

# DISSEMINATION AND IMPLEMENTATION SCIENCE

**Clayton R. Cook, Ph.D., LP**

*Associate Professor*  
School Psychology  
College of Education  
University of Minnesota

*Executive Member*  
School Mental Health Assessment,  
Research, and Training (SMART) Center  
University of Washington



# RESEARCH-TO-PRACTICE GAP

(i.e., implementation gap, science-to-service gap)

- *What works is not what actually gets implemented*
  - Recent reports from groups such as the Institute of Medicine (2000, 2001, 2007) and The U.S. Department of Education (2011) have highlighted the gap between researcher knowledge of effective interventions and the services actually received by persons who could benefit from research-based interventions
- The lag time for translating research into practice has been documented > 15 years

# IMPLEMENTATION ISSUES

- Even when adopted, only 25–50% of programs are implemented by school personnel with comparable fidelity to the original efficacy trials, reducing their effects on classroom functioning (Gottfredson & Gottfredson, 2002)
- Reasons for the gap between "what works" and what actually occurs in classrooms, include
  - fragmented school infrastructure that is not ready,
  - organizational barriers that impede EBP uptake,
  - lack of feasibility/fit of EBPs (Adelman et al., 2010; Forman et al., 2009)

# EXAMPLE OF THE PROBLEM

**Problem: Anxiety disorders**

**Solutions: Population-based study on anxiety treatment**

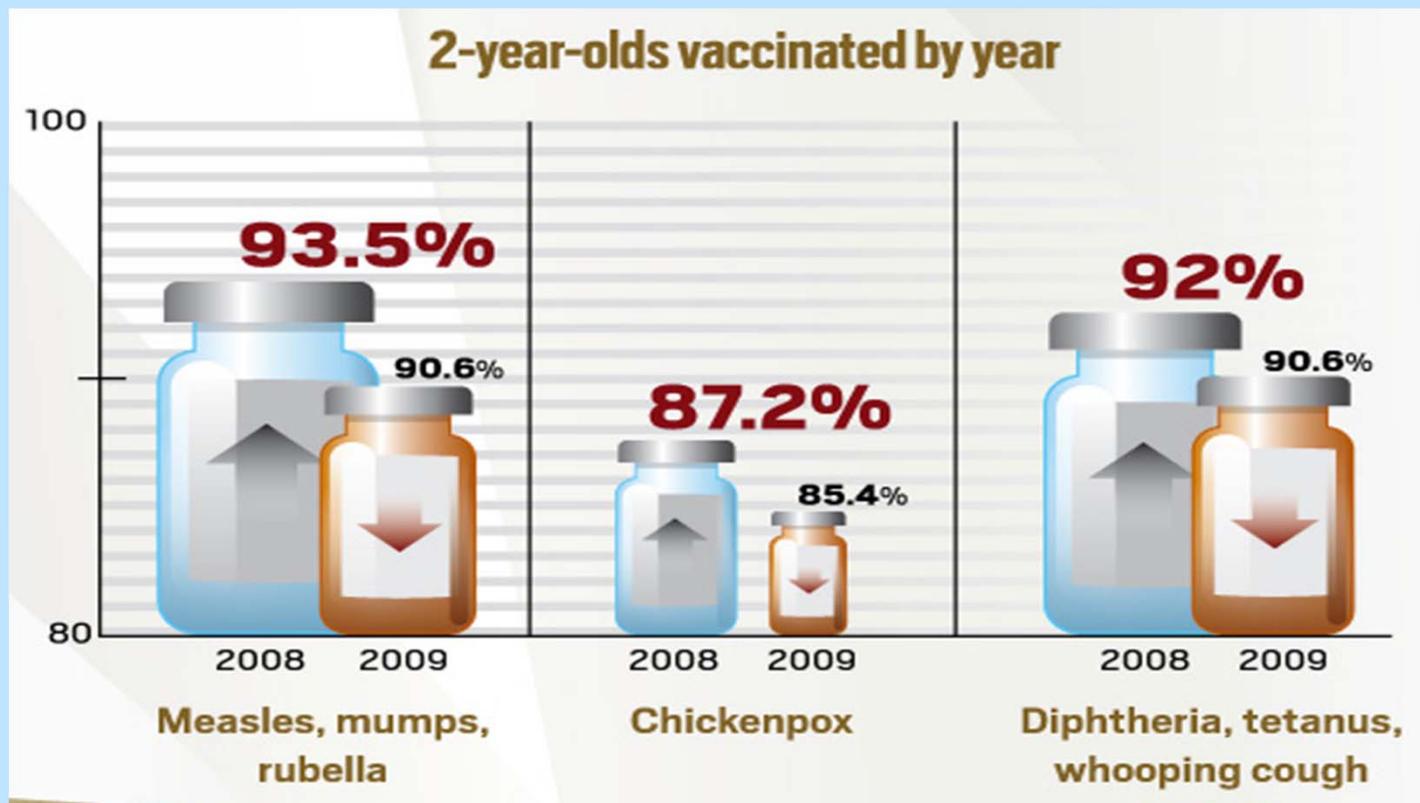
	<b>1996</b>	<b>2005</b>
<b>Use of psychotropic meds for anxiety</b>	<b>5.4% (13 million)</b>	<b>10.12% (27 million)</b>
<b>Use of psychological interventions</b>	<b>31.5%</b>	<b>19.8%</b>

