

**IMPROVEMENT SCIENCE
RESEARCH NETWORK**
improving patient outcomes

Addressing the Improvement Research Priorities

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Improvement Science Research Network (ISRN)

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ISRN STAR-2 Network Study Site PI

UNIVERSITY OF TEXAS
UT HEALTH SCIENCE CENTER
at Dell Medical Campus, Learning and Innovation Health Institute

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This seminar is supported in part by a grant from the Dean's Scholarly Project Award Program: Scholarship of Teaching Award from the University of Texas Health Science Center San Antonio School of Nursing.

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Submitting Questions

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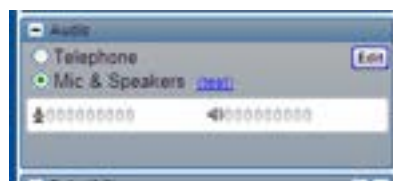


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Presenters



Kathleen R. Stevens, RN, EdD, ANEF, FAAN
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May 23, 2012



How Do We Know if an Improvement Strategy Works?

What work factors prevent medication errors? **Orange vests**



What impact does improved team performance have on patient safety?

TeamSTEPPS training

Gaps in Improvement Science

- Capacity
- Teams
- Infrastructure
- Research Methods

Improving our work... *is our work.*

Cathy Rick
Chief Nursing Services Officer
Veterans Health Administration
ISRN Steering Council

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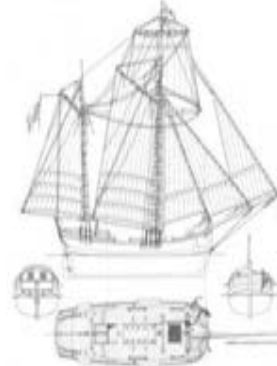


Improvement Science Research Network

Aim –

- Accelerate development and dissemination of improvement science in systems and microsystems contexts
- Provide a large-scale network as a test bed for improvement studies

a tall ship...



Mission

ISRN mission is to

- increase the scientific foundation of healthcare quality improvement, safety, and efficiency
- through transdisciplinary research focused on
- healthcare systems, patient-centeredness, and integration of evidence into practice.



Progress of the ISRN

- Developed Stakeholder-based Research Priorities
- Established the ISRN Steering Council
 - 14 nationally acclaimed experts
 - Monthly advisory meetings since December 2009
- Completed building our cyber-infrastructure
- Initiated vibrant communication & community engagement venues
- Engaged 200+ member affiliates- test bed
- Convened research methods conferences July 2010; June 2011 (AHRQ-R13 funded); July 2012
- Launched three multi-site Network Studies—“the test flight”



Research Strategies

...and a star to steer her by

- MATCH
 - Research priorities
- RIGOR
 - Rigorous research studies
- RELEVANCE
 - Partners engage in improvement studies
- LANDMARK
 - Multi-site *landmark* studies
- VIRTUAL
 - Collaboration through a cyber infrastructure
- SYNERGY
 - Shared capacity



Project Strategies

...and a star to steer her by

- Research Priorities



Research Priorities in Improvement Science: setting the national agenda



Stakeholders



Survey



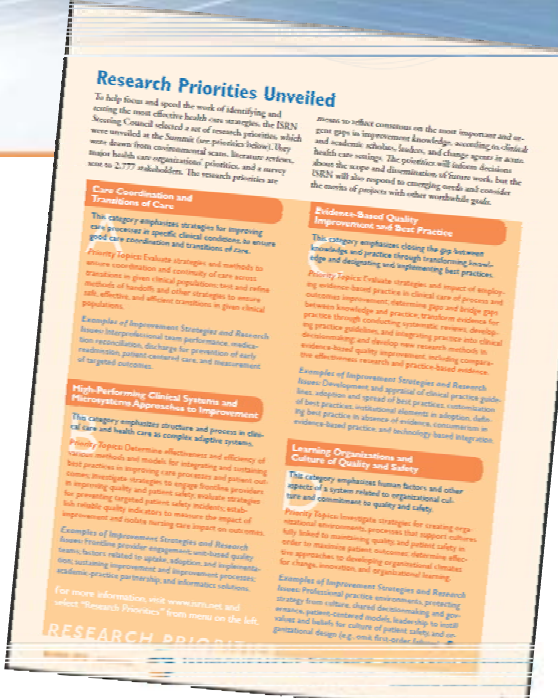
RAND Delphi



Research Priorities ISRN, July 2010

- First known globally
- Directs limited resources
- Meets crucial needs
- Guides selection of ISRN Network Studies

