

Putting More Evidence in Evidence-Based Practice: Designing Informed and Efficient Children's Mental Health Systems

June 17, 2014

IOM-NRC Forum on Promoting Children's Cognitive, Affective, and Behavioral Health

Bruce F. Chorpita, PhD

It's about...

- Alleviating human suffering by increasing the public impact of science
- Building healthier families, stronger communities, better lives



Where Evidence Comes In



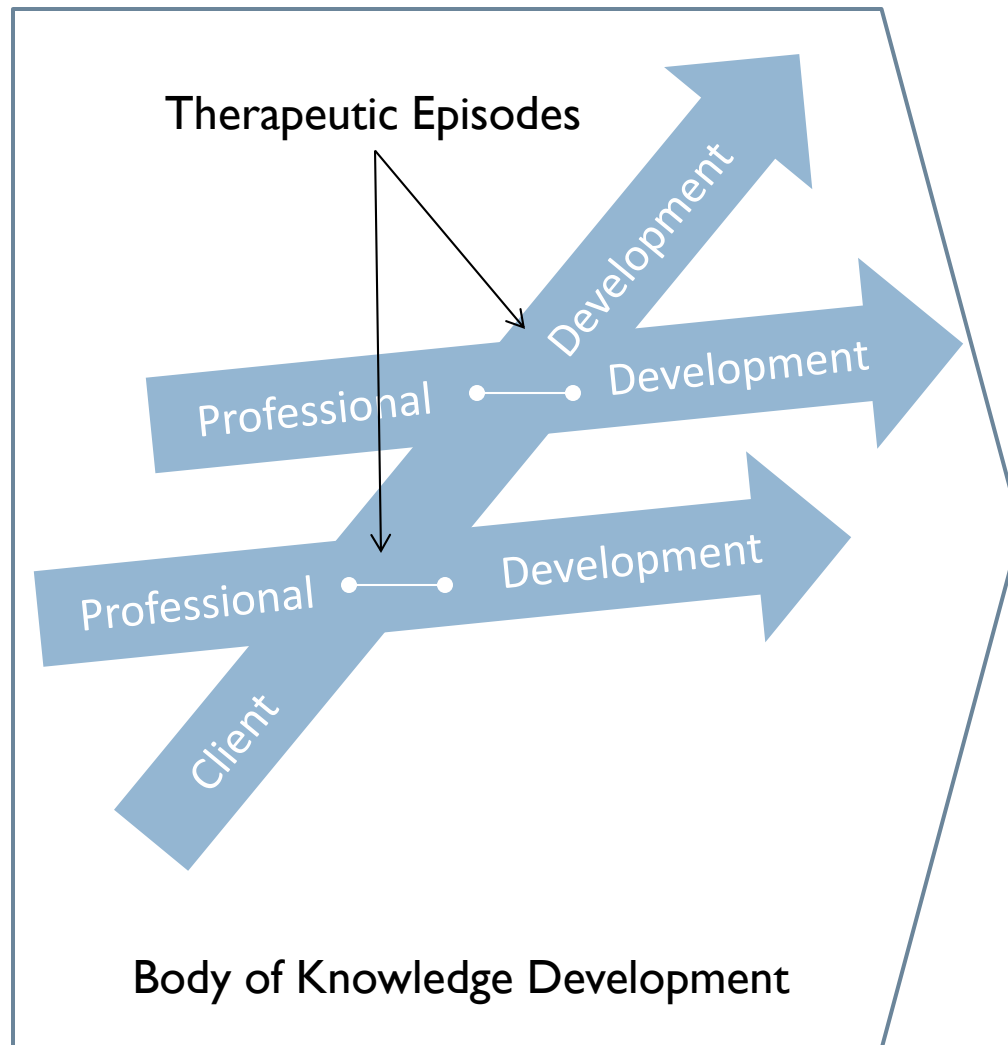
- The debate is about *how* evidence should inform clinical practice, not whether it should.

Stuart & Lilienfeld (2007)

No Shortage of Evidence

- Chorpita et al. (2011) identified 395 evidence-based protocols in a recent review of over 750 non-pharmacological treatments tested in controlled clinical trials
- We have identified 533 as of April 2014...

Challenge: Putting Evidence to Work



Critical Aspects of System Design

#1 Be Developmental



Critical Aspects of System Design

#2 Be Dynamic



What Happens When We Don't Design for Developmental Differences and Exceptions?



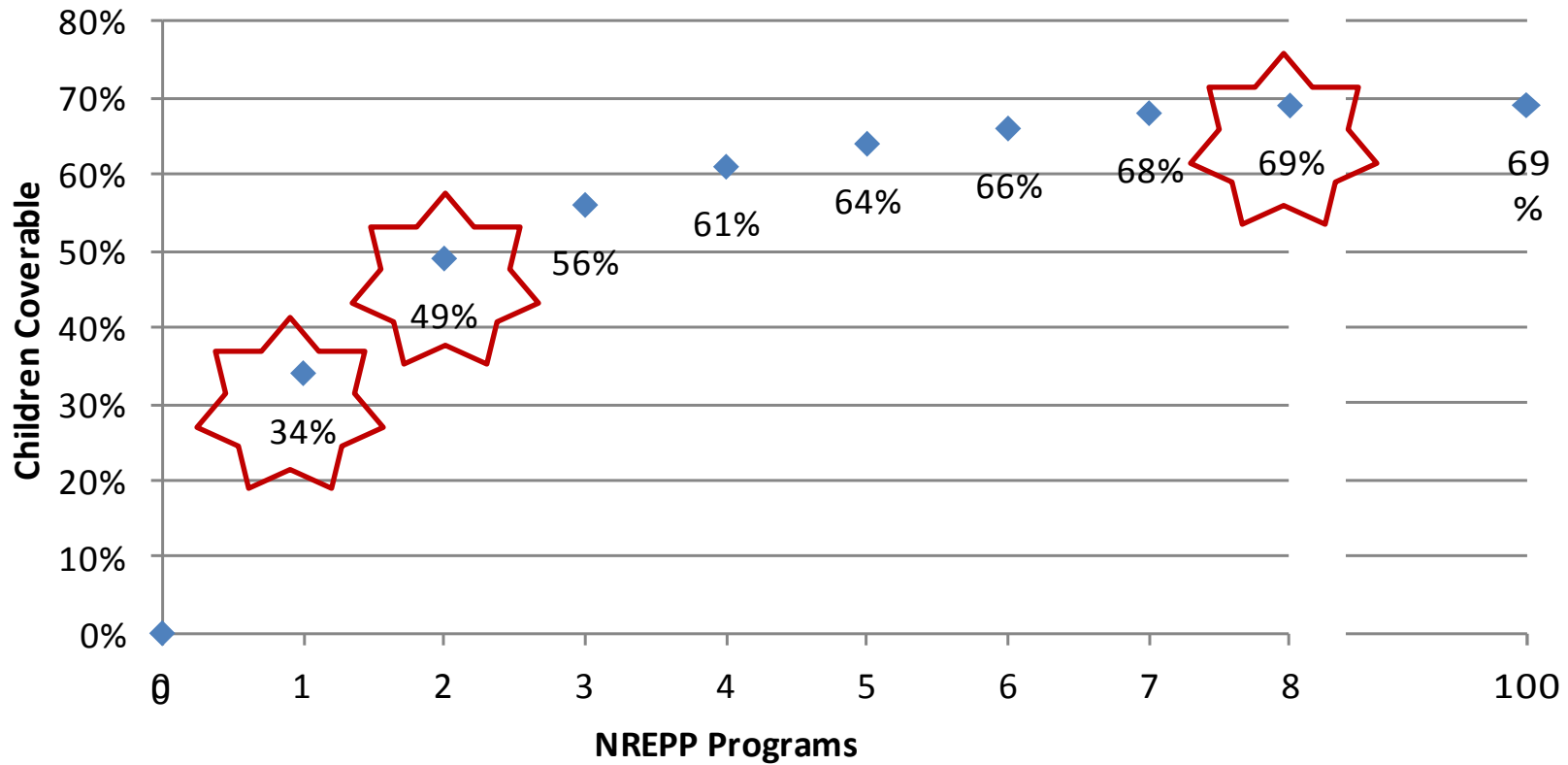
- Differences or exceptions are ignored
- We enter an “error state” of unstructured adaptation and spontaneous reactivity

How Does this Work at the System Level?

- “Relevance Mapping” determines how many EBTs are needed to serve a given population
- Shows which youth are coverable, which EBTs are needed, under a variety of scenarios...

Chorpita, B. F., Bernstein, A. D., & Daleiden, E. L. (2011). Empirically guided coordination of multiple evidence-based treatments: An illustration of relevance mapping in children's mental health services. *Journal of Consulting and Clinical Psychology*, 79, 470-480.

Matching Youth to Studies on Problem, Age, and Gender

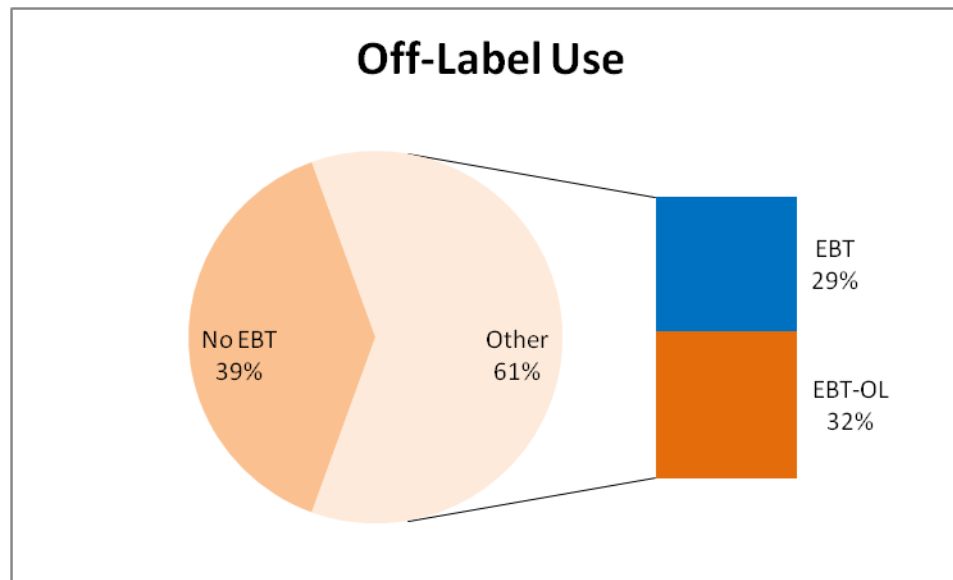


Implications

- Standard EBTs alone may not be sufficient to create high-performance service systems
 - ▣ Approximately one third of cases are “exceptions”
 - Ignored: Providers deliver off-label EBTs
 - Error state: Providers revert to Usual Care

“Off-Label” Use of EBTs

- Delivering an EBT that does not match the any of the youth’s top three problems and age range



- Significantly associated with provider training history
- For youth receiving trauma-focused treatment, 94% of treatment was off-label

Implications

- These data underestimate problem, which is typically much worse
 - Small organizations
 - Remote communities
 - Non-responders to initial EBT, need a second one
- Ideal service systems may involve hybrid combinations of existing EBTs and new treatment architectures that allow for **real-time design**



Design at the Treatment Level

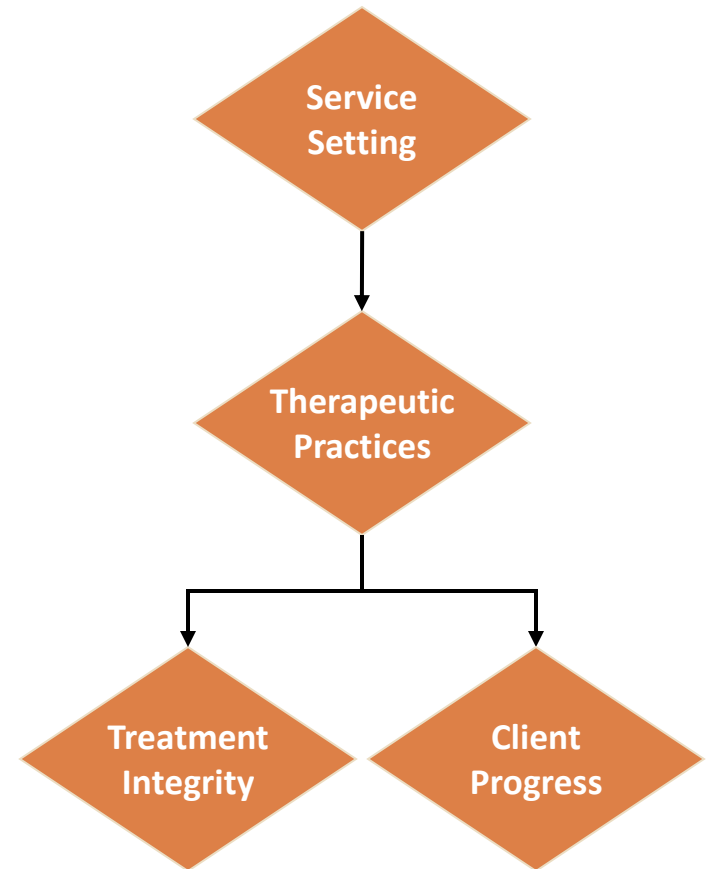
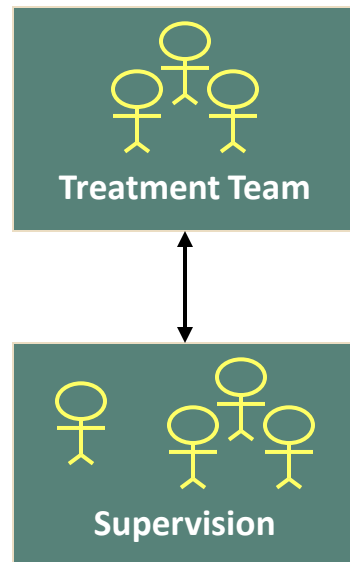
From paper maps to GPS...

