 - Can lead to depression and anxiety disorders (Greene, 2005)
 - Relates to lower academic achievement (Nakamoto & Schwartz, 2010)
 - Associated with skipping school/truancy (Gastic, 2008)
- A large proportion of disciplinary infractions and school safety problems are perpetrated by a small minority of students within schools (Hoagwood, Jensen, Acri, Olin, et al., 2011)



Socio-emotional learning (SEL) approaches dominate the literature



Bullying literature has developed separately as it represents a specific type of peer aggression (Bradshaw, 2015; Hymel & Swearer, 2015)



Efficacy of both SEL and bullying interventions decreases past elementary school (Wilson & Lipsey, 2007; Yeager et al., 2015)

SBMH interventions

- Addressing the needs of the small group of students perpetrating the most infractions can improve the climate of the school for the entire student body (Ballard, Sander, & Klimes-Dougan, 2014)
- Interventions are typically delivered by teachers
 - Teacher-delivered interventions have little-to-modest impact on externalizing behaviors (Franklin et al., 2017)
- Proportion of students in need of services outpaces available within-school resources

Current Study

- PREVIOUS Studies have focused on the impact of ***universal programs on school outcomes***,
- Or the effect of ***selective or targeted interventions on specific individuals*** at risk for violence perpetration and/or victimization



Intensive
Interventions

Targeted
Interventions

Universal Supports
& Prevention

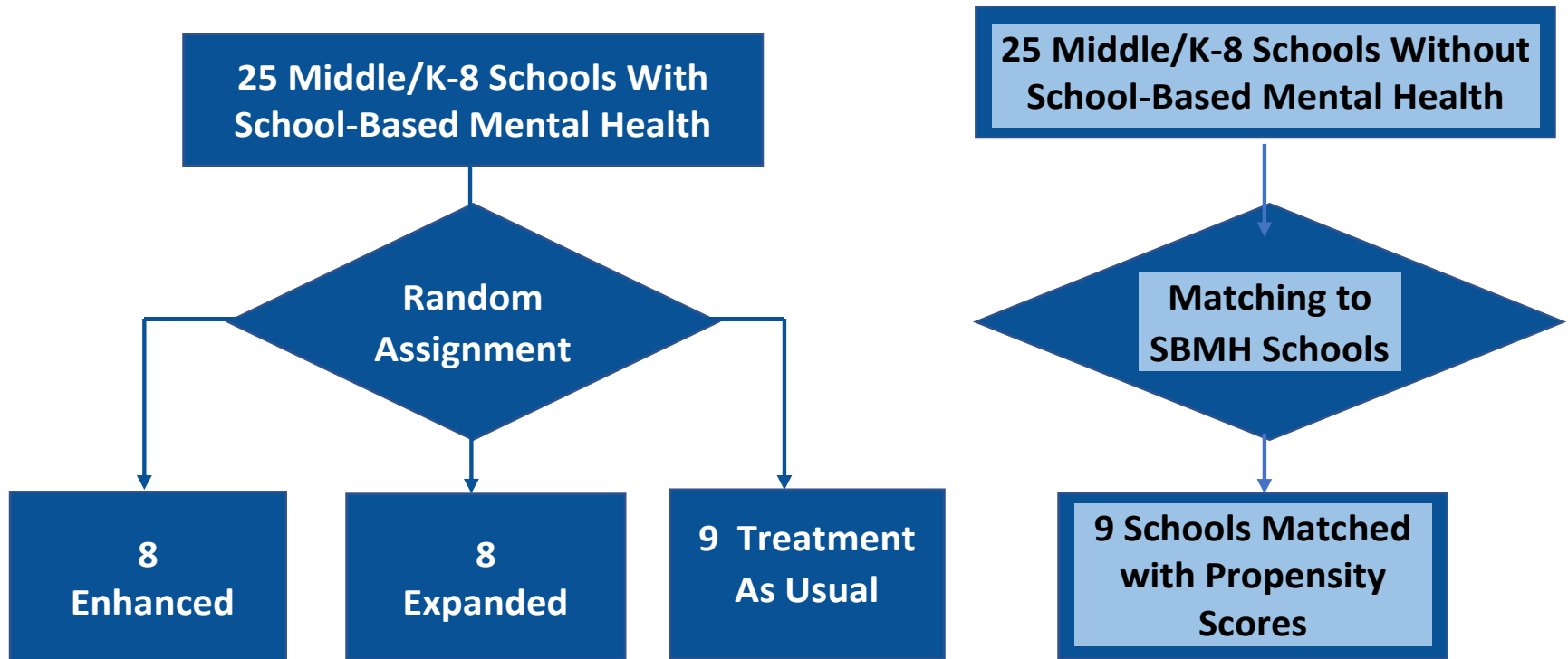
- The CURRENT STUDY examines the impact of targeting selected youth and the subsequent impact on the entire school population
 - Preventive intervention may include more intensive supports and programs for those identified as a bully or a victim

