Partnerships in Prevention Science Institute

PROmoting School-community-university Partnerships to Enhance Resilience

Scaling Systems for Evidence-based, Family-focused Programs: Challenges, Lessons and Strategies

Strategies for Scaling Tested and Effective Family-Focused Preventive Interventions to Promote Children's Cognitive, Affective, and Behavioral Health: A Workshop

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

April 2, 2014

Richard Spoth
Partnerships in Prevention Science Institute, Iowa State University

PPSI research reported herein has been funded by grants from the National Institute on Drug Abuse (DA13709, DA028879), the Centers for Disease Control and Prevention (DP002279), and the Annie E. Casey Foundation, with co-funding from the National Institute on Alcohol Abuse and Alcoholism.

Purpose:

- Highlight **findings on the development of systems** for scaling sustained, quality implementation of family-focused EBIs and indicated **next steps**
- Present "discussion points" concerning:
  - Part I. Family-focused EBIs and Scalable Systems: **Problem** and Needed **Solutions**/Strategies
  - Part II. One Illustrative Delivery System – **PROSPER** Approach and Outcomes
  - Part III. Strategies to Address **Challenges** at Community, State, and National Levels
  - Part IV. Further Considerations on **Steps Toward Greater Impact**

Advances in Family-focused Prevention

- **NRC-IOM 2009 Report*** reviews on array of effective preventive interventions
  - Prenatal through adolescent stages
  - Prevent multiple behavioral problems, with long-term effects
  - Many show cost benefit/cost effectiveness
- Highlights **evidence on family-focused** programs in particular
  - ↑ Caregiver-child bonding, child management, as well as social, emotional and cognitive competencies
  - ↓ Substance use, delinquency, conduct problems, other mental health problems

*National Research Council and Institute of Medicine (2009). Preventing mental, emotional, and behavioral disorders among young people: progress and possibilities. Committee on the Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults: Research Advances and Promising Interventions. Mary Ellen O'Connell, Thomas Boat, and Kenneth E. Warner, Editors. Washington DC: The National Academies Press.

Illustrative Advances: Crossover Effects

- Effects of Universal Intervention on Young Adolescents/Adults – Up to 14 Years Past Baseline
  - ↓ Wide-ranging types of substance use **(primary goal)**
  - ↑ Parenting skills and family functioning, youth skills (e.g., peer resistance, social competencies), school engagement and grades
  - ↓ Aggressive/destructive behaviors, conduct problems, mental health problems (e.g., depression), health-risking sexual behaviors

Why? Programs address common R/P factors; have impacts on primary socializing environments (social networks); well-timed developmentally.

Source: Spoth, Global Implementation Conference Plenary, 2013.

A Problem Remaining to be Addressed

- Despite advances
  - Most family-focused interventions actually implemented in real world are **untested**
  - Mostly have only limited, often **ineffective delivery systems**

See summaries in Spoth, R. (2008) Translating family-focused prevention science into effective practice. Toward a translational impact paradigm. *Current Directions in Psychological Science,* 17(6), 415-421. *Current Directions in Psychological Science*; Spoth, R., Greenberg, M. & Turrisi, R. (2008). Preventive interventions addressing underage drinking: State of the evidence and steps toward public health impact. *Pediatrics*, 121, 311-336.

Scalable Systems for Community-based, Family-focused EBIs to Address the Problem

The Translational Context…

In Reality, Following a Formula for "Slow Flow" of EBIs & Limited Population Impact

(1) Relatively small portion of total interventions implemented are EBIs

(2) ✚ Frequent limited EBI implementation quality

(3) ✚ Limited sustainability

(4) 〓 Limited population-level impact

- Major barriers to flow from proven EBIs to broad dissemination, quality implementation, and impact

So… Core Challenge #1: Infrastructure and Systems Development

- Necessary **supports for *practice*** – large-scale adoption, implementation and sustainability of EBIs
- Necessary **supports for *research*** – to investigate the technical, human, structural features that support translation functions
  (re adoption and sustained, quality implementation)

*Source: Spoth, Rohrbach, Greenberg, et al. (2013). Addressing core challenges for the next generation of Type 2 translation research and systems: The Translation Science to Population Impact (TSci Impact) framework. *Prevention Science, 14(4), 319-351.*

One Illustrative Delivery System: PROSPER

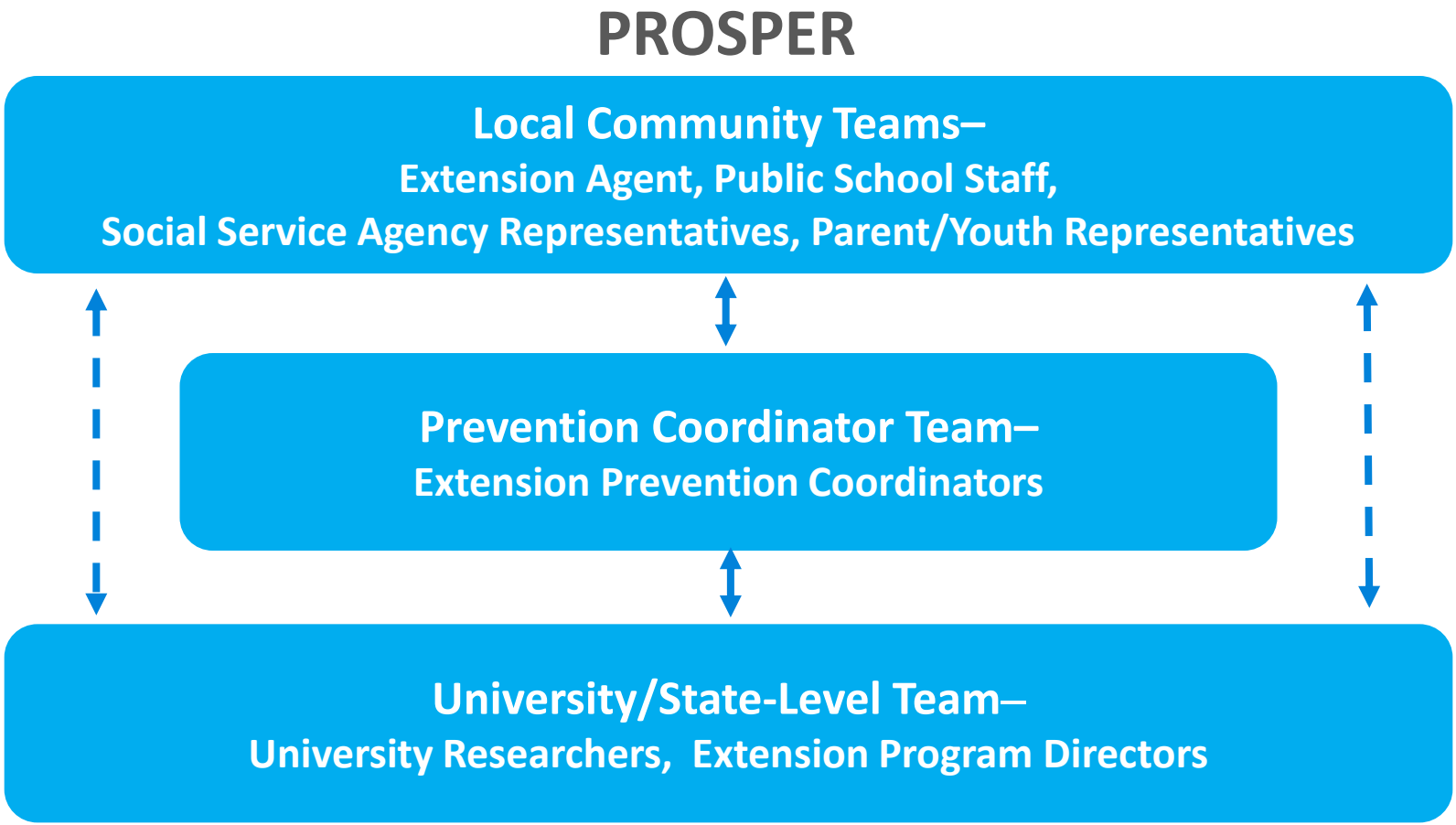
(**PRO**moting **S**chool-community-university **P**artnerships to **E**nhance **R**esilience)

