Building Capacity and Collaboration for Research in Improvement Science

Kathleen R. Stevens, RN, EdD, ANEF, FAAN, Principal Investigator
Darpan Patel, PhD, Grace Willard, RN, PhD, and Frank Puga, Collaborators

Developed from AHRQ 9-2011 poster
September 30, 2011

BACKGROUND:
Better healthcare through quality improvement and patient safety initiatives is a national priority. Yet in this field, there is insufficient research, insufficient rigor\(^1\), and too few scientists collaboratively engaged\(^3\) in studies to demonstrate which initiatives are effective, amenable to spread, and sustainable. Moreover, there are few opportunities to extend professional development skills through specialty research methods conferences in the field. As a relatively new competency in health science, the nation’s research capacity to study quality improvement falls well behind the need to discover ‘what works’.\(^1\) There are few research collaboratives and little infrastructure to advance the field through the conduct of landmark studies.

SIGNIFICANCE:
Bringing together a cadre of health improvement scientists has the potential to advance collective thinking among academic and practice scientists about the methods, design, and theories that are most useful in evaluating, sustaining, and spreading improvement innovations and strategies for better healthcare quality and safety. Scientific rigor is strengthened through multisite studies offered through the virtual laboratory of improvement science.

APPROACH:
This project produced, implemented, and evaluated the 2\(^{nd}\) Improvement Science Summit, a conference to advance research methodology and national collaboration in improvement research. The goal of the conference was to move forward the thinking, research methods, infrastructure, and national research collaboration capacity to conduct rigorous improvement research, capitalizing on the new Improvement Science Research Network (ISRN).\(^2\)

As part of the overall approach to increasing scientific capacity in this nascent field, a number of strategies were employed through the ISRN, all of which fed into the annual Summit. These are as follows:

- Improvement Science Summit
- Web Seminars
- IRB Assistance
- eReading Room
- eLearning Room
- Common Terminology
- Protocol Development

ACE has published this as received and with permission from the author(s).
• Collaborative Field Guide
• Protocol Implementation Support
• Network News – Official ISRN Newsletter
• Virtual Research Collaboratory Infrastructure

With added support from an AHRQ R13 Conference Grant, the 2nd Summit was offered as an open-to-all, 1 ½ day conference to advance research methods, topics, and collaboration in improvement research.

RESULTS:
Leveraging the momentum created by the nationally-funded Improvement Science Research Network (Stevens, 2009) the Summit contributed significantly to national capacity for healthcare delivery scientists and practice scholars to rigorously evaluate improvement strategies.

National and global experts discussed these improvement science research methods:
• Research Collaboratives: Applying the Science of Team Science
• Designs for Evaluating Quality Improvement Interventions
• Building ISRN Research Collaboratives for Multi-Site Studies
• Using National Measures to Study Quality and Patient Safety

Conference materials and presentations are being disseminated through various channels. Distribution venues include streaming video recordings of key presentations, conference proceedings, and publications, many publicly available on the Improvement Science Research Network website www.ISRN.net.

As a result of the Summit, the following aims were reached:
• AIM: Connect academic and clinical scholars and other entities in partnerships to maximize efforts in investigating improvement strategies. RESULTS: In response to the first call for abstracts, Summit participants made over 40 presentations of their improvement research projects during poster sessions. The Summit was attended by over 130 academicians (36%) and clinicians (33%).
• AIM: Enhance capacity of health professionals and scientists to conduct rigorous improvement research studies through exploring methods and design applicable to this field of research. RESULTS: Participation in the conference enhanced skills in research design, measurement, and collaboration. The conference met its learning objectives.
• AIM: Charter national research collaboratives to conduct rigorous studies on topics identified as national improvement priorities. RESULTS: Participants enlisted in the first Network Research Collaborative and received the Protocol Implementation Kit. 14 sites are selected to conduct the STAR-2 Network study using a standardized protocol, managed thorough the ISRN Coordinating Center.

IMPACT ON IMPROVEMENT RESEARCH:
Participants from academic and clinical settings partnered to conduct “landmark” studies across the national test bed of agencies. Participants enlisted in Collaborative teams during the Summit to implement three multisite studies, with the support of the ISRN Coordinating Center. These Collaboratives reflect new communities of learning and idea exchange.

Network studies currently recruiting multiple sites include:
NETWORK ASSOCIATES:
As a result of the Summit, the Network grew to over 250 associates, enabling
- Multi-site collaboration on patient safety and QI research
- Expansion of research technology and resources
- Formation of the ISRN Speakers Bureau
- Expansion of the member-only section of the ISRN website
- Recognition of the value of membership

REFERENCES:

ACKNOWLEDGMENTS:
Thank you to the ACE Team members who contributed to planning and implementing the Summit: Kandice Hall, Joan Feller, Tiffany Luna, and Ellen Hanks.
The 2ND Improvement Science Summit was supported by ARHQ Grant 1 R13 HS020742-01.
The ISRN infrastructure development is supported by NINR/NIH RC2NR011946.
This content is the sole responsibility of the authors and does not necessarily represent the official views of the funding agencies.

ISRN VIRTUAL RESEARCH LABORATORY:
The ISRN Coordinating Center is housed within the Academic Center for Evidence-Based Practice at the University of Texas Health Science Center San Antonio. Founded on this longstanding commitment to evidence-based quality improvement, the ISRN Coordinating Center partners with the Institute for Integration of Medicine and Science to strengthen the science of quality improvement.
Contact the Improvement Science Research Network: Email: ImprovementScienceResearch@ISRN.net
Phone: 210.567.5813 Website and Virtual Laboratory www.ISRN.Net