Writing D&I grants: Getting started in a fast-moving field

Enola Proctor
June 21, 2017
Session overview

• Rapid developments in the field
• Challenges facing IR
• Tips for grant writing
• Moving into the field
• Funding sources
Challenges universal to all grant writers

How to demonstrate capacity to successfully complete a study as proposed?
Additional challenges for implementation researchers

• Rising scientific bar:
  – Science of implementation demands moving beyond documentation of barriers

• Implementation research is complex & complicated

• Literature scattered across disciplines

• Implementation science is setting specific but must advance generalizable science
Major progress for the field
Writing implementation research grant proposals: ten key ingredients

Enola K Proctor, Byron J Powell, Ana A Baumann, Ashley M Hamilton and Ryan L Santens
Our approach & sources

• Experience with
  – Early career implementation researchers
  – Successful implementation research proposals

• Grant PARs
  – R03, R21, R34, R18, R01

• Literature
  – On pilot/feasibility/preliminary studies
  – On stages of implementation

• Queries to experienced implementation researchers
Most important

the question
What is your research question

(about DPP implementation?)
Presuming compelling Q.........

Ten Key Ingredients of a

Competitive IR Grant Application

(no application will have all 10)
1. Need for improvement...reducing gap between care that is and could be

The care that “could be”

vs

The care that “is”

The “know” –”do” gap
Quality gaps

The quality chasm reflected by:

\[
\% = \frac{\text{number receiving EB care}}{\text{total service recipients}}
\]

\[
\% = \frac{\text{number receiving EB care}}{\text{total number needing service}}
\]
# Quality of healthcare

<table>
<thead>
<tr>
<th>Measures</th>
<th>2002</th>
<th>2013</th>
<th>P</th>
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<tbody>
<tr>
<td>Rates of recommended Tx</td>
<td>36%</td>
<td>42%</td>
<td>≤ .01</td>
</tr>
<tr>
<td>Diagnostic &amp; preventive testing</td>
<td>76%</td>
<td>75%</td>
<td>≤ .05</td>
</tr>
<tr>
<td>Avoidance of inappropriate cancer screening</td>
<td>47%</td>
<td>51%</td>
<td>≤ .02</td>
</tr>
<tr>
<td>Avoidance of inappropriate imaging</td>
<td>90%</td>
<td>90%</td>
<td>= .64</td>
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</table>
“Half of all cancers could have been prevented by applying knowledge that we already have.”
Overuse

30% of health care spending in the United States—approximately $750 billion per year—is unnecessary.

Publication

The Healthcare Imperative: Lowering Costs and Improving Outcomes – Workshop Series Summary

Released: February 24, 2011
Calibrating care

Increase use of evidence-based interventions

Decrease use of ineffective, wasteful, or harmful interventions
WHAT IS THE QUALITY OF CARE IN YOUR AREA?
WHAT IS THE GAP?
WHAT IS THE QUALITY GAP FOR DPP?
Need for improvement....reducing gap btwn care that is and could be

Contribution: Project’s PH Significance & Impact

Important to demonstrate:
  Poor health services or wide variation
  Potential to improve care thru proposed work

How?
  Literature
  Preliminary data
2. Evidence Based interventions to be implemented?

Are interventions ready for D&I?
Balancing Tx discovery v Tx roll out
When we have effective interventions, it’s time to deliver them
COMPLEMENTARY QUESTIONS

Effectiveness Research: What works?

CER: WHAT to deliver

Implementation research informs HOW to deliver
Evidence-based intervention to be implemented

Contribution: Project’s PH Significance & Impact

How to demonstrate evidence & readiness for implementation?

Literature

Preliminary data
The intervention/ program/ policy/ treatment/ guideline for your study

got evidence?
3. Conceptual model/ theoretical framework

Justifies key variables to be tested
Links theory to measurement & analysis plan

Bridging Research and Practice Models for Dissemination and Implementation Research

Rachel G. Tabak, PhD, Elaine C. Khoong, BS, David A. Chambers, DPhil, Ross C. Brownson, PhD

Review of 61 frameworks
This interactive website was designed to help researchers and practitioners to select the D&I Model that best fits their research question or practice problem, adapt the model to the study or practice context, fully integrate the model into the research or practice process, and find existing measurement instruments for the model constructs. The term 'Models' is used to refer to both theories and frameworks that enhance dissemination and implementation of evidence-based interventions more likely.