Directions to My Party

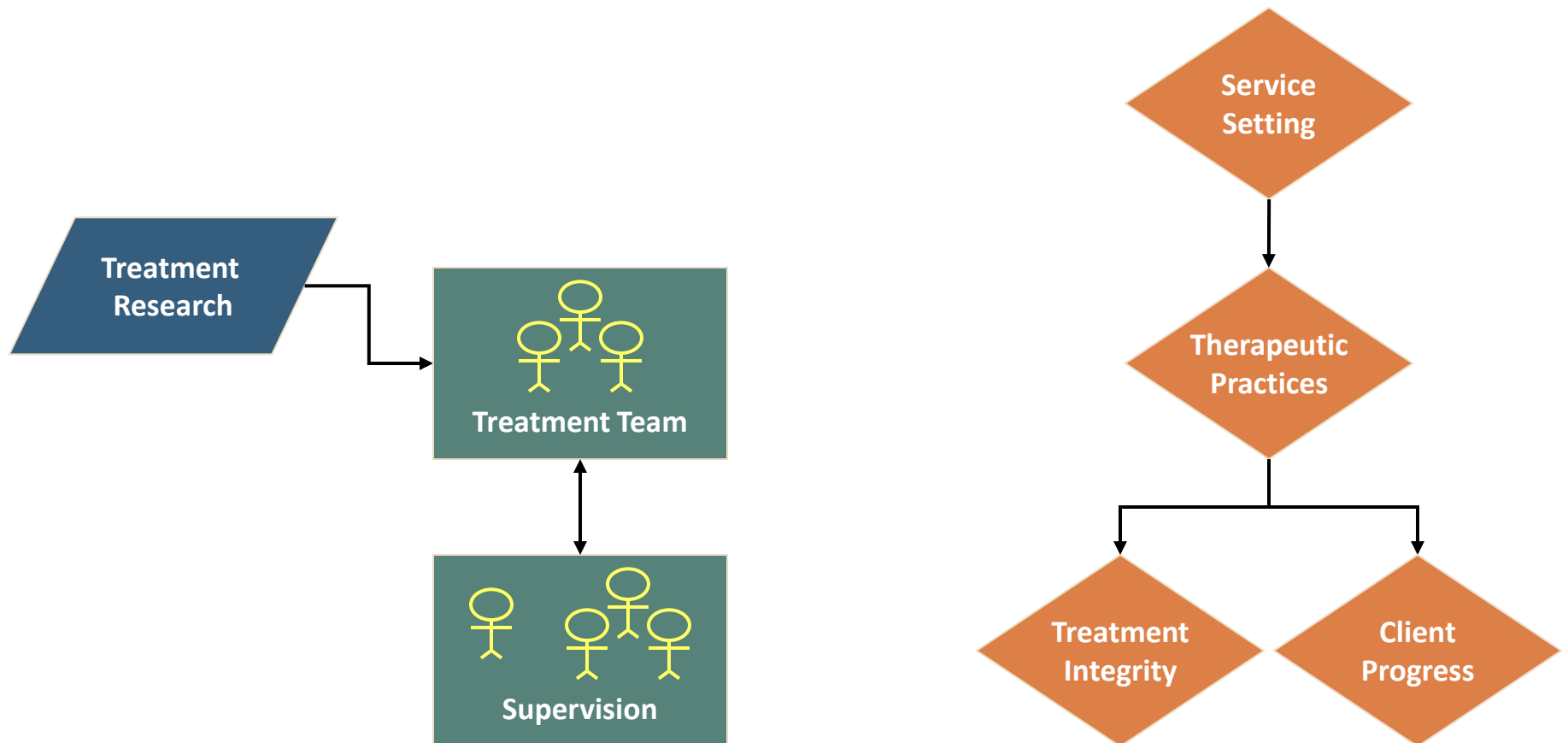
1. Head **east** on **Market St**
2. Turn left onto **Schuylkill Ave W**
3. Take the **Interstate 76 W** ramp to **Valley Forge**
4. Keep left at the fork, follow signs for **I-76 W/Valley/Forge** and merge onto **I-76 W**
5. Keep left at the fork, follow signs for **I-76 W/Harrisburg** and merge onto **I-76 W**
6. Merge onto **I-76**
7. Merge onto **I-76 W**
8. Take exit **75** to merge onto **I-70 W** toward **Wheeling WV**
9. Keep left to stay on **I-70 W**
10. Keep left to continue on **I-470 W**, follow signs for **Columbus**
11. Merge onto **I-70 W**
12. Keep right to stay on **I-70 W**, follow signs for **Interstate 70 W/Dayton/Rich Street/Town Street**
13. Continue onto **Anton Tony Hulman Jr Memorial Way**
14. Continue onto **I-70 W**
15. Keep right to stay on **I-70 W**, follow signs for **Interstate 70 W/Saint Louis**
16. Take the **Interstate 55/Interstate 70** exit on the left toward **St Louis**
17. Merge onto **I-55 S18**. Take exit **40B** for **Interstate 55 S** toward **Interstate 44 W**
19. Merge onto **I-44/I-55 S**
20. Keep right to continue on **I-44**, follow signs for **12th St/Gravois Ave**
21. Take exit **34** to merge onto **I-44 W/US-412 W** toward **OK-66/Tulsa**
22. Keep left to continue on **I-44**
23. Keep left at the fork, follow signs for **Oklahoma 66 W/Interstate 44 W/Sapulpa/Okla. City** and merge onto **I-44**
24. Continue onto **John Kilpatrick Turnpike**
25. Take the exit onto **I-40 W** toward **Amarillo**
26. Merge onto **I-15 S**
27. Keep right to stay on **I-15 S**, follow signs for **Los Angeles/San Diego**
28. Take the exit onto **CA-210 W** toward **Pasadena**
29. Continue onto **I-210 W**
30. Continue onto **CA-134**
31. Merge onto **US-101 N**
32. Take the exit onto **I-405 S** toward **Santa Monica**
33. Take the exit toward **Sunset Blvd**
34. Turn left onto **N Church Ln**
35. Turn right onto **Sunset Blvd**
36. Turn right onto **Mandeville Canyon Rd**
37. Take the 1st left onto **Westridge Rd**
38. Turn left onto **Raywood Dr** Destination will be on the left



What evidence drives decisions?

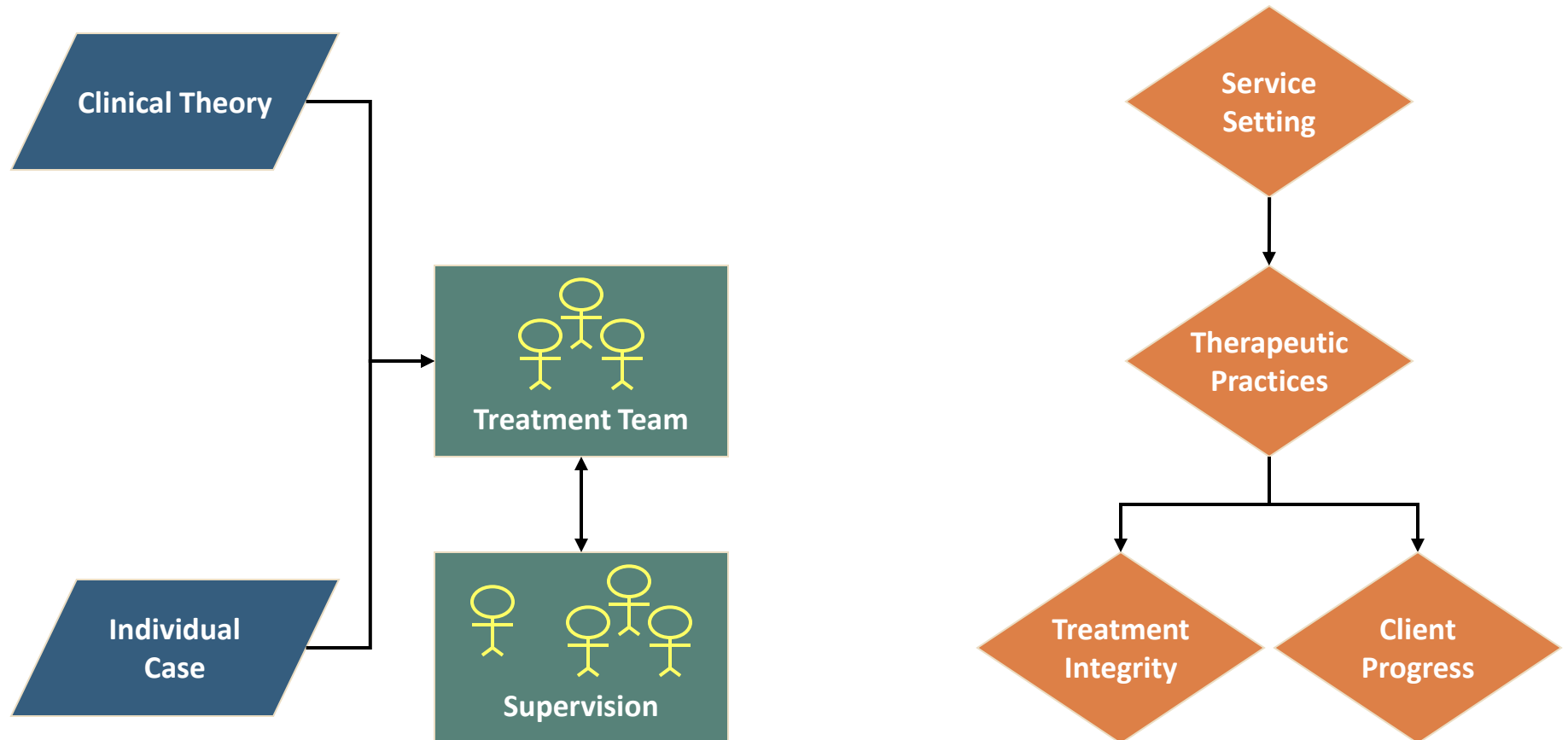


What evidence drives decisions?



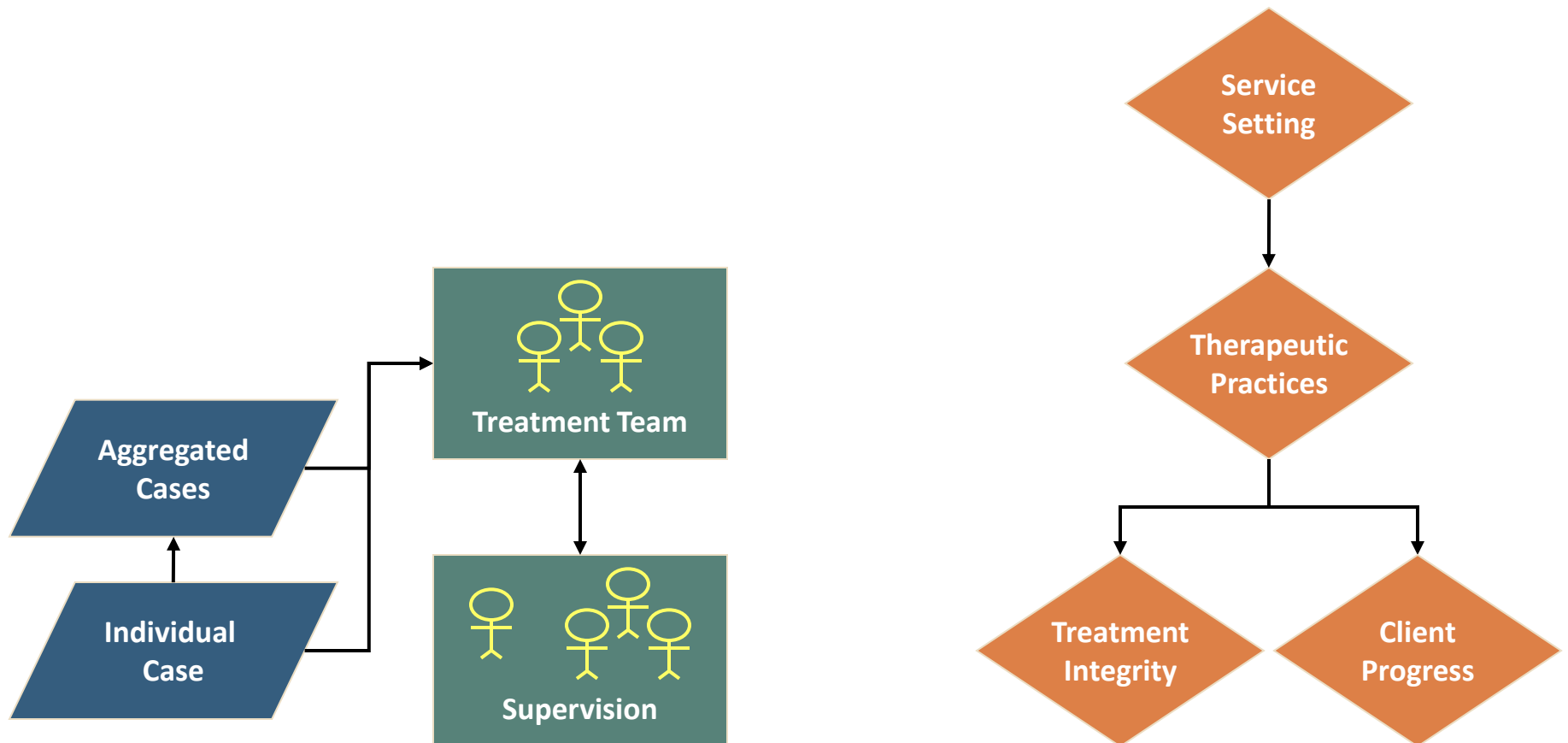
Evidence-Based Services Model

What evidence drives decisions?



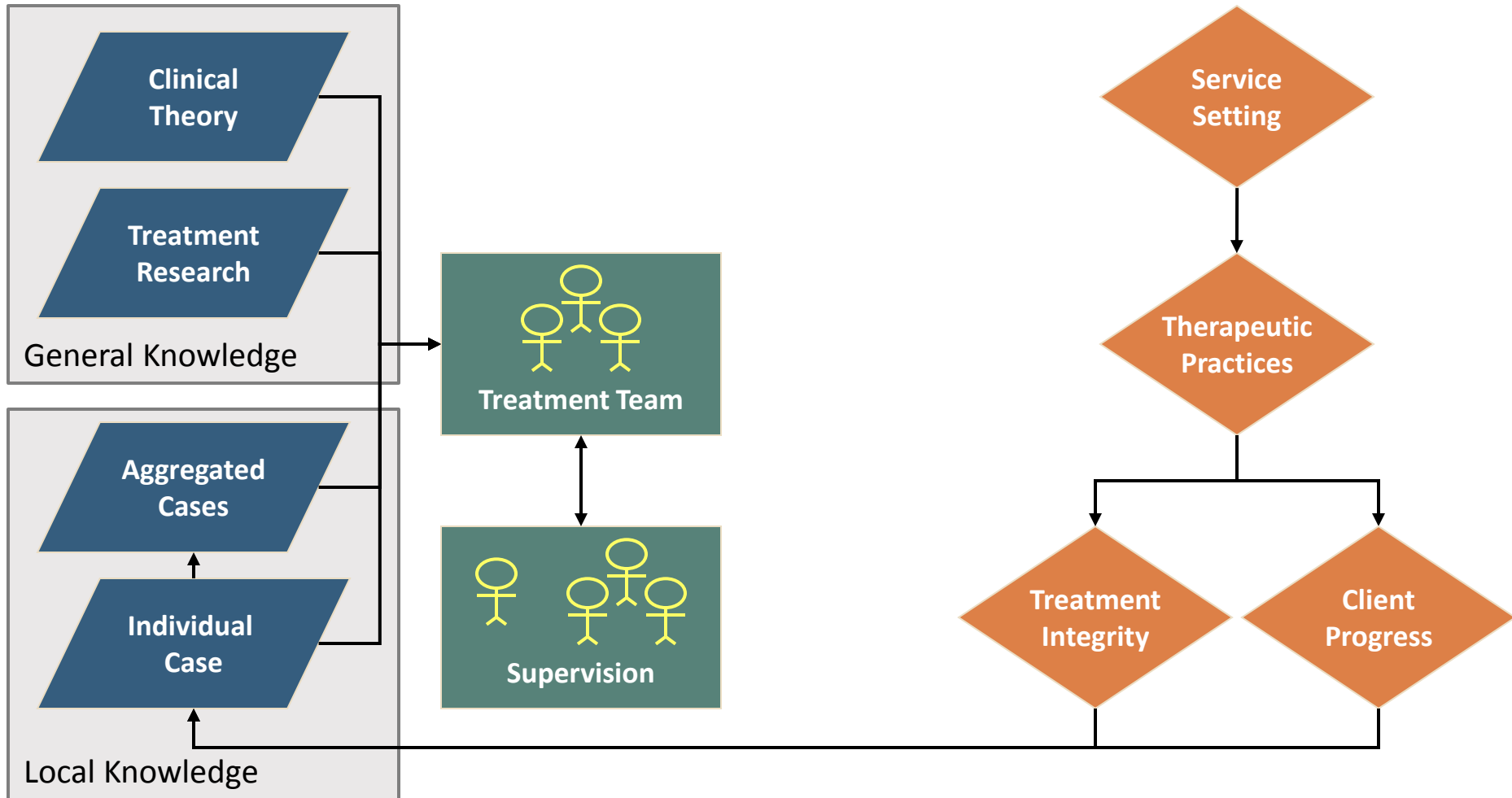
Individualized Case Conceptualization Model

What evidence drives decisions?