THE PROSPER APPROACH

PROSPER – Building on Existing Intervention Infrastructures/Systems

- USDA – Cooperative Extension System
  - Largest informal education system in the world
  - Reach into every county in the country
- DoE – State Public School Systems
  - Universal system reaching nearly all children
  - Existing relationships with Extension
- DoD – Military Family Support Systems
  - Ties into National Guard Support Systems
  - Could link to existing military training infrastructures
- Groundwork for linkage of the systems began in the late 1980s

Evolving Community Partnership Sustainability Model



- **Primary Task: Sustained, quality implementation** of family and school EBIs selected from menu

PROSPER Menu

- **Both family** EBIs (in 6th grade) and **school** EBIs (7th)
- Among 3 family EBIs, SFP 10-14* only one selected to date
- SPF 10-14 objectives
  - ↑ Protective factors (e.g., caregiver-child bonding)
  - ↓ Risk factors for child problem behaviors (e.g., ineffective discipline; low peer resistance)
- Program Length—7 weekly two-hour sessions
- Program Format—1 hour for separate parent and child training; 1 hour for family training

* SPF 10-14 is Strengthening Families Program: For Parents and Youth 10-14; formerly known as Iowa Strengthening Families Program

Community Level Staffing

- PROSPER Community Teams start with between 8-10 members including:
  - Family and/or youth Extension-based Team Leader – average 10 hours/week
  - School-based Co-team Leader – about 1 hour/week
  - Community volunteers – about 3 hours/month
    - Local mental health/public health representatives
    - Local substance abuse agency representative
    - Parents
    - Youth
- **Teams and EBIs expand** as teams mature, guided by TA

Outcome Study

- Collaboration with PSU
- Design: RCT of 28 school districts (14 IA, 14 PA)
  - Full partnership with community teams
  - Delayed intervention
- Participants: Two cohorts of 6th grade children (≈ 6,000 students per cohort); 2nd cohort has ≈ 1,000 intensive assessment families
- Multimethod, multi-informant measurement (now at 9th wave of data collection–post high school)

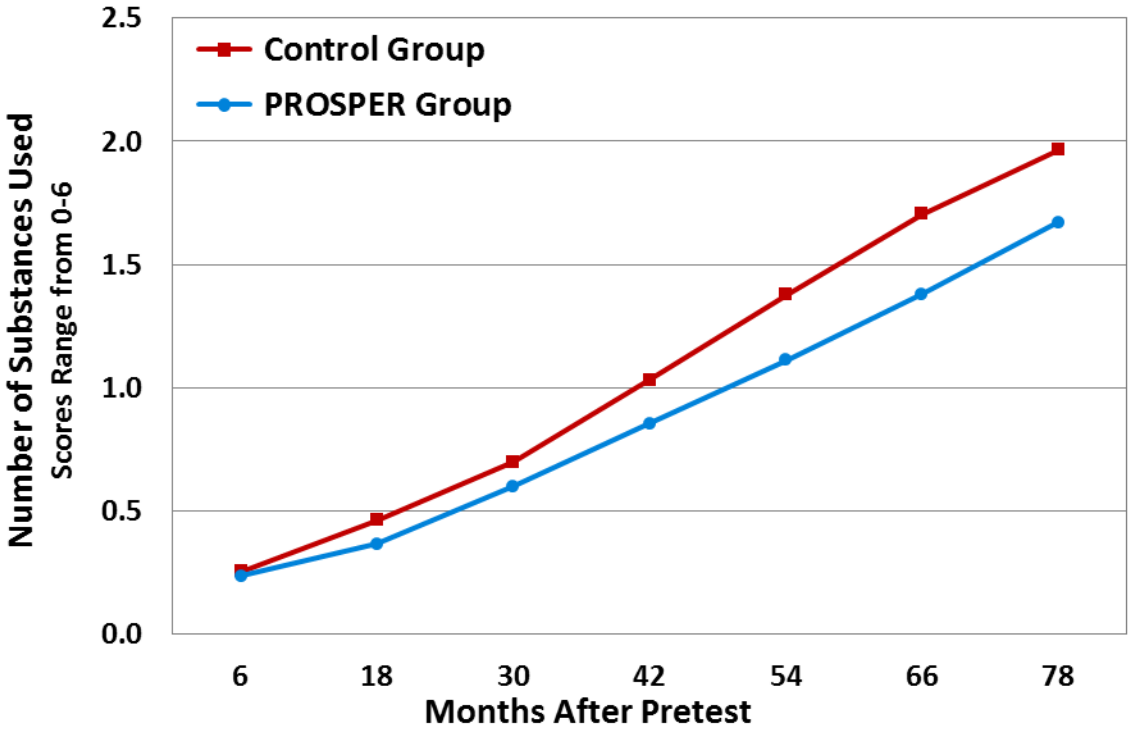
Partnerships in Prevention Science Institute
Iowa State University ™ University Extension

PROSPER is funded by a grant from the National Institute on Drug Abuse #DA013709-R. Spoth (PI, Iowa State University), M. Greenberg (PI on subcontract, Pennsylvania State University), C. Redmond (Co-PI at ISU), M. Feinberg (Co-PI at PSU), with co-funding from the National Institute on Alcohol Abuse and Alcoholism.

