Interprofessional Training and Practice at Duke

Karen Frush, BSN, MD
Chief Patient Safety Officer
Duke University Health System
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Overview
- Provide an overview of "Duke Medicine"
- Describe a framework for providing safe and reliable care
- Discuss the importance of interprofessional collaboration and high-performing teams in healthcare
- Review case studies at Duke
- Share challenges and successes of interprofessional education and training for healthcare professionals

Duke Medicine
- Duke University Health System, School of Medicine and School of Nursing
- Duke University Hospital, 2 community hospitals, primary care network, ambulatory services, home health and hospice
- Duke University Hospital
  - 1000 bed academic flagship hospital, Magnet designation
  - 8,000 nurses
  - 1,500 physicians
  - GME training for 950 residents and fellows in 74 programs
  - Over 1,600 volunteers

Duke Tradition
- Traditional culture of AMC
  - Described by D Kirch, AAMC President's Address 2007
  - Autonomous, expert-centered, hierarchical
  - High-achieving, competitive
  - Punitive
  - Human factors: fatigue, burn-out
- Leaders — the best and brightest clinicians
  - Medical directors
  - Charge nurses, Clinical operations directors
  - No training; figure it out
- Clinical science
  - Major research center: randomized control trials
  - Quality department responsible for "improvement"

Framework for Safe, High Quality Care

Leadership
- Hospital leadership
- Non-negotiables
- A major, a minor
- Everyone is welcome
- Everyone is involved
- Everyone is important
- Everyone is accountable
- Management of relationships
- Excellence "expected"

Culture - Collaborative
- The right kind of teams
- Team and patient
- Communication is key
- Shared goals
  - Shared vision
- Shared values
- Learning and innovation
- Excellence in execution
- Continuous improvement
- Critical thinking
- Critical language
- Clinical communication
- Situational awareness

Link to Unit Level
- Taking a collaborative, rapid-cycle improvement
- Lean
- GEM
- Critical thinking
- Clinical
- Improvement
- Unit structure and resources support performance improvement

Starts with Leadership: Attributes of the Right Stuff
- Most important factor in predicting success of safety improvement initiatives was quality of leadership
- Organizations highly successful in safety were also successful in operational performance
- What does it take to be a good leader?
  - Engage at all levels of the organization
  - Understand crucial aspects of human performance and relationships
  - To continuously improve performance and achieve superior results, culture must change — meaning behavioral change
Achieving Safe & Reliable Care

- Culture: collaboration and teamwork
  - Healthcare is highly complex
  - Clinical environment has evolved beyond limitations of individual performance
  - Effective teamwork and communication are essential, yet not taught in school
  - Many assumptions regarding effective communication and teamwork

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Communication breakdowns and adverse events at Duke Hospital

- Root Cause of Sentinel events at Duke Hospital similar to that reported to TJIC
- Communication failures have resulted in harm to:
  - Patients undergoing surgery: wrong site
  - Patients on our medical floors and ICUs:
    - Wrong medication, wrong procedure
    - Wrong newborn infant received vaccine
  - Need for knowledge and tools to improve communication, collaboration and teamwork behaviors

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Patterns of Communication Breakdowns Resulting in Injury to Surgical Patients

- 444 surgical malpractice claims
  - 4 liability insurers
- 60 cases with communication breakdowns resulting in harm to patient
  - Pre-op, intra-op and post-op
  - 74 verbal communications (1 transmitter, 1 receiver)
  - 60 failures to notify someone, i.e. an attending, of critical info
  - 59 responsibility ambiguity
  - 35 handoff breakdowns
- "Serious communication breakdowns occur across the continuum of care."

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Teamwork Climate is the consensus of Frontline Care Provider assessments Related to Collaboration

- Example Teamwork Climate Scale Items:
  - In this clinical area, it is difficult to speak up if I perceive a problem with patient care
  - Disagreements in this clinical area are resolved appropriately (i.e. not who is right, but what is best for the patient)
  - The physicians and nurses here work together as a well-coordinated team

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Case Studies at Duke: Interprofessional Practice and Training to Improve Patient Care

- Teamwork training and handoffs
  - TeamSTEPPS in PICU
- Healthcare acquired infections
  - CA-BSIs in Critical Care Units
- Next-generation Healthcare Professionals
  - Interprofessional training, education

