



# Leveraging Implementation Practice and Research for the Greater (Global) Good

Sonja K. Schoenwald, Ph.D.  
Professor of Psychiatry & Behavioral Sciences  
Medical University of South Carolina  
Charleston, SC U.S. A.

MST European Conference  
May 12-13, 2014  
London, England



# Brought to You By



The Emigres – May 12, 1957

**Implementation Methods Research Group (IMRG)**

John Landsverk, PI NIH 1P30MH074678 (NIMH Advanced Center)

**Linking Innovations, Neighborhoods, Kids, and Schools (LINKS)**

Marc Atkins, PI NIH 1P20MH0784458 (NIMH Developing Center)

**The Research Network on Youth Mental Health, Child STEPs**

John Weisz, PI, John D. and Catherine T. MacArthur Foundation

**The Annie E. Casey Foundation**

And, I am a Board member and shareholder of MST Group, LLC, which has the exclusive licensing agreement through the Medical University of South Carolina for the dissemination of MST technology.



# Implementation: How Hard Can it Be?





# “Evidence-Based Implementation of Evidence Based Medicine”

“...implementation research needs to come into its own to capitalize what is known and find out what strategies work or do not work in implementing changes in clinical practice.”

Drs. Richard Grol (Netherlands) & Jeremy Grimshaw (Scotland), 1999, *Journal on Quality Improvement*, 25 (10) p. 503



# Implementation Science An International Discipline

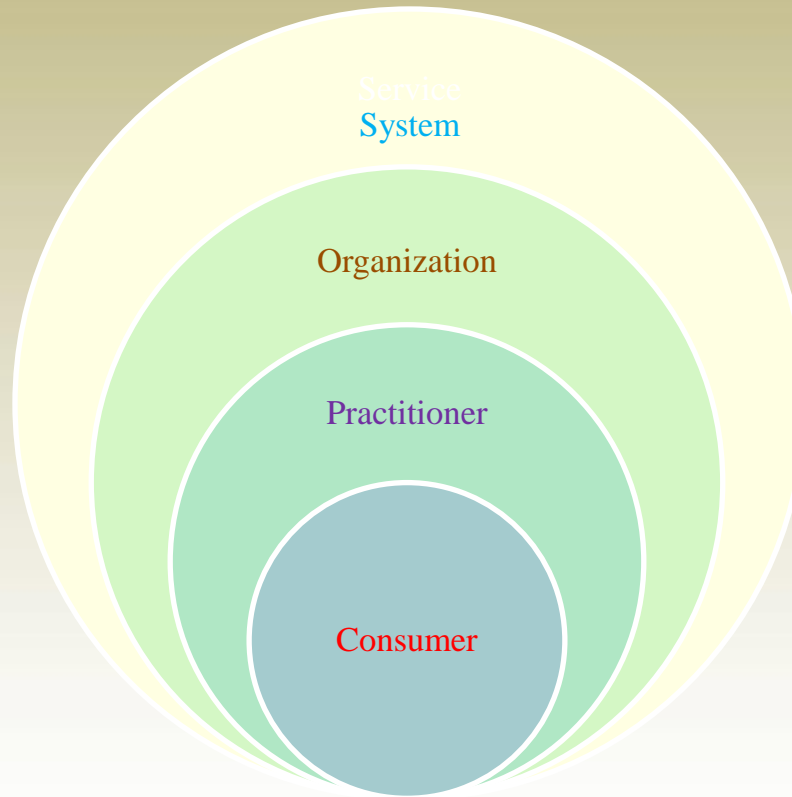


## Theory & Research from Diverse Fields & Nations

- Innovation implementation
- Technology transfer
- Organizational research
- Professional Training Research
  - Medicine (physicians, nurses, assistants)
  - Psychotherapy (psychologists, therapists, counselors)
  - Education (teachers)
  - Clinical supervision
  - Professional coaching
- Informatics and Computer-Aided Decision-making
- Research on Continuous Quality Improvement (CQI)

# Improving Health Services in the UK and US

Change may be needed at 4 levels



Ewan Ferlie & Stephen Shortell (2001). Improving the Quality of Health Care in the United Kingdom and the United States: A Framework for Change. *The Millbank Quarterly*, 79, 281-315.



# Change Strategies May Differ Across Levels

- Strategies effecting change at one level may differ from those effecting change at another.



- Multi-faceted strategies targeting different barriers are more likely to be effective than single strategies; they are also more costly.