Prevention Research Center
Penn State EXTENSION
AGRICULTURE | COMMUNITY & FAMILY | ENVIRONMENT

"Snapshots" of Long-term Outcomes, Positive Trajectories

Long-term Impact on Illicit Substance Use Index Through 6½ Years Past Baseline

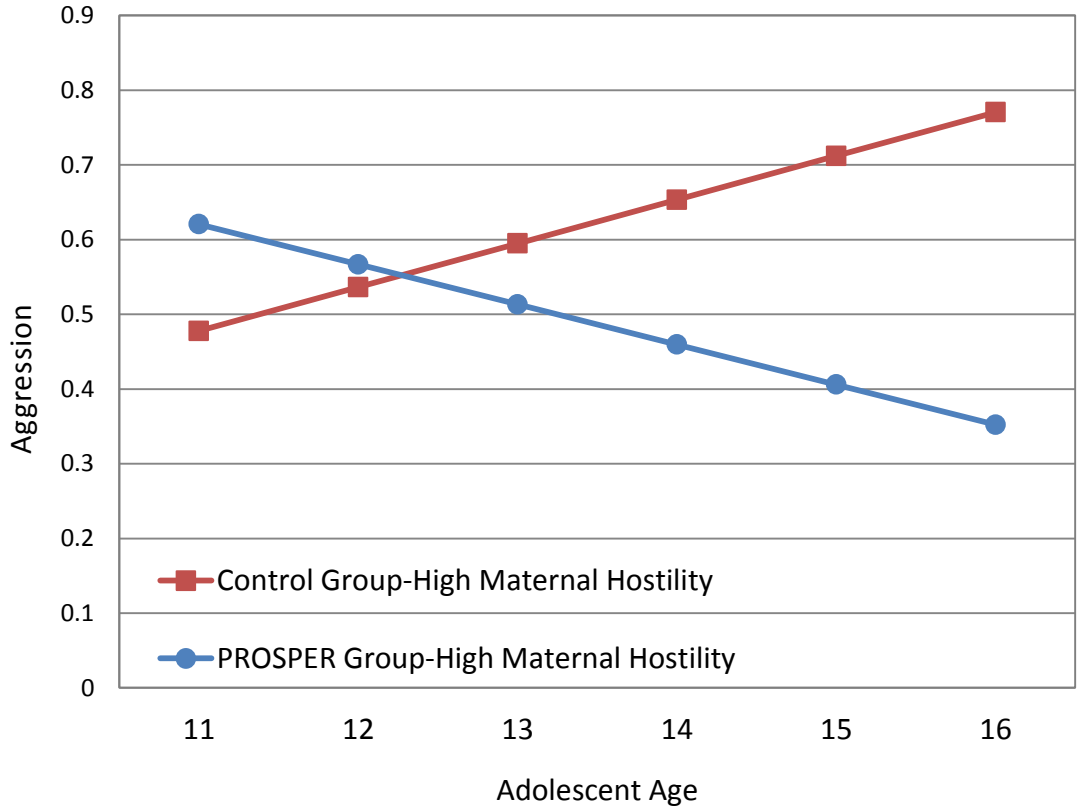


Difference in growth of use is statistically significant, as are differences at multiple time points, including 11th and 12th grades.

Stronger effects for higher-risk youth.

Source: Spoth, Redmond, Shin, Greenberg, Feinberg, Schainker (2013). PROSPER community-university partnerships delivery system effects on substance misuse through 6½ years past baseline from a cluster randomized controlled intervention trial. *Preventive Medicine, 56,* 190-196.* Sum of six lifetime illicit use measures (methamphetamines, Ecstasy, inhalants, Vicodin, prescription drug misuse overall, other illicit drug use).

PROSPER Interacts with Genetic Factor to Reduce Negative Parenting Effect on Aggression



Subgroup of youth with the DRD4 gene and a high level of maternal hostility show decrease in aggression from ages 11-16.

Source: Schlomer, Cleveland, Vandenbergh, Feinberg, Neiderhiser, Greenberg, Spoth, et al. Change in early to mid-adolescent aggression is moderated by maternal negative parenting, substance misuse preventive intervention, and variation in DRD4 genotype. Manuscript in final preparation.

Plus, PROSPER is a Cost Effective Way to Implement Evidence-based Programs

SFP 10-14 Implementation: PROSPER team vs. SFP 10-14 alone.

	PROSPER Low Estimate	**PROSPER** High Estimate	Economist Report Estimate**
Direct Costs Per Family	**$278.56***	**$348.25***	**$851.00**

* Represents a **59-67%** reduction in costs.

Source: Crowley, Jones, Greenberg, Feinberg & Spoth (2012). Resource consumption of a dissemination model for prevention programs: The PROSPER delivery system. *Journal of Adolescent Health,* 50, 256-263. (See explanation of "day of implementation" costs.) **See Washington State Institute for public Policy Report, 2004.

Key PROSPER Partnership Randomized Control Trial Findings (from published reports)

- **Effective mobilization** of community teams
- Community **teams sustained programming** efforts for ten years
- Community teams achieved **high recruitment rates** for family program participation, compared to traditional approaches
- Reductions in **negative peer influences** indicated by social network analyses
- All programs **implemented with high levels of quality**
- Positive effects for **strengthening family relationships, parenting, and youth skill outcomes** – note crossover effects
- Youth score significantly lower on a **range of problem behavior outcomes** (both substance misuse and conduct problems)
- Indications that it is **more cost efficient** than regular programming; also, that it is **cost effective and cost beneficial**

Source: Spoth, R. (January 2012). Moving toward population-level impact with community-based prevention: PROSPER project findings, lessons, big questions, future directions. Invited presentation for NIDA DESPR seminar session, Bethesda, MD.