**Select**
Search, view, and select D&I Models

**Adapt**
Read strategies for adapting D&I Models to research or practice context

**Integrate**
Read strategies for incorporating D&I Models into the full spectrum of your project

**Measure constructs**
Find a list of constructs and links to measurement tools associated with the D&I Models

www.dissemination-implementation.org
3. Conceptual model/ theoretical framework

Contribution:

– Innovation for implementation science
– Scientific impact & generalizable knowledge gain

How?

– Published papers
– Use throughout proposal text!
4. Stakeholder priorities, engagement in change & study

Contribution: Significance, impact, & feasibility of success

What is the implementation imperative:
Which stakeholders care and why?

Is there a demand to implement?

Is there a push out?

Is there a pull?

Is there infrastructure?
4. Stakeholder priorities, engagement in change & study

How?

– Preliminary data (qualitative, quantitative)
– Evidence of past partnerships (joint publications)
– Method detail (partnered research)
– Letters

• In your study, who are the key stakeholders?
5. Setting’s readiness to adopt new intervention

Contribution:

- Scientific generalizability & impact
- Shows PI knowledge of study setting

Practice change needs to aligned with
Agency infrastructure, system antecedents (Emmons, 2013)

How to convey?

- Preliminary data
- Letters
What’s required (cont’d)....

Delivery system research:

- Assessment of practice context
- Infrastructure required to deliver different care
- An environment that ensures accountability
- Alignment of incentives for effective care
- Practice redesigns to make “doing the right thing the easy thing”
- Technology levers (EHR’s) and decision support
- Patient engagement
6. Implementation strategy/process

The observed/introduced change strategy

Contribution:
  – Public health significance
  – Impact
  – Feasibility

How?
  – Detail in planned approach
  – Literature cited
  – Preliminary studies
  – Specify, provide manuals (Proctor et al, 2014)
Strategies Compilation

68 “discrete” strategies in 6 categories:

- Plan
- Educate
- Finance
- Restructure
- Manage quality
- Attend to policy context
Identification of Implementation Strategies: ERIC Cluster Solution

- Engage consumers
- Utilize financial strategies
- Support clinicians
- Provide interactive assistance
- Train and educate stakeholders
- Develop stakeholder interrelationships
- Change infrastructure
- Adapt & tailor to context
- Use evaluative and iterative strategies

ERIC Cluster Solution
Example: strategies & their specification

Reporting on the Strategies Needed to Implement Proven Interventions: An Example From a “Real-World” Cross-Setting Implementation Study

Rachel Gold, PhD, MPH; Arwen E. Bunce, MA; Deborah J. Cohen, PhD; Celine Hollombe, MPH; Christine A. Nelson, PhD, RN; Enola K. Proctor, PhD; Jill A. Pope, BA; and Jennifer E. DeVoe, MD, DPhil

© 2016 Mayo Foundation for Medical Education and Research. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Mayo Clin Proc. 2016;91(8):1074-1083
<table>
<thead>
<tr>
<th>Strategy specification</th>
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<tbody>
<tr>
<td><strong>Actor</strong></td>
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<tr>
<td><strong>Action</strong></td>
</tr>
<tr>
<td><strong>Action target(s)</strong></td>
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<tr>
<td><strong>Dose</strong></td>
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<tr>
<td><strong>Temporality</strong></td>
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<tr>
<td><strong>Implementation Outcome addressed</strong></td>
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<tr>
<td><strong>Justification</strong></td>
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7. Team experience w/ setting, treatment, implementation

Contribution:

– Feasibility
– Capacity to complete study as proposed

How?

– Build team, cite work
– Describe relevant experience in preliminary studies
– Biosketches, budget justifications
– Letters
8. Feasibility of proposed research design & methods

Different research designs

- Study designs
  - Observational
    - Descriptive
      - Case report
      - Case series
    - Cross-sectional study
  - Experimental
    - Analytical
      - Case control study
    - RCT
    - Non-RCT
    - Cohort
8. Feasibility of design & methods (cont’d)

Value: Conveys

– Feasibility of completing study as proposed
– Investigator capacity (understanding of unique IR challenges)

How?