# ADDRESSING ANXIETY – THE PROBLEM OF DISSEMINATION AND IMPLEMENTATION

- **Why the discrepancy?**
  - Medications readily available—heavily marketed and disseminated
  - Psychological interventions—not so much
- **How to better promote and disseminate evidence-based psychological interventions?**

# EXAMPLE OF THE PROBLEM

- **Problem:** Increase in diseases
- **Evidence-based practice:** Vaccinations that prevent diseases



# PREVENTING DISEASES – THE PROBLEM OF USING EBPS

- Despite evidence demonstrating the success vaccinations and evidence debunking the myths (vaccinations cause autism), why a decrease in their use?
- 99.4 of all children in Mississippi are vaccinated due to state-level policy

# EXAMPLE OF THE PROBLEM

**Problem:** Reading failure too high in California

**Solution:** non-evidence-based practice:

- Whole language
  - Approach to teaching reading that emphasizes students selecting their own reading material and learning site words by recognizing words in everyday contexts



\*Jenyes & Little (2000)

# IMPROVING READING SCORES – THE PROBLEM OF SELECTING THE WRONG PROGRAM

- Eight years after whole language was adopted statewide in California, fourth-grade reading scores plummeted to near the bottom nationally, according to the National Assessment of Educational Progress (NAEP)

"I fear that the education leaders in California didn't see the real problem that has sent California to the absolute bottom in reading. You cannot keep using an entire state as an experiment. You wouldn't administer a drug to 3 million people without testing it first, would you?"

~Douglas Carnine, University of Oregon

# EXAMPLE OF THE PROBLEM

- **Problem: Staph infections in hospitals**
    - 2 million acquire an infection
    - 90,000 die in U.S Hospitals
    - BUT, rates of handwashing 33-50%
  - **Evidence-based practice:**
    - regular handwashing
- \* \* Gwande (2007)