Practice-Based Evidence Model

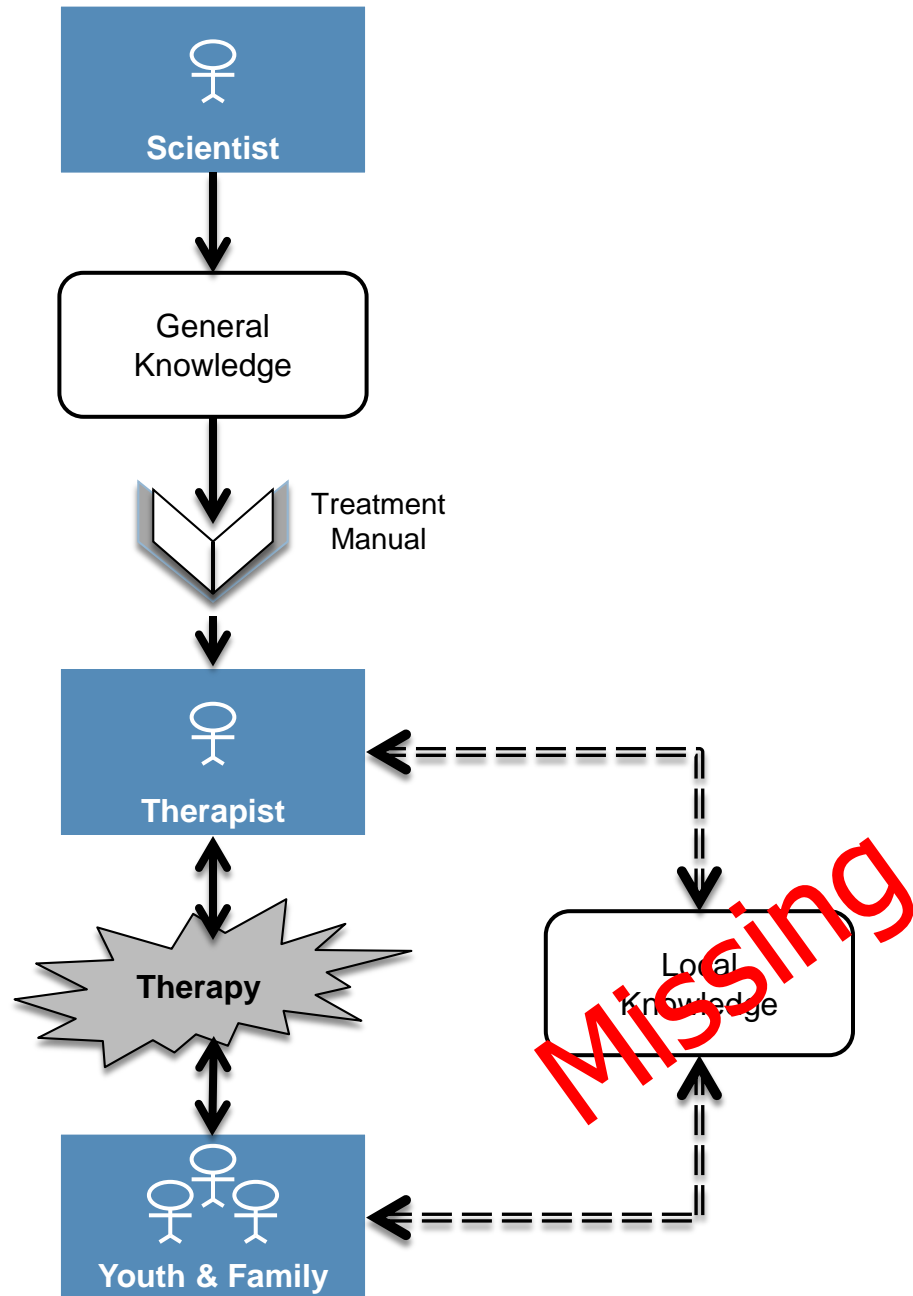
The Full Model





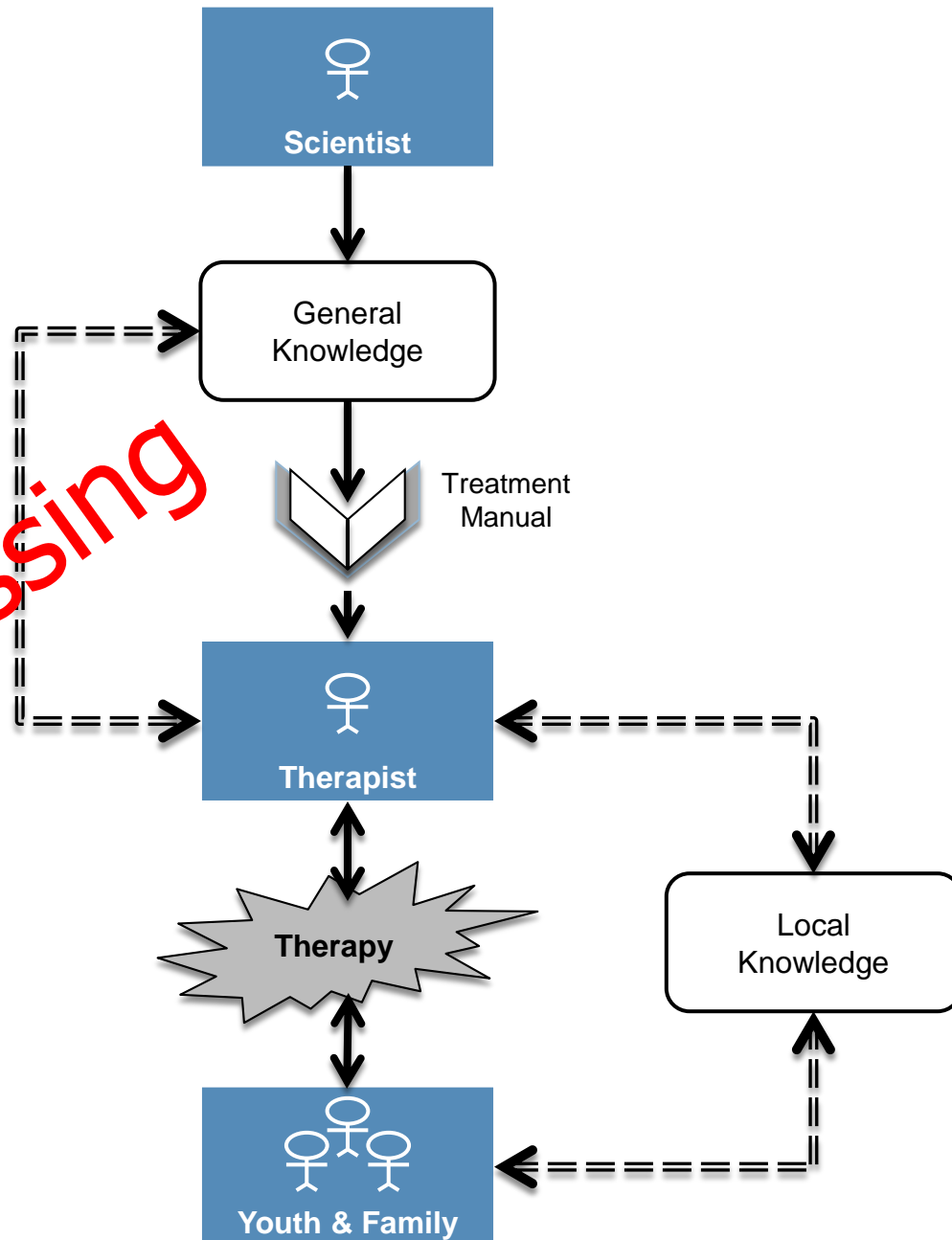
Where's the Problem?

How do we know
there is an exception
(e.g., treatment not
working as
expected)?

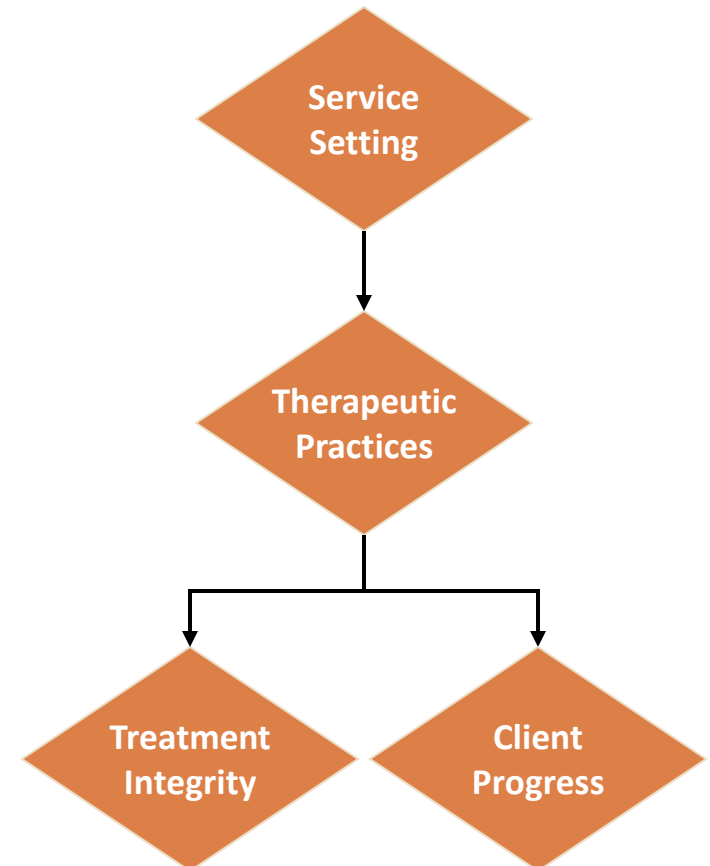
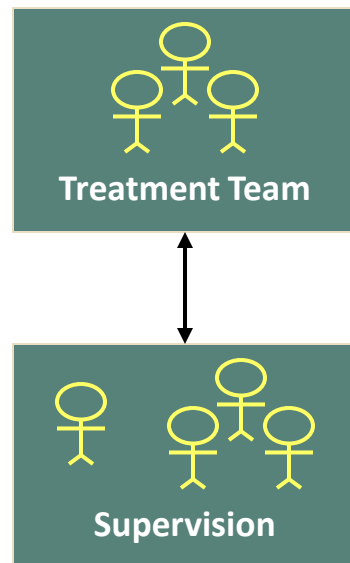


Manual as a
knowledge
resource not
always amendable
to intra-episode
adaptation

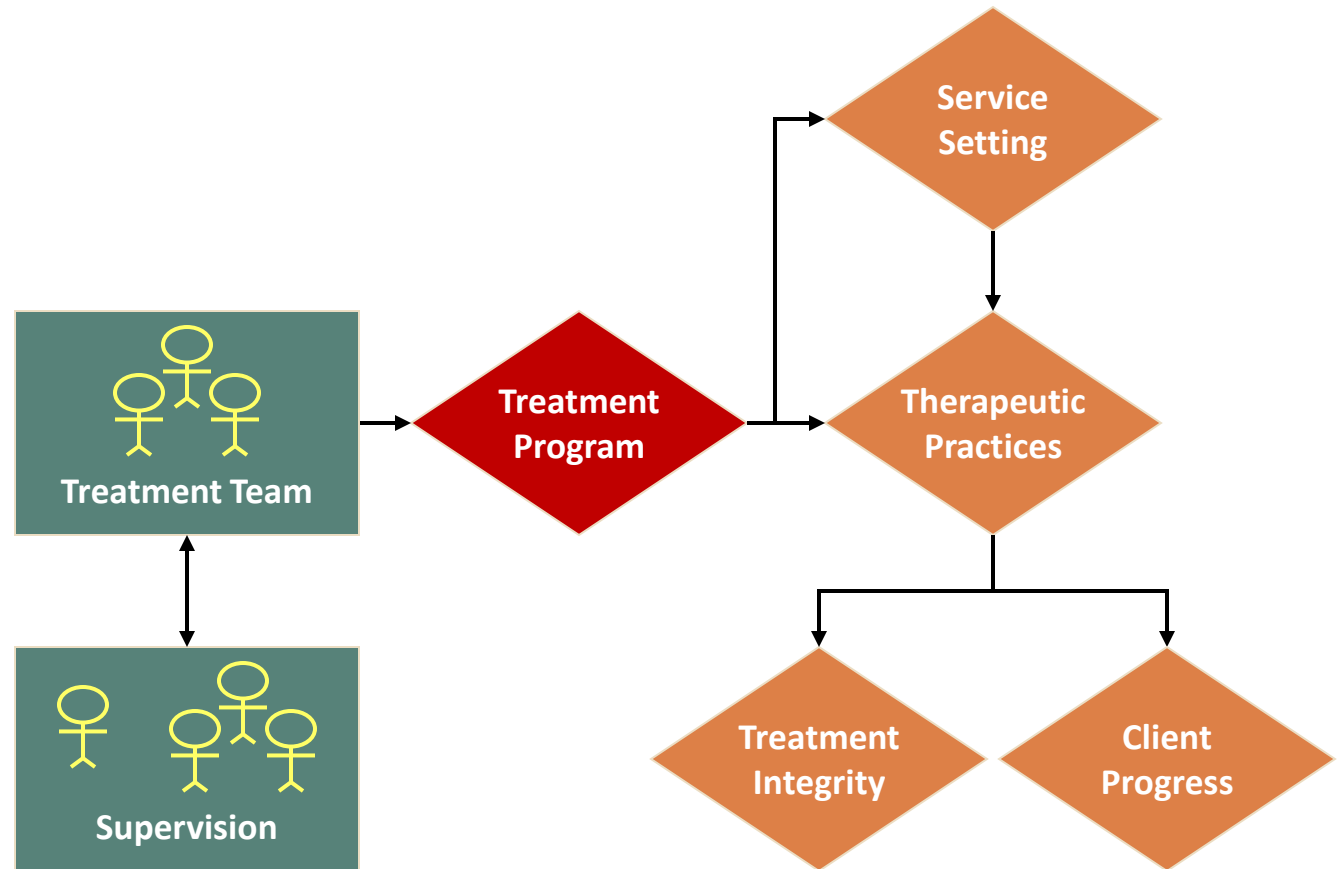
Missing



Not just problems with being dynamic, but with being developmental (meeting people where they are)...