Dr. Jeremy Grimshaw & Colleagues (UK, US, Italy, Norway, Canada) (2001). Changing provider behavior: An overview of systematic reviews of interventions. *Medical Care*, 39, No. 8, Suppl. 2, pp II-2-II-45.

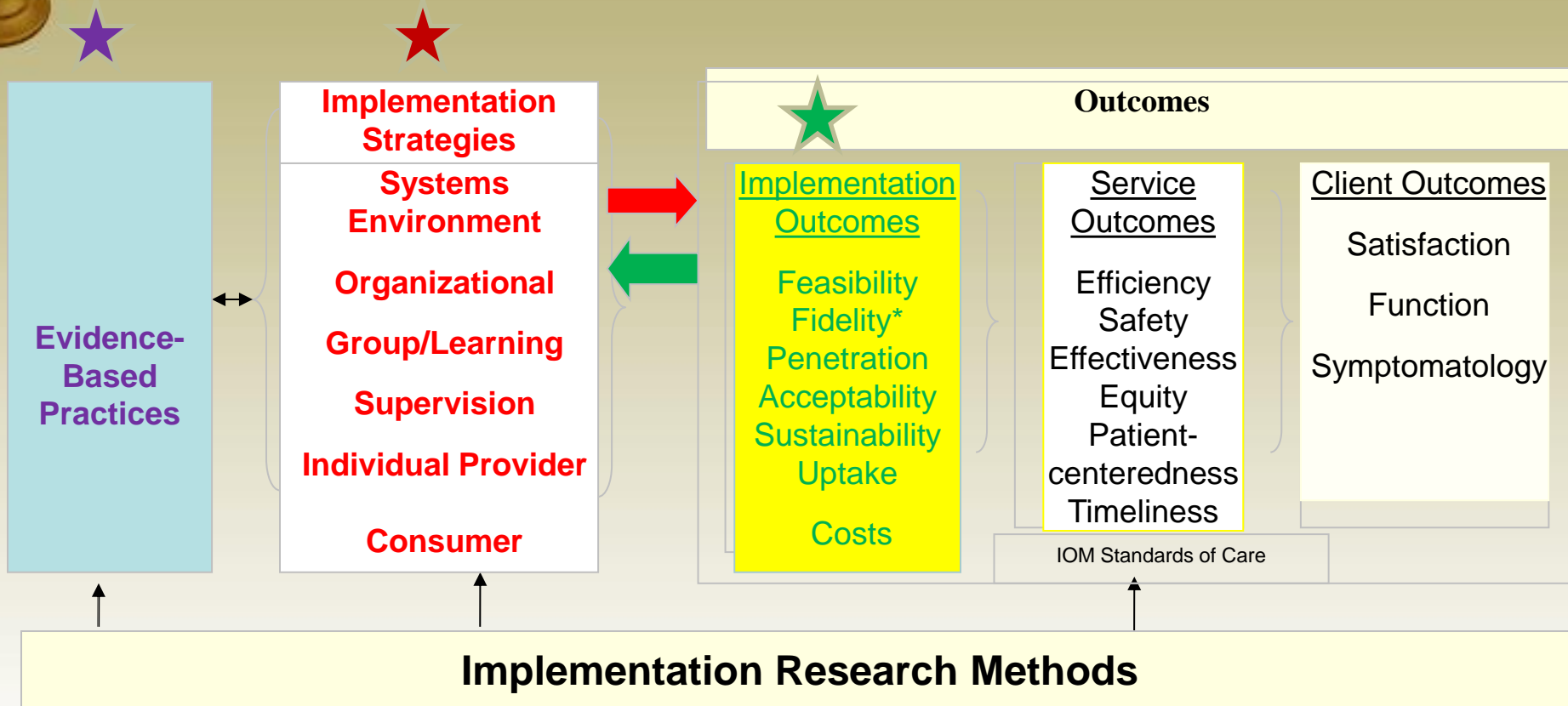


# Implementation: Models, Ideas, Science

- Numerous theoretical models of implementation drivers
  - 61 models (Glasgow & Steiner, 2012)
  - 68 distinct implementation components (Powell et al., 2012)
- Scant empirical evidence of “how these play out across contexts where customs, attitudes, values, laws, and service systems differ.” Dr. Deborah Gbate, January 25, 2012
- Multiple forums for international discussion
  - “Evidence and policy in six European countries: diverse approaches and common challenges (Nutley, Morton, Jung, & Boaz, 2010)
  - The 2011 Stockholm Conference on outcome Studies of Social, Behavioral, and Educational Interventions