Study Design and Research Questions



Research Design: Two Components

- Experimental: For the 25 middle schools (grades 6–8) and K–8 schools that had SBMH programs, we randomly assigned schools to condition (stratified on school violence & disciplinary infractions)
- Non-experimental: Used propensity score matching to select 9 non-SBMH comparison schools that were most similar to SBMH schools



Summary of Treatment Conditions—with some movement...

- To prevent denial of SBMH services to students in need, CMS started SBMH in 2 comparison schools - after we had randomized schools

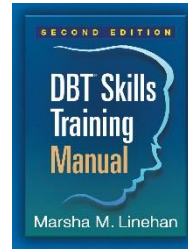
| Condition at Randomization | Comparison (n = 7) | Formerly Comparison Now TAU (n = 2) | Treatment As Usual (n = 9) | Expanded Treatment (n = 8) | Enhanced Treatment (n = 8) |
|---|--------------------|-------------------------------------|----------------------------|----------------------------|----------------------------|
| School Counseling, School Psychology, & Social Work | X | X | X | X | X |
| CMS standard SBMH program (therapists) | | X | X | X | X |
| Added <i>pro bono</i> time for SBMH therapists | | X | X | X | X |
| Student Services Facilitator | | | | X | X |
| Added School Psychologists & Increased Coverage | | | | X | X |
| Training in Evidence-Based Treatments (SPARCS, DBT) | | | | | X |

Evidence-Based Treatments Added in Enhanced Condition

Tier 3 Tertiary
Prevention
(Intensive)

Tier 2 Secondary
Prevention
(Targeted)

Tier 1 Primary
Prevention
(Universal)



Dialectical Behavior Therapy (DBT; Linehan, 2014)

- Suicide/self-injury
- Aggression and anger
- Emotion regulation problems



Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS)

- Trauma response
- Aggression, anger, disruptive behavior

Research Questions Addressed Today

1. Do non-SBMH schools and schools in each experimental arm (TAU, Expanded, Enhanced) differ on changes in outcomes (student self-reported aggression and victimization)?
2. Do schools in one experimental arm (TAU, Expanded, Enhanced) differ from schools in another arm on changes in outcomes?
3. What are the barriers and supports to implementing various levels of School-Based Mental Health with high fidelity and dosage?

Data Collection Timeline

| Instrument | Respondents per school (34 schools) | Mode | 2016–17 school year | | 2017–18 school year | | 2018–19 school year | |
|-----------------------------------|---|--|---------------------|-------------|---------------------|-------------|---------------------|-------------|
| | | | Fall [T1] | Spring [T2] | Fall | Spring [T3] | Fall | Spring [T4] |
| Student survey | ~120 students from randomly selected classes in 6 th –8 th grades | Paper-and-pencil survey; classroom setting; 1-hour session | ✓ | ✓ | | ✓ | | ✓ |
| Staff survey | 40 randomly selected instructional staff and 20 non-instructional staff | Web-based survey lasting ~20 minutes | ✓ | ✓ | | ✓ | | ✓ |
| Qualitative Interview Data | 1-2 Providers per school | Individual phone interview | | | | ✓ | | ✓ |

Student Survey Results



Participants and Measures

- **32 schools**
- Removed 2 schools that changed conditions
- Student N = **4025** at baseline (Fall 2016); N = **3588** at 1st follow-up (Spring 2017); N = **2600** at 2nd follow-up (Spring 2018); N = **2471** at 3rd follow-up

- **Covariates (in propensity score modeling)**
 - Enrollment
 - Economic disadvantage (e.g., free/reduced lunch)
 - Suspensions
 - Crime rates
 - Baseline levels of the outcome (i.e., aggressive behavior, victimization, PO)

- **Outcomes**
 - Aggressive behavior, victimization

Outcome Items

Aggressive Behavior (Orpinas & Frankowski, 2001)

I teased students to make them angry.

