Individual Investigator Research Awards for Prevention and Early Detection (IRRAP)

February 15, 2018

Presented By:
James Willson, M.D.
Ross Brownson, PhD
Becky Garcia, PhD
## Individual Investigator Research Awards for Prevention and Early Detection (IIRAP)

### AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
</tr>
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<tbody>
<tr>
<td>9:30 – 9:40</td>
<td>Welcome and high-level overview of new area of emphasis to the IIRAP RFA.</td>
<td>James Willson, M.D., Chief Scientific Officer</td>
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<td>9:40 – 10:15</td>
<td>High-level review of implementation research and examples.</td>
<td>Ross Brownson, PhD</td>
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<td>10:15 – 10:30</td>
<td>Q&amp;A</td>
<td>Becky Garcia, PhD, Ross Brownson, PhD and James Willson, M.D.</td>
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Research Objectives:

- Innovative research projects addressing questions that will advance current knowledge of the causes, prevention, early-stage progression from normal to neoplastic cells, and/or the early detection of cancer.

- Research projects that propose to conduct implementation research designed to accelerate the adoption and deployment of sustainable, evidence-based cancer prevention and screening interventions at multiple levels and in different clinical and community settings are encouraged.
Funding Information

- Maximum of $300,000 in total costs per year for up to 3 years for laboratory and clinical research and
- Up to $500,000 in total costs per year for up to 3 years for population-based research, including implementation research designed to accelerate the adoption and deployment of sustainable, evidence-based cancer prevention and screening interventions at multiple levels and in different clinical and community settings.
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Applying for an IIRAP Award

- Go to https://cpritgrants.org/ to view current RFAs
- Go to https://cpritgrants.org/ to submit an application
Contact Information

Phone: 866-941-7146

Email: Help@CPRITGrants.org

Monday through Friday, 8 a.m. to 6 p.m. CT
Scientific and Programmatic Questions

Phone:  512-305-8491

Email:  pmoore@cprit.texas.gov

Web:  www.cprit.state.tx.us
What is implementation science?

CPRIT Webinar on Prevention and Early Detection Funding February 15, 2018

Ross C. Brownson
Washington University in St. Louis
Think of a common implementation problem in your field...
Objectives

1. Describe the underpinnings of implementation science.
2. Begin to understand the differences between implementation science and other types of research.
3. Explore CPRIT-supported topics that are candidates for implementation science.
4. Describe resources for building your capacity in implementation science.
The latest research shows that we really should do something with all this research.
What’s in a name?
NIH definitions and CPRIT usage

- **Dissemination research** is the scientific study of targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to understand how best to spread and sustain knowledge and the associated evidence-based interventions.

- **Implementation research** is the scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings in order to improve patient/population outcomes.

- For today and in the RFA, we use implementation research.

From: NIH PAR 18-007: Dissemination and Implementation Research in Health (R01)
The Gap: Scurvy

What progress have we made in getting evidence into practice?

Total elapsed time from Lancaster to adoption: 264 years

1497 - Vasco da Gama: 100 of 160 crew died of scurvy; citrus suspected as cure

1601 - Capt James Lancaster sails with 4 ships: crew on Ship #1 given 3 tsps of lemon juice daily; 0% mortality. 40% of crew on other 3 ships perish.

1747 - James Lind, British Navy physician conducts random trial of 6 treatments for scurvy. Sailors on HMS Salisbury; citrus again proves effective against scurvy.

1795 - British Navy orders that citrus fruits become the diet on all navy ships.

1865 - British Board of Trade adopts the innovation, ordering proper diets on merchant vessels.
It takes 17 years to turn 14 percent of original research to the benefit of patient care.

Balas, 1995

Poynard, 1985

Koren, 1989

Dickersin, 1987

Antman, 1992

Kumar, 1992

Poyer, 1982

Inconsistent indexing

Negative results

Original research variable

Submission

Reviews, guidelines, textbook

Implementation

9.3 years

Lack of numbers

Expert opinion

“Inconsistent indexing”

“PUBLICATION PATHWAY”
An Evidence-Based Cancer Control Intervention

Is only so good as how and whether...

• It is adopted?
• Practitioners are trained to deliver it?
• Trained practitioners choose to deliver it?
• Eligible populations receive it?