Part III: Findings on Strategies to Address Key Challenges at Community Level

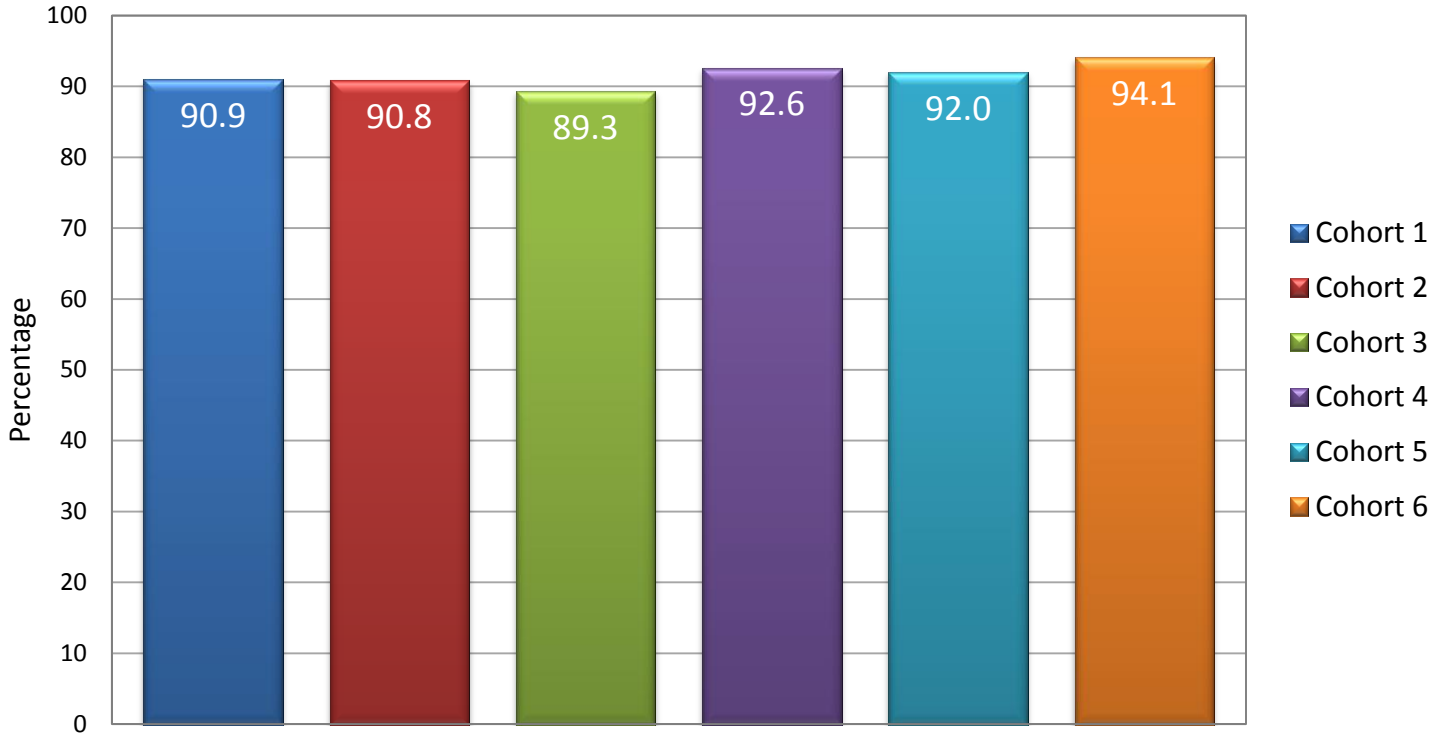
1. Technical Assistance and Support Systems for Evidenced-based Program Delivery
2. Participation/Active Engagement of Targeted General Populations
3. **Implementation Quality** of Evidence-based Programs
4. **Sustaining Evidence-based Programming** (especially funding)
5. Strategies for Integrating Ongoing Evaluation/Quality Improvement

Ongoing EBI Monitoring for Quality Implementation

- Educate/train PROSPER partnership members about the **importance of quality monitoring** at:
  - Statewide meetings
  - Learning communities
  - Facilitator and observer trainings
  - "Feedback sessions" after program (e.g. SFP 10-14) session is completed
  - Facilitator supervision