# One Model for Implementation Science



# EPIS Model of Implementation Phases And Factors Affecting Implementation

Figure 2. Conceptual Model of Implementation Phases Aarons, Hurlburt, & Horwitz, 2011





# A Word About the Evidence-Based Intervention

## Clinical Intervention

- Treatment model
- Treatment component (e.g., exposure, fear ladder)
- Diagnostic assessment
- Surgical procedure
- Telemedicine protocol for hypertension
- Classroom management program

## Context Interventions

- Organizational development
- Leadership training
- Clinical Training
- Financing strategy (e.g., pay-for-performance)
- Feedback protocol (e.g., hospital performance “report card”)


# Evidence-Based Intervention “Design-Time”

- Often requires intensive and extensive “design time” and effort (10 – 15 years or more), to progress through the process from initial development and specification through demonstration of feasibility and safety, and then efficacy and/or effectiveness

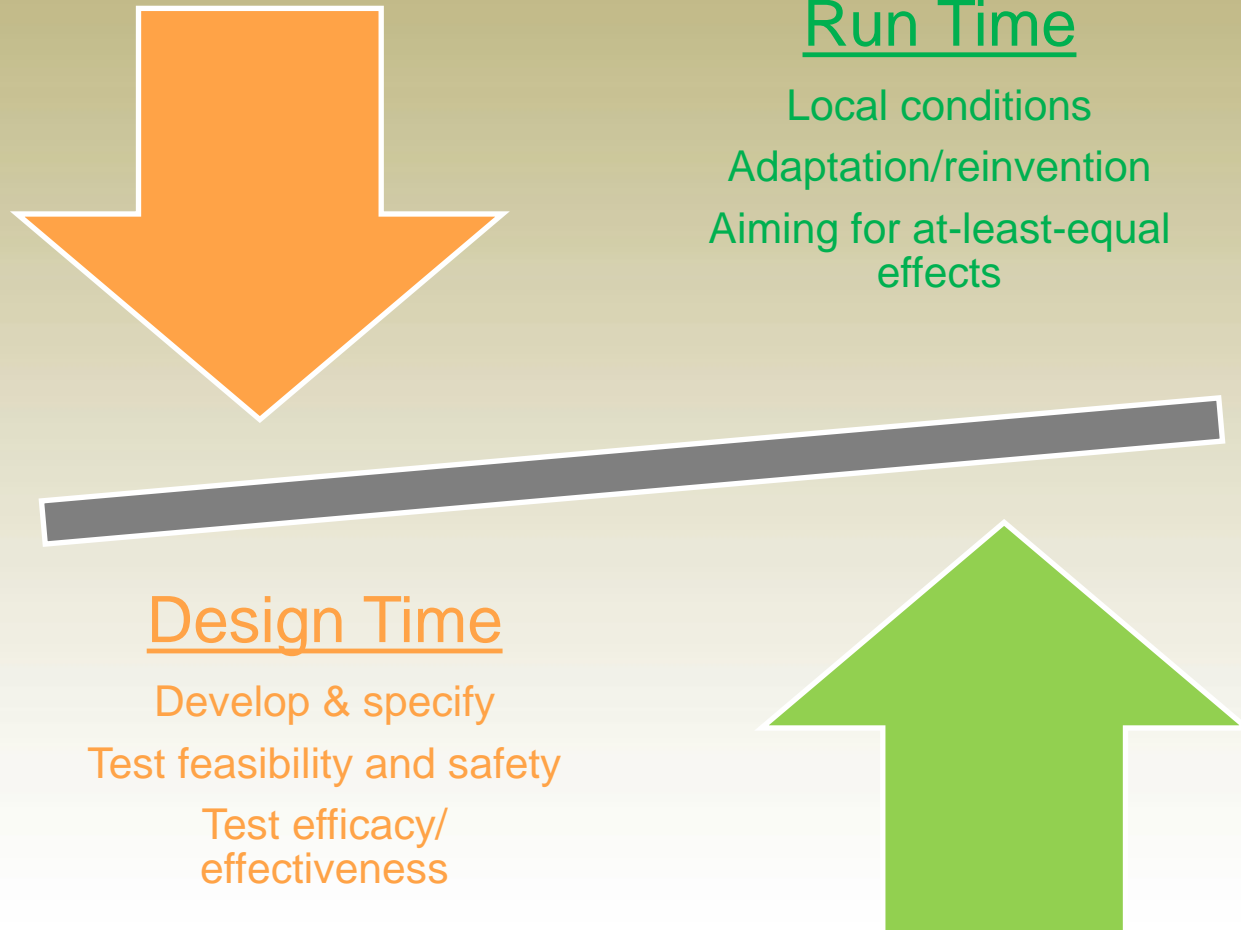


# Evidence-Based Intervention “Run-Time”



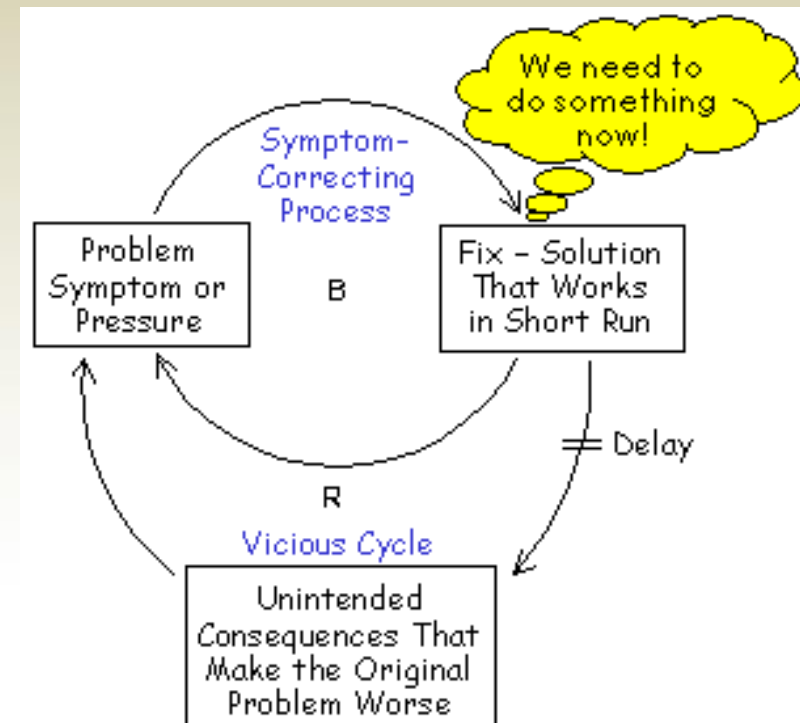


# Imbalance of “Design Time” and “Run Time”



# Common Run-Time Challenges

- Managing uncertainties of intervention – context fit
  - Unplanned adaptation of implementation parameters
  - Unplanned adaptation of intervention itself
- Intervention rejection
- Implementation problems
- Unequal outcomes
  - Intervention failure?
  - Implementation failure?
  - How would we know?





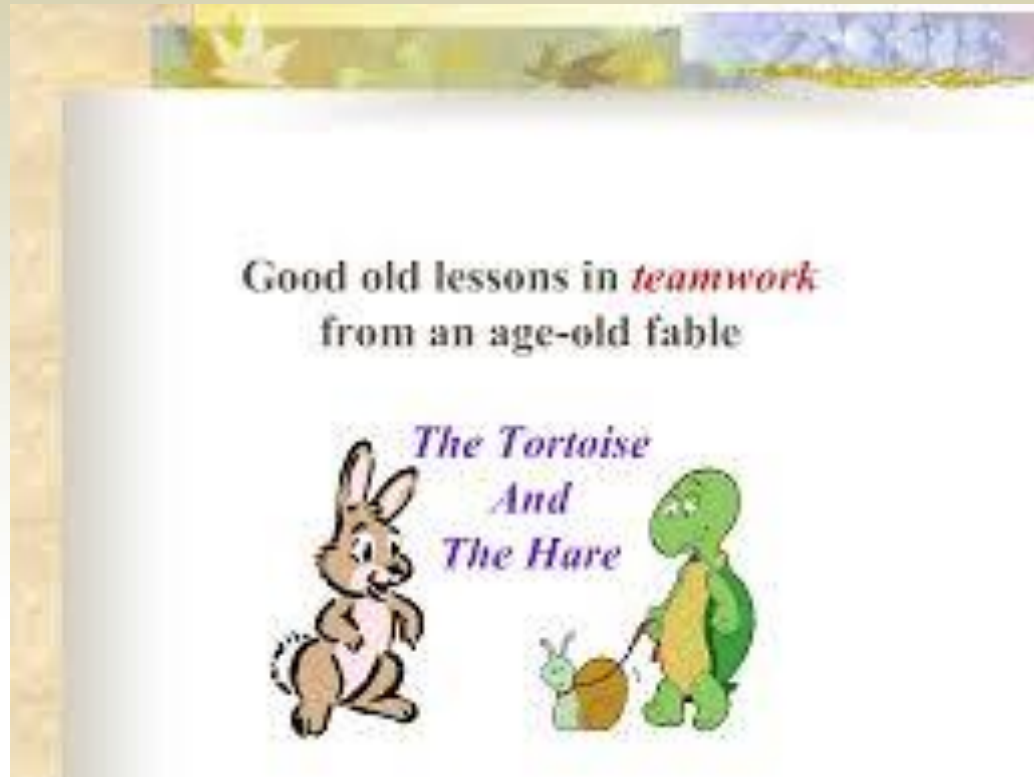
# How Might We Better Balance Design-Time and Run-Time?