See www.ISRN.net



Research Priorities Unveiled

To help focus and speed the work of identifying and setting the most effective health-care strategies, the ISRN Steering Council selected a set of research priorities, which were unveiled at the Summit for priorities below. They were drawn from conventional science, literature reviews, major health care organizations' priorities, and a survey sent to 2,777 stakeholders. The research priorities are:

- Care Coordination and Transitions of Care**
This category emphasizes strategies for improving care processes in specific clinical conditions, to ensure good care coordination and transitions of care.
Priority Topics: Evaluate strategies and methods to ensure coordination and continuity of care across transitions in given clinical populations; use and refine methods of health and other strategies to ensure safe, effective, and efficient transitions in given clinical populations.
Examples of Improvement Strategies and Research Issues: Interprofessional team performance, medication reconciliation, discharge for prevention of early readmission, patient-centered care, and measurement of targeted outcomes.
- Evidence-Based Quality Improvement and Best Practices**
This category emphasizes closing the gap between knowledge and practice through transforming knowledge and designing and implementing best practices.
Priority Topics: Evaluate strategies and impact of employing evidence-based practice in clinical care of process and outcomes; improvement, determine gaps and bridge gaps between knowledge and practice; produce evidence for practice through conducting systematic reviews, developing practice guidelines, and integrating process into clinical development; and develop new research methods in evidence-based quality improvement, including comparative effectiveness research and practice-based evidence.
Examples of Improvement Strategies and Research Issues: Development and appraisal of clinical practice guides; best practice as implemented elements in adoption, scaling best practice in absence of evidence; combination of evidence-based practice and technology based change agents.
- High-Performing Clinical Systems and Microsystem Approaches to Improvement**
This category emphasizes structure and process in clinical care and health care as complex adaptive systems.
Priority Topics: Determine effectiveness and efficiency of current methods and models for integrating and sustaining best practices in improving care processes and patient outcomes; investigate strategies to engage frontline providers in improving quality and patient safety; evaluate strategies for promoting targeted patient safety incidents; establish reliable quality indicators to measure the impact of improvement and testing during the impact on outcomes.
Examples of Improvement Strategies and Research Issues: Practice provider engagement, workflow quality, factors related to uptake, adoption, and implementation; sustaining improvement and improvement processes; evidence-practice partnership; and information solutions.
- Learning Organizations and Culture of Quality and Safety**
This category emphasizes human factors and other aspects of a system related to organizational culture and commitment to quality and safety.
Priority Topics: Investigate strategies for creating organizational environments, processes that support culture fully linked to measuring quality and patient safety in new approaches to developing organizational climate for change, innovation, and organizational learning.
Examples of Improvement Strategies and Research Issues: Professional practice environments, promoting practice, patient-centered models, leadership to build culture and culture of patient safety, and organizational design (e.g., work flow, order, behavior).

For more information, visit www.isrn.net and select "Research Priorities" from menu on the left.

Improvement Research Priorities

- A. Coordination and Transitions of Care
- B. High Performing Clinical Systems and Microsystems Approaches to Improvement
- C. Evidence-Based Quality Improvement and Best Practice
- D. Learning Organizations and Culture of Quality and Safety



Definition

Collaboratory

Center without walls in which scientists—clinicians and academicians—can work together regardless of physical location.

Features:

- Spans distance
- Supports rich human interaction
- Oriented to a common research area
- Access to data sources and tools

Olson, Zimmerman, & Bos, 2008

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Why a Collaboratory for Improvement Science

- Complex scientific problems—beyond the realm of single discipline or single scientist
- Collaboration increases quality of research
- Information and Communication Technologies—now cost-effective and reliable



www.ISRN.net

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SCHOOL OF NURSING UT HEALTH SCIENCE CENTER
ACADEMIC CENTER FOR EVIDENCE-BASED PRACTICES

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What is the Improvement Science Research Network?
The Improvement Science Research Network is the only National Institutes of Health-supported improvement research network. Our primary mission is to accelerate interprofessional improvement science in a systems context across multiple hospital sites. [More...](#)

Spotlight
Dr. Kathleen Stevens, ISRN Principal Investigator, was awarded a \$3 million grant from the National Institute for Nursing Research. The grant will support the creation of the first national research network to focus on the collaborative design, testing and dissemination of quality initiatives related to improving bedside care. [More...](#)

Upcoming Events
Web Event
Team Success: Creating Successful Collaborative Teams
Date: May 25, 2011
Time: 2:00 PM EDT

2nd ANNUAL Improvement Science Summit 2011
Date: June 28-29, 2011
Location: The Hyatt Regency Riverwalk Hotel in San Antonio, TX
[Call for abstracts](#)