If we assume 50% threshold for each step...
(even w/perfect access/adherence/dosage/maintenance)

Impact: \(0.5 \times 0.5 \times 0.5 \times 0.5 = 6\%\) benefit

Too often, we have assumed...

“If you build it...”
“Know-Do” Gap

Americans receive “recommended care” approximately 50% of the time. (McGlynn et al., 2003; Levine 2016)

Between the health care we have and the care we could have lies not just a gap, but a chasm. (IOM, 2001)
The push/pull dilemma...

TRUST ME, HAROLD, IT’S NOT OR DEMAND... IT’S SUPPLY AND DEMAND

SNOW CONES
Quiz
Q1. What do these have in common?

TRUTH
BEAUTY
PORNOGRAPHY
CONTACT LENSES
EVIDENCE
D&I SCIENCE
...in the eye of the beholder
Q2. Is this a D&I Research Project?

- **Chemotherapy:** The objective of this study is to determine the most effective chemotherapy regimen (as measured by overall survival) for individuals with stage III colon cancer who have not been previously treated.
Q3. Is this a D&I Research Project?

• Tool for Health Systems Guidance: The objective of this study is to develop a measurement instrument designed to evaluate the methodological quality of health systems guidance documents.
Q4. Is this a D&I Research Project?

• **AF+Media vs. Media alone cRCT:** The objective of this cluster randomized control trial is to determine if small media combined with audit & feedback are superior to small media alone at increasing primary care providers' rates of flu vaccination of their elderly patients in their practice. Do differences exist as a function of type of primary care provider (physician, nurse practitioners vs. others)?
Q5. Is this a D&I Research Project?

• **# Patients Using ER:** Using clinical databases, the objective of this study is to examine the proportion of patients who visit the emergency department within 2 weeks of death and to compare patterns of practice across 14 local health integrated networks (i.e. health regions).
...And The Survey Said...

- Chemotherapy Options
- Tool for Health System Guidance
- A&F + Media vs. Media alone cRCT
- # Patients using ER

Green = no  Blue = yes  Orange = not sure
Interpretation

- Even among the old-timers, differences of opinion (...in the eye of the beholder)

- **Benefit**: Likely an appetite for a broad range of ideas

- **Challenge**: Variety of opinions on your review committees (funding, publication)
What we know, implementation*

1. Implementation generally does not occur spontaneously and naturally;
2. Passive approaches to implementation are largely ineffective;
3. Single-source prevention/early detection messages are generally less effective than comprehensive, multilevel approaches;
4. Stakeholder/partner involvement in the research or evaluation process is likely to enhance implementation;
5. Theory and frameworks for implementation are beneficial; and
6. The process of implementation needs to be tailored to various audiences

*These all inform implementation research
Studying Implementation

What?
Evidence-based Interventions

How?
Implementation Strategies
Implementation Outcomes
Feasibility
Sustainability
Uptake
Costs

Implementation Research Methods

THE USUAL PATHWAY

Service Outcomes*
Efficiency
Equity
Patient-centeredness
Timeliness

Health Outcomes
Satisfaction
Function
Health status/symptoms

*IOM Standards of Care

Proctor et al 2009 Admin. & Pol. in Mental Health & Mental Health Services Research
# Key Characteristics of D&I Science

