Human Infrastructure for Patient Safety: PASQUAL Scholars Program

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INTRODUCTION

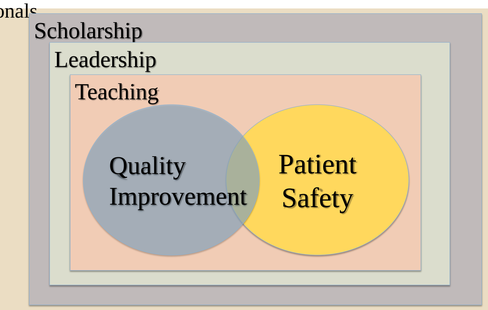
Neither engineers alone, nor healthcare professionals alone can create safe medical systems.

To succeed in achieving and maintaining high quality, safe systems, clinicians and engineers must work together with interprofessional teams of willing partners. We are challenged to find effective models for collaboration between engineers and healthcare professionals who understand the fundamentals of engineering, patient safety, and quality improvement.

To address this problem, the University of Michigan (UM) Medical School has established a **Patient Safety and Quality Leadership ("PASQUAL") Scholars** Program for medical school faculty and medical center staff who wish to become front-line leaders in quality and patient safety within the UM Health System and beyond.

The objective of the program is to **create a community of clinical partners** who can **effectively collaborate with engineers** and other safety professionals, and who appreciate the tools and methods of engineering, patient safety and quality improvement.

Through this program, we can **leverage the expertise of engineering** professionals to improve outcomes through patient safety and quality improvement efforts. Graduates of this scholars program are well positioned to direct quality and safety initiatives, to facilitate education and research on quality and safety in patient care, and effectively collaborate with engineering professionals.



Curriculum Concept: Establish a foundation of safety and quality knowledge; use it as a catalyst for teaching, leadership and scholarship activities.

METHODS

1. Formal curriculum

- Weekly 3.5 hour afternoon seminars over a 8 month period
- University of Michigan faculty and visiting faculty
- Interactive sessions, supported by site visits, readings and application exercises

Core components of the curriculum include:

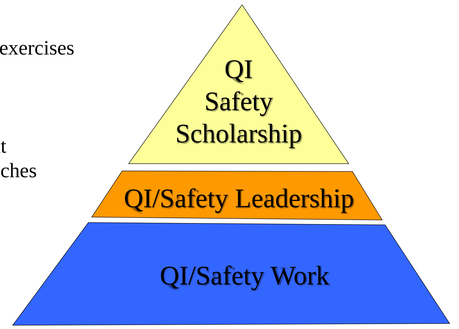
Quality Improvement
- From front-line techniques to strategic alignment and management
- Lean Thinking principles and methods, as well as other QI approaches

Patient Safety
- Human factors, systems theory, root cause analysis
- Theories of error and resilience, safety science
- Non-technical skills such as communication, transitions of care and teamwork

Leadership
- Implementation of safety and quality programs
- Strategic alignment of goals, organizational change
- Mentorship

Teaching:
- Educational theory; formal and informal techniques for teaching
- Practical techniques for teaching HF/QI/PS

Scholarship:
- Methods for applied research and evaluation studies in quality and safety
- Exploration of research trends, and the presentation and publication of scholarly work in safety and quality



Developing Collaborators: Many will participate, some will be expert educators and leaders, and a small group will be scholars.

2. Consultants and Visiting Faculty

- Quality and safety experts serve as consultants to guide the Scholars
- Advise and assist scholars with their quality and safety projects
- Experts at the University of Michigan as well as visiting faculty from outside the University

3. Hands-on Project

- Scholars identified a new or existing QI/PS project to develop during seminar
  - Created opportunity to apply principles, skills, and methods from program
- Facilitated scholarly approach to safety and quality
  - Expected to present at local, regional, and national QI/PS meetings

4. Peer Group of Scholars

- Scholars share formal learning sessions, work together using small group approaches to learning, and interact and collaborate with each other on safety and quality issues and projects
- Creates infrastructure of QI/PS-literate front-line providers conversant in engineering approaches

RESULTS

Participants' Areas of Specialty

- OB/GYN
- Emergency Medicine
- General Medicine (Hospitalist)
- Pediatrics (NICU)
- Physical Med. & Rehabilitation
- Pathology
- Otolaryngology
- Anesthesiology
- Radiology
- Family Medicine

Participant Roles

- Attending Physicians
- Pharmacists
- Nurse Managers
- Physician Assistants
- Nurse Practitioners

Safety and Quality Improvement Project Examples

- New OR team for scheduled cesarean deliveries
- Pathology lab metrics for professional practice (OPPE) quality
- Multi-disciplinary round implementation
- Handoffs improvements in the Emergency Department
- Discharge summary process improvements
- Medication reconciliation process improvement
- Designing an equitable case-review process
- Tracheostomy care technique training and improvement
- Code-team organization and documentation techniques

CONCLUSIONS

- The complexity of healthcare systems necessitates effective **collaboration between engineers and front-line providers**.
- A key strategy for improving healthcare outcomes is to **develop a critical mass** of front-line people who can **partner with engineering** professionals, and promulgate the lessons of patient safety and quality improvement.
- A **scholars program** can create clinical leaders who can work together with engineering professionals to have a significant impact on healthcare outcomes.
- The **PASQUAL Scholars** program provides a concrete, **time-tested blueprint** for a successful program to meet these needs.

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