# Leverage Practice and Research

Implementation Practice  Implementation Research





# “Dissemination” & “Implementation” in Children’s Mental Health

- 14,247 Citations → 44 Studies → 73 Articles
- Inner Context
  - Practitioner training
  - Ongoing supervision
  - Fidelity assessment
  - Individual practitioner characteristics
  - Organizational social context characteristics
- Outer Context
  - Inter-organizational practitioner networks
  - External ratings/report cards
  - Interactions among organizations and/or individual practitioners and EBP developers

# Inner Context: Implementing Practitioner





# Challenges to Practitioner Development of Psychotherapy Expertise

## Failure to Engage in Routinely Deliberate Practice

- Well-defined specific task to be mastered
- Task performance followed by immediate feedback
- Opportunity for repetition
- Actively exploit opportunity for improvement afforded by **errors** (Lewandowsky & Thomas, 2009 as cited in Tracey et al, 2014)

## Lack of Accurate Feedback

# Challenges to Practitioner Expertise (2)

## Inaccuracy of Self-Appraisals of Competence



- None of us believe we are below average, and about 25% of us believe we are in the top 10%
- Our confidence in our competence increases with experience, even if our competence does not
- Belief of increased competence decreases our motivation to obtain and use critical feedback to enhance expertise



# Implications for Practitioner Training

- Building proficiency appears to require repetitions and active learning (Joyce & Showers, 2002)
- Deliberate practice is needed
- Type of practice matters
  - Set aside practice time to review one's behavior, outcome feedback
  - Make specific plans for improvement
  - Follow through on plans
  - Use outcome (or other valid and reliable measured indicator) as criterion against which to test hypothesis



# Practice a Disconfirmatory Approach



- Check against confirmatory bias
- Check for hindsight bias (“Monday morning quarterbacking” for those in the U.S.)
- Engage in specific, explicit, hypothesis testing, and include alternative hypotheses

# Inner Context: Towards Evidence-Based Supervision



## “More Practice, Less Preach?”\*

- Prospective observational study within RCT\*\*
- 57 community-based therapists trained in EBPs
- 12 doctoral level supervisors with EBP expertise
- 136 youths and families
- Modeling and role-play → higher use than discussion
- Modeling → practice use in next session
- Greater effects for older clinicians

Supported by  
**MacArthur**  
**Foundation**  
[www.macfound.org](http://www.macfound.org)

\* Bearman, Weisz, Chorpita et al & The Research Network on Youth Mental Health, 2013

\*\* Weisz, Chorpita, Palinkas, Schoenwald et al., 2012; Chorpita, Weisz, Daleiden, Schoenwald et al., 2013

# Toward Evidence-Based Supervision

## UK

- Quasi experimental study of supervision of mental health nurses implementing a new psychosocial intervention  
(Bradshaw et al., 2007)
- Observational studies of supervisor and learner behaviors  
(Derek Milne and colleagues, various)



## US

- RCT of TF-CBT supervision in public mental health  
(Dorsey et al., 2013)
- Observational studies in context of treatment RCT
  - Links to Learning (L2L): Observational study of supervision with interdisciplinary teams during a randomized trial of L2L effects  
(Schoenwald, Mehta et al., 2013; M. Atkins, PI R01MH 073749)



# Consultation and Coaching



## Specific functions, processes, of consultation

- Engagement
- Problem solving implementation barriers
- Direct case application
- Appropriate adaptation
- Accountability
- Mastery skill building
- Sustainability planning



Nadeem, Gleacher, & Beidas (2013). Consultation as an implementation strategy for evidence-based practices across multiple contexts: Unpacking the black box. *Administration & Policy in Mental Health and Mental Health Services Research*