1st ANNUAL Summer Institute on Collaborative Research

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ISRN.net

a star to steer her by

Priorities

First mates

Associates

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Retreat June 2011

**Core Business=
Conducting Research**

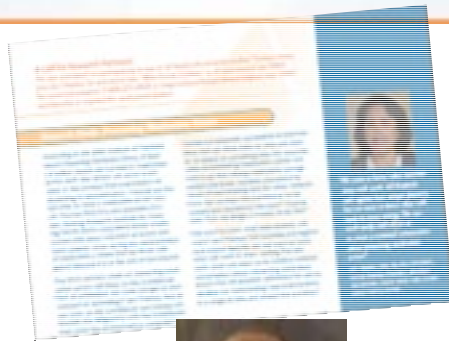
2014 Strategic Vision

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NETWORK STUDIES
Addressing the ISRN Priorities

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Impact of Cognitive Load, Interruptions and Distractions on Procedural Failures and Medication Administration Errors




"We want to know what interventions will work. All hospitals and regions have unique features, but we want to know what will work in every setting. The network study will allow us to create a national conversation about preventing medication errors."

LILY THOMAS, PH.D., RN, VICE PRESIDENT,
SYSTEM NURSING RESEARCH, INSTITUTE
FOR NURSING, NORTH SHORE LONG ISLAND
JEWISH HEALTH SYSTEM

ICH NETWORK
By patient outcomes

System Factors that Facilitate Uptake of Team Performance for Patient Safety




"Through the Improvement Science Research Network, we will learn how organizations effectively integrate teamwork principles into practice for sustained improvement. Which organizational factors are critical for success?"

HEIDI KING, MS, FACHE, DEPUTY DIRECTOR,
DEPARTMENT OF DEFENSE PATIENT SAFETY
PROGRAM

ICH NETWORK
By patient outcomes

Small Troubles, Adaptive Responses (STAR-2): Frontline Nurse Engagement in Quality Improvement



"Early on, the pocket card study put frontline nurses in the central position to identify problems and jump start--or even drive--needed change. We hope that if nurses make changes to address small problems rather than leaving them in place, we can improve the quality and safety of care."

ROBERT FERRER, MD, MPH, PROFESSOR,
FAMILY AND COMMUNITY MEDICINE, UN-
IVERSITY OF TEXAS HEALTH SCIENCE CENTER
AT SAN ANTONIO

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Small Troubles, Adaptive Responses (STAR-2): Frontline Nurse Engagement in Quality Improvement

NETWORK INVESTIGATIVE TEAM
Kathleen R. Stevens, EdD, RN, ANEF, FAAN
Robert L. Ferrer, MD, MPH

UT HEALTH SCIENCE CENTER
at San Antonio, University of Texas Health Science Center

WEB SEMINARS-build capacity for studies

Featured Research: Addressing

Anita Tucker, DBA, associate professor at Harvard Business School, specializes in understanding the varied responses of frontline providers in health system health-care. She has spent 7 months of their day doing work arounds, finding them to say that: "This response is a real pain in general care do but didn't have time for," says Tucker.

Manager mistakes may help problems to plan. Tucker: "When the manager says 'I've got to go,' managers need to hear about problems that employees can't solve themselves. For example, if nurses are not getting medications in the form they need, that's a problem that the pharmacy will know about if it's not on your work around the problem. On the other hand, Tucker says that in some ways,

"Go to the unit that wants to work on the problem and give them resources and time."

ANITA L. TUCKER, DBA, ASSOCIATE PROFESSOR, HARVARD BUSINESS SCHOOL

frontline providers can derive satisfaction and a sense of competence from their ability to work around problems that come up in a day's work, again leaving systemic problems in place.

Tucker often teaches into system improvement. Currently in the department of organizational behavior, she says, there is a tendency for each department to be worried and concerned in its own system. Although it is an easy system, it doesn't do the whole system, it doesn't really work when you have system interdependencies.

Tucker argues that engaging improvement capabilities is crucial. "Go to the unit that wants to work on the problem and give them resources and time. How people practice improvement, create a culture and mind-set that say, 'We know how to make change in part of the daily work rather than something done on top of all the other work.'"

In an association context, so improvement, that people could network could be especially useful in addressing systemic problems, Tucker says, because it can allow frontline employees to have their workdays shaped by many small problems that keep them away from patients. See "Labeling 'Sticks' p. 1, for more." Tucker will present at the February 16 web event described in column 8. ☐

Research Resources: Systems Change

To learn more about Anita Tucker's research, consult the following references:

Tucker, Anita L., and Amy C. Edmonstone. 2001. Why hospitals don't learn from failures: Organizational and psychological dynamics that inhibit system change. *California Management Review* 43 (2): 1-12.

Tucker, Anita L. 2004. The impact of operational failures on hospital nurses and their patients. *Journal of Operations Management* 22 (2): 151-68.