– Detailed “approach” section
– Address choice junctures & contingencies
– Preliminary recruitment & enrollment data
– Letters (re: willingness to be randomized)
9. Measurement and analysis detail

Contribution:
- Approach
- Feasibility of completing study as proposed

How?
- Detailed measurement plan
- Variation data
- Unit of analysis specified & consistent
- Analysis will exploit data and answer Q’s
10. Policy environment will leverage, support, sustain the change

- Policy = key part of context
- Is the implementation topic consistent with payment and policy trends?
- Policy ecology: Priorities and trends *
- *Raghavan, 2009
10. Policy environment will leverage, support, sustain the change

Contribution:
– Public health significance
– Impact
– Sustainability
– Feasibility

How?
– Background literature
– Letters
– Resources & Environment
Moving into the field

Implementation
Science
A Big Tent of Terms (and Circles)*

* The terms according to D.A.C.
Paths to D&I

Establish your footprint toward the field through prior publications and studies

• The evidence-based “what” to be implemented
  – Intervention (policy research)

• The quality gap

• The population

• The setting
Measurement resources for dissemination and implementation research in health

Borsika A. Rabin\textsuperscript{1,2,\dagger}, Cara C. Lewis\textsuperscript{3,\dagger}, Wynne E. Norton\textsuperscript{4}, Gila Neta\textsuperscript{4}, David Chambers\textsuperscript{4}, Jonathan N. Tobin\textsuperscript{5}, Ross C. Brownson\textsuperscript{6,7} and Russell E. Glasgow\textsuperscript{2}
Instrument Review Project

The SIRC Instrument Review Project: A Systematic Review of Dissemination and Implementation Science Instruments

Video of Instrument Review Taskforce at SIRC 2011
Power Point Presentation from ABCT
SIRC_IRP Update_2013 (video of full presentation coming soon).

Exciting advances have been made in the field of dissemination and implementation (D&I). However, much like the science-practice gap that motivates our field, a communication gap exists among stakeholders at the forefront of this work. Measurement issues have slowed the progression of the field of D&I given the laborious process of systematically developing psychometrically sound yet feasible and cost-effective ways to assess our efforts. The lag that occurs between initial development, implementation, and then publication delays the process further, resulting in instances in which independent research teams are devoting considerable resources to unnecessarily redundant work. As a consequence, progress toward the development of commonly used instruments has been very slow, limiting the extent to which researchers have access to and are able to

www.seattleimplementation.org/sirc-projects/sirc-instrument-project/
Dissemination and Implementation Research in Health

PAR # 16-236; 237, 238

Primary purpose: identify, understand, & develop

• **Strategies** for the

• **Adoption, adaptation, integration, scale-up, & sustainability**

• Of **EB** interventions, tools, policies, & guidelines
Resources

- Brownson et al—successful D&I grant writing
- Tannenbaum et al—why sex and gender matter in IR
- NCI website- Content analysis of funded grants: http://cancercontrol.cancer.gov/IS/pdfs/DandI-PAR-Grant-FundedContentAnalysis.pdf
- UNC D&I website containing successful grant applications http://impsci.tracs.unc.edu/ http://impsci.tracs.unc.edu/
Finding funding

• [https://impisci.tracs.unc.edu/index.php/get-funded/funding-opportunities](https://impisci.tracs.unc.edu/index.php/get-funded/funding-opportunities)
funding opportunities

Explore a selection of relevant funding opportunities for your Implementation Science proposals.

- Agency for Healthcare Research and Quality (AHRQ)
- National Institutes of Health (NIH)
- Patient-Centered Outcomes Research Institute
- International
GREAT MOMENTS IN SCIENCE

NICE WORK, YOU'VE ISOLATED THE FUNDING GENE

NIK SCOTT
Support:
National Institute of Mental Health
  P30 MH068579
  R25 MH080916
  P30 DK092950
  U54 CA155496
  UL1 RR024992 (Clinical and Translational Science Award, CTSA)

Washington University
  Institute for Public Health
  Brown School of Social Work

Conflicts: none
Contact Information

Enola Proctor
314-935-6660
ekp@wustl.edu

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