# Toward Evidence-Based Consultation

- Dosage, delivery-method, collaboration, & proactive nature matter (Wandersman, Chien, & Katz, 2012)
- Less is known about the specific functions and processes that are most effective
- Study underway: Stirman & colleagues (2013)
  - RCT: 3 consultation conditions for clinicians treating PTSD in military veterans with Cognitive Processing Therapy (CPT)
  - Outcomes: CPT adherence, competence; client symptoms



# Feedback to Practitioners



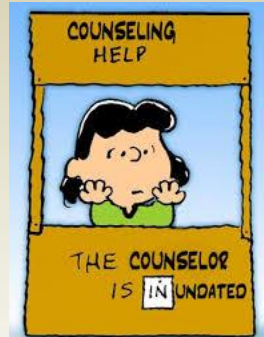
## Health Care



- Audit-and-feedback systems
- Effective for:
  - Relatively straightforward tasks
  - Physicians demonstrating low baseline adherence
  - When the feedback is sufficiently detailed and intensive  
(*Grimshaw et al, 2001; Jamvedt et al., 2006*)

## Adult Individual Psychotherapy

- Reduces deterioration among “not on track” clients
- Benefits unclear to the other clients (*Tracey et al., 2014*)



## Children’s Mental Health

- Feedback to school-based providers about fidelity to Coping Power as rated on observational measures improved fidelity and outcomes (*Lochman, Boxmeyer, Powel, Qu, Wells, & Windle, 2009*)





# Context Intervention Strategies

## Availability, Responsiveness, Continuity (ARC)

- Charles Glisson and Colleagues
- Organizational and inter-organizational
- Principles and strategies in phases
- Trained facilitator



## Outer Context

### Community Development Teams (CDT)

- Todd Sosna & Lynn Marsenich, California Institute for Mental Health
- County-wide, and/or multi-county, approach to scale up adoption and implementation of evidence-based practices



# Rural Appalachian Project (RAP)

## DESIGN:

Counties



THE UNIVERSITY of  
**TENNESSEE** **UT**  
KNOXVILLE  
Big Orange. Big Ideas.

- MST Implementation
  - Indicators: TAM, SAM, MST Therapist Logs
  - Results:
    - No differences in adherence (therapist or supervisor)
    - No differences in odds of addressing a particular system
    - Therapists in ARC counties: fewer minutes within family system; rated progress with extra-familial systems more highly
- Outcomes: MST + ARC better than either alone
- Why?



# Outer Context Experiment: MTFC Implementation Trial\*



## Design:

Counties (40 CA, 11 OH) → MTFC Standard  
→ CDT + MTFC  
Randomized to cohorts for start time

## Evaluating:


Penetration

Implementation Competence



Observational Opportunity Gave Rise to A New Study:  
Stages of Implementation Completion (SIC) for Evidence  
Based Practices,” L. Saldana, PI, NIH R01MH097748

\* Courtesy of Patti Chamberlain & Lisa Saldana



# Effectiveness – Implementation Hybrid Designs

## A priori dual focus

1. Test clinical effectiveness on outcomes *while* observing and gathering implementation information
2. Dual test of clinical and implementation strategies
3. Test implementation strategy *while* observing and gathering information on clinical intervention impact on relevant outcomes



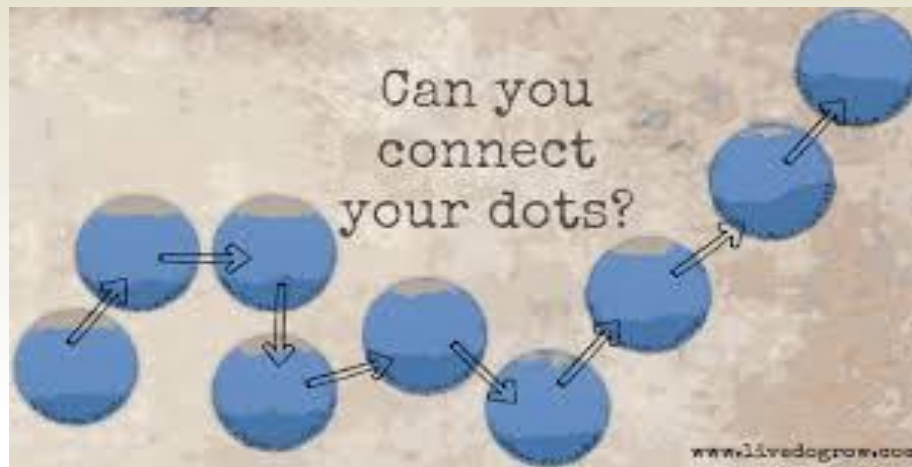
# Hybrid Designs: Purposes & Examples



- Test clinical effectiveness while observing/gathering
  - Therapists' experiences of training, supervision, and treating children in the Standard and Modular EBT conditions  
(Palinkas, Schoenwald, Hoagwood, et al, 2008)
  - L2L community-based supervision of interdisciplinary teams  
(Schoenwald, Mehta et al, 2013)
- How might this advance science and practice?
  - Illuminate possible mechanisms of implementation action for future hypothesis testing
  - Implementation mechanism  $\neq$  Treatment mechanism

