AHRQ Patient Safety Program

Inaugural Conference: Wisconsin Institute for Healthcare Systems Engineering (WIHSE)
March 16, 2017

Jeffrey Brady, MD, MPH
Rear Admiral, Assistant Surgeon General, U.S. Public Health Service
Director, Center for Quality Improvement and Patient Safety
How AHRQ Makes a Difference

- AHRQ **invests in research and evidence** to understand how to make health care safer and improve quality
- AHRQ creates materials and tools to **teach and train** health care professionals and systems to **catalyze** improvements in care
- AHRQ **generates measures and data** used to track and improve performance and evaluate progress of the U.S. health system
• Understand causes of harm associated with health care, why it occurs and how to prevent it
• Apply knowledge to accelerate patient safety improvement in all health care settings
• Prevent HAIs, reduce antibiotic resistance
• Improve communication and engagement among providers and between clinicians and patients
• Build capacity in the health care system to address safety issues
Unprecedented Reductions in Patient Harm and the Impact of this Improvement

Between 2010 and 2015:

• **21% reduction** in rates of hospital-acquired conditions

• Over **3.1 million** adverse events and infections averted in hospitals

• **125,000 deaths averted** due to reduced adverse hospital events.
  ▶ ~87,000 lives saved for 2011, 2012, 2013, and 2014 combined
  ▶ ~37,000 lives saved for 2015

• **$28 billion** in health care cost savings

---

Summary 2010-2015 HAC Rates

![Bar chart showing the rates of various hospital-acquired conditions (HACs) from 2010 to 2015. The chart includes rates for specific HACs such as post-operative venous thromboembolisms, ventilator-associated pneumonias, surgical site infections, pressure ulcers, obstetric adverse events, falls, central line-associated bloodstream infections, catheter-associated urinary tract infections, and adverse drug events. The data is presented in units of percentage.]
Patient Safety in the United States: National Progress, but Harm Persists

2010: 145 Harms/1000 Discharges
2011: 142 Harms/1000 Discharges
2012: 132 Harms/1000 Discharges
2013: 121 Harms/1000 Discharges
2014: 121 Harms/1000 Discharges
2015: 115 Harms/1000 Discharges
Why is it so hard to make health care safer?

• COMPLEXITY
  ► Health care delivery is complex (technical, organizational, administrative, etc.)

• FLAWED SYSTEMS
  ► Health care systems (at all levels) are not designed to optimize safety or to address systems-based problems

• INEFFECTIVE COMMUNICATION
  ► Poor Communication is a common contributor to patient harm

• WEAK INCENTIVES
  ► The business case for patient safety is inadequate (but improving)
The Research Continuum: Discovery to Implementation

**Research**
- Identification of: Risks and Hazards
- Safe practices to prevent harm

**Testing & Demonstration**
- Refinement of safe practices
- Seamless Integration

**Implementation**
- Socioadaptive factors
- Widescale adoption

**Measurement**
Patient Safety Tools and Training

- Patient Safety Culture Surveys
- TeamSTEPPS® team training materials
- Comprehensive Unit-based Safety Program (CUSP) toolkits to reduce CLABSI, CAUTI, etc.
- Re-Engineered Discharge (RED) tools to reduce avoidable hospital readmissions
Patient Safety Tools and Resources


- Toolkit will help medical offices assess and improve the process they use to manage patient testing and followup
- Includes surveys, survey scoring sheets, and patient handouts:
  - Surveys of office readiness, testing processes, and patient engagement (English and Spanish)
  - Tools for planning, chart audit, and electronic health record evaluation
  - A patient handout (English and Spanish)
- Users can pick and choose among these surveys and tools to select the ones that apply to their office
Funding Opportunities

AHRQ supports investigator-initiated research that addresses patient safety issues.

Two recent opportunities focus on diagnostic safety in all settings:
  ► Incidence and factors that contribute to diagnostic failure
  ► Strategies and interventions to improve diagnostic safety

Other opportunities include: safe medication use, health care simulation, and HAI prevention.

www.ahrq.gov/funding
AHRQ Grant Mechanisms and Continuum of Research

**Training/Career Development**
- K08, K01, K02 – Research Career Dev. and Mentorship
- R36 – Health Services Research Dissertations

**Health Services Research**
- R03 – Small Research Grants
- R01 – Large Research Grants
- R18 – Large Demonstration/Dissemination Grants

**Conferences**
- R13 – Conference Grants
Healthcare Simulation

AHRQ Issue Brief

Health Care Simulation To Advance Safety:
Responding to Ebola and Other Threats

Foreword
Simulation has long been recognized for the integral role it plays in high-risk industries. Our aerospace transportation, and power-generating industries have become incredibly safer over the years with the aid of simulation. As the Ebola virus disease is rapidly spreading, healthcare is a high-risk industry. Yet providers and health care workers should not have to put their own lives at risk when caring for the sickest patients.

