

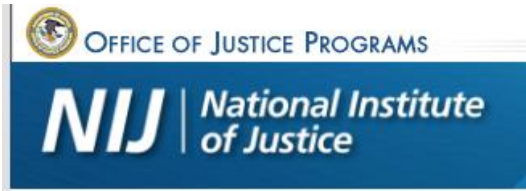


An Economic Cost and Cost-Effectiveness Analysis of Three Levels of School-Based Mental Health Services

-- NIJ FY15 Comprehensive School Safety Initiative --
Advancing School Mental Health, November 7, 2019

Alan Barnosky; Alex Cowell - RTI International | Carrie Sargent - Charlotte Mecklenburg Schools

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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Background: School Partner

- Charlotte Mecklenburg Schools (CMS) is an urban district of 175 schools and approximately 148,000 students
- CMS has had some form of a school-based mental health program for the past 25 years
- The current form of the school based mental health program is present in 135 schools with additional schools on the wait list
- The program is a partnership between the county, the school system, and eight local mental health agencies

Background: What is School Based Mental Health (SBMH)?

Clinicians

School
Psychologists

School Social
Workers

School
Counselors

Contract Providers

Therapists

Background: Basic Functioning of SBMH

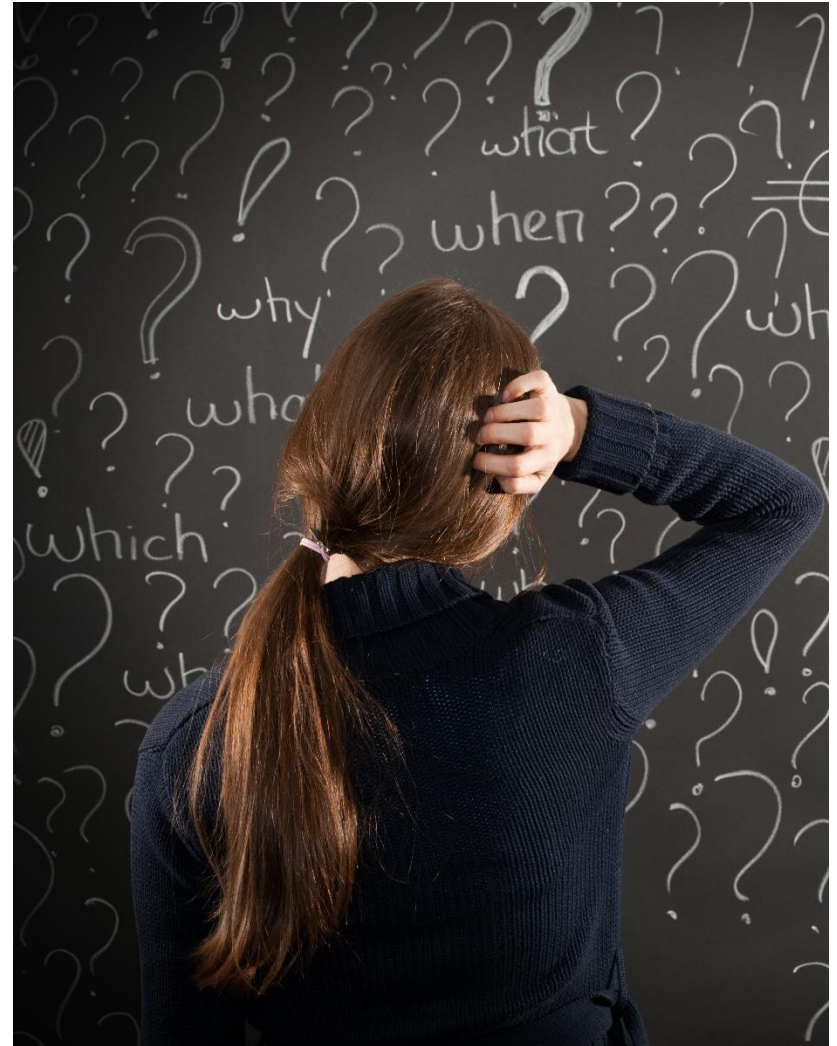
- There is an extensive process to select mental health partner agencies for the program
- One main feature of the program is that mental health therapists from partner agencies are housed on school campuses and provided outpatient therapy during the instructional day
- Another feature is that school system employed psychologists, social workers and counselors have also been trained to provide evidence-based treatments within schools such as Dialectical Behavior Therapy, SPARCS groups, Bounce Back, and Seeking Safety.

