Finding the Next Frontiers

Bruce F. Chorpita
Eric L. Daleiden
What’s Out There?

- Opportunities to improve the ways that our knowledge connects with and influences what happens in the world
- Opportunities to alleviate human suffering by increasing the public impact of science
- Pursuit of these opportunities requires understanding
  - Knowledge Management
  - Coordination Theory
  - Development and Adaptation
On Knowledge Management, Coordination, and Development

Resources
- Knowledge
- Products
- People
- Time
- Funding

Activities
- Delivery System Processes
- Therapeutic Practices
- Lifestyle Behaviors

Coordination: Organization of activity and resource transactions

Body of Knowledge Development

Therapeutic Episodes
Illustration in the Therapy Room
Illustration in the Therapy Room

General Knowledge

therapy
Illustration in the Therapy Room

General Knowledge → therapy
Illustration in the Therapy Room

General Knowledge

Local Knowledge

therapy
Let’s Design for Coordination from the Outset

Decisional Premises

- **Causal Mechanisms (Theory)**
- **Treatment Research**
- **Local Aggregate Evidence**
- **Case-Specific Evidence**

Local Knowledge

- General Knowledge

Decision Team

- Treatment Team
- Supervision

Decision-making structure

Decision

- Decision

Result

Human Factors
- Learning History
- Data Fluency
- Attitudes
Collaborative Design and Bounded Adaptation

- **Scientist**
  - Builds in generalized knowledge
  - Specific principles, steps, procedures, or activities

- **Therapist**
  - Designs and adapts in real time
  - Changing procedures, style, targets

- **Client**
  - Provides real-time feedback and preferences
  - What is working, what is not?

- **Bounded by…**
  - A set of arranged decisional premises and choice points
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
Toward Architectures for Collaboration and Coordination
What should I do next?

Decisional Premises

- Flowcharts
- Therapy Procedures
- Local Aggregate Evidence
- Dashboard

General Knowledge

Human Factors
- Learning History
- Data Fluency
- Attitudes

Treatment Team

Decision-makers

Supervision

Decision-making structure

Local Knowledge

Result
A Multi-Treatment Coordination Problem: “Relevance Mapping”

- How to select the smallest array of evidence-based interventions to serve the maximum number of members of a service community?
Illustrating a Knowledge Management and Coordination Problem: “Relevance Mapping”

- We have developed technology that allows us to simulate enrollment of all members of a service population into all randomized trials to produce an empirical mapping of treatments to people

Hawaii Department of Health
Matching youth to studies on problem, age, and gender

![Graph showing the correlation between the number of NREPP Treatment Programs and the percentage of children covered. The graph has a y-axis labeled 'Children Covered' ranging from 0% to 100% and an x-axis labeled 'Number of NREPP Treatment Programs' ranging from 0 to 8. There are two clusters of data points: one at 34% with 2 programs, and another at 49% with 5 programs. The other data points are at 56%, 61%, 64%, 66%, 68%, and 69%, with corresponding numbers of programs.]
**Decisional Premises**

- **Causal Mechanisms (Theory)**
- **All RCTs**
- **Client Characteristics**
  - Case Specific Evidence

**Local Knowledge**

**General Knowledge**

- Human Factors
  - Learning History
  - Data Fluency
- Attitudes

**System Leaders**

**Decision-makers**

**Decision**

- What should we select for our array?

**Result**
Implications for Our Training Models
Thank You!