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<tr>
<th>Point #</th>
<th>Characteristic</th>
<th>Implication</th>
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<tr>
<td></td>
<td><strong>Systems Perspective</strong></td>
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<tr>
<td>1</td>
<td>Context is critical</td>
<td>Research should focus on and describe context</td>
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<tr>
<td>2</td>
<td><strong>Multilevel complexity</strong></td>
<td>Most problems, and interventions are multilevel and complex</td>
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<tr>
<td>3</td>
<td>Focus on systems characteristics</td>
<td>More emphasis needed on interrelationships among system elements and systems rules</td>
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<td></td>
<td><strong>Robust, Practical Goals</strong></td>
<td></td>
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<tr>
<td>4</td>
<td>Representatives and reach</td>
<td>Focus on reaching broader segments of population and those most in need</td>
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<tr>
<td>5</td>
<td>Generalizability</td>
<td>Study generalization (or lack of such) across settings, subgroups, staff, and conditions</td>
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<td>6</td>
<td>Pragmatic and practical</td>
<td>Producing answers to specific questions relevant to stakeholders</td>
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<tr>
<td>7</td>
<td><strong>Scalability and sustainability</strong></td>
<td>From outset, greater focus on scale-up potential and likelihood of sustainability</td>
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<td><strong>Research Methods to Enhance Relevance</strong></td>
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<tr>
<td>8</td>
<td>Rigorous</td>
<td>Identify and address plausible threats to validity in context of question. Greater focus on replication</td>
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<tr>
<td>9</td>
<td>Rapid</td>
<td>Approaches that produce faster answers</td>
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<tr>
<td>10</td>
<td><strong>Adaptive</strong></td>
<td>Best solutions usually evolve over time, as a result of informed hypotheses and mini-tests with feedback</td>
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<tr>
<td>11</td>
<td>Integration of methods; triangulation</td>
<td>For greater understanding, integrated Quantitative and Qualitative methods are often required</td>
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<tr>
<td>12</td>
<td>Relevance</td>
<td>Relevance to stakeholders should be top priority</td>
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<td></td>
<td><strong>Flexibility</strong></td>
<td></td>
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<tr>
<td>13</td>
<td>Multiplicity</td>
<td>Encourage and support diverse approaches with the above characteristics (all models are wrong)</td>
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<tr>
<td>14</td>
<td><strong>Respect for diverse approaches; humility</strong></td>
<td>Different perspectives, goals, methods and approaches are needed. Continuing the same existing approaches will produce the same unsatisfactory results</td>
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Implementation research questions

What implementation strategy is most relevant to the population and the EBI?

What factors impact the decision to implement?

Does implementation of the EBI work with the chosen strategies?

What strategies are needed to maintain or extend use of the EBI?
The CPRIT call

• “…conduct implementation research designed to accelerate the adoption and deployment of sustainable, evidence-based cancer prevention and screening interventions at multiple levels and in different clinical and community settings are encouraged.”

• “…address any topic or issue related to cancer causation, prevention, early progression, early detection, or implementation of evidence based interventions.”

From: CPRIT RFA R-19.1-IIRAP
Example

- CPRIT Prevention Program has supported colorectal (CRC) cancer screening
- Certain regions and populations in Texas have low screening rates
- **Scenario**
  - **Setting:** Community health centers serve high risk individuals
  - **Context:** Office systems are not in place to ensure every eligible person is offered screening; pilot works suggest that office-system changes are needed + potential of outreach workers
  - **Design:** Roll-out (stepped wedge) randomized design
  - **Outcomes:** New office systems, organizational climate/culture, screening rates
Capacity Building Resources
10th Annual Conference on the Science of Dissemination and Implementation in Health

A decade of progress and the path forward

DATE & TIME  December 4-6, 2017    LOCATION  Crystal Gateway Marriott, Arlington, VA
Training Programs

NIH Training Institute for D&I Research in Cancer
July 9 and 10, 2018, Bethesda, MD
Training Programs

Mentored Training for Dissemination and Implementation Research in Cancer (MT-DIRC)
http://mtdirc.org/
  • Washington University in St. Louis (PI: Brownson)

Implementation Research Institute in Mental Health (IRI)
http://iristl.org
  Washington University in St. Louis (PI: Enola Proctor)
NIH Funding Opportunities

• Dissemination and Implementation Research in Health
  – R01 PAR-18-007
  – R21 PAR 18-017
  – R03 PAR 16-237

• Standing study section

• Many associated materials to support your CPRIT application

• It is worth the investment of your time!!
Textbooks

1. Dissemination and Implementation Research in Health: Translating Science to Practice (Second Edition)
2. Evaluating Improvement and Implementation for Health
3. Knowledge Translation in Health Care: Moving from Evidence to Practice
Building capacity for dissemination and implementation research: one university’s experience

Ross C. Brownson¹,², Enola K. Proctor³,⁴, Douglas A. Luke⁵, Ana A. Baumann³, Mackenzie Staub⁶, Matthew T. Brown⁴ and Mallory Johnson⁴
Take home points

1. Implementation research is a vibrant field with many practical applications.

2. As you build a research or practice-oriented project, keep in mind the key characteristics of implementation science.

3. There are many opportunities for meaningful implementation science under the CPRIT umbrella.
That's a good question!
# Key Dates - Cycles 19.1

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