Success Stories of Interprofessional Education in Quality and Safety at the Point of Care:
*The University of Missouri Experience*

Carla Dyer, MD
Associate Professor of Internal Medicine and Child Health
dyerca@health.missouri.edu

---

**Key Characteristics of MU SOM Graduates**

- Able to deliver effective patient-centered care
- Honest with high ethical standards
- Knowledgeable in biomedical sciences, EBM, and social/cultural issues
- Critical thinkers; problem-solvers
- Able to communicate
  - **Able to collaborate**
  - **Committed to improving quality and safety**
- Committed to life-long learning and professional formation
Interprofessional Patient Safety and QI Learning: Design Principles

- Longitudinal and integrated approach
  - Required elements across courses/years of training
- Interprofessional learning: students and faculty
- Involvement top→down (and bottom→up)
- Experiential learning: link to clinical setting
- Partner with the health system
- Evaluate and evolve...a work in progress

The Integrated Interprofessional Patient Safety Curriculum (TIIPS)

Retooling for Quality and Safety

- Independent Online Modules on Patient Safety, QI and Fall Risk Reduction
- Interprofessional Simulation: Preventing Falls in Hospitalized Patients
- Bedside Fall Risk Assessment by Student Dyad & Customized Patient Education Plan
- Interprofessional Debrief
Interprofessional Simulation and Bedside Encounter

• Aging/Mobility Simulation
  – Team based—groups of 4-5
  – Sharing expertise
  – 4-5 stations

• Bedside Fall Risk Assessment (2 students)
  – Chart and medication review
  – Environmental observations
  – Customized fall prevention plan

Focus: Learning & Patient Care

**Student Learning**

1. Knowledge
   – 99% of risk factors reported were correct

2. Improved confidence assessing risk and educating patients

3. Reflection questions

4. Potential interventions:
   Team and institution

**Patient Care**

• 93% of patients interviewed reported encounter valuable

*Patient: “The students were interested in my well being; they worked as a team and emphasized I might have a deficit when I go home after surgery…they asked me about home, steps, cords, cars, medications… and discussed how to be careful…”*
Clerkship Students Focus on Safety

• What went wrong?
• How did this happen?
• What are potential solutions to prevent recurrence?

M3 Patient Safety Curriculum Results

• Learning and Patient Care
  • Improvements in orthopedic order sets
  • Improvements in multi-disciplinary rounding process
  • Improvement in student comfort identifying patient safety issues and analyzing issues to find a cause
  • Student suggestions more robust than typical reporter

[Reference: Effectiveness of patient safety training in equipping medical students to recognise safety hazards and propose robust interventions]

L W Hall, S D Scott, K R Cox, et al
Qual Saf Health Care 2008 17: 248
doi: 10.1136/qshc.2008.031781
Achieving Competence Today

- Grew out of RWJF Collaborative in 2004—adapted
- **Goals:**
  - Learn QI principles and basic tools while improving care
  - Effective teams and IP roles
- **Principles of learning:**
  - Experiential learning in interprofessional teams
  - Faculty, students, and staff collaborative learning

<table>
<thead>
<tr>
<th>1st Learning Session</th>
<th>2nd Learning Session</th>
<th>3rd Learning Session</th>
<th>Project Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing Project Work and Experiential Learning</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Achieving Competence Today

- Create interprofessional improvement teams:
  - Departments/service areas identify learners/faculty
- QI personnel help identify focus for improvement
- Each team focuses on project for service area
  - **Teams:** 6-8 learners, faculty, staff, QI advisor
  - **Faculty:** “new” and experienced
  - **Learners:** 4th year med students, residents, pharmacy residents, graduate nursing students
- Interactive learning sessions & didactics (4 months)
  - 12 Contact hours and (bi-)weekly working team meetings
  - Effective teams, QI basics and tools, Health systems and change
  - Final presentations for system leaders: share projects & outcomes
- Improvements in student knowledge (pre vs. post)
Examples of Improvements

- **Pathology:** Improving tracking system for cytology results
- **Pediatrics:** Improving pre-discharge immunization rates for post-partum women (Tdap and influenza)
- **Family Medicine:**
  - Improving knowledge/use of comfort care pathway
  - Improving patient knowledge of care plan
- **Psychiatry:** Decreasing wait time and duplication of work in symptom evaluation unit.

Learner Outcomes

- Using the QI Knowledge Application Tool
- Significant differences noted in both the pre/post QIKAT scores ($p<0.001$), and between the ACT participants and matched controls ($p<0.0005$).
**Evaluation Model –**
What works in the context of QI/Safety Education at MU?

- **Outcomes**
  - *Improved system function and patient outcomes at microsystem level*
- **Behavior**
  - *Improved self-perception of teamwork skills*
  - *Improved predisposition toward collaboration*
  - *Increased QI skills*
- **Learning**
  - *Qualitative feedback suggests there is a lasting inoculation effect*
  - *Works best with “booster”*
  - *Learners usually value IP experiences*
    - • Meaningful tasks
    - • Linked to the care of patients
- **Satisfaction**

Kirkpatrick Evaluation Model adapted by Barr, 2000

---

**Final Thoughts**

- Develop integrated/required opportunities for IPE
  - Pre-clinical ➔ Clinical training ➔ Practice
- Experiential learning for students (and faculty)
  - Linked to clinical settings
  - Ultimate goal: improvements in care delivery
- Reinforce principles across experiences
- Develop champions: schools and health system
- Equip faculty to be proficient at this work
- Measure outcomes and continuously improve
Acknowledgements

- Les Hall, Dean School of Medicine
- Linda Headrick, Senior Associate Dean for Education
- Interprofessional Education Steering Committee
- Education Innovation and Improvement Steering Committee
- Partners in Education Steering Committee
- TIIPS Steering Committee
- Shelden Simulation Center
- University of Missouri Health System
  - Center for Healthcare Quality
  - Office of Clinical Effectiveness
  - Internal Medicine QI Committee
- Reynolds Foundation