Background: How Is SBMH Related to School Safety?

- School safety is a critical issue
 - Large proportion of discipline infractions and school safety problems are perpetrated by a minority of students who need selective and indicated interventions (Fabelo et al., 2011; Hoagwood et al., 2012)
 - Addressing their needs improves school climate for everyone (Ballard et al., 2014)
- School-Based Mental Health (SBMH)
 - Brings community mental health providers into schools; identifies and targets youth who exhibit or are at risk for mental health problems
 - Has been shown to reduce enhance school climate, enhance school safety, reduce suspensions, increase academic performance, and increase school attendance (Ballard et al., 2014; Bruns et al., 2004; Powers, et al. 2014)
- Limited research
 - A growing literature that demonstrates the efficacy of SBMH
 - Limited studies on the economic costs and cost-effectiveness of SBMH
 - We are aware of no studies that compare differing levels of SBMH

Background: Economic Evaluation

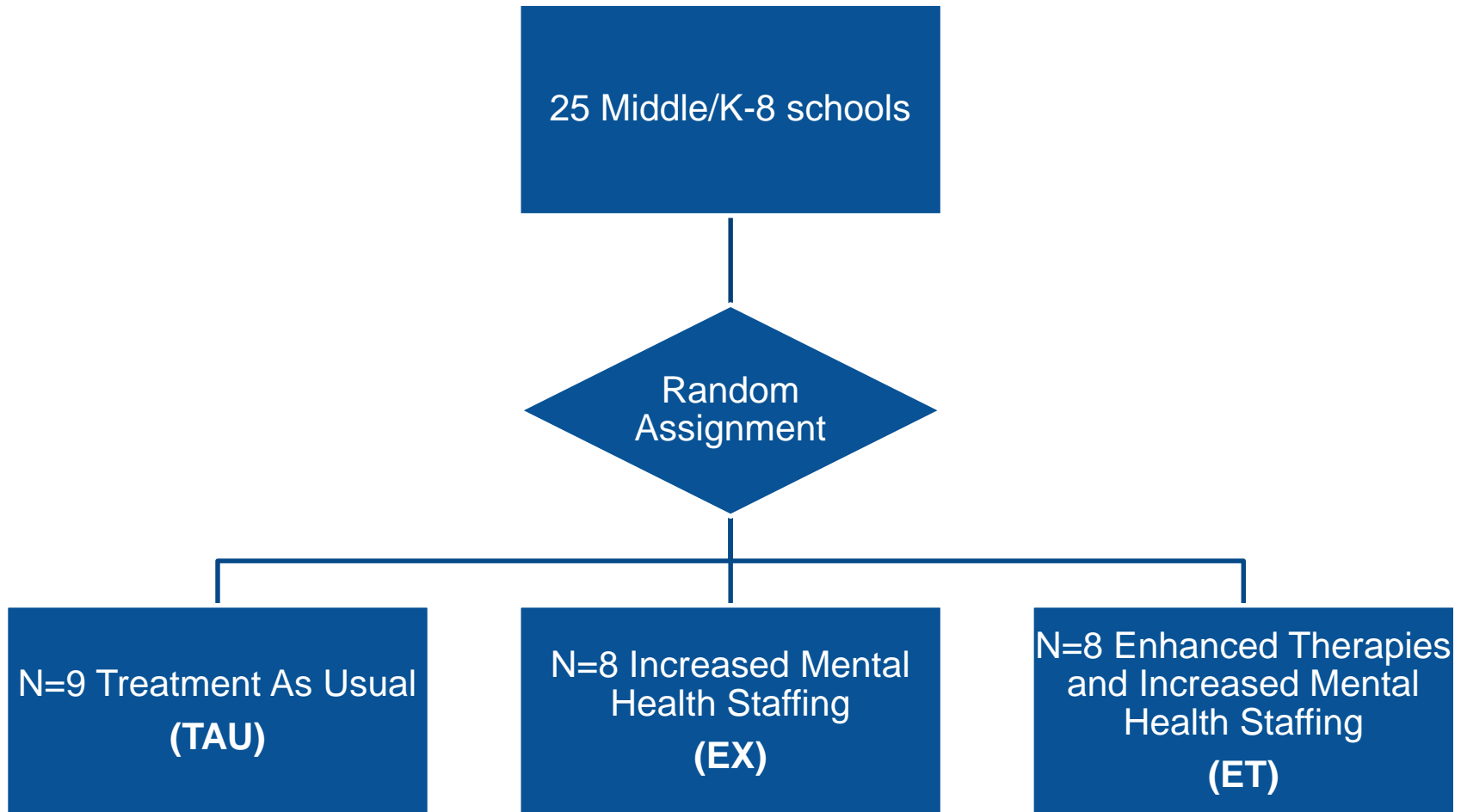
- Outcome vs Economic Evaluation
 - Outcome: determine if treatment is effective at improving outcome
 - Economic: determine if treatment is cost-effective for a particular outcome
- Why Economic Evaluation?
 - Schools and districts have limited resources
 - Helps policy makers and administrators make decisions on how allocate scarce resources



