Better by Design: Treatment Architecture to Expect the Unexpected

Bruce F. Chorpita, PhD
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 654 as of Oct 2016...

Challenge: Development in Systems

How do we optimize these episodes?
Critical Aspects of Service Infrastructure Design

#1 Semi-Formality: Meeting people where they are

![Image of a microphone and speaker setup]

Critical Aspects of Service Infrastructure Design

#2 Exception Management: Handling emergent events

![Image of a person standing on a cracked road]
What Can Happen When We Don’t Design for These Accommodations?

- Differences or exceptions are ignored
- We enter a state of unstructured adaptation and spontaneous reactivity

Plan A

If Plan A Fails

Examples
- Not attending to a highly distressed youth
- Implementing procedures that are not relevant to the most pressing problem

Think Fast

Examples
- Playing a game for rest of session
- Modifying treatment plan to something without supporting evidence (e.g., play therapy for disruptive behavior).
What is Happening 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...


Treatments from the Literature
<table>
<thead>
<tr>
<th>P</th>
<th>Anxiety</th>
<th>P</th>
<th>Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8 years old</td>
<td>A</td>
<td>13-17</td>
</tr>
<tr>
<td>G</td>
<td>Male</td>
<td>G</td>
<td>F &amp; M</td>
</tr>
<tr>
<td>E</td>
<td>Hispanic</td>
<td>E</td>
<td>Caucasian</td>
</tr>
<tr>
<td>S</td>
<td>School</td>
<td>S</td>
<td>Clinic</td>
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</tbody>
</table>

**Match Table:**
Child x Treatment

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**EBTs**
Matching Youth to Studies on Problem, Age, and Gender

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”
    - Think fast: Forced to fall back on “usual care”
    - Ignore: Deliver EBTs that don’t fit

“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

- Standard EBTs alone may not be sufficient to create high-performance service systems
  - Approximately one third of cases are “exceptions”
    - Think fast: Forced to fall back on “usual care”
    - Ignore: Deliver EBTs that don’t fit
  - Rate is higher if EBTs not available
    - 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 (an exception management option)

Structured Collaboration

Rather than build only treatments, we need to construct an architecture that allows providers, scientists, and families to create treatments in collaboration with each other
Managing and Adapting Practice (MAP)

A Treatment Builder for Direct Service

We Need a Better Interface with the General Knowledge Base

“Good to see you, Maggie. As soon as I finish reading these research studies, we can start our session today.”
Automated Review of Child RCTs

Delivering Knowledge in Multiple Levels

Families

Protocols

Practice Elements

Parent Training

Incredible Years

PCIT

Defiant Children

Commands

Attending

Commands

Time Out

Rewards

Time Out
Broader Challenge: Diverse Ontologies

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

From “What to Do” to “How to Do...”

Practice Guides
Anatomy of a Practice Guide

What It Is

Problem Solving

When to Use It

Use This When:
To provide children with a systematic way to negotiate problems and to consider alternative solutions to situations.

Who It’s for

Steps:
- Normalize problems
- Discuss the fact that we all have problems, every day.
- Notice that solving them can make us feel good, and not solving them can make us feel bad.
- Discuss with the child the types of problems that people in general experience daily, and more specifically, those problems that the child might be dealing with. Appropriate self-disclosure may be useful.
- Ask the child to begin thinking about a particular problem he/she has experienced lately.

Teach 5 steps to problem solving
1) Say what the problem is
2) Think of solutions
3) Examine each one (what good and bad things would happen if he/she tried this solution?)
4) Pick one and try it out
5) See if it worked. If so, great. If not, go back to the list of solutions and try another one.

Practice using the problem solving steps
- Familiarize the child with this problem-solving process by starting with your own problem and allow the child to help you in working through the problem solving steps.
- Keep your example brief (e.g., use only 2 or 3 possible solutions, and move through them quickly; the goal is to illustrate the process).
- Use questioning to make sure he/she understands the steps.

About the Steps

Checklist

Details
We Need Recipes

- Not just ingredients...

Putting Practices Together

Focus

- Connect
- Cultivate
- Consolidate

Interference
Depression Example

Focus

Connect
Engagement
Psychoeducation

Cultivate
Activity Selection
Cognitive
Problem Solving...

Consolidate
Maintenance
Booster

Interference

Low Motivation: Rewards
Complaining and Irritability: Active Ignoring
Tantrums: Time Out...

The Session Planner  *(Clinical Event Structure)*

Before Session
- Remind client and obtain commitment
- Review dashboard to assess progress and practice history
- Review notes on previously assigned homework
- Identify next practice(s) that will be the focus
- Review the Practice Guide(s)
- Establish session plan and choose rehearsal activity
- Check in with supervisor if needed

During Session
- Check In, Identify a Strength
- Review Earlier Skills/Homework
- Set Agenda
- Advise, Instruct, Or Guide
- Rehearse
- Repeat
- Review
- Assign Homework
- Reward

After Session
- Record progress ratings and practice(s) performed
- Review Practice Guide(s) to determine if any steps were missed that should be covered next time
- Note any homework that was assigned
- Note any new stressors or obstacles
- Check in with supervisor if needed
The Clinical Dashboard

Local Knowledge to Inform Adaptation, Self-Correction

Progress
## Expected Values

<table>
<thead>
<tr>
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<th>Example Standards</th>
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<td>How has this youth done in the past?</td>
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Causal Mechanism (Clinical Theory) | What would theory predict should happen next? What is a logical expectation for this youth? |
Progress

Progress and Practice Monitoring Tool
Case ID: NZ
Age (in years): 17.4
Treatment Target: Depression