PROSPER Strategies to ⬆ Implementation Quality – Illustrative Findings

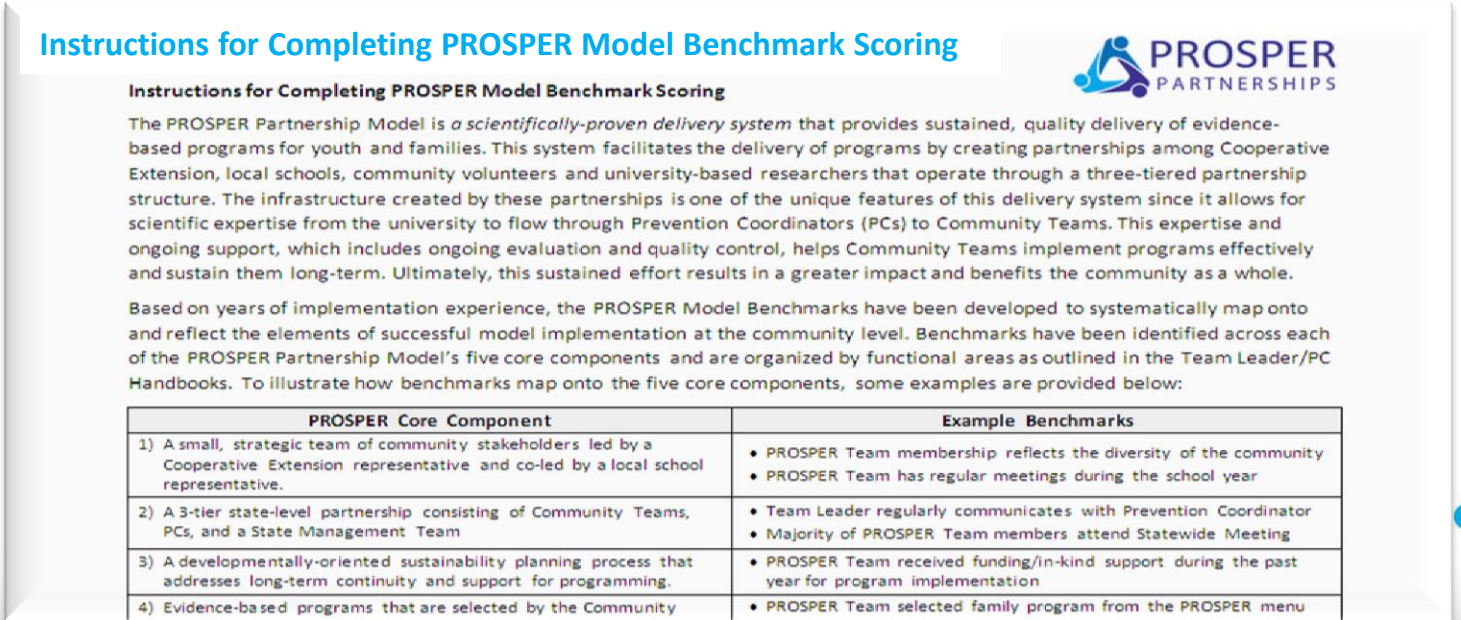
PROSPER Long-Term Adherence Ratings



See: Spoth et al. (2007). PROSPER study of evidence-based intervention implementation quality by community-university partnerships. *Journal of Community Psychology,* 35(8), 981-999. Also see Spoth et al. (2011). Six-year sustainability of evidence-based intervention implementation quality by community-university partnerships: The PROSPER study. *American Journal of Community Psychology, 48*, 412-425.

Phases of Sustainability-Oriented PROSPER Developmental Process

- **Assess benchmarked progress** across all phases, with special attention to core components
  - Used to monitor sustainability efforts re team and programs
  - Facilitates sustained, long-term development



Instructions for Completing PROSPER Model Benchmark Scoring

Instructions for Completing PROSPER Model Benchmark Scoring

The PROSPER Partnership Model is *a scientifically-proven delivery system* that provides sustained, quality delivery of evidence-based programs for youth and families. This system facilitates the delivery of programs by creating partnerships among Cooperative Extension, local schools, community volunteers and university-based researchers that operate through a three-tiered partnership structure. The infrastructure created by these partnerships is one of the unique features of this delivery system since it allows for scientific expertise from the university to flow through Prevention Coordinators (PCs) to Community Teams. This expertise and ongoing support, which includes ongoing evaluation and quality control, helps Community Teams implement programs effectively and sustain them long-term. Ultimately, this sustained effort results in a greater impact and benefits the community as a whole.

Based on years of implementation experience, the PROSPER Model Benchmarks have been developed to systematically map onto and reflect the elements of successful model implementation at the community level. Benchmarks have been identified across each of the PROSPER Partnership Model's five core components and are organized by functional areas as outlined in the Team Leader/PC Handbooks. To illustrate how benchmarks map onto the five core components, some examples are provided below:

PROSPER Core Component	Example Benchmarks
1) A small, strategic team of community stakeholders led by a Cooperative Extension representative and co-led by a local school representative.	• PROSPER Team membership reflects the diversity of the community • PROSPER Team has regular meetings during the school year
2) A 3-tier state-level partnership consisting of Community Teams, PCs, and a State Management Team	• Team Leader regularly communicates with Prevention Coordinator • Majority of PROSPER Team members attend Statewide Meeting
3) A developmentally-oriented sustainability planning process that addresses long-term continuity and support for programming.	• PROSPER Team received funding/in-kind support during the past year for program implementation
4) Evidence-based programs that are selected by the Community	• PROSPER Team selected family program from the PROSPER menu

Team Training Guided by PROSPER

Sustainability Model

Purpose:
Improved Child and Family Outcomes

Goal 1:
Sustaining Growth & Quality of Programming

Goal 2:
Sustaining Well-Functioning Teams

Objectives

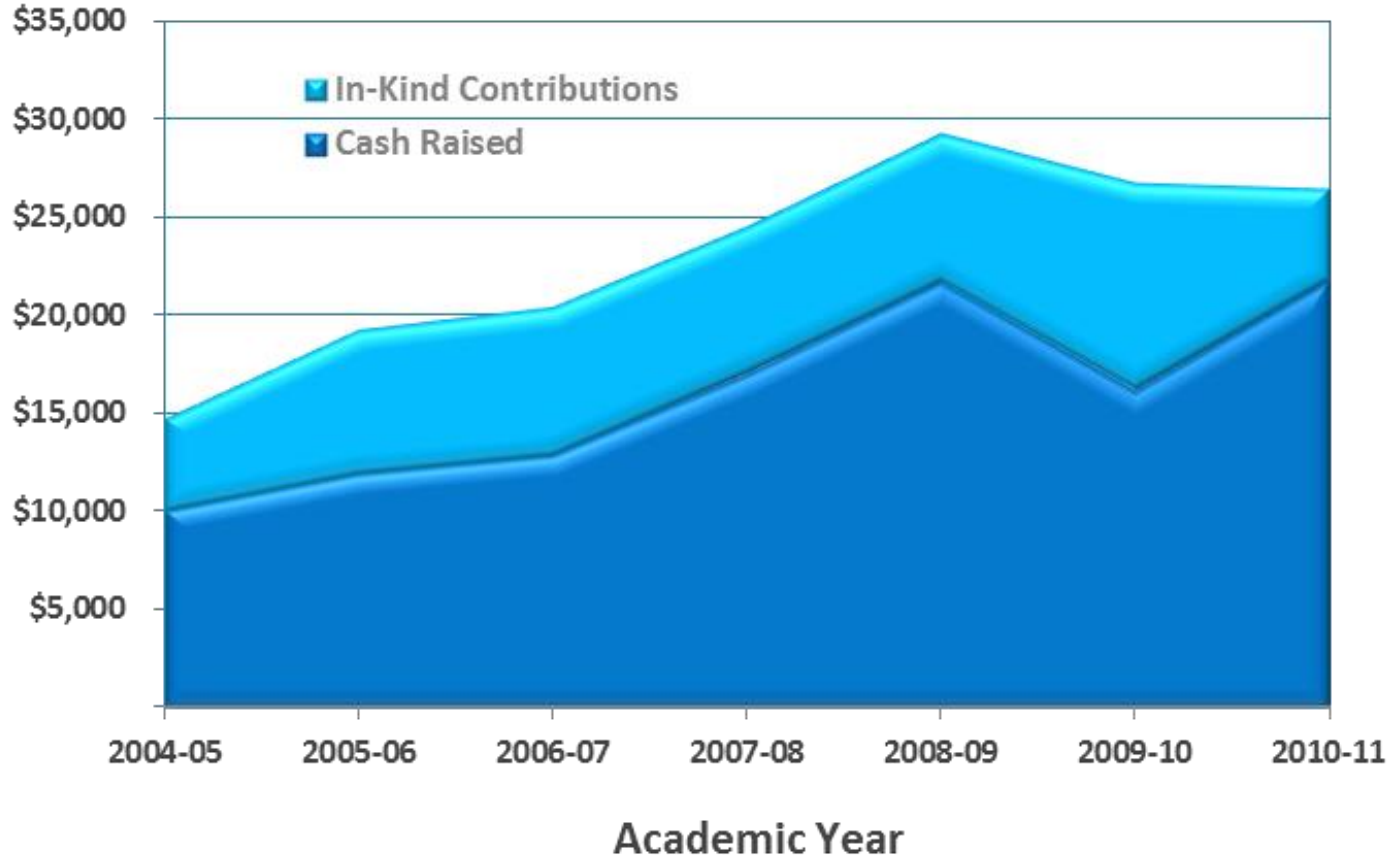
- Evidence-based Family Program
- Evidence-based School Program
- Effective External Relationships
- Effective Internal Relationships