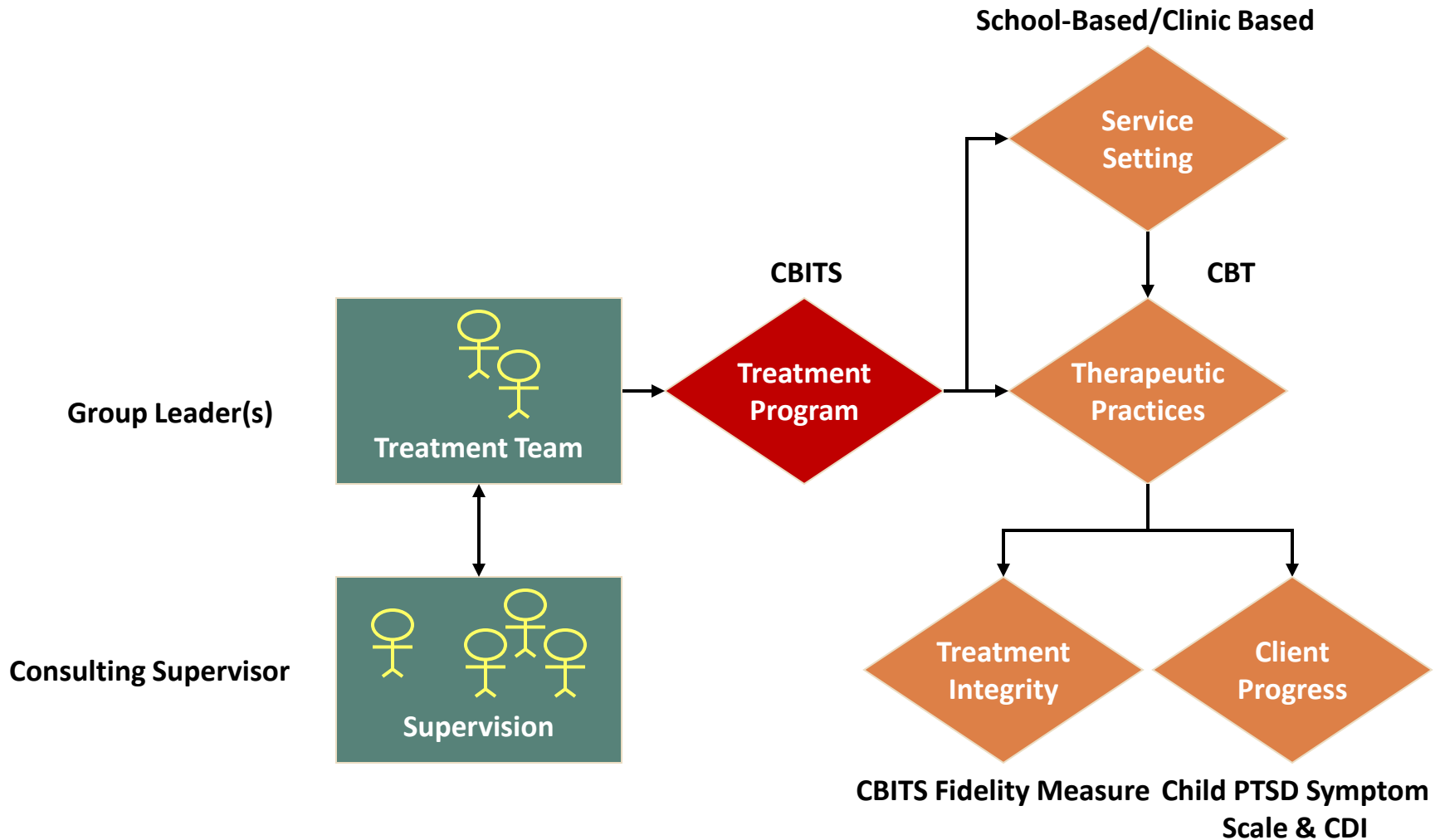


Selecting a treatment program will often dictate the setting, practices, integrity measures, progress measures, and even treatment team and supervision structure

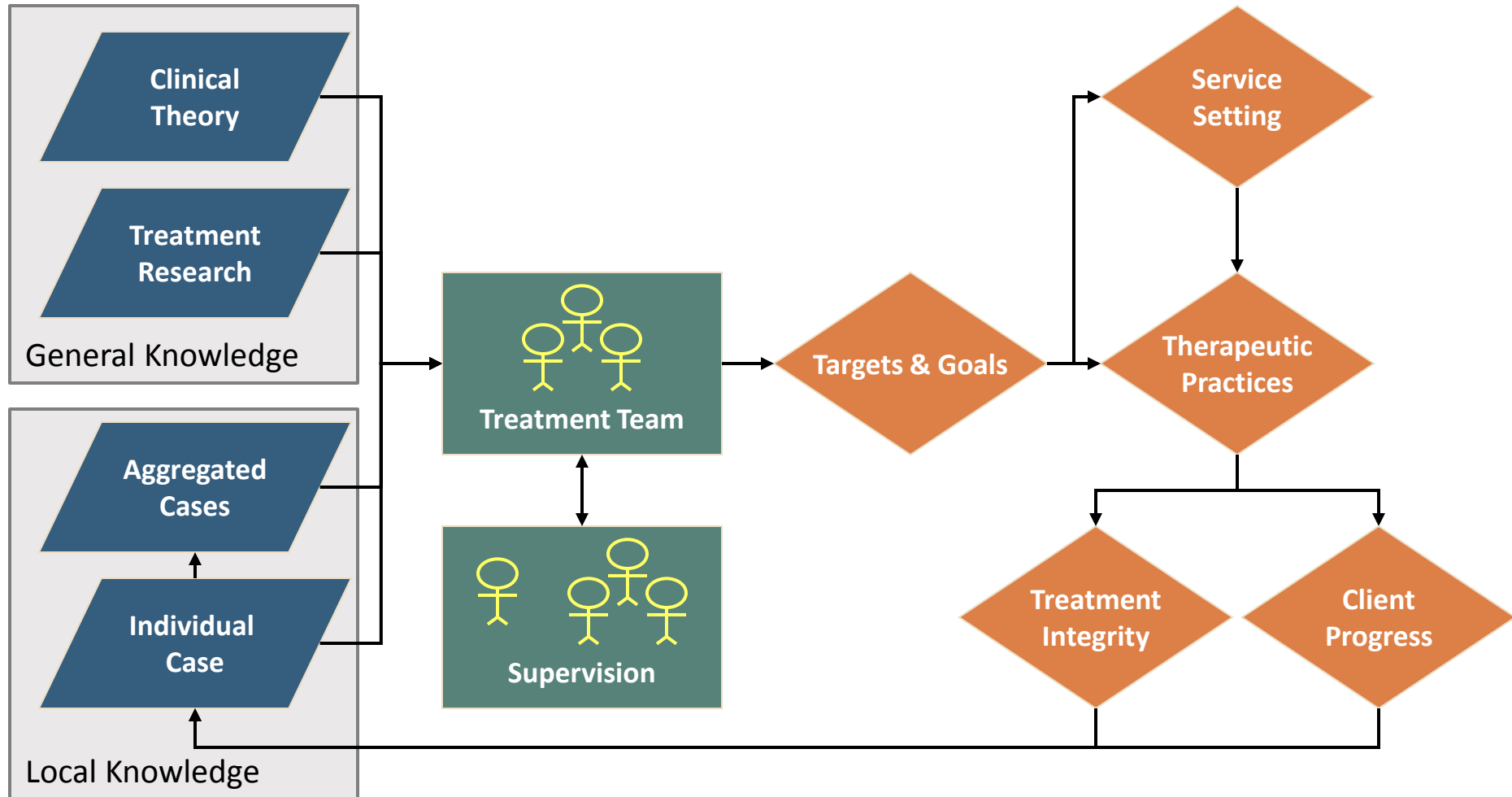


Example

CBITS: Cognitive Behavioral Intervention for Trauma in Schools



But decisions can be “unbundled” by selecting ***targets and goals*** first and making other decisions in turn





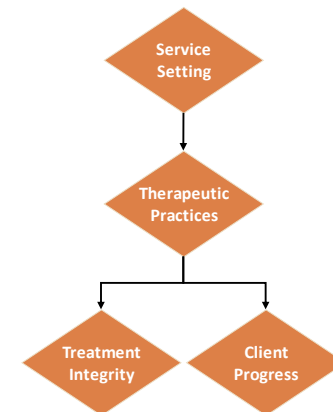
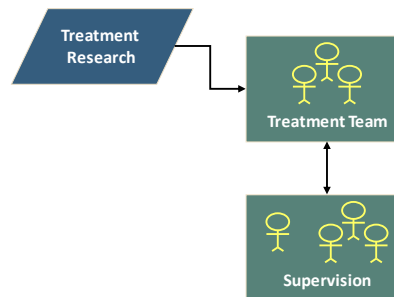
Managing and Adapting Practice (MAP)

A Treatment Builder for Direct Service

Where does the treatment research come in?

■ Ongoing Review and Analysis

- 700+ randomized clinical trials
- 45 years
- 1,613 study groups
- > 50,000 youth participants



We Need a Better Interface with the General Knowledge Base



“Good to see you. As soon as I finish reading these research studies (practice parameters, Cochrane Reviews, etc.), we can start our session today.”

Automated Review of Child RCTs

Evidence-Based Youth Mental Health Services Literature Database - Internet Explorer provided by Dell

http://www.practicewise.com/pwebs/YouthSearch.aspx

Google Calendar Evidence-Based Youth ... X

PracticeWise

Welcome

Evidence-Based Youth Mental Health Services Literature Database

Welcome! This application was created to help improve the lives of youth and families by providing information about mental health treatments for youth. This site allows you to search a database that contains treatment summaries based on an expert review of published research that meets specific standards for scientific quality.

Welcome to the Evidence-Based Youth Mental Health Services Literature Database

Below is a brief description of this database to help you find what you need.

Search Youth Treatments

Enter specific youth characteristics in order to find matching treatment protocols, treatment practices and research papers specific to your search criteria.

Treatment Protocols

Search for treatment protocols by author, title, or type of treatment to find out what practices are used and which studies tested the protocol.

Treatment Practice

View practice descriptions, find treatment protocols that use a specific practice and studies that test a specific practice.

Research Papers

Search for specific research papers by author, title, or source to find the protocols and practices that were studied.

By using this site you agree to the [Terms of Use](#).

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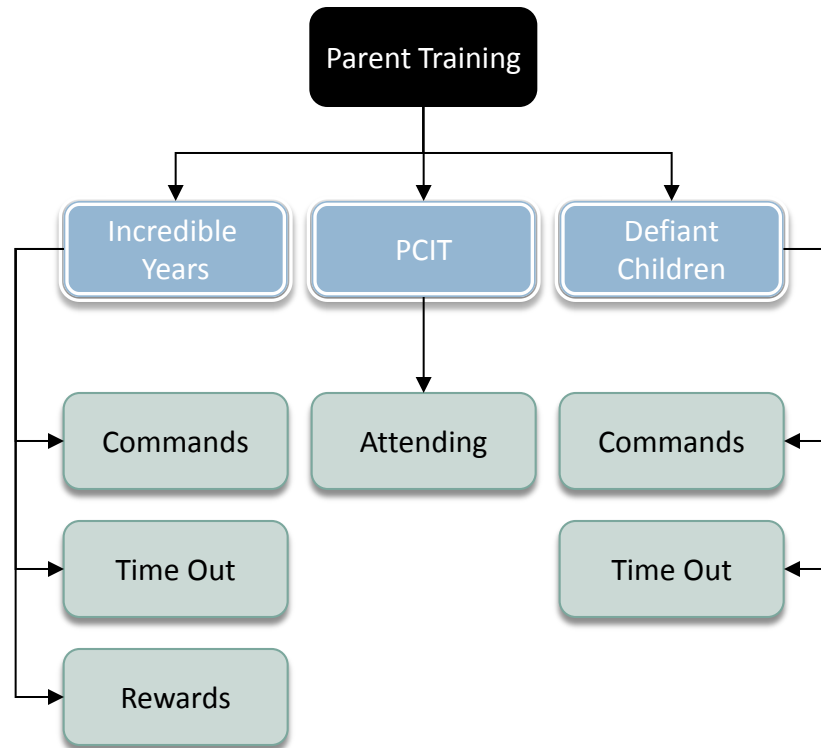
Internet | Protected Mode: On 100%