I pushed or shoved other students.

I got into a physical fight because I was angry.

I slapped or kicked someone.

I threatened to hurt or to hit someone.

Victimization (Orpinas, 1993)

A student beat me up.

A student pushed or shoved me.

A student slapped or kicked me.

A student threatened to hurt or to hit me.

Response options: 0 times, 1 time, 2 times, 3 times, 4 times, 5 times, 6+ times

Design and Analysis Challenges

- Pre-evaluation differences in school-level factors (e.g., suspension rates, crime rates) between SBMH and non-SBMH schools
 - Same factors are *also related to student outcomes*
 - Make it difficult – without statistical adjustments – to isolate the impacts of SBMH and pre-existing differences for student outcomes
- Random assignment and implementation measures are at the school-level but outcomes measured at the student-level – but not linked over time at the student-level
- Typically, school safety & climate worsen from Fall to Spring; T1 -T2 changes should be interpreted accordingly

Internal Consistency and Confirmatory Factor Analysis Fit

| Outcome | Cronbach's α | RMSEA ($\leq .05$ is ideal) |
|----------------------------|---------------------------------------|---|
| Aggressive behavior | 0.84 | 0.066 (0.061, 0.070) |
| Victimization | 0.78 | 0.044 (0.038, 0.049) |

Propensity score weighting successfully adjusted for differences between SBMH & Non-SBMH schools

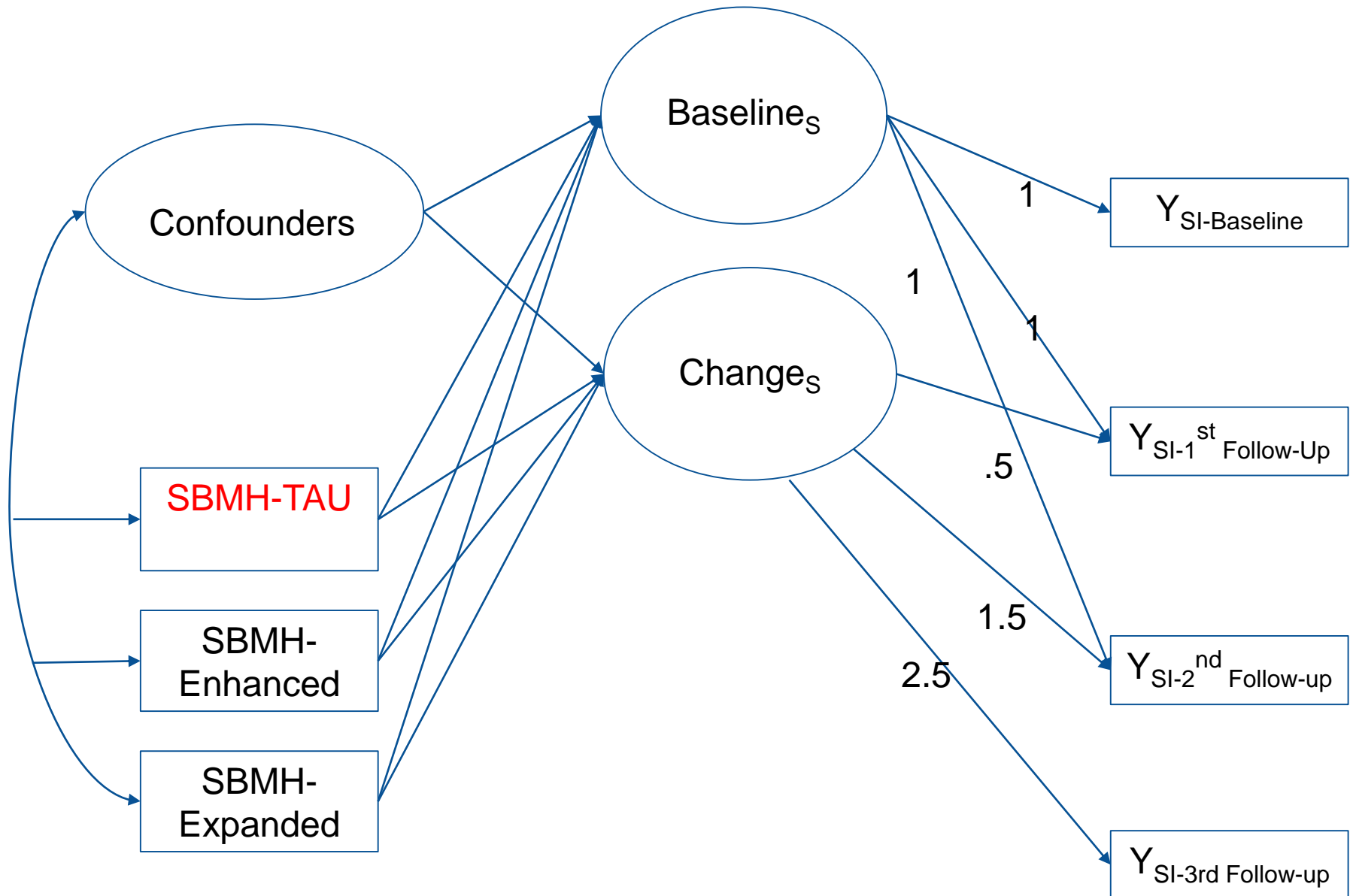
- Students within Non-SBMH schools that more closely resembled SBMH schools received greater weight
- Cohen's d Effect Sizes ("Balanced" $\leq |.10|$)
 - Before propensity score weighting, schools were dissimilar
 - After propensity score weighting, schools were balanced (similar)