Strategies

- Resource Generation for Programs
- Community/ School Positioning
- Program Quality Management/ Planning
- Strengthening Partnerships with Schools/ Other Organizations
- Strategic Communication Planning
- Planning for Recognitions and Rewards
- Monitoring Team Structure & Roles & Participation
- Conducting Effective, Regular Meetings

Illustrative Team Financial Sustainability

Average Total Contributions Received Across All Project Communities by Academic Year



Key Challenges at the State and National Levels – Strategies and Lessons

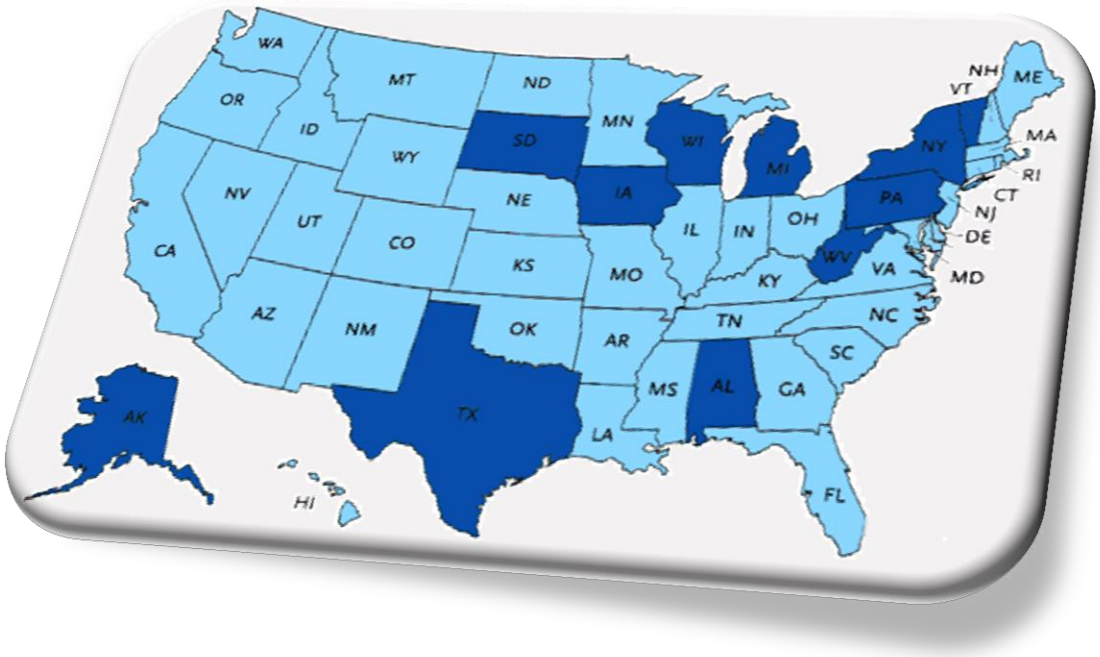
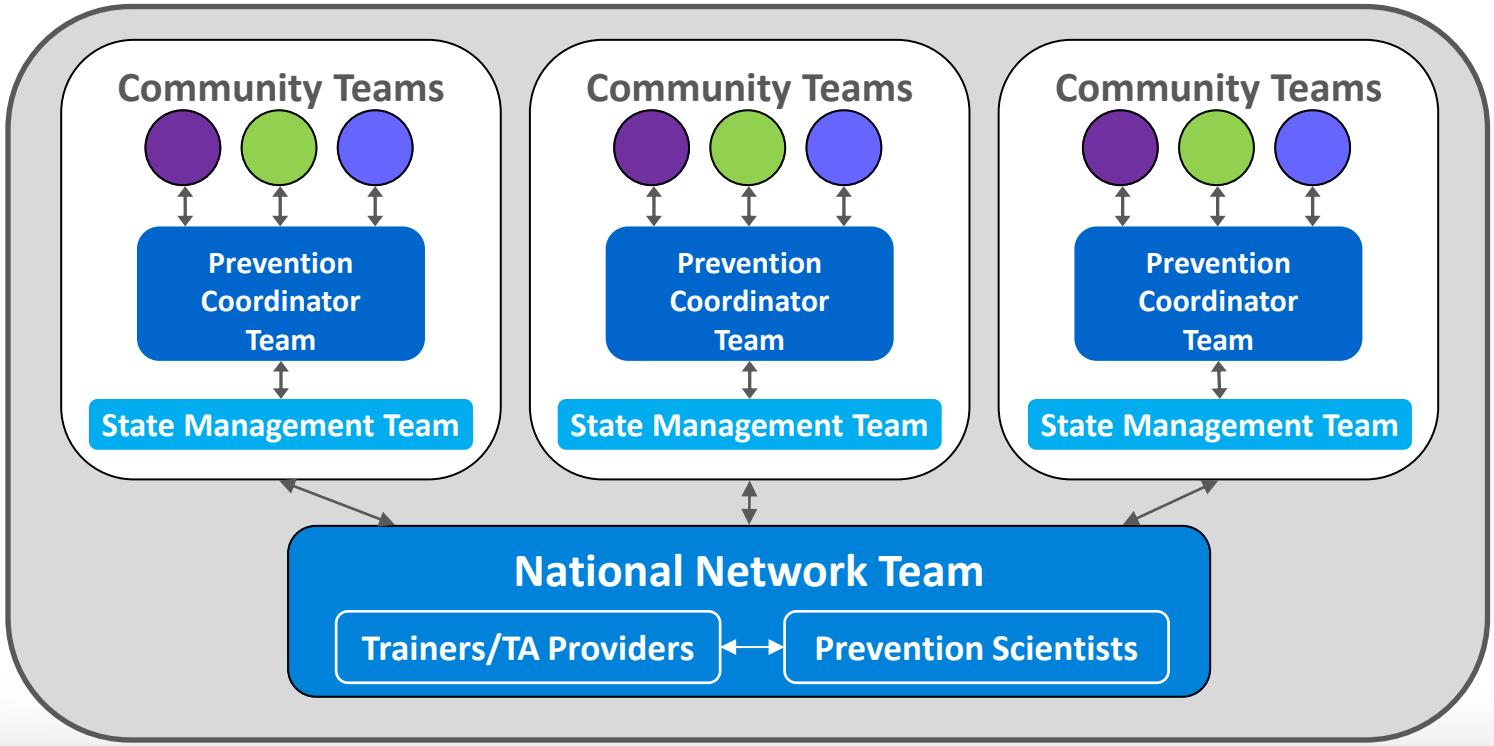