Delivering Knowledge in Multiple Levels

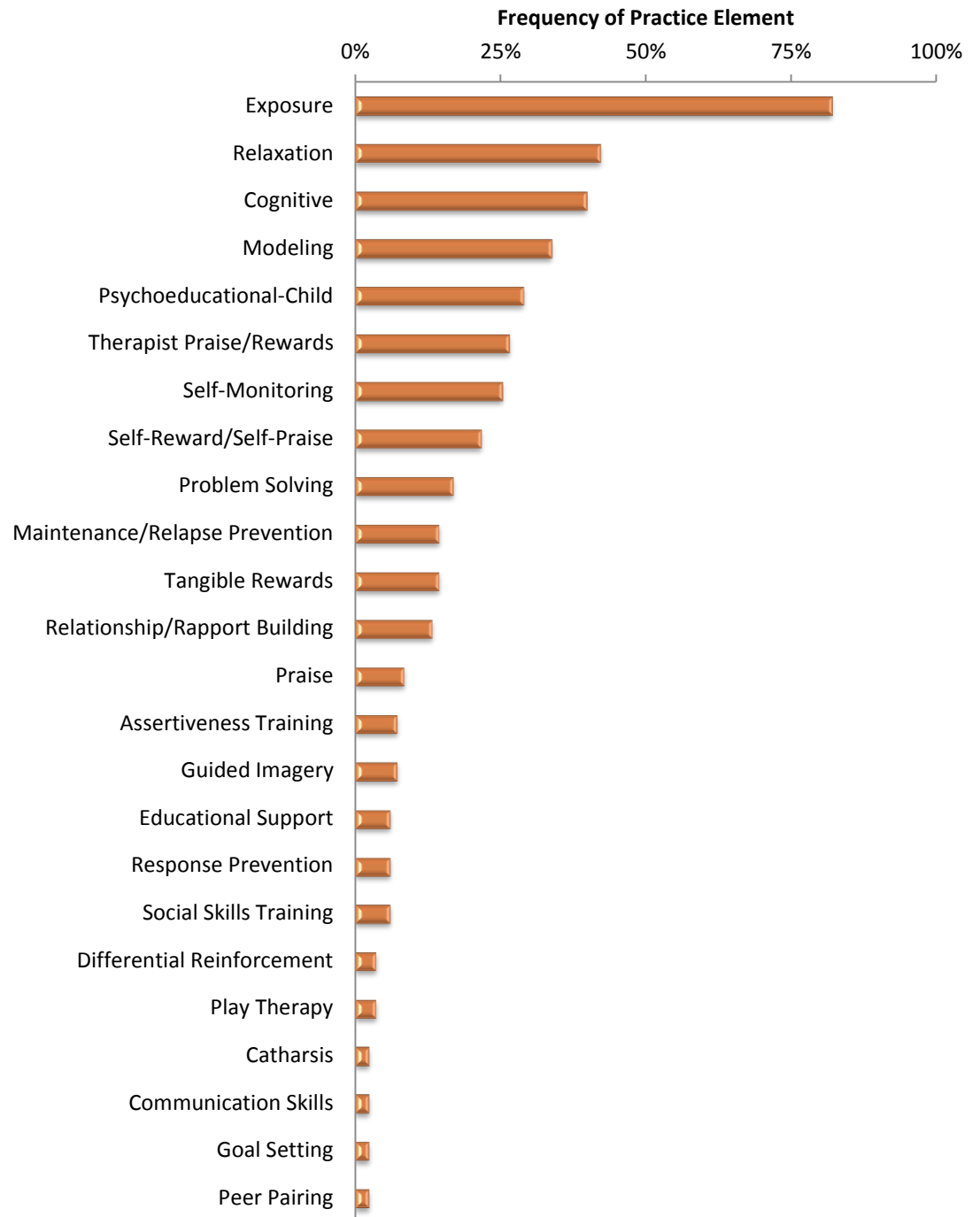
Families

Protocols

Practice Elements



Anxiety



Broader Challenge: Diverse Ontologies

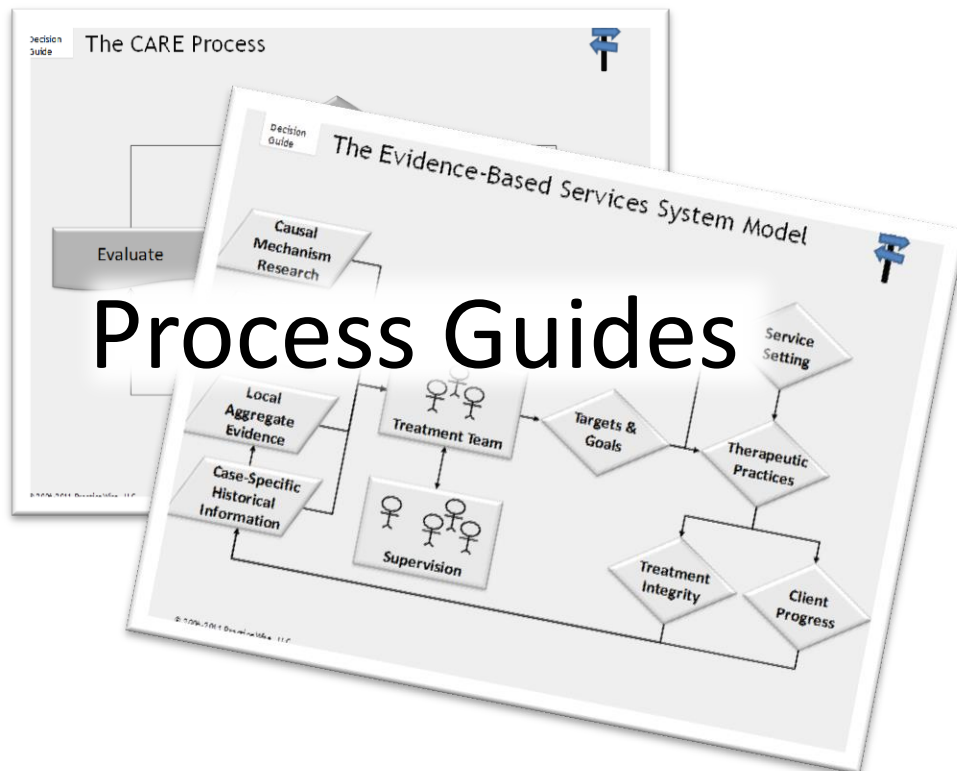
Domain		Examples	
	Client Development	Provider Development	Organizational Development
Targets/Outcomes	Diagnostic and Statistical Manual diagnoses Scores on defined measures Research Domain Criteria Individualized Education Plan goals	Interpersonal competencies Professional competencies Therapeutic effectiveness Certifications	Cost-effectiveness Climate and culture
Practices	Evidence-based treatments Common elements of treatments	Clinical Supervision Training Workshops Continuing Education Common elements of supervision	Leadership training Strategic planning
Populations	Children Adolescents Families Race/ethnicity Language spoken Urban/rural	Providers Supervisors Support Workers Teachers Nurses	Publicly funded community clinics Directly operated government programs Schools Managed care organizations
Contexts	School/clinic/home Poverty Stable/unstable community	Solo practice Community mental health Child welfare Juvenile justice	Recession/economic growth Privatized vs. socialized health care
Coordination	Assessment precedes treatment	Supervised work precedes licensure	Accreditation must occur every 3 years to continue operation



From “What to Do” to “How to Do...”

Practice Guides

Practitioner Guides



<input type="checkbox"/> Discuss life goals in the context of the target behavior	Have the child state specific goals for 5, 10, and 20 years. Then, ask: <ul style="list-style-type: none">• How important is it for you to achieve these goals? Why?• What would it take for you to reach your goals?• Have you ever done something like this before?• What did it take for you to achieve your goals in the past? Ask: "How will [the behaviors] help you achieve your goals?" "How will
<input type="checkbox"/> Respond with reflect	
<input type="checkbox"/> Explore behavior cha	
<input type="checkbox"/> Consider life goals in context of behavior c	
<input type="checkbox"/> Identify a small goal	
<input type="checkbox"/> Reinforce "change ta	
<input type="checkbox"/> Foster self-efficacy	

Practitioner Guide

Motivational Enhancement

Use This When:

To increase reflection, efficacy, and commitment about behavior change.

Objectives:

- To highlight the discrepancy between values and life goals and current behavior
- To increase perceptions of self-efficacy

Steps:

<input type="checkbox"/> Adopt a collaborative, reflective style	The purpose of motivational enhancement is to promote the child's reflection about behavior in relation to goals. Be aware that resistance to behavior change is normal. Avoid imposing a specific end goal (e.g., total abstinence). Instead, encourage any behavior change that has the potential to improve the current situation (e.g., reduction of harm or risk related to behavior). Also minimize advice-giving, persuasion, and confrontation, which are contrary to the principles of motivational enhancement and likely to increase resistance to change.
<input type="checkbox"/> Explain rationale	Let the child know you value his or her perspectives and want to learn how the child makes decisions about behavior. Normalize and empathize with the child's situation (e.g., "Other children say it's a real hassle when adults are on their case about [substance use, sexual risk behaviors, unhealthy eating or exercise habits, poor study habits, etc.] and that they get frustrated when other people tell them how they should change.").
<input type="checkbox"/> Elicit benefits of a specific behavior	Have the child think about the immediate and long-term benefits of a specific target behavior (e.g., substance use, violating curfew). To promote reflection, ask questions such as: <ul style="list-style-type: none">• What feels good/is helpful about [the behavior] when you do it?• How does [the behavior] help you feel good about yourself?• How does [the behavior] help you cope with problems?• How does [the behavior] help you feel good about your future?
<input type="checkbox"/> Elicit negative consequences of the behavior	Have the child think about the immediate and long-term negative outcomes of the behavior. Ask questions such as: <ul style="list-style-type: none">• What feels bad/unhelpful about [the behavior] when you do it?• How does [the behavior] get in the way of feeling good about yourself?• How does [the behavior] get in the way of coping with your problems?• How does [the behavior] cause problems for you with socially?• How does [the behavior] get in the way of doing what needs to be done? Thoroughly explore and record the child's responses. If the child has difficulty thinking of negative consequences, provide prompts (e.g., "Some kids say that drinking can make it hard for them to study or to do well during sports competitions. Is this a concern for you?"). Validate and empathize (e.g., "It must be really tough to your parents/teachers/the police on your case."). Have child provide relative rankings of the negative consequences (i.e., which consequence is most problematic?).

Helpful Tips:

- Remember the importance of increasing self-efficacy
- Remember the importance of increasing reflection



The Clinical Dashboard

Local Knowledge to Inform Adaptation, Self-Correction

Local Knowledge Resource: Dashboard

Progress

Practice

Progress and Practice Monitoring Tool

Case ID: Maggie

Age (in years): 7.1

Gender: Female

Primary Diagnosis: Depression

Ethnicity: African American

Progress Measures:

Left Scale

PHQ-9

RCADS Depression T

☐ Clear All Data

☐ Redact File

Display Measure:

Yes PHQ-9

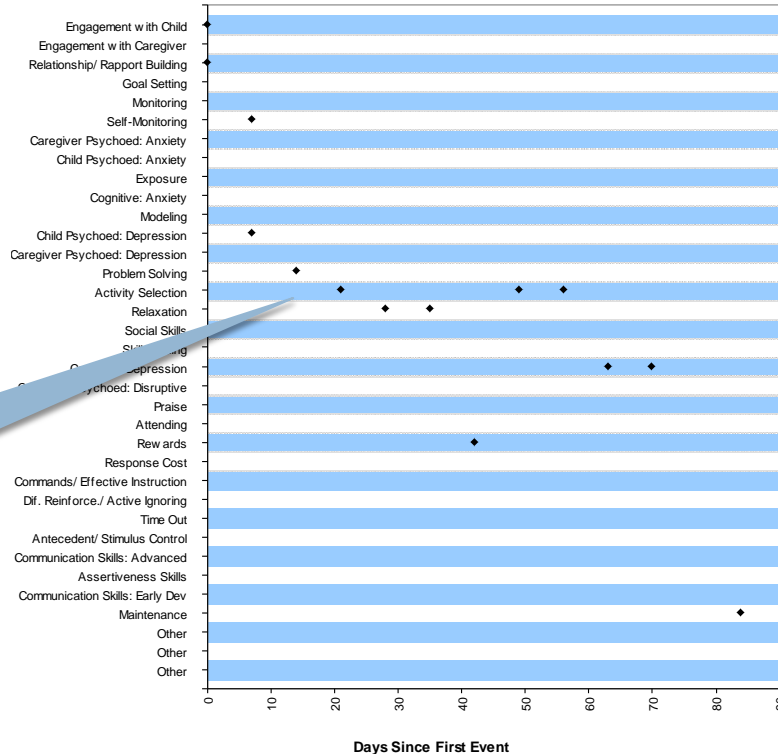
Yes RCADS Depression T

No

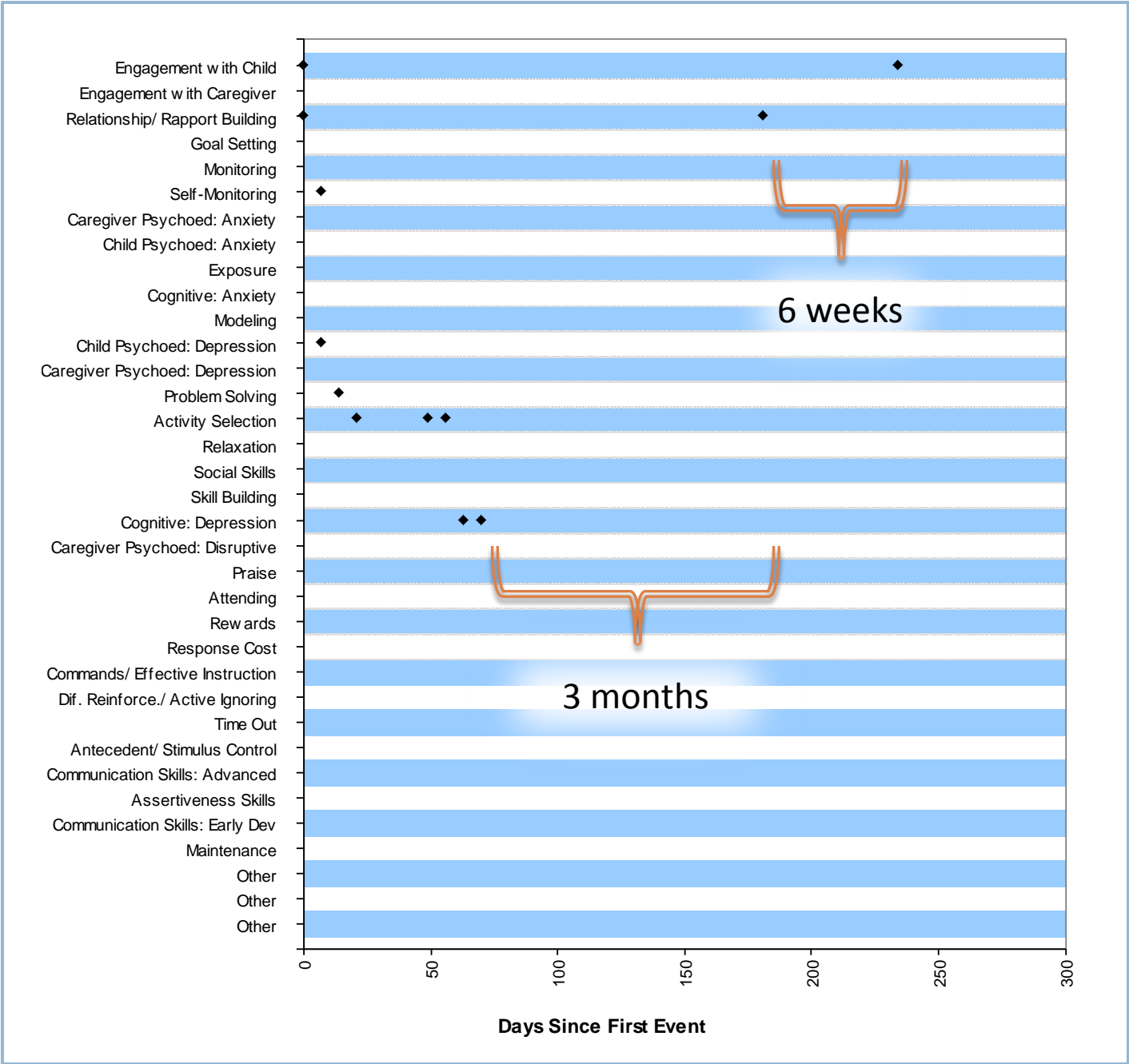
No

No

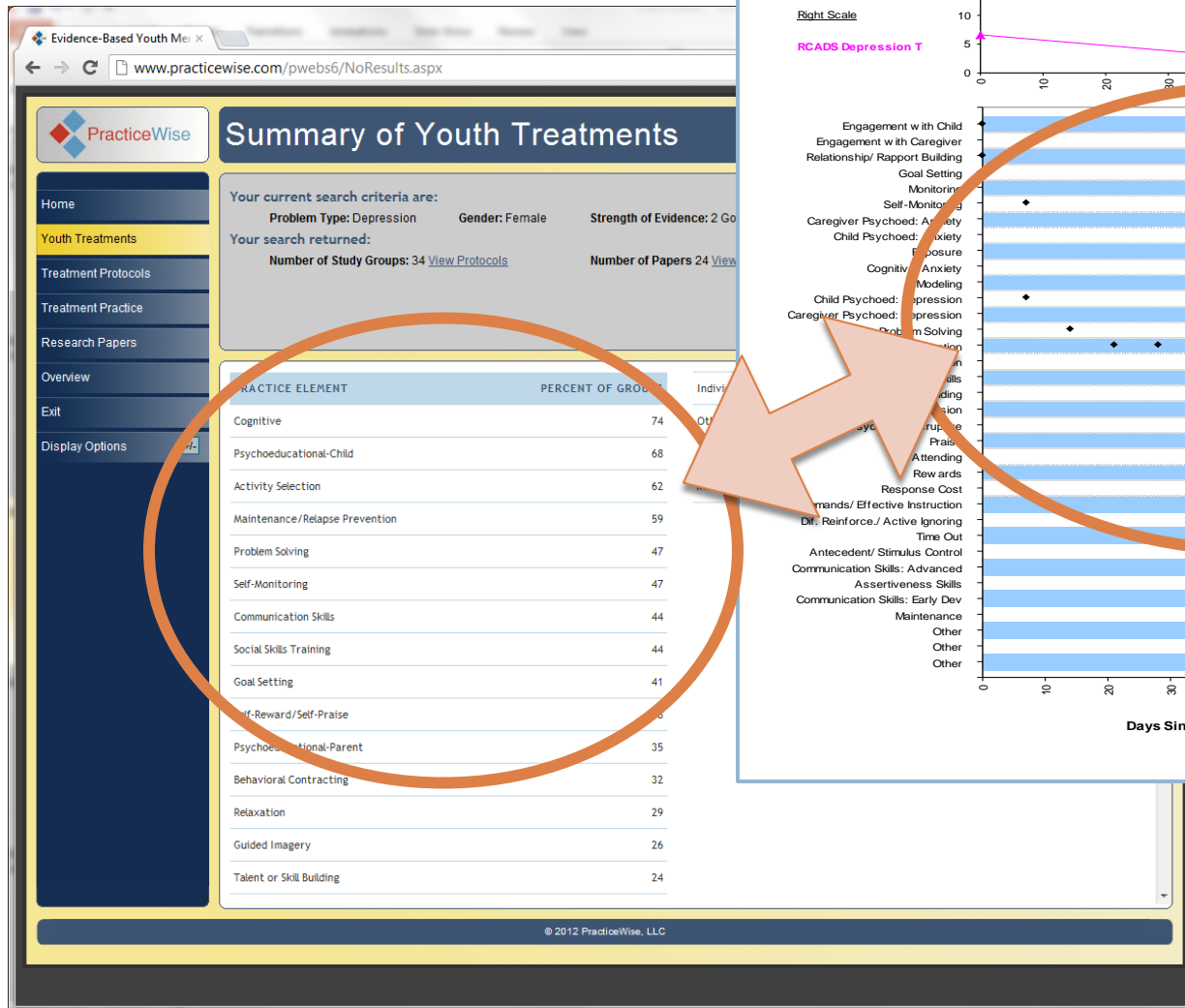
Display Time:
To Last Event



Evidence
of
Poor
Engagement



Do the Practices Fit the Problem?