Research Questions

- Study aim: Conduct cost-effectiveness analysis that compares three levels of SBMH:
 - TAU – Treatment As Usual
 - EX – Expanded Treatment
 - ET – Enhanced Therapies
- Research questions addressed in this presentation:
 - Start up costs
 - Ongoing costs
 - Preliminary discussion of cost-effectiveness analysis (CEA)
- All presented findings are preliminary

Study Design



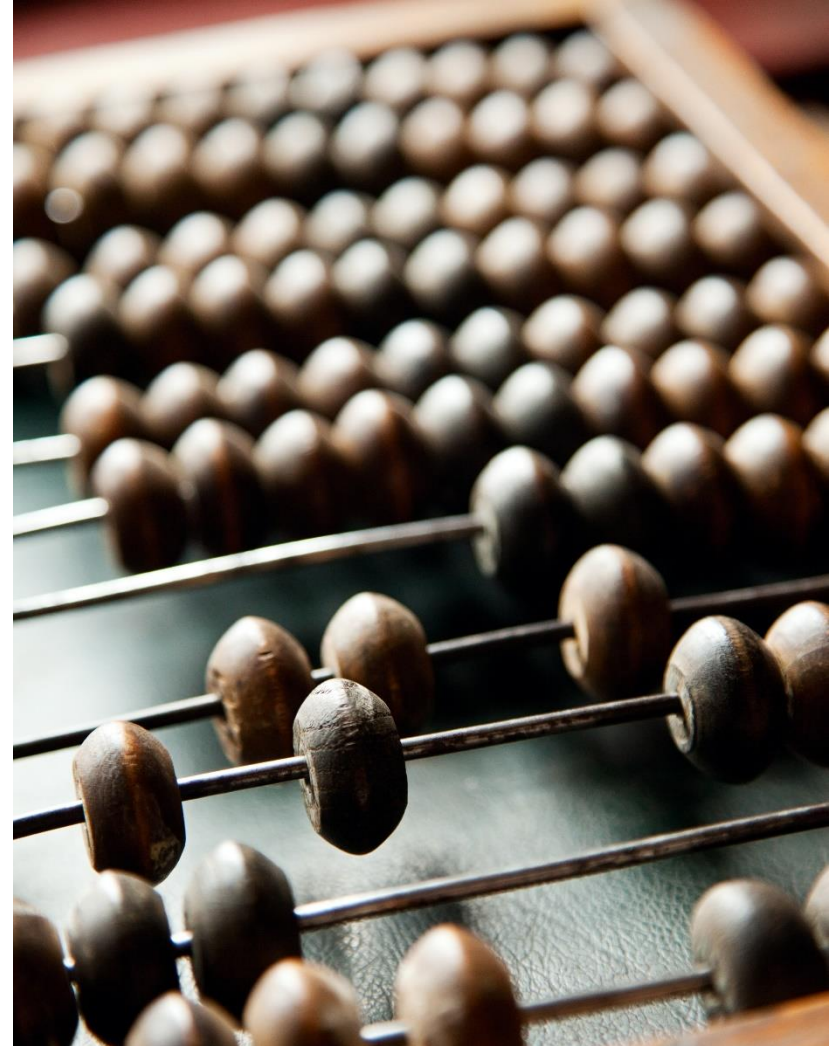
Study Design

	TAU	EX	ET
Psychologists, counselors, and social workers	✓	✓	✓
Community mental health provider	✓	✓	✓
Increase to half-time school psychologist		✓	✓
Student services facilitator		✓	✓
Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS)			✓
Dialectical Behavior Therapy (DBT)			✓