Illustration of Network Systems: PROSPER National Support System

(CDC, NIH/NIDA, Foundation Scaling Up Projects)

- PROSPER Partnership Network Development
- The PROSPER Network Team was formed to support Model adoption in new states



Activities and Lessons on State and National Support Systems (CDC, NIH, Foundation Grants)

Pilot research and model implementation in adoption-ready states – Key Challenges:

- **Assessing readiness** of complex, dynamic systems (surveys of 50 states – Extension, Education, Public Health) – **mixed picture**
- State **adoption decision-making** supports
- State **implementation capacity-building**
- **Implementation staff effectiveness** in roles/functions
- **Partnering with state agencies**

Adapted from Spoth, Ralston, Schainker, Chilenski, Greenberg, Hanlon, Perkins, Redmond, Shin, Todey & Welsh (2011). Developing a national evidence-based intervention delivery system based on the PROSPER partnership model. Symposium Presentation at the Society for Prevention Research 19th Annual Meeting, Washington, DC.

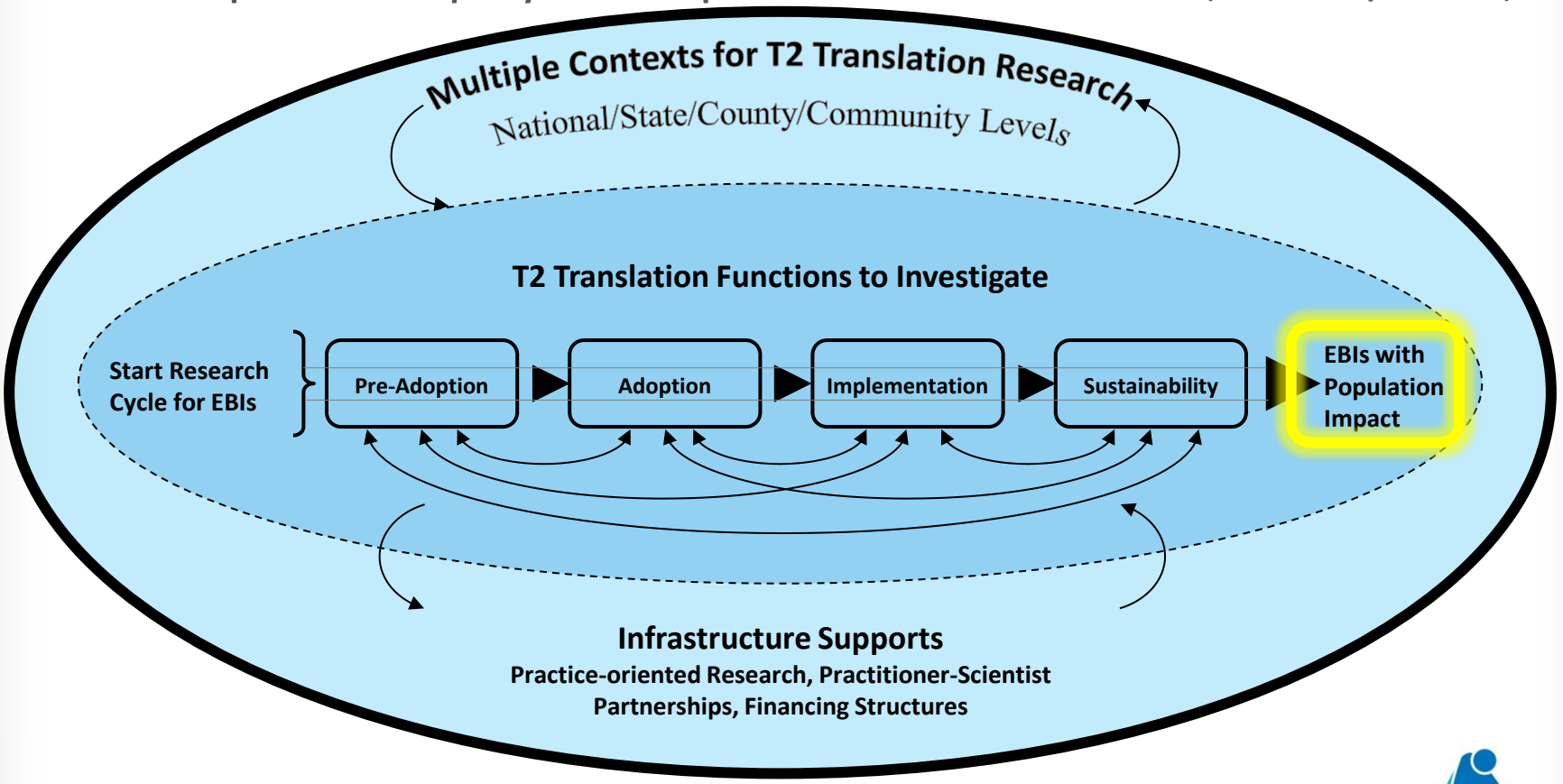
Overarching Lessons Learned

- **Complex systems change is required**, and many resources must be devoted in formative stages, to assure that barriers are addressed quickly and effectively – **resources are lacking**
- Assessing readiness, adoption support, implementation capacity-building, and well-functioning implementation staff is key – **an iterative process** continuously addressing key factors necessary
- When have **effective systems-level adaptations**, program-level adaptations compromising quality are less likely
- **General Strategy:** Developing ongoing trainings/TA/data systems to ensure all of the relevant issues are addressed

Part IV: Further Considerations on Steps for Increasing EBI/Systems Impact

Keep Eye on the Prize of **Population Impact**

- Sustain "…a clear vision of a desired outcome," addressing complex interplays of implementation factors (see Tony Bates).