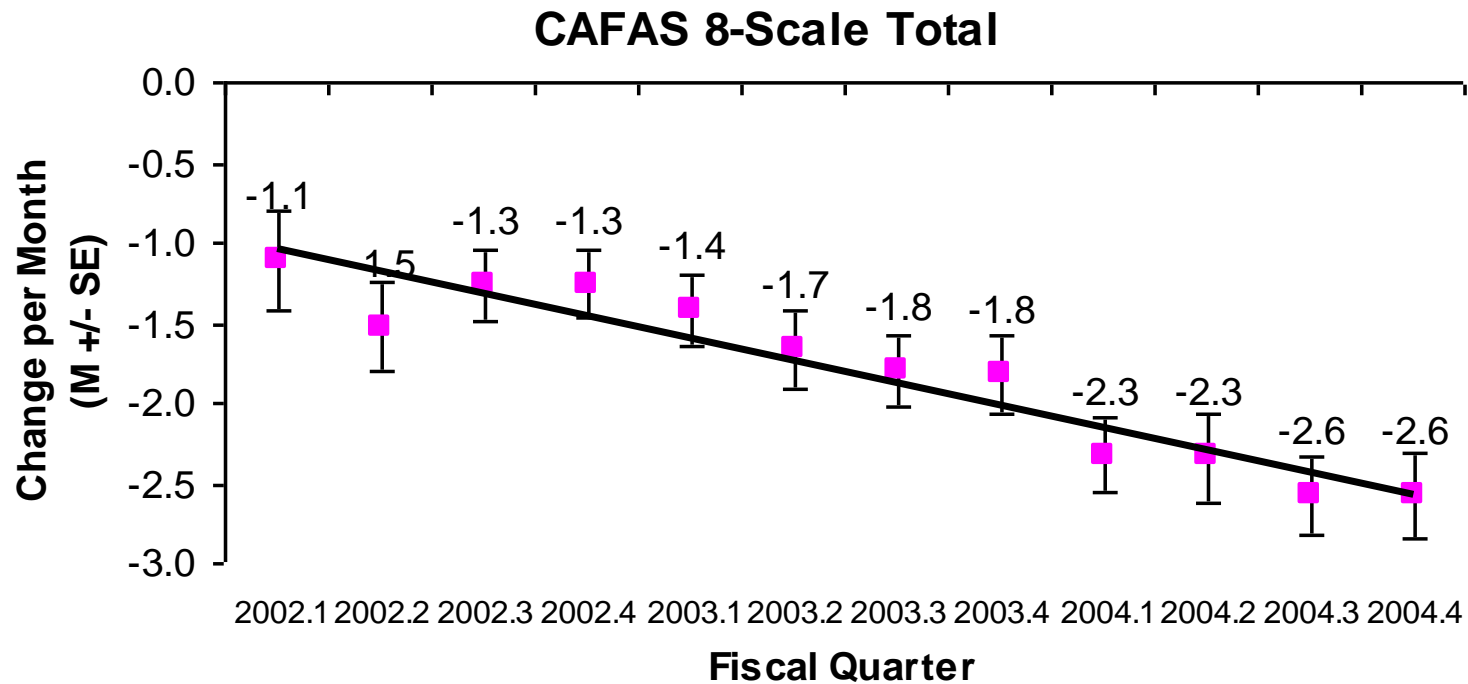




How Has This Worked So Far?

Examples from Hawaii, California

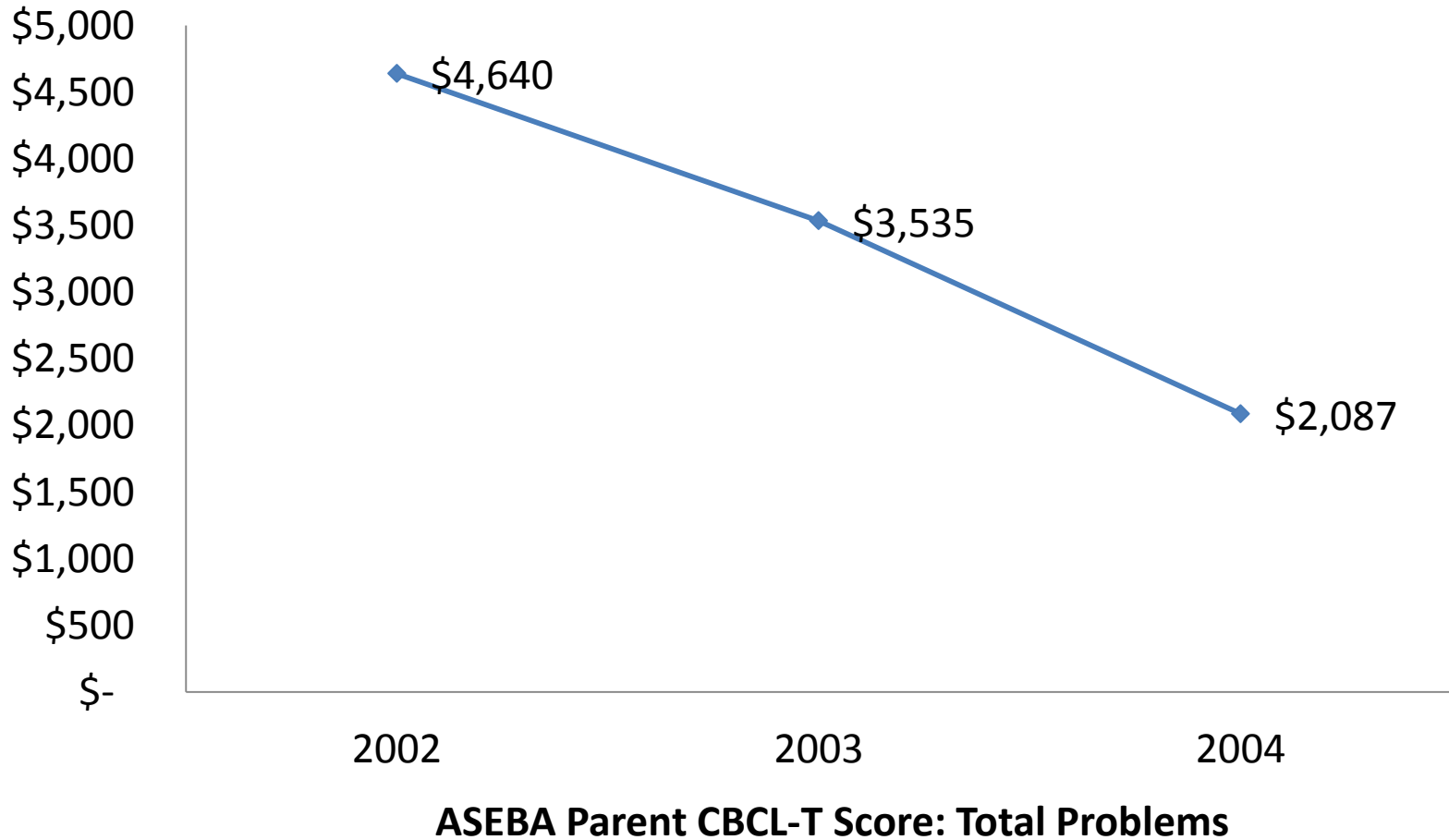
Hawaii System of Care



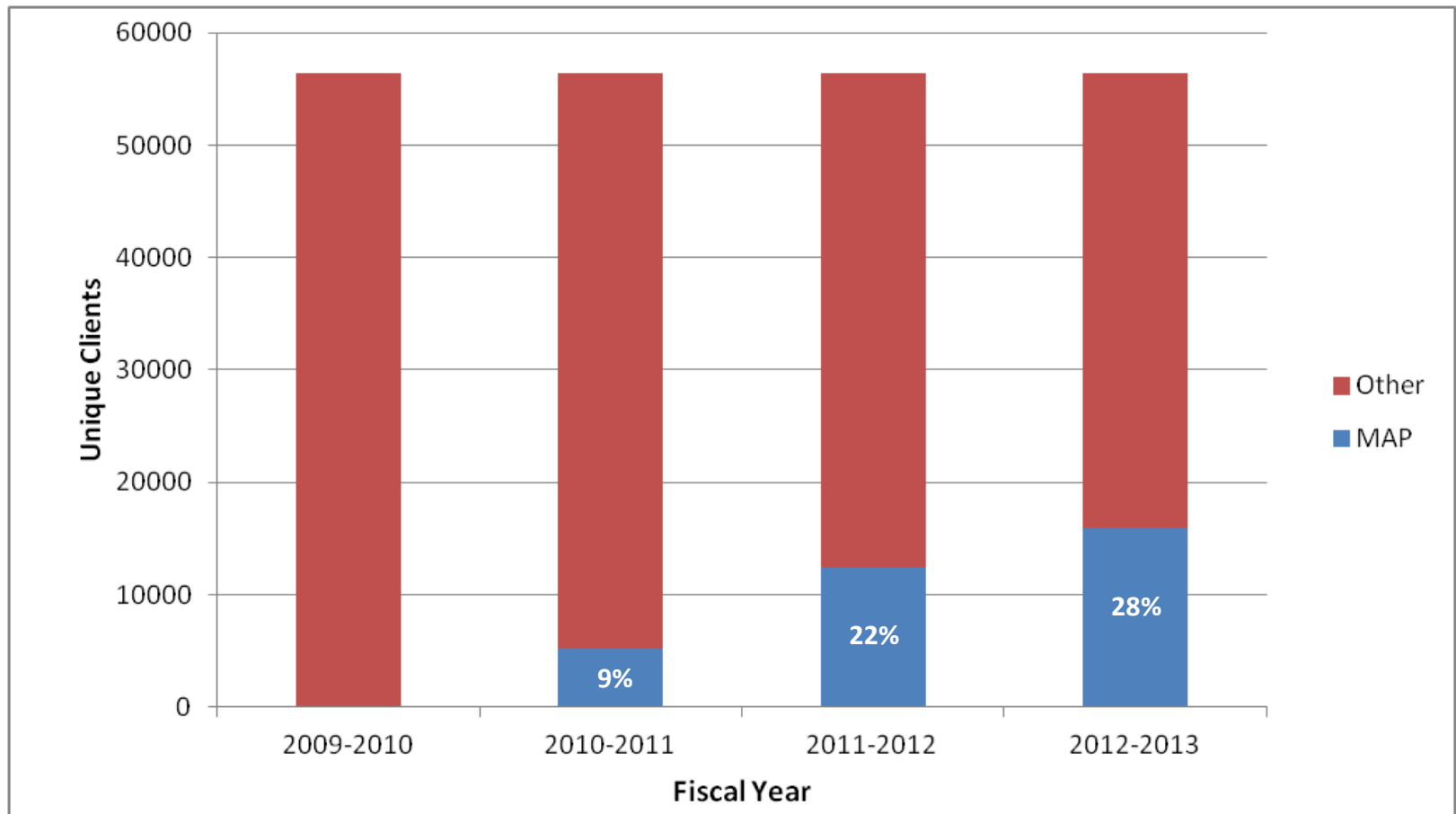
Final Effect Size for Change = .07/mo, .84/yr

Cost per Outcome

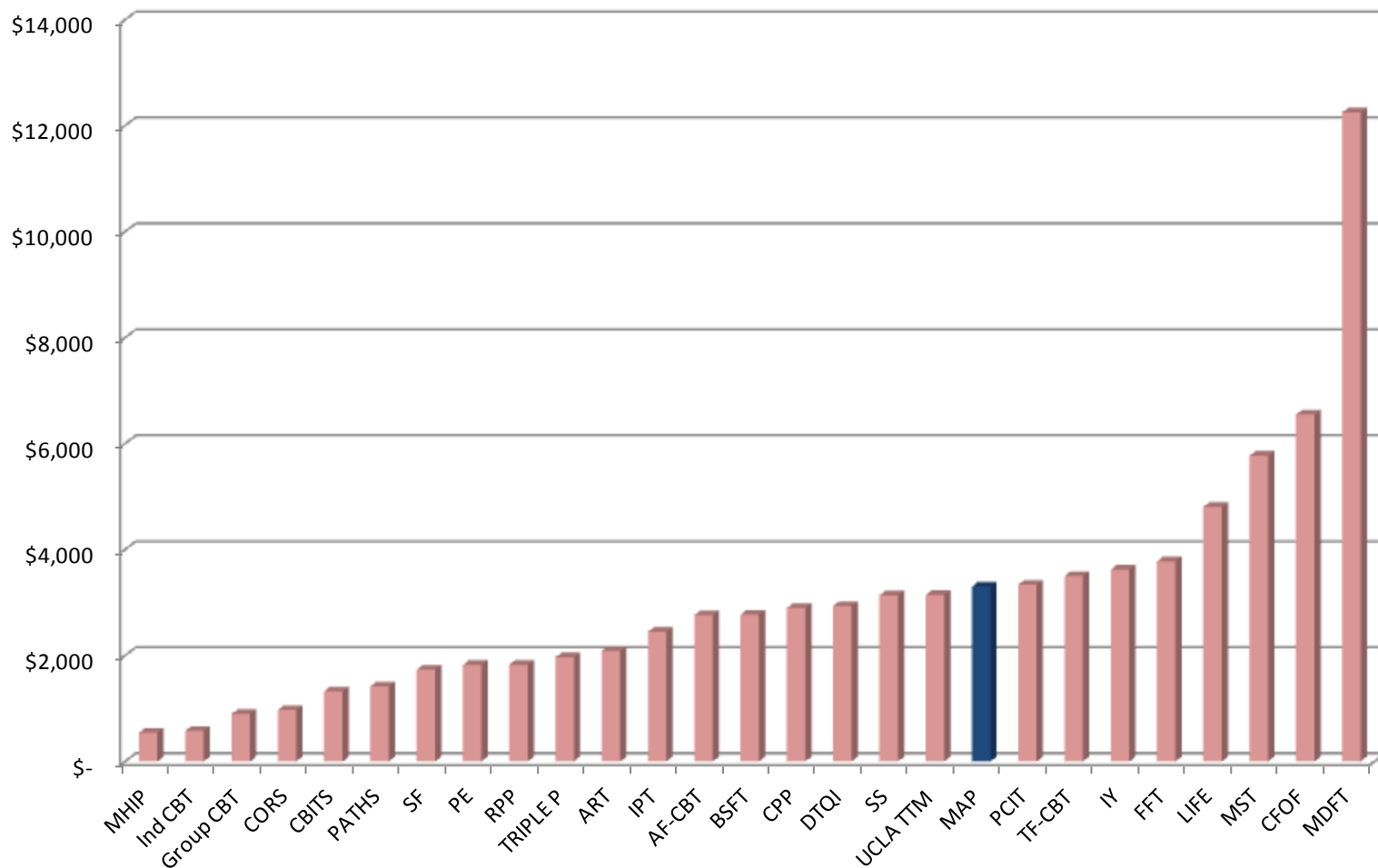
Service Expenditures per Unit of Improvement
(Annual Cost Per Youth/Annual Average Rate of Improvement)