# Purposes of Hybrid Designs (2)

- Explain Expected and Unexpected Results
  - Associations of implementation indicators and outcomes
    - Moderation of effects
    - Mediation (mechanisms of action)
- This requires sufficient quantitative data to . . .





# Program Evaluation and Implementation

## “Program Evaluation”

- Typically “decision maker” driven
- Clearly defined “program theory”
- Measures processes
- May measure outcomes
- Data use: inform changes that may be needed
- Extent and constraints of inference specified

## Application to Implementation

- Some European Examples
  - Norway: Ogden and colleagues, 2012
  - UK: Siriwardena and colleagues, 2014

# “Everyday” Evaluation in Implementation

## Plan

- Design or revise business process components to improve results

## Do

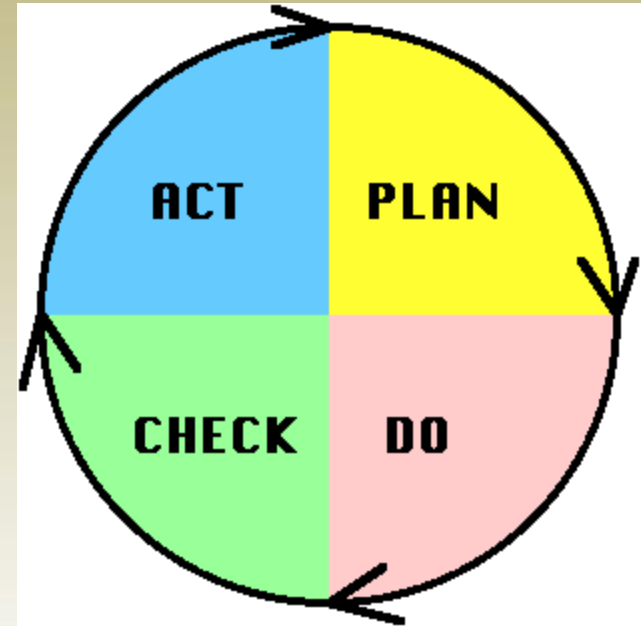
- Implement the plan and measure its performance

## Check

- Assess the measurements and report results to decision-makers

## Act

- Decide on changes needed to improve the process



Plan-Do-Check-Act (PDCA, Walter Shewart, 1920s; W. Edwards Deming, 1950s)



# Toward Evidence-Based Implementation Systems

- Evidence-Based System for Innovation Support (EBSIS; Wandersman, Chien, & Katz, 2012)
  - Tools
  - Training
  - Technical Assistance
  - Quality Assurance/Quality Improvement





# Toward the Greater Global Good

- “Research and services partnerships are fundamental to dissemination and implementation research.”  
(Chambers & Azrin, 2013)



- Implementation practice and research in diverse contexts can inform the design and evaluation of “Robust, sustainable, implementation systems using rigorous, rapid, and relevant science.”  
(Glasgow & Chambers, 2011)





**Tack**

thank  
you!

**Dank U**

**Takk skal du**

**Tak**

**Kiitos**

thank  
you!