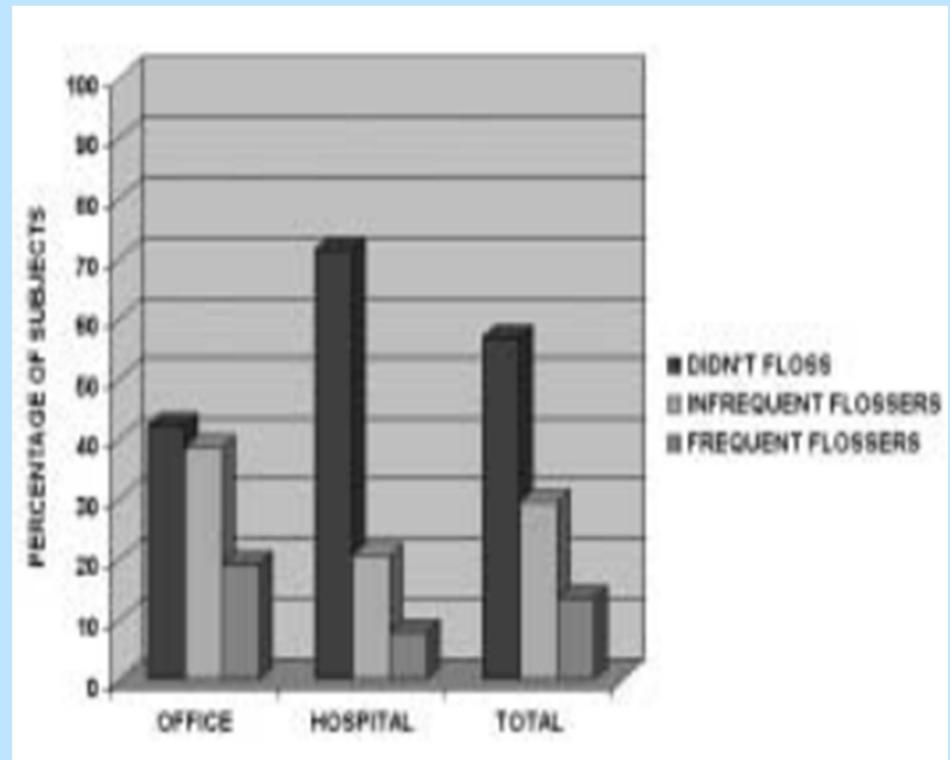
# IMPROVING HANDWASHING PRACTICES – THE PROBLEM OF IMPLEMENTATION

- Reasons for not washing hands
  - Inconvenient & not enough time (make it easier)
  - High alcohol content (create ventilation)
  - Irritation to skin (aloe)
  - Aloe stinks (remove aloe)
  - Gel reduces fertility (share data that debunks the myth)
- Outcomes
  - Improved from 40%-70% but no significant drop in infections

\*\*Gwande (2007)

# EXAMPLE OF THE PROBLEM

- **Problem: Gum disease**
- **Evidence-based practice:**
  - **Regular flossing**



# IMPROVING FLOSSING – THE PROBLEM OF BEHAVIOR CHANGE

- Habit formation (i.e., behavior change) doesn't necessarily happen because someone said you should change
- Dental offices that employ strategic behavior change strategies
  - Improvements to 80% of individuals flossing on a regular basis and a significant reduction in gum disease

\*Segelnick (2009)

# BIG QUESTIONS

- **Why is it that two comparable settings serving similar demographics of students will differ in their adoption and use of effective practices that they've been told they need to implement?**
- **Why is it that two people working in the same setting who have been provided with the same training and follow-up support will differ in their implementation of EBP?**

# THOUGHT EXERCISE

- You are aware of a feasible and effective evidence-based practice that is likely to improve the outcomes of students now and in the future but it is not currently being implemented.
- How would you thoughtfully go about facilitating the adoption, use and sustainment of this practice?

# COMMON SENSE APPROACH TO IMPLEMENTATION

- Assumption is that people will see the logic and benefit of doing it and it will catch fire
- “Common Sense” alone hasn’t worked so far...
  - Train and hope model
  - Trial & error approach
  - Reinventing the wheel
  - Cherry-picking interventions
  - Retrospectively trying to understand the “black box” of implementation after a failure

# PENT MEMBERS AS IMPLEMENTATION INTERMEDIARIES

- Working on a dissemination and implementation team within a building
- Providing coaching and consultative support to facilitate teacher fidelity
- Delivering professional development/training on evidence-based practices
- Monitoring implementation efforts and linking it to student outcomes
- Aligning with leadership to improve accountability and priority of the implementation
- Advocating at a district-level for policy, resources, and a better infrastructure

# DEFINITIONS

- **Dissemination** is the targeted distribution of information and intervention materials to a specific practice audience to facilitate knowledge and skill acquisition
- **Implementation** is the building of an infrastructure and the use of specific strategies to facilitate the adoption and use of evidence-based interventions with fidelity and ultimately change practice patterns within a specific setting
  - “Scaling up” of interventions

# WHY FOCUS ON IMPLEMENTATION?

**RESEARCH**

**IMPLEMENTATION**

**PRACTICE**

Why Focus on Implementation?

“Students cannot benefit from interventions they do not experience.”

# IMPLEMENTATION SCIENCE

- “Implementation science is the systematic study of variables and conditions that lead to full and effective use of evidence-based programs and other effective innovations in typical human service settings.”