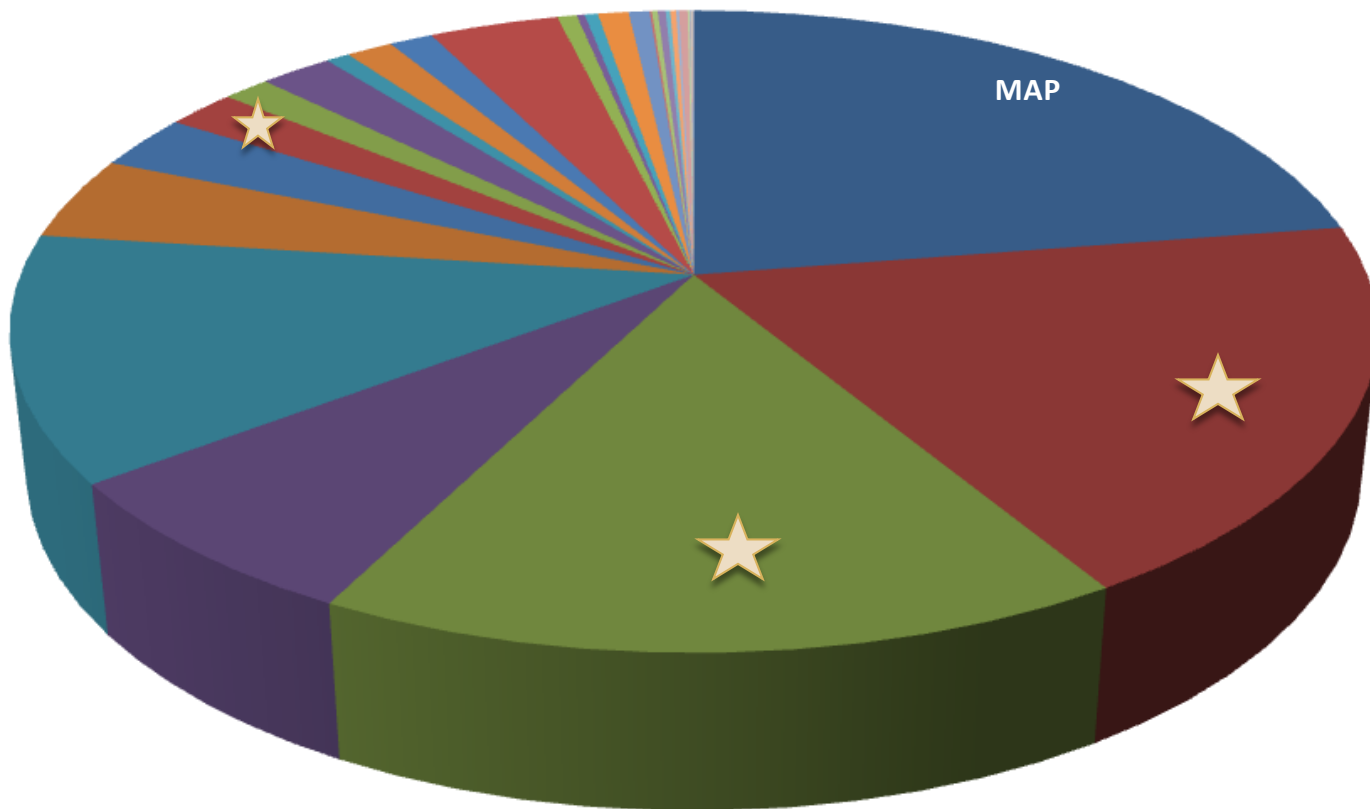
LAC DMH Utilization: 3 Years



Average Cost Per Client

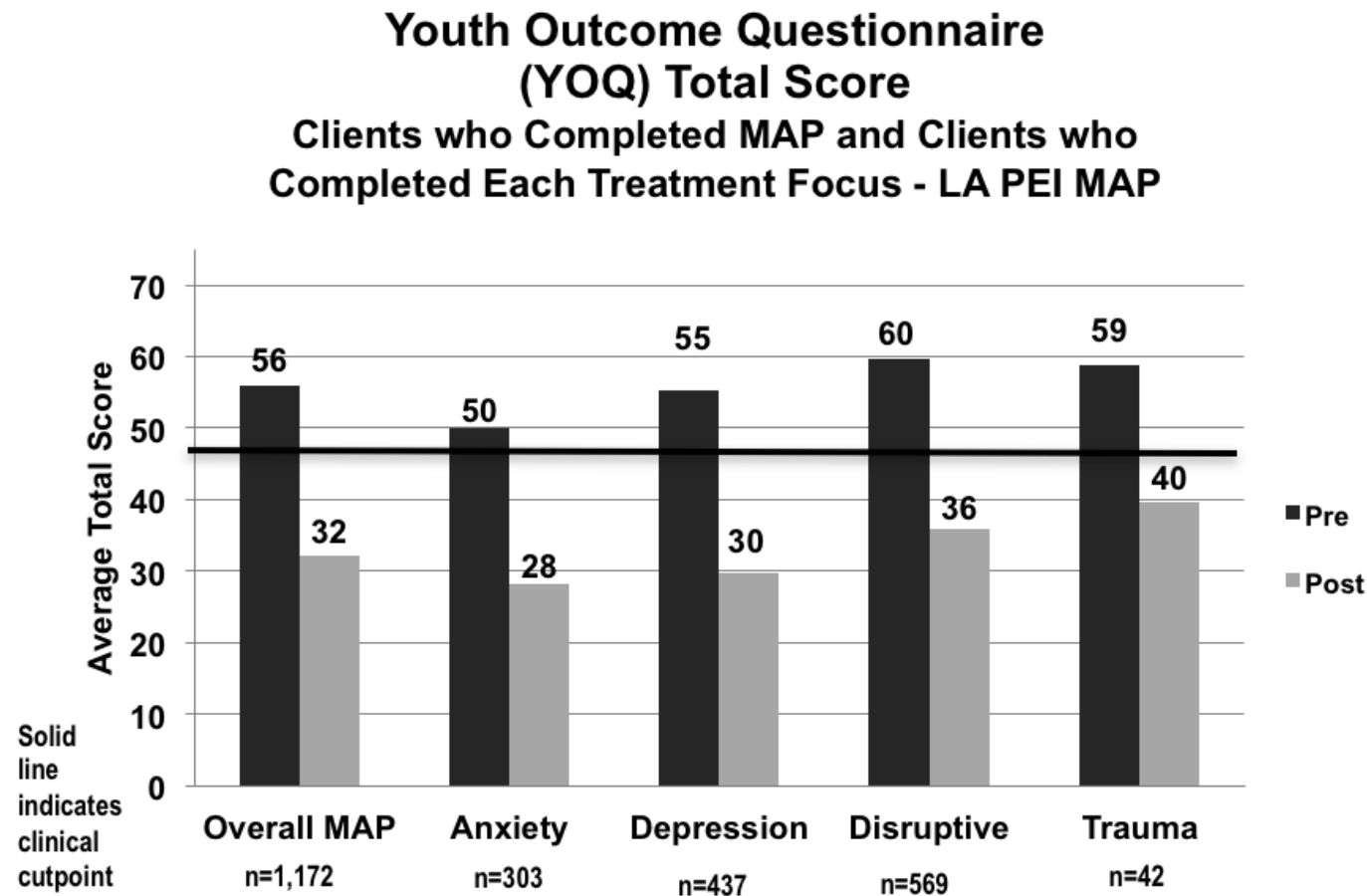


LAC DMH – FY 2011-2012



34.33% of services delivered were trauma-focused (not counting another 1.2% treated for traumatic stress using MAP)

LA County Through Dec, 2012



Pre-post effect size: Cohen's $d = .76$

Child STEPs Treatment Project

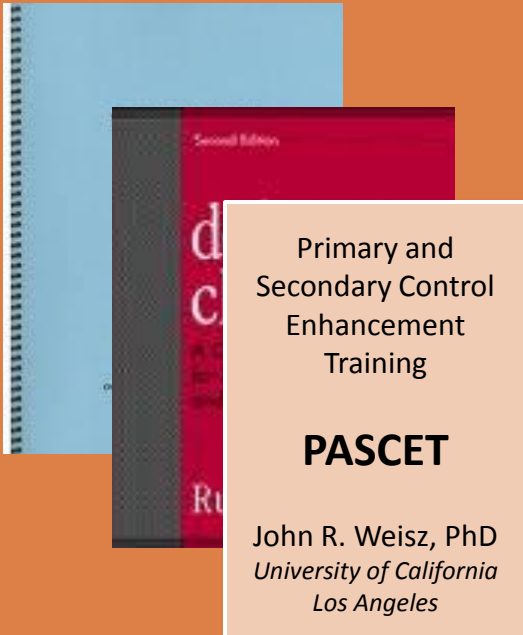


Child STEPs Treatment Project

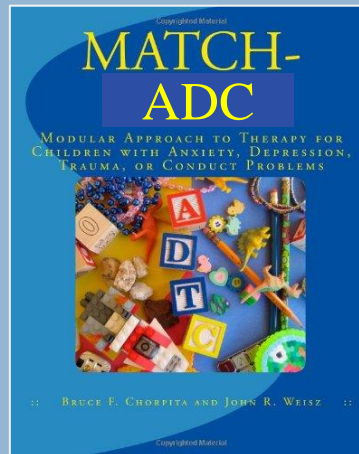
- Research Network on Youth Mental Health
- 5-Year, multisite randomized trial
 - ▣ Boston, Honolulu
- Anxiety, Depression, Conduct Problems
- Community therapists
- Standard Manuals, MATCH, Usual Care
- N = 174 children ages 7-13
- Funded by John D. and Catherine T. MacArthur Foundation