Tucker, Anita L., Sara J. Singer, Jennifer E. Hayes, and Alison J. Walsh. 2008. From the staff perspectives on opportunities for improving the safety and efficiency of hospital work. *Health Services Research* 43 (6): 1827-29. ☐

and Leadership: Commitment to Improve Patient Care

Wednesday, February 16, 2011 at 2:00 PM EST

Presenters will discuss how frontline clinicians and organizational leaders can

ANITA L. TUCKER, DBA, ASSOCIATE PROFESSOR, HARVARD BUSINESS SCHOOL

RESOURCES

If you missed our live event, you can access them online at www.isrn.org or by downloading the ISRN web site for free.

For details, registration, and seat events, visit the ISRN web site at www.isrn.org.



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Research Problem

In frontline nursing, **workarounds** are a response to **first order operational failures** exposing patients to errors and creating inefficiencies in care.

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Example: Missed Learning Opportunities

“We never told the pharmacy when we got a dose of medicine that was more than we requested. We just squirted out the extra because we figured they were busy, they had not intended to make the mistake, and they wouldn’t do anything about it anyway.”-
Nurse Hosp #8

Tucker, 2008

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Example: Missed Learning Opportunities

“...It was sad really because we weren’t letting them have the information so they could fix their own problems.”
– Nurse Hosp #8

Tucker, 2008



What We Know

- Failures occur about one per hour per nurse on hospital units and 95% of problems are managed through workarounds. (Observational, Tucker)
- Detection of first order operational failures provides opportunities to fix problems and contributes to organizational learning.

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Operational Failures

1. Detect



2. Intervene



POCKET CARD STUDY

DETECTION

See the back for examples/definitions

POCKET CARD STUDY

Research Questions:

1. What first-order operational failures do nurses self-detect?
2. Do self-detected first-order operational failures correlate with observed failures?
3. What factors are correlated with self-detection?

NEXT: Design intervention





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Addressing the Research Priorities for Improvement Science

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ISRN STAR-2 Network Study Site PI



Our STAR-2 Engagement Story



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Casting On:



- Meeting Dr. Stevens and Discovering the Improvement Science Research Network
- Becoming a Research Associate Member
- Making the Case to include Pediatrics
- Announcement of the STAR-2 Study
- Preparing a Letter of Intent



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STAR-2 Study Team



Raven Wiggins, BSN, RN
Catherine Williams, MS, RN

Sharon Bostic, BSN, MBA, RN
Kathleen Stevens, RN, EdD, MSN, ANEF, FAAN



Christine Harris, BSN, RN, CPN
Catherine Williams, MS, RN



Also Co-Investigators
Pam Hinds, PhD, RN, FAAN
Debbie Freiburg, MS, RN



Amy Burke, BSN, RN-BC, CPN
DeDe Colevas, MSN, RN



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The Synergy of Collaboration:



- The Practicality of Generating New Knowledge
- How to Use New Knowledge
- The Outcomes of Using New Knowledge
- What it Takes to Conduct a Study



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Practical Benefits

- Rigorous Research Plan
- The Protocol Implementation Tool Kit
- Webinars
- Telephone Consultation
- Expert Guidance
- Collaboratory Progress Meetings
- Technical Protocol Implementation Guidance



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Local Knowledge



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What it Takes:



Javan Ngai, BSN, RN
Staff Nurse, Neuroscience Unit



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Taking Full Advantage To Host



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Questions and Comments



Kathleen R. Stevens, RN, EdD, ANEF, FAAN
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LAUNCHPAD FOR NEW NETWORK STUDIES
*Improvement Science Summit
Research Methods Conference
July 17-18, 2012
San Antonio, TX*

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Next ISRN Web Seminar



Transitions in Care

June 27, 2012
1:00 PM CST

Visit www.ISRN.net to register.

Mary D. Naylor, PhD, FAAN, RN
Marian S. Ware Professor in Gerontology
Director of the New Courtland Center for Transitions and Health
University of Pennsylvania School of Nursing

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Closing Remarks

- ISRN Mission
 - To enhance the scientific foundation for quality improvement, safety, and efficiency through transdisciplinary research addressing healthcare delivery, patient-centeredness, and integration of evidence into practice.

- For information on the ISRN or to become a member please visit our website:
www.ImprovementScienceResearch.net

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<p>KATHLEEN R. STEVENS, RN, EdD, FAAN Professor and Director Academic Center for Evidence-Based Practice Improvement Science Research Network (ISRN)</p>	<p>EILEEN P. ENGH, MSN, RN-BC, CPN Manager of Nursing Research and Development Programs, Department of Nursing Research & Quality Outcomes Children's National Medical Center Washington D.C. ISRN STAR-2 Network Study Site PI</p>
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