Blase and Fixsen, 2010  
National Implementation  
Research Network

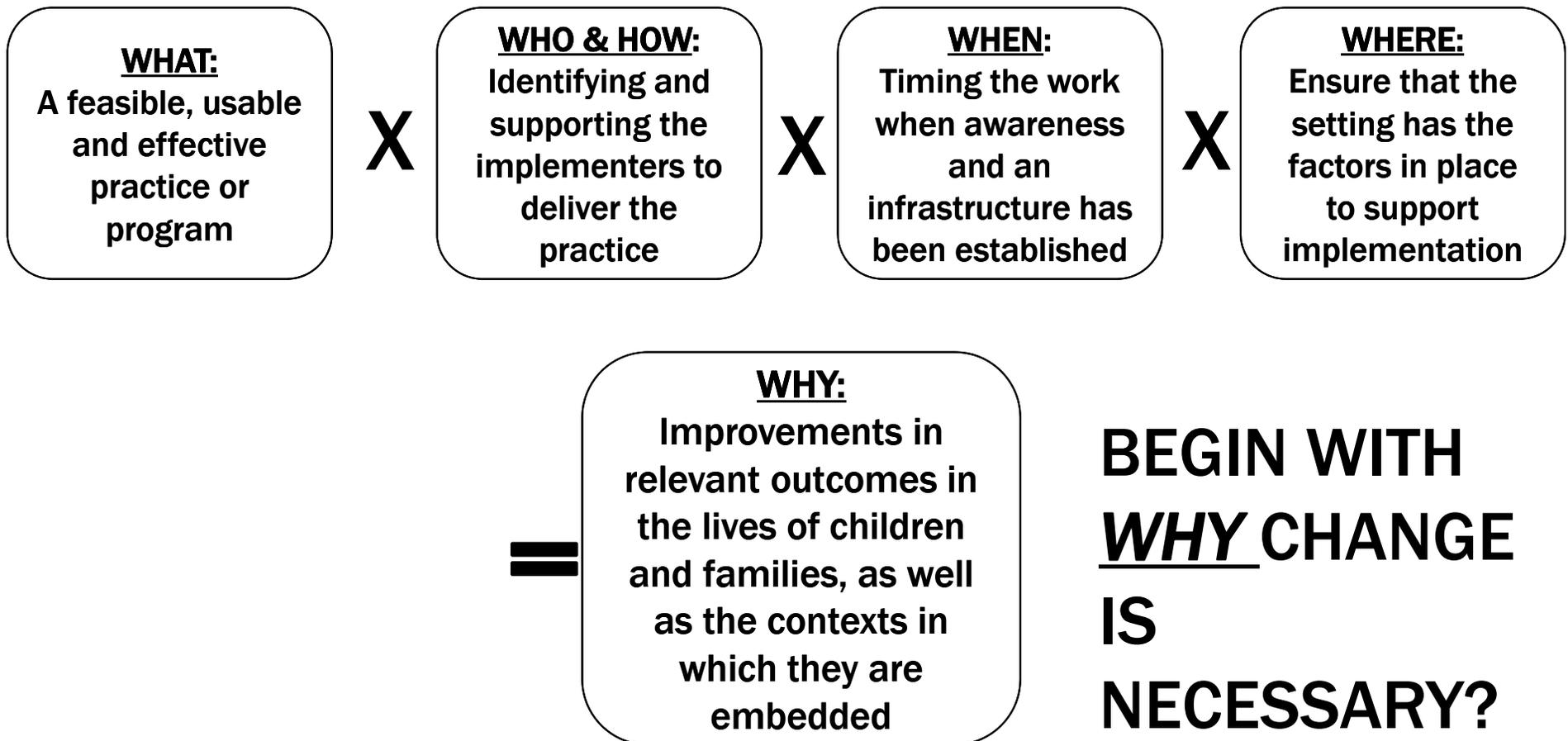
- Barriers and facilitators to installation, uptake, use, and ultimately high quality fidelity of implementation

# APPROACHES TO IMPLEMENTATION

- **Letting it happen**
  - Recipients are accountable
  - Put the guidance and resources on a website
- **Helping it happen**
  - Recipients are accountable
  - Provide a professional development experience
- **Making it happen**
  - System is accountable for implementation
  - Strategic planning based on factors that will facilitate or impede EBP delivery
  - Support implementation as an ongoing process to ensure effectiveness over time

**\*\*Based on Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004**

# FORMULA FOR SUCCESS



# IMPLEMENTATION RESOURCES

- Active Implementation Hub
  - <http://implementation.fpg.unc.edu/>
- Consolidated Framework for Implementation Research
  - <http://cfirguide.org/>
- Society for Implementation Research Collaboration
  - <https://www.societyforimplementationresearchcollaboration.org/>
- EPIS Center
  - <http://www.episcenter.psu.edu/>
- The Diffusion of Effective Behavioral Interventions (DEBI) project
  - <https://effectiveinterventions.cdc.gov/en/home.aspx>
- Evidence-Based Behavioral Practice
  - <http://www.ebbp.org/>