- **SPARCS:** A 16-session manually guided group treatment to improve functioning of adolescents exposed to trauma.
- **DBT:** A modified cognitive behavioral treatment (CBT) emphasizing individual psychotherapy and group skills training classes.

Economic Evaluation Overview

- General Approach
 - Identifies resource use and intensity of use (quantity)
 - Identifies costs attributed with resources (price)
 - Price and quantity are used to determine the cost of programs
- Economic costs
 - Includes value of resources that may not be explicitly paid but that have an opportunity cost (e.g., donated materials, volunteer staff, office space)
- Perspective
 - Charlotte-Mecklenburg School District



Methods: Data

- Start-up and ongoing costs
 - Start-up: Resources and associated costs used to begin a project
 - SPARCS & DBT training (trainer cost, staff time, materials, space)
 - Initial hiring activities
 - Planning meetings
 - Initial purchase of materials
 - Ongoing: Variable depending on the number of students served and/or the length of time implemented
 - Labor hours for school staff and associated wage rates
 - Billed amounts from community-based providers
 - In-kind or volunteer services
 - Materials and space costs
- Data collection
 - Resource use collected via interviews and questionnaires
 - Price data collected via interviews and public data sources (e.g., BLS)

Study Design

- Study timeline
 - Year 1: 2016-2017
 - Year 2: 2017-2018
 - Year 3: 2018-2019
- Outcome data collection (staff and student surveys)
 - Fall 2016
 - Spring 2017
 - Spring 2018
 - Spring 2019
- Cost data collection
 - Start-up: Spring/summer 2016
 - Year 1: Fall 2017
 - Year 2: Fall 2018
 - Year 3: Fall 2019

Preliminary results: start-up costs

Mean SBMH Start-Up Costs Per School, By School Type (2018\$)

	TAU (N=9)	EX (N=8)	ET (N=8)
Training and related activities	NA	\$0	\$39,657
Hiring activities	NA	\$1,654	\$1,654
Meetings w/ school staff & admin	NA	\$390	\$390
Materials	NA	\$56	\$2,495
Other (e.g., legal, IT)	NA	\$54	\$54
<i>Total</i>	<i>NA</i>	<i>\$2,154</i>	<i>\$44,249</i>