| Weighting Condition | SBMH TAU v. Non-SBMH | SBMH Expanded v. Non-SBMH | SBMH Enhanced v. Non-SBMH |
|----------------------------------|----------------------|---------------------------|---------------------------|
| Unweighted | | | |
| T1 aggression | 0.29 | 0.38 | 0.33 |
| T1 victimization | 0.21 | 0.24 | 0.15 |
| Propensity Score Weighted | | | |
| T1 aggression | -0.03 | 0.02 | -0.01 |
| T1 victimization | 0.07 | 0.1 | 0.01 |

Outcome Model

- Mixed-effects regression models
 - Fixed effects: school-level treatment condition
 - Random intercepts/slopes at the school level
 - *Cannot include RI/S at the individual level because students are not tracked over time*
- Comparisons between each pair of conditions
 - SBMH-TAU & Non-SBMH
 - SBMH-Expanded & Non-SBMH
 - SBMH-Enhanced & Non-SBMH
 - SBMH-TAU & SBMH-Expanded
 - SBMH-TAU & SBMH-Enhanced
 - SBMH-Expanded & SBMH-Enhanced

Path Diagram for SBMH Evaluation



Propensity-Weighted Models With Non-SBMH Schools

- Aggressive behavior

- Compared to non-SBMH schools

- SBMH-Expanded schools saw reductions in aggressive behavior ($b = -0.12(0.05)$, $p = 0.018$, Cohen's $d = -\mathbf{0.29}$)

- Victimization

- Compared to non-SBMH schools

- SBMH-Expanded schools saw reductions in victimization ($b = -0.05(0.03)$, $p = 0.08$, Cohen's $d = -\mathbf{0.16}$)

Comparisons Between SBMH Randomized Arms

- Aggressive behavior

- Compared to SBMH-TAU schools

- SBMH-Expanded schools saw reductions in victimization ($b = -0.07(0.03)$, $p = 0.02$, Cohen's $d = -\mathbf{0.17}$)

- Victimization

- Compared to SBMH-TAU schools

- SBMH-Expanded schools saw reductions in victimization ($b = -0.06(0.03)$, $p = 0.03$, Cohen's $d = -\mathbf{0.18}$)

Why does Expanded show improved results, but not Enhanced

- Enhanced Treatment could result in higher burden of providers to complete DBT and SPARCS training with minimal return
- Variations could be by clinician-driven.
- Continue to explore this question through
 - Implementation variables
 - Administrative data

Staff Survey Results – To Be Continued

- Expanded School Mental Health Collaboration Index (Mellin, Taylor, & Weist, 2013)
- Inventory of School Climate (Brand et al., 2008)
- Perceptions of Feeling Safe
 - Before, during and after school
 - In the classroom, school building, and school grounds
- Continued analyses and model adjustment
- No current significant findings