Several simulation centers are already training simulation-based practitioners to anticipate their role readiness for Ebola patients and more rigorously address essential training, protocol development, personal protective equipment, and facility issues. This brief underscores the helpful role simulation can serve in response to the Ebola virus disease, other emerging epidemic challenges, providers and patient safety, and quality of care in general. In addition to tested and verified protocols, health care professionals need practice implementing them through simulation.

In addition to tested and verified protocols, health care professionals need practice implementing them through simulation.

This brief also addresses simulation’s essential features and benefits, approaches and uses, the concept of mastery learning, and the Agency for Healthcare Research and Quality’s (AHRQ’s) systematic focus on simulation, and some selected lessons learned that still represent a challenge. While all the lessons learned are yet to be recorded and digested, the relevance of simulation extends not only to the immediate Ebola response but beyond Ebola to other serious viral outbreaks and future threats. Although the number of patients with Ebola virus disease is expected to be very low, there will almost certainly be similar outbreaks in the future.

Richard Kornick, Ph.D.
AHRQ, Director
Patient Safety
Learning Laboratories

Innovative Design and Development
to Improve Healthcare Delivery Systems

(P30, Center-based grant mechanism)

RATIONALE:

- Systems approach endorsed by many thought leaders as a way to address patient safety (PS) problems
- Scarcity of activity that actually engages redesign and systems engineering effort
- IOM & PCAST reports call for closer engineering/healthcare partnerships to accelerate improvement and lower costs
- More focus needed on addressing related PS harms rather than singular concerns in piecemeal fashion
Patient Safety Learning Laboratories are places where:

- interrelated threats to PS are identified,
- multidisciplinary teams generate innovative ideas with respect to threats,
- environments are established for brainstorming and rapid prototyping of new designs,
- multiple develop-test-revise iterations of promising designs occur,
- designs evolve into related projects for development, integration and implementation into an overall working system, and
- the integrated system is evaluated in a realistic simulated or clinical setting.
Establish multidisciplinary teams of clinicians, architects, designers, engineers, human factors specialists and end-users

Select 2-4 related PS project areas for which new designs are needed to achieve synergistic impact when integrated

Follow a systems engineering methodology of problem analysis, design, development, implementation and evaluation

RFA noted that applications that focus on frequent and high-cost care in under-resourced communities were welcomed
Definition of Diagnostic Error

The failure to:

(a) establish an **accurate** and **timely** explanation of the patient’s health problem(s)

OR

(b) **communicate** that explanation to the patient
NAM Committee’s Conceptual Model of the Diagnostic Process

1. Patient Experiences a Health Problem
2. Patient Engages with Healthcare System
3. Information Gathering
   - Clinical History and Interview
   - Physical Exam
   - Referral and Consultation
   - Diagnostic Testing
4. Information Integration & Interpretation
   - Has sufficient information been collected?
5. Working Diagnosis
6. Communication of the Diagnosis
   - The explanation of the health problem that is communicated to the patient
7. Treatment
   - The planned path of care based on the diagnosis
8. Outcomes
   - Patient and System Outcomes
     - Learning from diagnostic errors, near misses, and accurate, timely diagnoses
Outcomes stemming from the Diagnostic Process

THE WORK SYSTEM
- Diagnostic Team Members
- Tasks
- Technologies and Tools
- Organization
- Physical Environment
- External Environment

THE DIAGNOSTIC PROCESS

INFORMATION INTEGRATION & INTERPRETATION
INFORMATION GATHERING
WORKING DIAGNOSIS

OUTCOMES

Accurate, Timely Diagnoses
Diagnostic Errors and Near Misses

PATIENT OUTCOMES

SYSTEM OUTCOMES
Effects on Quality, Safety, Cost, Efficiency, Morale, Public Confidence in the Health Care System
Learning from Diagnostic Errors, Near Misses, and Accurate, Timely Diagnoses

Patient Experiences a Health Problem
Patient Engages with Health Care System
Communication of the Diagnosis
Treatment

TIME
What’s on Our Horizon

• Diagnostic error
  o Following NAM report, September 2015
  o Area of growing concern in patient safety field

• Increased focus on patient safety in settings outside the hospital

• Continued focus on HAIs, including antibiotic resistance through support of national efforts

• Supporting clinicians with better measurement systems

• Patient/provider communication and engagement
• **PSNet** is a national “one-stop” portal of resources for improving patient safety and preventing medical errors

• Offers wide variety of information on patient safety resources, tools, conferences, and more

http://psnet.ahrq.gov
http://webmm.ahrq.gov
Visit Our Web Site

www.ahrq.gov