Source: Spoth, Rohrbach, Greenberg, et al. (2013). Addressing core challenges for the next generation of Type 2 translation research and systems: The Translation Science to Population Impact (TSci Impact) framework. *Prevention Science, 14(4), 319-351.*

Increasing Impact: Delineating Infrastructure Development Needs Across Translational Phases

- **Pre-adoption and Adoption Phases**
  - Market analysis systems
  - Information sharing structures
  - **Community monitoring/data systems**
  - Community-based partnerships
- **Implementation Phase**
  - EBI-related training systems
  - **Implementation TA systems**
  - Supports for engaging participants

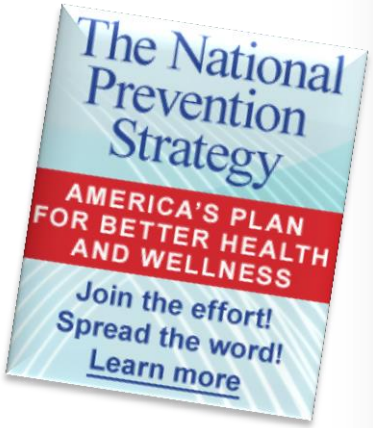
Source: Spoth, Rohrbach, Greenberg, et al. (2013). Addressing core challenges for the next generation of Type 2 translation research and systems: The Translation Science to Population Impact (TSci Impact) framework. *Prevention Science, 14(4), 319-351.*

Increasing Impact: Delineating Infrastructure Development Needs Across Translational Phases (cont.)

- **Sustainability Phase**
  - **New financing structures/strategies**
  - State-supported TA systems with monitoring, benchmarking, CQI feedback systems
- **Cross-cutting Type 2 Translation Research**
  - Systems for early assessment of EBI feasibility/ research feasibility
  - **Practitioner-Scientist Partnerships/Networks**
  - Dedicated research centers/technical/data systems
  - Indicated research projects/resources
  - Research workforce development

Increasing Impact: Possible Action Steps

1. **Planning and Organization for Infrastructure Development**
   - **Interagency collaboration** building on National Prevention Strategy and IOM-NRC 2009 Report, focusing on EBI scaling systems
   - Development of a **common conceptual framework** for addressing multiple behavioral health outcomes important across federal stakeholders (e.g., common risk and protective factors)
   - **Strategic planning on critical scaling activities** and related stakeholder involvement – see illustrative exercise



Increasing Impact: Illustrative Exercise for Strategic Planning Specific to Phases

Next Steps from ACF Scaling Meeting:

A **T**ranslation **F**unction, **A**ctivity, **S**takeholder (T-FAS) Framework-Toward Coordinated Strategy Across Agencies

Translation Function/ Phase	Activities/Steps	Required Stakeholders/Roles
Pre-adoption/adoption Phases • • •	1. Identify/articulate targeted systems 2. Market Analysis 3. Readiness assessments 4. Etc.	Agency directors/ administrators… • •
Implementation Phase • • •	1. Needs/Resource Assessments 2. Coalition recruitment 3. Team building 4. Etc.	Community agency supervisors • • •
Etc.	Etc.	Etc.

Increasing Impact: Possible Action Steps
(cont.)

2. Innovative Funding Mechanisms

- Support **braided funding** approaches
  - Across service and research agencies
  - State agency funding to support community grants with federal agency support for research
- Develop **private-public partnerships** (e.g., Social Impact Exchange Scaling Marketplace, AECF Evidence-2-Success)
- Develop **State Prevention Financing Teams** with Communities of Interest, to support priority prevention goals, possibly including M/M financing

Source: Society for Prevention Research's Mapping Advances in Prevention Science Task Force on Type 2 Translation Research. Spoth, Rohrbach, et al. (2011). Addressing Challenges for the Next Generation of Type 2 Translation Research: The Translation Science 2 Population Impact Framework. Manuscript submitted for publication.

Increasing Impact: Possible Action Steps
(cont.)

3. Development, testing, coordination of **scalable delivery systems**, with embedded research

- **Lessons** from wide-ranging **successful systems** (e.g., like this meeting)
  - * Systems for delivering individual EBIs, or EBIs on menus
  - * Consider systems for universal EBIs with crossover effects as gateways to more targeted, or intensive interventions
- **Embed research in state and national prevention systems** to develop, test, disseminate EBIs, and use continuous systems improvement across translation phases (see SPR Task Force Paper*)

*Source: Spoth, Rohrbach, Greenberg, et al. (2013). Addressing core challenges for the next generation of Type 2 translation research and systems: The Translation Science to Population Impact (TSci Impact) framework. *Prevention Science, 14(4), 319-351.*

Please visit our website…

www.prosper.ppsi.iastate.edu

THANK YOU from The PROSPER Partnership Group

Iowa State University

Partnership in Prevention Science Institute

Richard Spoth, Director

PPSI Scientists:

Cleve Redmond
Lisa Schainker
Chungyeol Shin
Kate Ralston

Pennsylvania State University

Prevention Research Center

Mark Greenberg, Director

PRC Scientists:

Mark Feinberg
Claudia Mincemoyer
Sarah Meyer Chilenski
Daniel F. Perkins
Janet Welsh

Human Interaction Research Institute

Tom Backer, Director

Partnerships in Prevention Science Institute

Iowa State University ™
University Extension

Funded by
The Centers for Disease Control and Prevention
The Annie E. Casey Foundation
The National Institute on Drug Abuse

Prevention Research Center

Penn State EXTENSION
AGRICULTURE | COMMUNITY & FAMILY | ENVIRONMENT