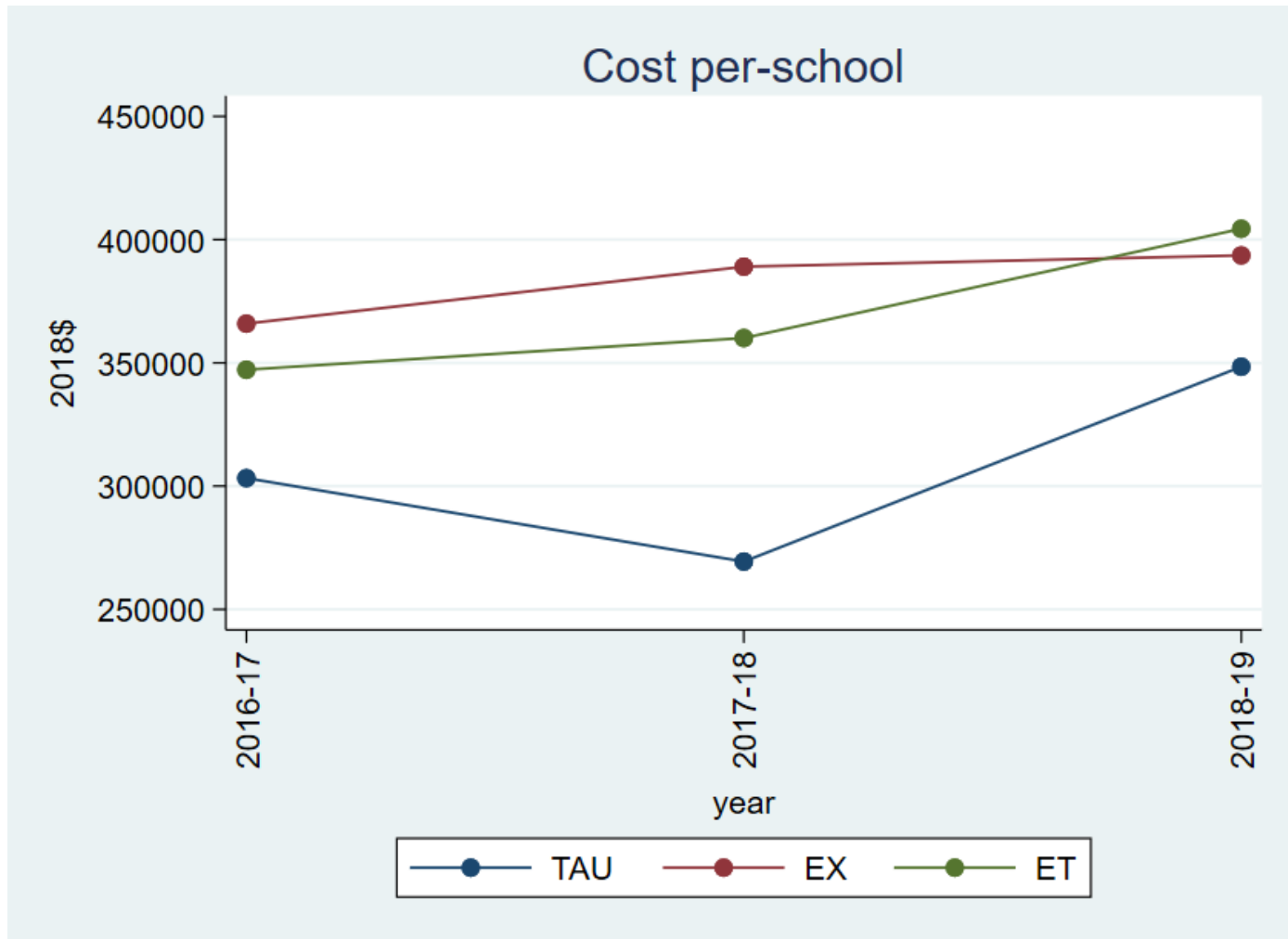
Preliminary results: ongoing costs per school

Mean SBMH Annual Cost Per School, by Year and Condition (2018\$)