Random Assignment

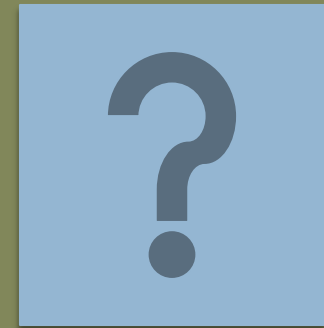
Standard



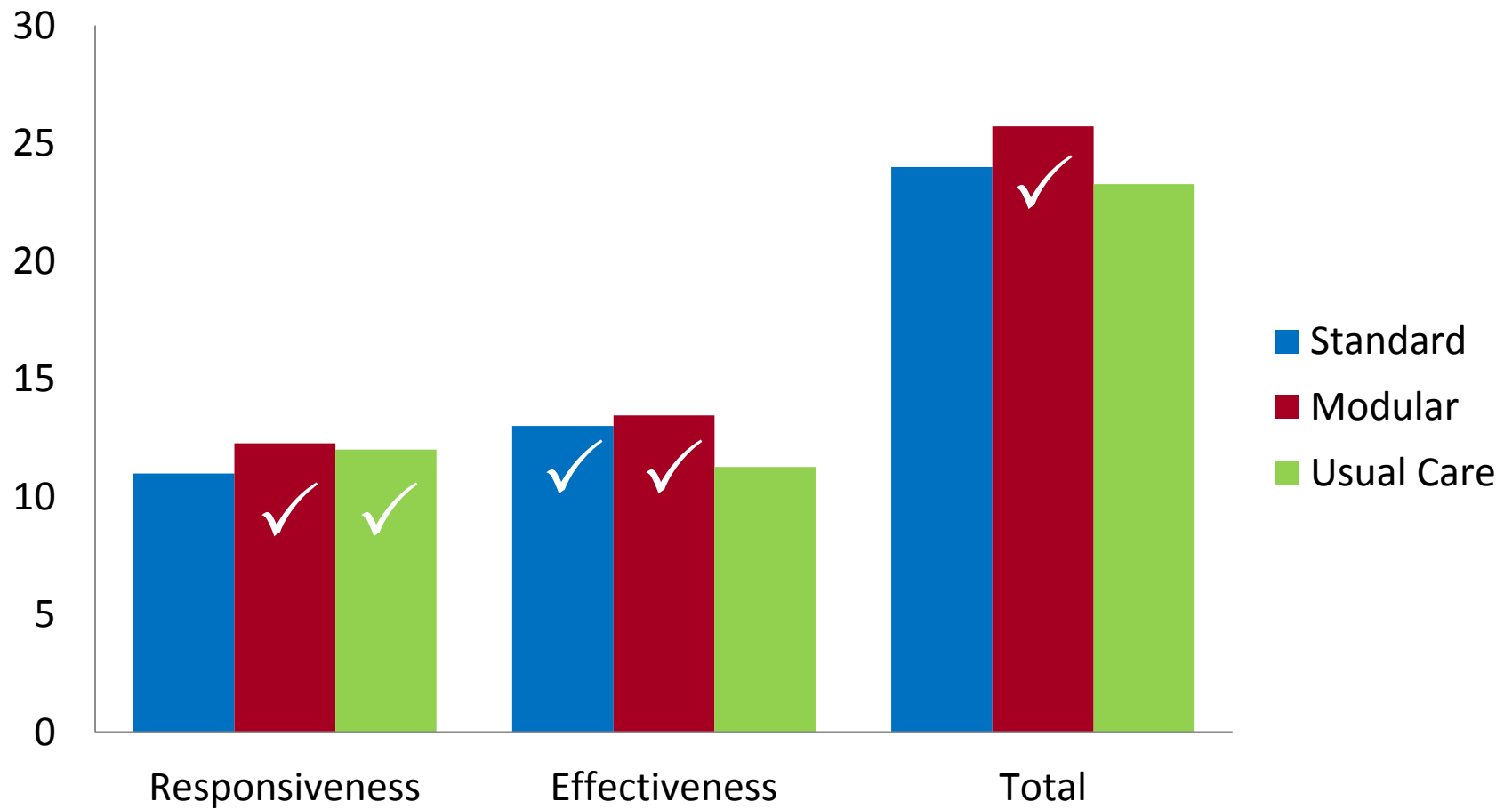
Modular



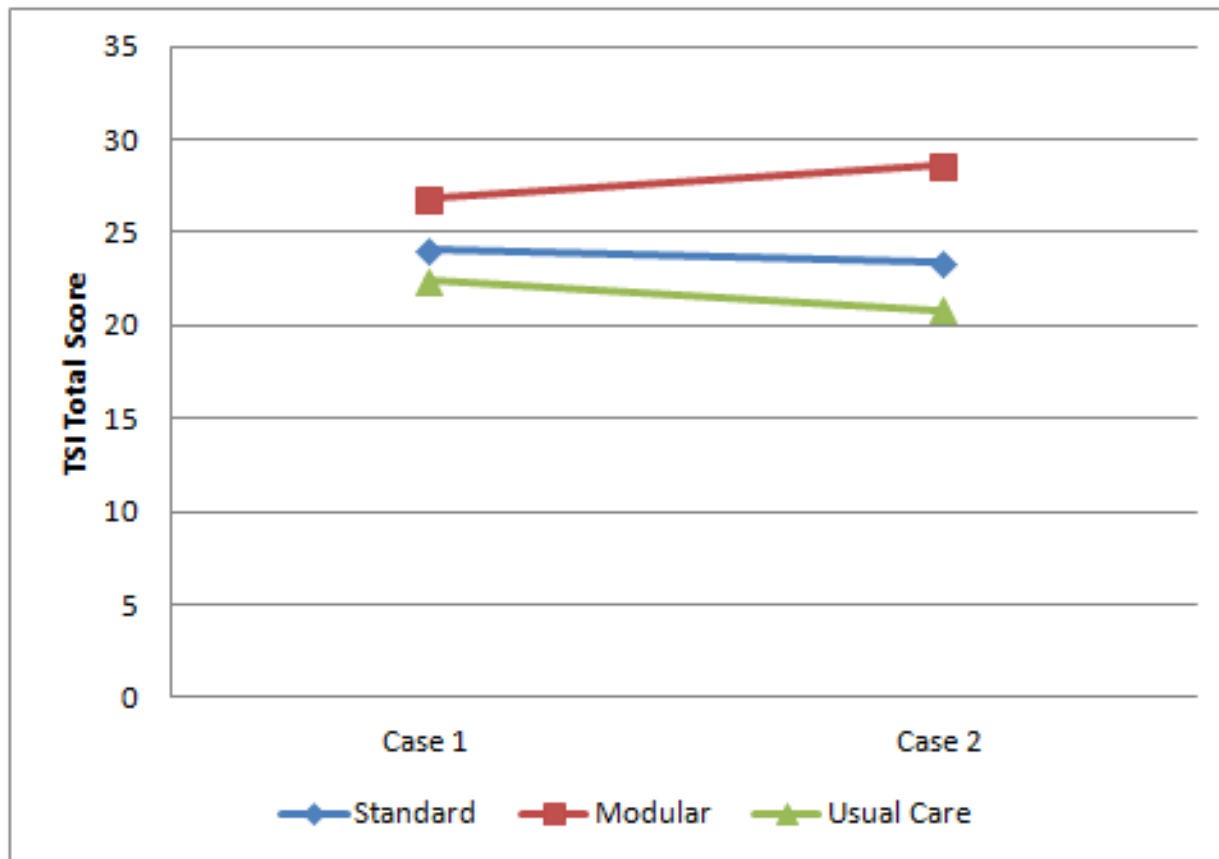
Usual Care



Effectiveness: Satisfaction

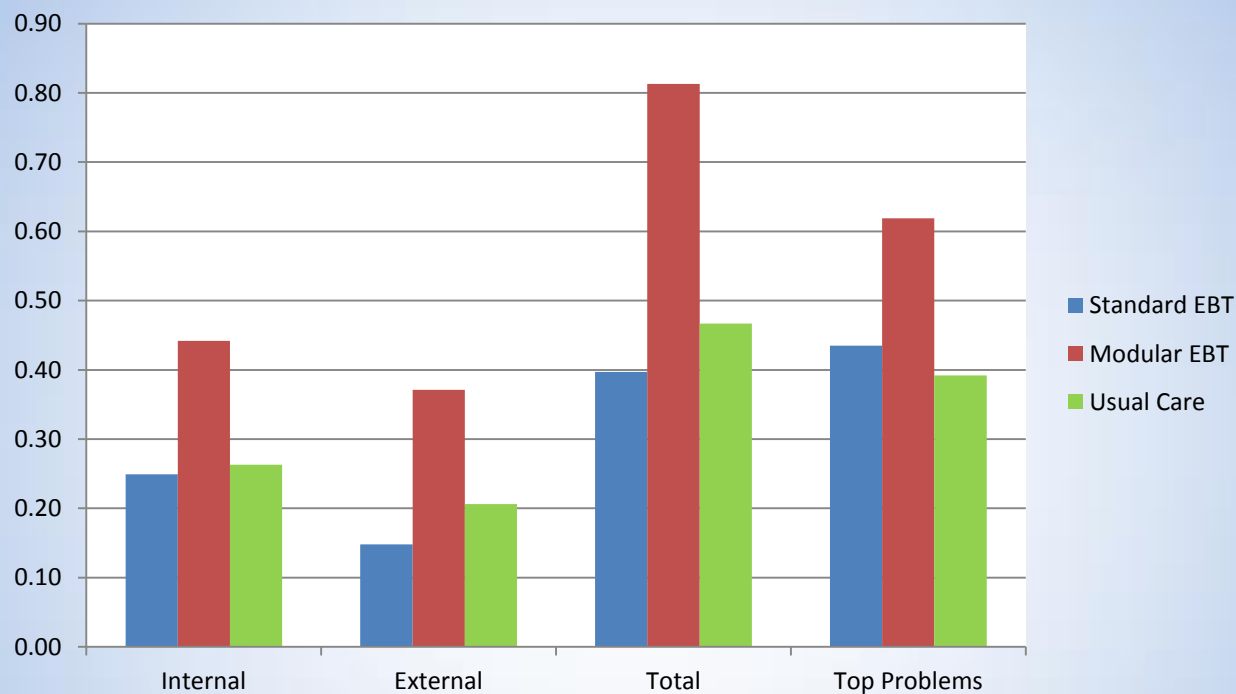


Satisfaction Over Time



Significant Case Number \times Condition Interaction: Modular EBT > Usual Care ($p < .05$)

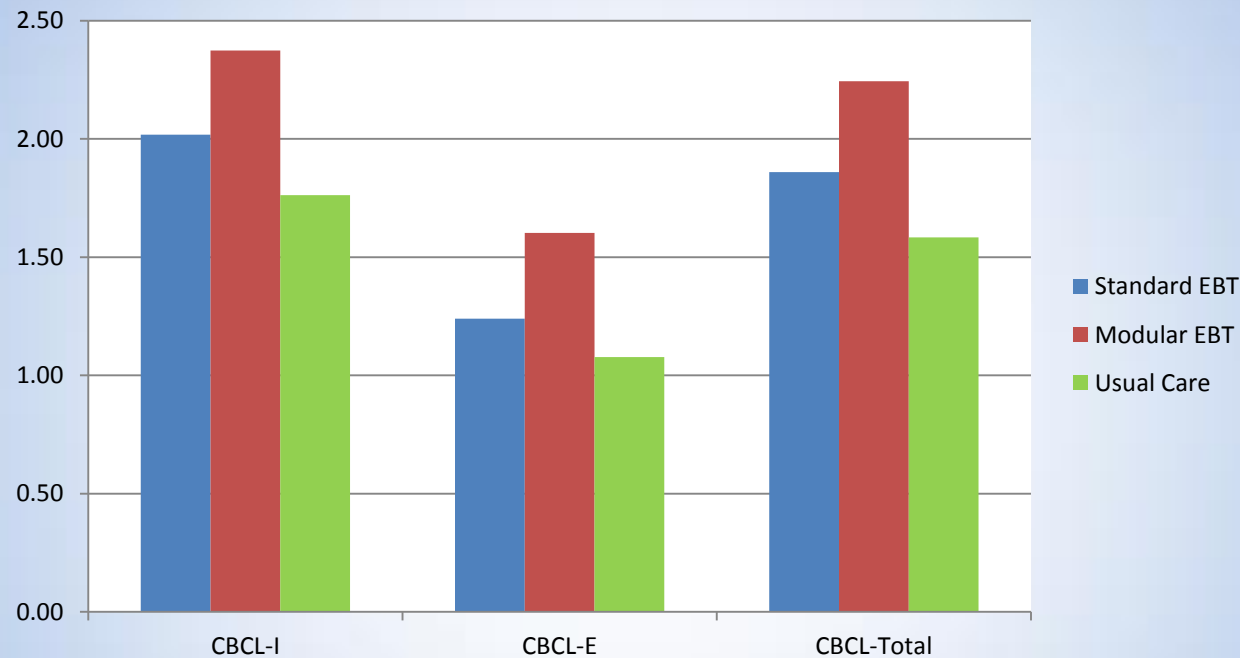
Rate of Improvement During Treatment



All Four Outcomes: Modular EBT > Usual Care, Standard EBT ($p < .05$)

Weisz, J.R., Chorpita, B.F., Palinkas, L.A., Schoenwald, S.K., Miranda, J., Bearman, S.K., Daleiden, E.L., Ugueto, A.M., Ho, A., Martin, J., Gray, J., Alleyne, A., Langer, D.A., Southam-Gerow, M.A., Gibbons, R.D., and the Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy with youth depression, anxiety, and conduct problems: A randomized effectiveness trial. *Archives of General Psychiatry*, 69, 274-282.

Rate of Improvement Over 2 Years



All Three Outcomes: Modular EBT > Usual Care ($p < .05$)

Chorpita, B. F., Weisz, J. R., Daleiden, E. L., Schoenwald, S. K., Palinkas, L. A., Miranda, J., Higa-McMillan, C. K., Nakamura, B. J., Austin, A. A., Borntrager, C., Ward, A. M., Wells, K. C., Gibbons, R. D., & the Research Network on Youth Mental Health. (2013). Long term outcomes for the Child STEPs randomized effectiveness trial: A comparison of modular and standard treatment designs with usual care. *Journal of Consulting and Clinical Psychology, 81*, 999-1009.

Clinical Outcomes: Diagnosis



Modular EBT > Standard EBT, Usual Care $p < .05$

What Do We Make of Child STEPs?

- Implications of **new design** are larger than those of **new treatment**
- Raises questions about how many treatments can providers successfully master
- It's not about flexibility – it's about guided adaptation (being developmental and dynamic)

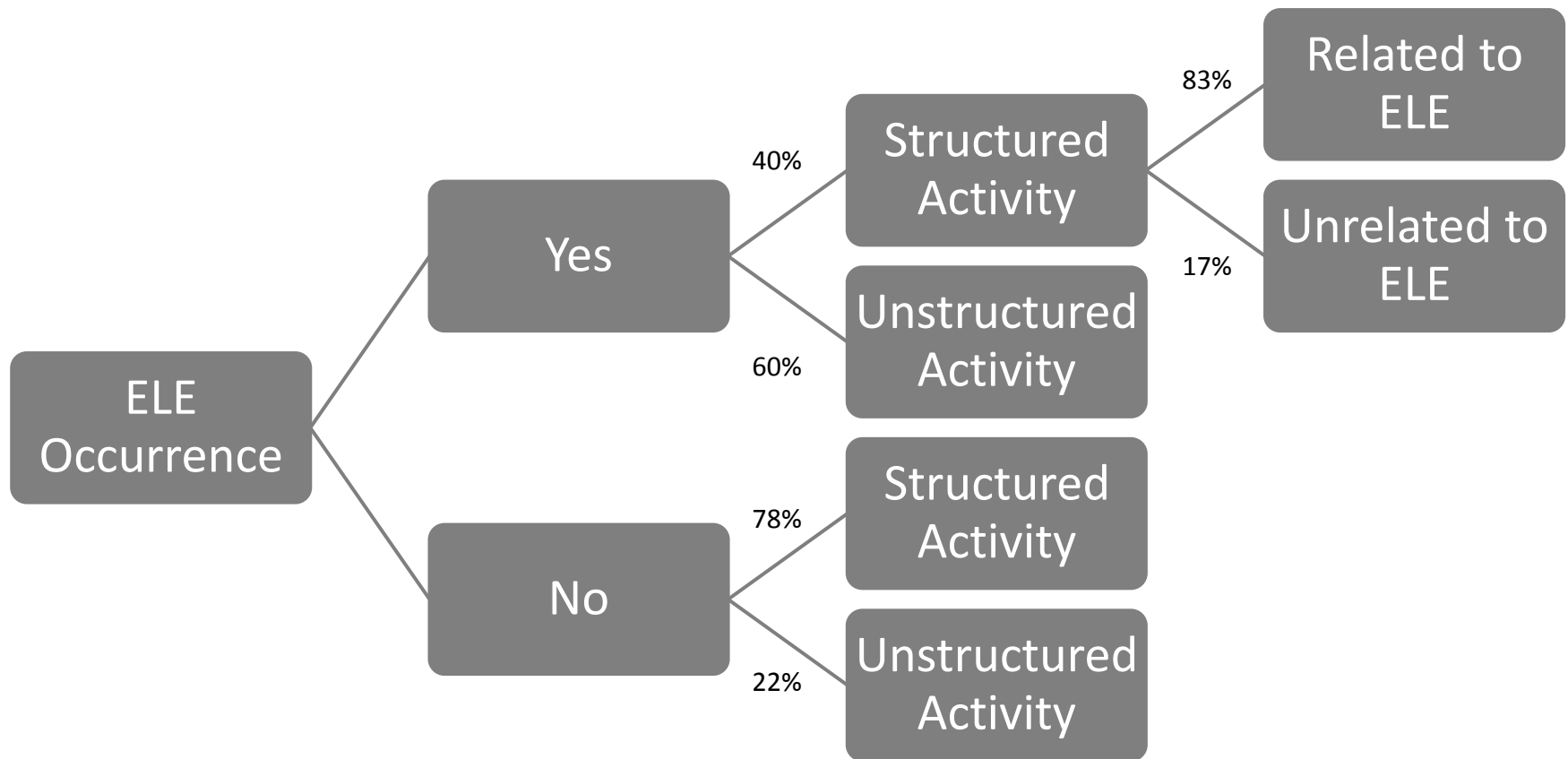
What is Happening at the Session Level?

Provider Report

- Emergent Life Events occurred in 69.1% of cases in Child STEPs trial
- Range: 1 to 12 events per case
- Cases with at least one ELE had on average 1.5 *additional* ELEs later in treatment
- Providers reported being able to fully return to their original session plan only 20.6% of the time

What is Happening at the Session Level?

A First Look at Digital Recordings



When a critical event is disclosed in session, only 33% of the time will a therapist use content from the protocol and attempt to related it to the crisis.

Summary: Key Points

- System and treatment designs must accommodate the developmental and dynamic nature of the service context
 - ▣ Developmental interfaces and exception management strategies should be built in from the start
 - ▣ Need to consider systems, treatments, encounters
- We can do far better with what we already know
 - ▣ Extending, not replacing what we have done so far



Thank You