Provider Interview

Provider Interviews



Conducted by phone by BYC Consulting



Designed to describe barriers and supports to implementation of the program



Asked about perceived impact on students

Interview Respondents

| | Student Services Role | | | | |
|---------|-----------------------|--------------|---------------|-----------|-------|
| Round | Counselor | Psychologist | Social Worker | Therapist | Total |
| Round 1 | 6 | 3 | 3 | 1 | 13 |
| Round 2 | 2 | 1 | 2 | 2 | 7 |
| Total | 8 | 4 | 5 | 3 | 20 |

| | Treatment Condition | | | | |
|---------|---------------------|-----|----------|----------|-------|
| Round | Comparison | TAU | Expanded | Enhanced | Total |
| Round 1 | 3 | 4 | 0 | 6 | 13 |
| Round 2 | 0 | 1 | 2 | 4 | 7 |
| Total | 3 | 5 | 2 | 10 | 20 |

Interview Themes

| | | Treatment | | | Total |
|---|-------------------------|-----------|----------|-------|---------------|
| | | Enhanced | Expanded | TAU | |
| SBMH Implementation Effect on Student Services | Count | 28 | 15 | 9 | 52 |
| | % within Construct Code | 53.8% | 28.8% | 17.3% | 100.0% |
| SBMH Impact on School Safety | Count | 30 | 2 | 5 | 37 |
| | % within Construct Code | 81.1% | 5.4% | 13.5% | 100.0% |
| How SBMH can be Improved | Count | 5 | 3 | 4 | 12 |
| | % within Construct Code | 41.7% | 25.0% | 33.3% | 100.0% |
| Level of Need for SBMH | Count | 34 | 12 | 8 | 54 |
| | % within Construct Code | 63.0% | 22.2% | 14.8% | 100.0% |
| Barriers to SBMH | Count | 34 | 3 | 26 | 63 |
| | % within Construct Code | 54.0% | 4.8% | 41.3% | 100.0% |
| Fidelity of Implementation of SBMH | Count | 36 | 1 | 3 | 40 |
| | % within Construct Code | 90.0% | 2.5% | 7.5% | 100.0% |

Interviews – Barriers – Supply and Demand

“It’s actually more about that our time to do it—and it has been very, very helpful—we have the Student Services Facilitator, and she’s been wonderful. She’s helping us a whole lot with 504’s, however, there’s the two of us, and we have an intern, and so for a thousand kids, we’re each supporting 500, that’s why I come back to I think SPARCS is awesome and I think it’s making an impact, however, when we look at it as the whole school, it’s almost like it would have been better to learn a guidance curriculum that would have impacted a larger group.”

“So when you drill down into that, and you’re tapping just a little bit of the student body, and you realize it’s not a handful of kids that are struggling with traumatic issues, it’s almost the whole school, whether the trauma of living financially on the edge, moving a lot, high percentage of incarcerated parents, on and on and on. You know, that’s not the way schools are supposed to be where everybody is in need of social work services”



“I will say I do feel really supported by the [district] department in terms of like they equip us with snacks and supplies. That’s really nice, because sometimes that is a barrier, and so that has been provided for us, which oftentimes we either have to come out-of-pocket or request funds from the PTA. That has been very, very helpful.”



“I think for SPARCS what’s worked well is the group session with the kids. I think the students, based on what the counselors say, really seem to like it, and the counselors feel like that the kids want to come to sessions, that they enjoy it, that they are able to learn some skills that they would not have gotten anywhere else.”

Initial Implications

School-based mental health programs are effective in:

- Reducing aggressive behavior and victimization
- Observing lower levels of disruptiveness

Barriers to School-based mental health implementation

- Expansive student need
- Limited provider time

Supports to School-based mental health implementation

- Leadership buy-in and support

Results are Preliminary

We are conducting similar analyses on other types of data – treated student mental health data, administrative data

We are also considering different approaches to modeling the relationships between implementation (dosage) & outcomes

- With 2018-2019 dosage data, we will have 4 rounds of outcomes and 3 rounds of implementation data, making additional approaches possible (e.g. lagged effects of services on outcomes)
- We are exploring whether and how to examine the relationship between aggregated (rather than individual) services and outcomes

More Information

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