Duke PICU

- First 6 months: no traction
- End of year one: good results
  - Decrease in infection rates (3% to 1%)
  - Decrease LOS (0.6 days) and increased throughput (10%)
  - Work Culture survey score increased by 16%
- End of year three: fantastic results
  - Decrease in infection rates (≤0.5% 300 days with no BSI)
  - Improved handoffs (more efficient and effective)
- Consistent sustainment
  - New staff and new residents oriented each month
  - "The way we work here", not a separate initiative anymore
  - Tools and strategies are embedded into workflow

Duke PICU

- Started team training in 2005, using earliest versions of TeamSTEPPS
- Transformational change model:
  - Strong leadership support
  - Trained everyone over a few weeks time in interprofessional groups
  - Hired consultants to train, coach, and observe
  - Chose several practice changes at once: sterile cockpit for rounds, morning huddle, SBAR nursing report, structured handoffs
  - Consistent metrics measured frequently: surveys, observation, outcomes

Cardiothoracic Surgical Hand-Off

Teamwork Climate Across 33 Clinical Areas

Teamwork Climate and BSI Across Michigan ICUs: No BSI ≥ 5 Consecutive Months without a BSI

The strongest item level predictor of clinical excellence: caregivers feel comfortable speaking up if they perceive a problem with patient care
**OR – ICU Hand-Off Turnaround Time**


![Graph showing OR – ICU Hand-Off Turnaround Time](image)

**OR – ICU Hand-Off Improvements**


- Turn-around time was reduced from 15.3 minutes to 9.6 minutes (p<0.001)
- Critical lab draw time reduced from 13.0 minutes to 2.4 minutes (p<0.001)
- Percent of chest radiographs completed within 15 minutes of arrival to PCICU increased from 60% to 94% (p<0.01)
- Most importantly, decrease in serious safety events related to handoffs from OR to PCICU

**Improving Collaboration to Decrease CA-BSI**

- Implement IT safety systems
  - Computerized SRS
  - CPOE, EHR
  - Automated Surveillance
  - Bar Coding, Smart Pumps
  - Patient Portal
- Standardize, align processes
  - Implement best practices
  - Use of checklists
  - CA-BSI Bundle

**Why we need checklists**

- [Checklist Image]

**Duke University Hospital**

![Graph showing Duke University Hospital](image)

**Interprofessional Education for Students in the Health Professions**

- Growing body of evidence to suggest interprofessional collaboration and teamwork are important for patient safety, outcomes
- How are we training next generation healthcare professionals?
- Personal experience...
Interprofessional Education

- 2007 grant funded interprofessional, inter-institutional study
- Duke/UNC SoN and SoM
- Using TeamSTEPPS in lecture, ARS, role play and high fidelity simulation

**TEAM TRAINING EVALUATION**

**KIRKPATRICK'S EVALUATION MODEL**

**Level 4 - Results:**
- Healthcare acquired infection rates.
- AHRQ Patient Safety Indicators.
- Adverse drug events.
- Length of stay.
- Patient satisfaction.
- Staff satisfaction.
- Nurse turnover rates.
- Observation of teamwork behaviors during routine patient care.

**Level 3 - Behavior:**
- Teamwork knowledge test.
- Survey of attitude toward teamwork.
- Survey of self-perceived communication skills.

**Level 2 - Learning:**
- Post-training reactions survey.

**Level 1 - Reaction:**
- Teamwork training with nursing and medical students.
  - Does the method matter? Results of an interinstitutional interdisciplinary collaboration.

**Teamwork Knowledge Results**

**Conclusions of Study**

- Training significantly improved student knowledge of TeamSTEPPS curriculum attitudes toward interdisciplinary teamwork.
- No significant difference between four different educational delivery methods.
- Students reported positive experiences and asked for more opportunities for interdisciplinary education.
Interprofessional Education

- Duke interprofessional sessions during Capstone
  - Scheduling difficulties: evening sessions
  - Team based learning; key interaction of medical and nursing students in small groups
- UNC Interprofessional Teamwork and Communication (IPT) Course
  - Semester long course; SoM, SoN, SoPh
  - Lecture, simulation, TBL; Faculty development
- Emory
  - Interprofessional team training; SoM, SoN, PA, PT
  - 460 students, 88 facilitators
  - Communication, Role Identity, Team Identity

Summary

- Growing evidence to link effective teamwork behaviors and collaboration with good patient outcomes, safe patient care
- Duke, others’ experience supports focus on interprofessional training in healthcare
- Important to understand culture survey results and assess need for teamwork training
- AMCs have great opportunity to “mold” behavior and create new norms, rather than changing old patterns
- Challenges to IPE in healthcare professions include scheduling logistics, faculty development and role models