Gender: Male
Ethnicity: Asian American

Progress Measures:
- a) RGS-5 Depression
- b) RGS-5-P Depression
- c) Benchmark

Graph showing progression over time.
### Expected Values

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### Progress

**Progress and Practice Monitoring Tool**

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- **Gender:** Male
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- **Treatment Target:** Depression

**Progress Measures**

- a. RDAS-Depression
- b. RDAS-P Depression
- c. Benchmark

![Progress Graph](image)
Expected Values are Important

- Discrepancy between Observed Values and Expected Values tells us *when* to act

- It does not tell us *how* to act
- For that we need a...
Logic Model

Practice ➔ Progress

Progress and Practice

Progress and Practice Monitoring Tool

Case ID: NZ
Gender: Male
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Age (in years): 17.4
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Progress Measures
- RCPM
- Composite Score
- Benchmark
- Trends
- Scale Score

Practices
- FOCUS
- Functioning/Resilience Building
- Child Psychosocial Development
- Physical, Social, Emotional, Cognitive Development
- Activity Engagement
- Problem Solving
- Relationships
- Social Skills
- Communication Skills
- Support Networking
- Goal Setting
- Maintenance

- PERFORMANCE
- Child Psychosocial, Anxiety, Cognitive, Activity, Exposure, Self-Reflection
Remember Expected Values?

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<td>How has worked for similar youth in our system? What are commonly performed practices in our provider network?</td>
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<td>Research Literature (Evidence Based Practice)</td>
<td>What practices are used with similar youth in evidence-based treatments tested in research trials?</td>
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<td>What practices would be theoretically indicated? What should logically be expected to help?</td>
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Progress and Practice
Progress and Practice

• Can generate hypotheses for how to act
  – Is poor engagement contributing to delays, off-focus activity, and worse-than expected outcomes?
  – Why hasn’t the provider tried engaging with the caregiver?

• There are 2-page engagement guides
• There are online learning modules for engagement practices
Online learning modules for many of the MAP practices

How Has This Worked So Far?
Hawaii System of Care

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

LAC DMH – FY 2011-2012

Within 2 years, MAP accounted for about 22% of all youth services in LA County; we are now at about 40%
LA County Published Results

Youth Outcome Questionnaire (YOQ) Total Score
Clients who Completed MAP and Clients who Completed Each Treatment Focus - LA PEI MAP

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

Designing Treatment...as Treatment Unfolds
Putting Practices Together

Focus

Connect ➔ Cultivate ➔ Consolidate

Interference

???

Exception Management: Poor Engagement
Engagement Outcomes

- **Session Consistency (days between sessions)**
  - MATCH: 8.51 (3.23) vs. CIT: 9.79 (3.99)
  - $t = 2.08, p < .05$, Cohen’s $d = .36$

- **Premature Treatment Termination**
  - MATCH: 52%; CIT: 57%
  - Not significantly different

What We Have Done

Review paper of 40 RCTs testing engagement interventions:

- Attendance: 85.0%
- Adherence: 30.0%
- Cognitive preparation: 25.0%
- Satisfaction: 10.0%
- Therapeutic alliance: 2.5%

(Becker et al., 2015; Lindsey et al., 2014)
We Need to Consider the Dimensions of Engagement

We Need to Detect Engagement Problems Earlier

My Thoughts about Therapy – Child Version

Directions. This form is about your thoughts and experiences with therapy. Circle the answer that best tells how true each sentence is about how you usually feel. Remember, there are no right or wrong answers, just circle what you think describes you best.

1. I like meeting with my therapist. Strongly disagree Disagree Agree Strongly agree
2. I actively participate during appointments with my therapist. Strongly disagree Disagree Agree Strongly agree
3. It is important for me to attend treatment regularly. Strongly disagree Disagree Agree Strongly agree
4. The goals of therapy are clear. Strongly disagree Disagree Agree Strongly agree
5. I believe the effort I put into therapy will pay off for me. Strongly disagree Disagree Agree Strongly agree
6. It is easy to share my thoughts with my therapist. Strongly disagree Disagree Agree Strongly agree
7. I enjoy practicing new things with my therapist. Strongly disagree Disagree Agree Strongly agree
8. I am always on time for appointments with my therapist. Strongly disagree Disagree Agree Strongly agree
9. What we are doing in therapy makes sense to me. Strongly disagree Disagree Agree Strongly agree
10. I believe my therapist knows how to help other people. Strongly disagree Disagree Agree Strongly agree
Consider Which PGs are Useful for Engagement

Support for Coordinating Practices

REACH

<table>
<thead>
<tr>
<th>Accessibility Promotion</th>
<th>Psychoeducation</th>
<th>Goal Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectancy</td>
<td>Attendance</td>
<td>Homework</td>
</tr>
<tr>
<td>• Modeling</td>
<td>• Assessing Barriers</td>
<td>• HW Assignment</td>
</tr>
<tr>
<td>• Instilling Hope</td>
<td></td>
<td>• Monitoring</td>
</tr>
</tbody>
</table>
We Need a Feasible Method for Monitoring Treatment Engagement

Exception Management: Emergent Life Events
Provider Report

- Emergent Life Events (“COWs”) occurred in 69.1% of cases in Child STEP\textsubscript{s} 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

Coded 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.
What’s Coming

- It looks like we need a way to balance
  - Genuinely responding to the issue
  - Covering skills from the treatment program
- We are still learning, but it seems like more of the ELEs are addressable with protocol content than are
  - These are “missed opportunities”
- We’d like to build this into MAP systematically

What’s the Latest?

- Online learning (50+ hours of free modular training content and growing)
- Continuing education online for MAP
- Faculty programs (over 100 universities using MAP materials in their curricula)
- Training in psychiatry programs at UCLA, UMB
- Training in USC School of Social Work
- API with our literature database – integration with EHR applications to add “expected values” to health record tracking
- CANS integration
- NWI partnership
Thank You