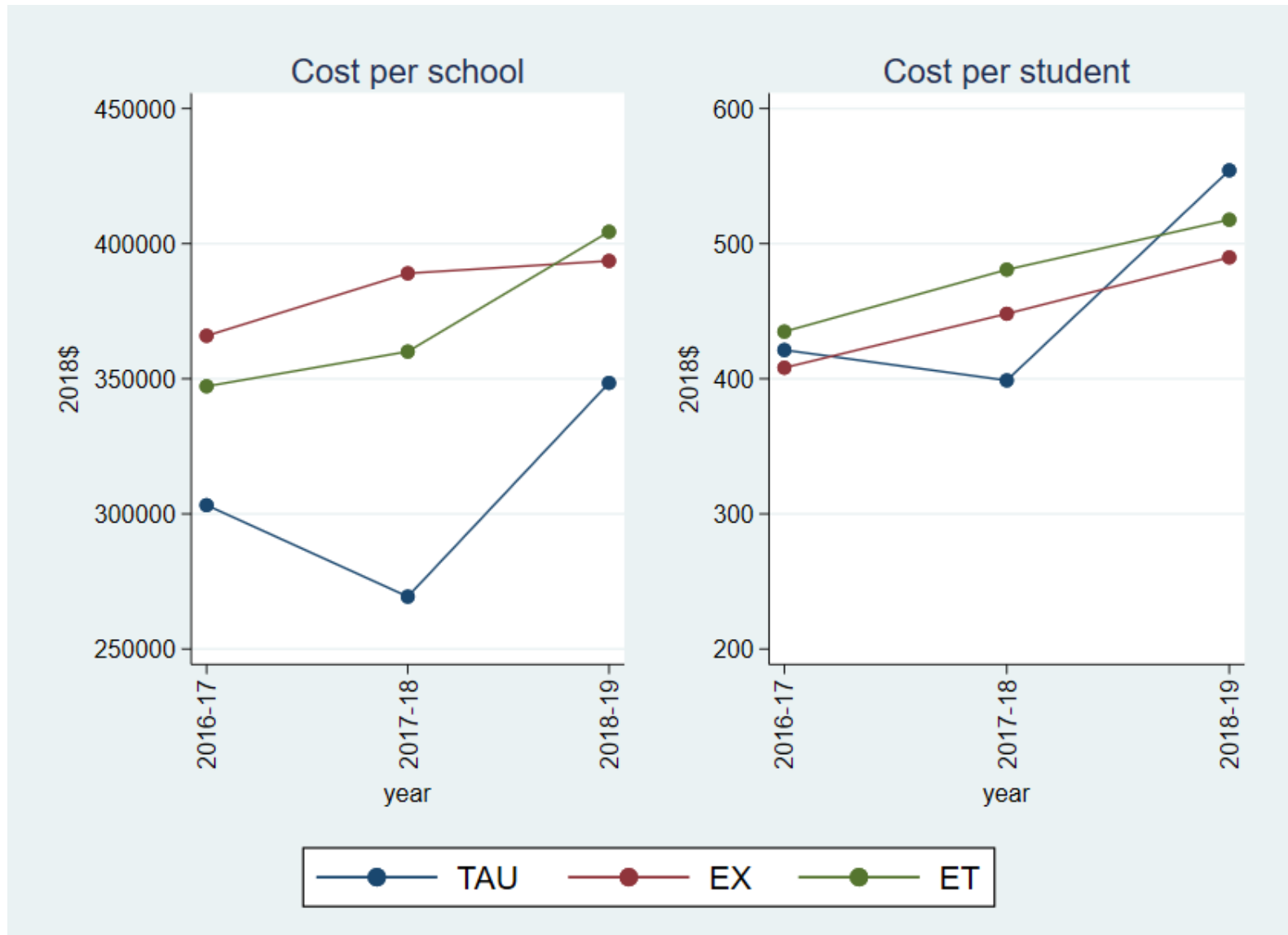
	2016-17	2017-18	2018-19
TAU (N=9)	\$303,240 (\$107,014)	\$269,388 (\$115,877)	\$348,449 (\$76,899)
EX (N=8)	\$365,902 (\$44,037)	\$389,025 (\$83,970)	\$393,610 (\$87,564)
ET (N=8, 7 year 3)	\$347,217 (\$83,122)	\$360,066 (\$77,297)	\$404,407 (\$59,159)