**þakka þér**



# References

- Chambers, D., & Azrin, B. (2013). Research and services partnerships: A fundamental component of dissemination and implementation research. *Psychiatric Services, 64*, 50-513.
- Chorpita, B.F., & Daleiden, E.L. (2014). Structuring the collaboration of science and service in pursuit of a shared vision. *Journal of Clinical Child & Adolescent Psychology, 43*, 323-338.
- Chorpita, B.F., Weisz, J.R., Daleiden, E.L., Schoenwald, S.K., Palinkas, L.A., Miranda, J., Higa-McMillan et al. (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. DOI: 10.1037/a0034200
- Curran, G.M., Bauer, M., Mittman, B., Pyne, J.M., & Stetler, C. (2012). Effectiveness-implementation hybrid designs. Combining elements of clinical effectiveness and implementation research to enhance public health impact. *Medical Care, 50*, 217-226.
- Dorsey, S., Pullmann, M.D., Deblinger, E., Berliner, L., et al., (2013). Improving practice in community-based settings: a randomized trial of supervision – study protocol. *Implementation Science* 2013, 8:89 doi:10.1186/1748-5908-8-89
- Ferlie, E.B., & Shortell, S.M. (2001). Improving the quality of health care in the United Kingdom and the United States: A framework for change. *The Millbank Quarterly, 79*, 281-315.
- Ghate, D. (January, 2012) *Implementing evidence-based practice: A European perspective on culture and context*. Webinar Presentation to the Implementation Interest Group, The Learning Center for Child and Adolescent Trauma, The National Child Traumatic Stress Network. Colebrook Centre for Evidence and Implementation, London, UK.
- Glasgow, R.E., & Chambers, D. (2011). Developing robust, sustainable, implementation systems using rigorous, rapid, and relevant science. *Clinical Translational Science, 5*(1), 48-55.
- Glasgow R & Steiner J. (2012). *In Dissemination and Implementation Research*. Brownson, R, Colditz, G, and Proctor, E (Eds.). Oxford University Press
- Grimshaw, J.M., Shirran, L., Thomas, R., et al (2001). Changing provider behavior: An overview of systematic reviews of interventions. *Medical Care, 39*, No.8, Suppl 2, pp. II-2-II-45.
- Grol, R., & Grimshaw, J. (1999). Evidence-based implementation of evidence-based medicine. *Journal on Quality Improvement, 25*, 503-513.



# References (2)

- Novins, D.K., Green, A.E., Legha, R.K., & Aarons, G.A. (2012). Dissemination and implementation of evidence-based practices for child and adolescent mental health: A systematic review. *Journal of the American Academy of Child and Adolescent Psychiatry*, 52, 1009-1025.
- Nutley, S., Morton, S., Jung, T. & Boaz, A. (2010). Evidence and policy in six European countries: diverse approaches and common challenges. *Evidence & Policy*, 6 (2), 131-144.
- Ogden, T., Bjornebekk, G., Kjobli, J., Patras, J. (2012). Measurement of implementation components ten years after a national introduction of empirically supported programs – a pilot study. *Implementation Science*, 7:49.
- Palinkas, L. A., Schoenwald, S.K., Hoagwood, K., Landsverk, J., Chorpita, B.F., Weisz, J.R., and the Research Network on Youth Mental Health (2008). An ethnographic study of implementation of evidence-based practice in child mental health: First steps. *Psychiatric Services*, 59, 738 – 746.
- Powell, B.J., McMillen, J.C., Proctor, E.K. et al. (2012). A compilation of strategies for implementing clinical innovations in health and mental health. *Medical Care Research Review*, 69(2), 123-157.
- Schoenwald, S.K., Kelleher, K., Weisz, J.R. and the Research Network on Youth Mental Health (2008). Building bridges to evidence-based practice: The MacArthur Foundation Child System and Treatment Enhancement Projects (Child STEPs). *Administration and Policy in Mental Health and Mental Health Services Research*, 35, 66 – 72
- Schoenwald, S.K., Mehta, T.G., Frazier, S.L., & Shernoff, E.S. (2013). Clinical supervision in effectiveness and implementation research. *Clinical Psychology: Science and Practice*, 20, 44 - 59. doi:10.1080/14733140601185274.
- Siriwardena, A.N., Shaw, D., Essam, D., Togher, F.J., et al (2014). The effect of a national quality improvement collaborative on prehospital care for acute myocardial infarction and stroke in England. *Implementation Science*, 9:17
- Tracey, J.G., Wampold, B.E., Lichtenberg, J.W., Goodyear, R.K. (2014). Expertise in psychotherapy: An elusive goal? *American Psychologist*, 69, 218-229
- Wandersman, A., Chien, V.H., & Katz, J. (2012). Toward an evidence-based system for innovation support for implementing innovations with quality: Tools, training, technical assistance, and quality assurance/quality improvement. *American Journal of Community Psychology*, 50, 445-459
- Weisz, J.R., Chorpita, B.F., Palinkas, L.A., Schoenwald, S.K., Miranda, J., Bearman, S.K., Daleiden E.L., et al. (2012). Testing standard and modular designs for psychotherapy treating depression, anxiety, and conduct problems in youth. *Archives of General Psychiatry*, 69(3):274-282 doi:10.1001/archgenpsychiatry.2011.147.69, 274-282. doi:10.1001/archgenpsychiatry.2011,147