Expanding Improvement Science Competencies: Successes & Challenges
Terry L. Jones RN, PhD
Objectives

• Review literature related to educational preparation for IS competencies.
• Describe an exemplar course designed to enhance IS competencies.
• Examine student self-reported performance on selected IS competencies.
• Discuss strategies to overcome the barriers to achieving IS competencies.
Historical Context

- 1999 IOM To Err is Human
- 2003 IOM Health Professions Education: A Bridge to Quality
- 2006 AACN Revised BSN Essentials
- 2007 RWJF & QSEN
- 2011 AACN Revised MSN Essentials
QSEN Competencies

• Patient-Centered Care
• Teamwork & Collaboration
• Evidence-Based Practice
• Quality Improvement
• Safety
• Informatics
Preparedness Surveys

- Sullivan, Hirst, & Cronenwett (2009)
- Dycus & McKeon (2009)
- Kovner et al. (2010)
- Djukic et al. (2013)
- Mennenga, Tschetter, & Sanjaya (2015)
- Lee, Jang, & Park (2015)
Student & Nurse Perspectives

• Perceived preparation is consistently lowest for knowledge, skills, and attitudes related to the quality improvement competency
Improvement Science

• Quality Improvement
• Safety
Quality Improvement

• Use data to monitor the outcomes of care processes and use improvement methods to design and test changes to continually improve the quality and safety of health care systems
Safety

• Minimize risk of harm to patients and providers through both system effectiveness and individual performance
The UT Experience

• Dedicated Course (N386Q)
  – 2013
    • Required for Nursing Administration Program
  – 2014- Present
    • Required for all MSN programs
  – 2015-2016
    • Self-report assessment of preparation
N386Q

• 16 Week course (3hrs/week)
• Approach
  – Traditional classroom
  – Flipped classroom
Course Objectives

• Critically analyze research findings relative to the current state of patient safety and quality in healthcare.

• Use theories of error and knowledge of human factors in the design and evaluation of healthcare systems.
Course Objectives

• Examine the role of organizational culture in determining patient safety and quality outcomes with emphasis on the cultural dimensions of leadership, communication, team relations, and organizational learning.

• Compare and contrast cultures of safety and blame within the healthcare system.
Course Objectives

• Compare and contrast theories and conceptual models used in the evaluation of patient safety and quality.

• Evaluate the effectiveness of local, state, and national quality and safety initiatives.
Course Objectives

• Evaluate quality and safety indicators.

• Develop effective strategies for creating and sustaining a culture of safety within the healthcare system.
Resources

- Textbooks
- Articles
- Web Sites
- TV Dramas
- IHI
Classic Papers
Classic Texts

- The Improvement Guide
  A Practical Approach to Enhancing Organizational Performance
  Gerald J. Langley, Ronald D. Moen, Kevin M. Nolan, Thomas W. Nolan, Clifford L. Norman, Lloyd P. Provost

- The Health Care Data Guide
  Learning from Data for Improvement
  Lloyd P. Provost, Sandra K. Murray
How Do You Use a Driver Diagram?

Don Goldmann, MD, IHI’s Chief Medical and Scientific Officer, explains the purpose and value of a driver diagram.

OPEN SCHOOL

The IHI Open School is transforming health care education around the world.

Free Audio Program

AUDIO PROGRAM

WIHI: All Hands on Deck to Reduce C. difficile April 9 | 2-3pm ET

IN-PERSON TRAINING

Conversation Ready Seminar April 15-16 | Boston, MA

WEB-BASED TRAINING

Advancing Pain Management and Opioid Safety Begins April 22 | IHI Expedition
Open school

• Basic Certificate 16 courses
  – Improvement capability (6)
  – Leadership (1)
  – Patient safety (7)
  – Person-centered-care (1)
  – Quality cost and value (1)

Free for students!!

utexas.edu/nursing
Assignments

• Attendance & Participation
• Quality Walk of Fame
• Quality Circle Activities
• Post Test
Quality Walk of Fame

Examples of Quality Circle Foci

- Hospital Readmissions
- Medication Errors
- Medication Adherence
- Missed Clinic Appointments
- Adherence to EBP Guidelines
- Restraint Utilization
- Self-Care Practices among the Elderly
- Fall Reduction
Quality Circle Activities

• Project Charter
  – Background/Business Case
  – Aim statement
  – Family of measures
  – Deliverables/Expected outcomes
  – Timeline - Gantt Chart
Quality Circle Activities

• PDSA Cycles
  – Specific questions & predictions
  – Empirically defined measures
  – Data collection methodology
  – Data analysis methodology
  – Data supported actions
PDSA Cycles

• Types
  – Learning
  – Testing
  – Implementation
PDSA Cycles

- Skills incorporated
  - RCA & Fishbone
  - Process Flow Map
  - Development of data collection tools
  - Graphical display of data
    - Run Chart
    - Process Control Chart
    - Pareto Diagram
Quality Circle Activities

• Implementation Checklist
  – Predicted impact on key measures
  – Processes/products affected
  – Documentation of change
  – Impact on training
  – Measurements required
Post-Test

• Take Home Test

• 4 PI Project Scenarios
  – Team Leader of PI Project
    • Develop a learning PDSA related to types of medication errors
  – PI Team Member
    • Analyze data using a Run Chart
  – PI Team Member
    • Assess variation in ALOS data using Process Control Chart
  – PI Team Member
    • Analyze payor mix data using PIE and Column charts
# Self-Report Skills Assessment

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The University of Texas at Austin
School of Nursing
30 Skills Assessed

- Performing an RCA
- Creating a fishbone diagram
- Creating a process flow diagram
- Perform an FMEA
- Recognize & report a sentinel event
30 Skills Assessed

• Access technical specifications for nationally endorsed QIs
• Access reports of provider performance on nationally endorsed QIs
30 Skills Assessed

• Apply the Model for Improvement to design PI projects
• Apply the Model for Improvement to evaluate PI projects
• Create an effective data collection tools to assess variation in processes and outcomes
30 Skills Assessed

• Format a data file in Excel to support analysis of quality data
• Accurately analyze data for variation in practice & outcomes
• Display data in professionally formatted tables
30 Skills Assessed

• Display data in charts (*=interpret as well)
  – PIE
  – BAR
  – LINE
  – RUN*
  – SPC*
  – PARETO*
  – GANTT
30 Skills Assessed

• Document PI Project Plan using Project Management Templates
  – Project Charter
  – PDSA Cycle
  – Implementation Checklist
30 Skills Assessed

• Error Reporting
  – Self
  – Others
• Disclosure to patient/family
• Apologize
Many Successes to Report!
Less than somewhat comfortable
Less than somewhat comfortable

Somewhat comfortable

Not comfortable
Comfortable
Very Comfortable

Somewhat comfortable
Mean Scores by Cohort

Course

Spring 2015: Pre-Test = 3.81, Post-Test = 8.67
Fall 2015: Pre-Test = 3.26, Post-Test = 8.40
Spring 2016: Pre-Test = 2.88, Post-Test = 8.25
Challenges

- Complexity of content
- Time constraints
- Access to quality & safety data
- Reinforcement & integration of skills
- Faculty & preceptor preparedness
Implications for Practice

• Better preparation for faculty & preceptors
• Academic-Service partnerships
  – access to PI & safety data
  – integration of students in PI projects
• Dedicated Academic Courses
  – Didactic
  – Lab or practicum hours
• Ongoing reinforcement of skills