Standard deviation in parenthesis

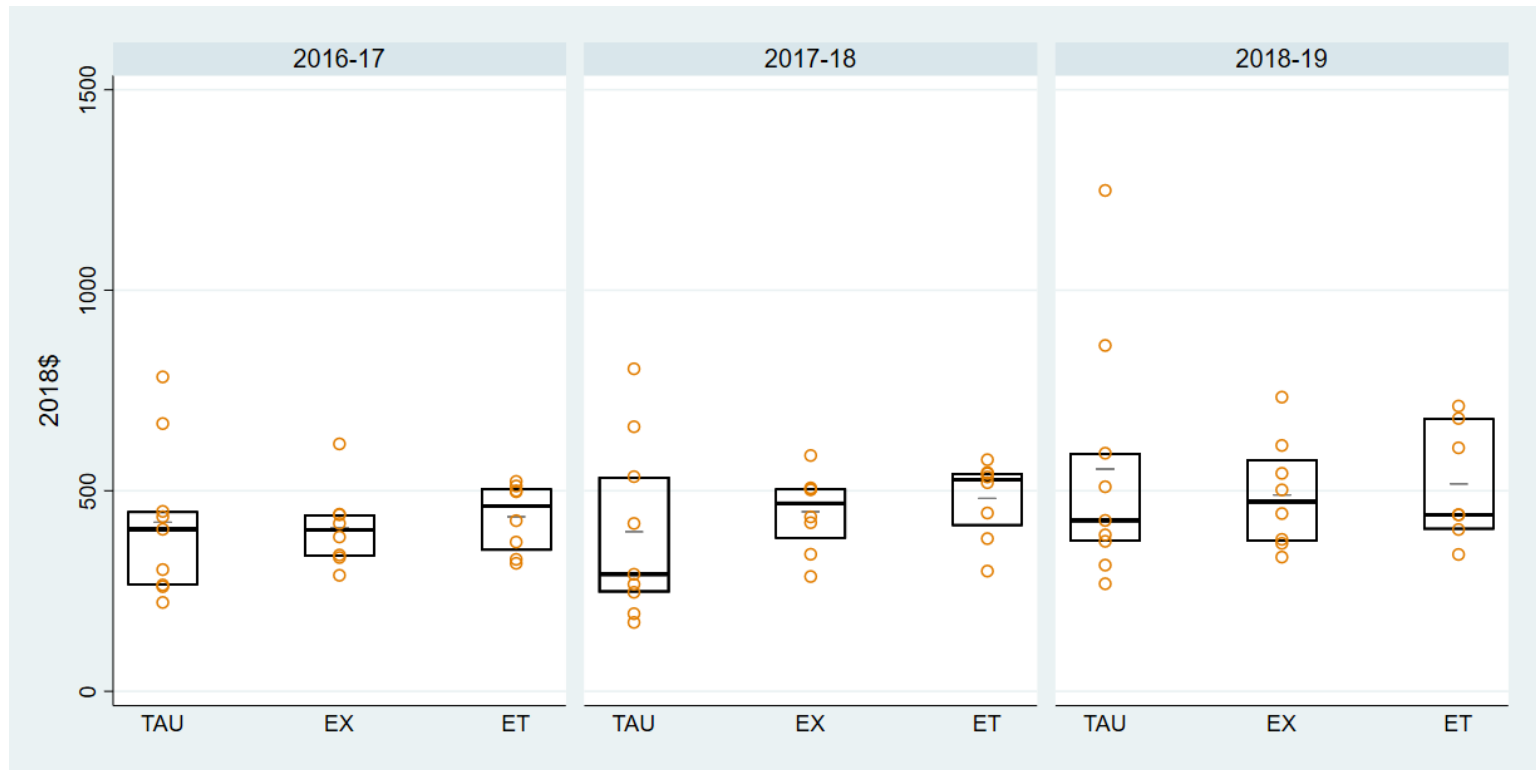
Mean ongoing costs per-school



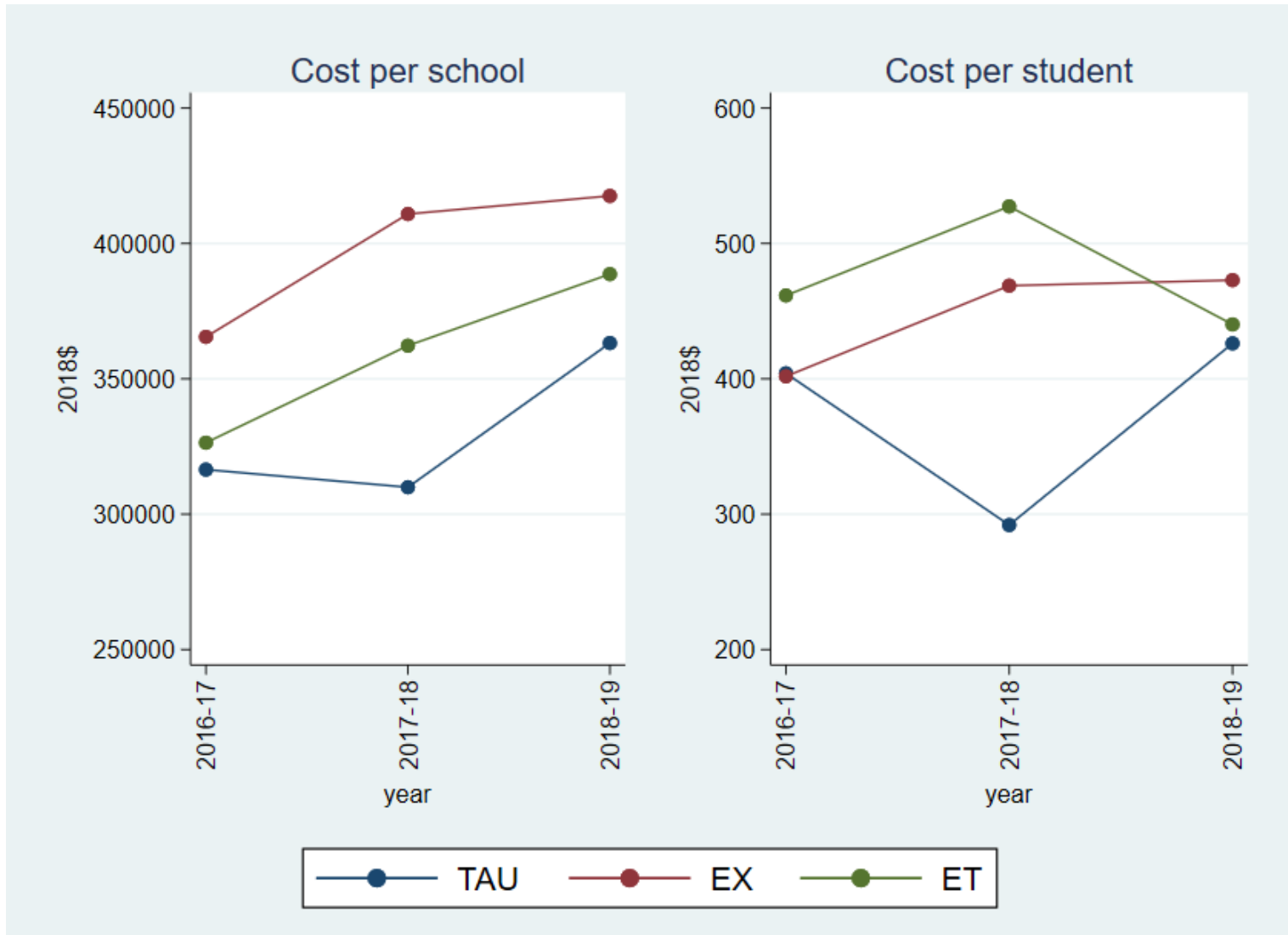
Mean ongoing costs per-school and per-student



Boxplot of ongoing costs per student



Median ongoing costs per-school and per-student



Mean cost per-school by cost category, 2018-19

	TAU	EX	ET
Labor	\$316,585	\$361,573	\$369,435
In-Kind	\$7,663	\$4,310	\$7,834
Contracted	\$3,961	\$5,374	\$4,917
District staff	\$5,453	\$6,083	\$6,011
Space	\$14,658	\$16,126	\$16,011
Other (Materials, Trainings)	\$130	\$144	\$199
Total	\$348,449	\$393,610	\$404,407

Discussion: Core Findings

- Start up:
 - EX costs about \$2,000 more per school than TAU
 - ET costs about \$44,000 more per school than TAU
 - Costs driven by SPARCS & DBT training
- Ongoing
 - Costs are driven by labor
 - Community-based mental health providers have little effect on costs because they mostly bill to Medicaid, private insurance
 - At the school level, EX and ET cost more than TAU across all years
 - At the student level, results are less clear

Next Steps

- Explore cost per student served
- Outcome Evaluation
 - victimization and aggression
- Cost-effectiveness analysis
 - Will combine cost results with outcomes to determine which treatment arm is cost-effective relative to the alternatives
 - Assesses trade-off of extra spending on an intervention arm and improving outcomes

Next steps: Outcome Evaluation

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

Limitations

- Limitations:
 - A single school district in North Carolina
 - Small number of schools
 - School-level data (small N)

More Information

Alan Barnosky

919.316.3333

abarnosky@rti.org

Alex Cowell

919.541.8754

cowell@rti.org

Back Pocket slides

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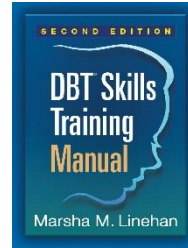
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Evidence-Based Treatments Added in Enhanced Condition

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

Boxplot of ongoing costs per school

SBMH School-Level Costs

