Integrating Health Systems Science Education into Five Graduate Programs

Ariadne K. DeSimone1,2 and Diane T. Siegel1

1Emory University School of Medicine, Atlanta, GA 30322
2Rollins School of Public Health, Emory University, Atlanta, GA 30322
ariasimone@emory.edu, diane.siegel@emory.edu

Background

Over the past decade, there have undoubtedly been remarkable shifts in health care delivery and changes in the overarching health care system as it evolves into a "learning health care system." In parallel, medical schools and other health professional programs understand the imperative to supplement traditional curricula with education in health systems science, which includes quality improvement and patient safety, in order to train the health professional of the 21st century: someone who delivers patient-centered care as a member of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics.2,3 It is important that each health professional student engage in health systems science education early in training in order to be prepared when they are called on to assess and improve their own performance throughout their professional lives and to do the same to improve the delivery system in which care is provided.4,5 While many schools have already begun to implement curricular innovations that marry learning about quality of care with learning about patient care, these efforts are not universal or comprehensive, and do not meet the needs of many current students. The Institute for Healthcare Improvement (IHI) Open School Emory University Chapter sees one of its roles as filling gaps in the education of graduate students of medicine, allied health, public health, nursing, and business in health systems science by offering a combination of didactic instruction and experiential activities across the continuum of professional development to improve knowledge, skills, and attitudes. Our initiatives have been well-received by students and faculty, and they provide a model for other organizations and institutions.

Health Systems Science Education

Student leaders within IHI Open School Emory work together to supplement the curricula of various graduate schools (including medicine, allied health, public health, nursing, and business) with meaningful learning experiences—both didactic instruction and experiential activities—in health systems science across the continuum of professional development. The learning experiences we provide help students progress from novice to advanced learner; from the acquisition of basic knowledge, skills, and attitudes, to its analysis and application in the practice and delivery of patient care. Interdisciplinary education and leadership competencies are integrated into our health systems science model curriculum. (See Figure 1 and 2)

Figure 1. Learning Across the Continuum

Quality improvement & patient safety
Interdisciplinary education & teamwork
Leadership

Figure 2. Learning Experiences

Theory & knowledge domains
Clinical applications
Skill development
Experiential

Quality improvement & patient safety

Theory & Knowledge Domains

For beginners, we organize didactic instruction in the principles of improvement science, such as change theory, interdisciplinary approaches to health care, the structure of health systems, and the link of quality to cost. We also encourage students to complete the IHI Open School online courses in these subjects. In the last year, 26 students completed the Basic Certificate of Completion under our guidance. We worked with other interdisciplinary student groups to organize symposia sponsored by the Emory-Georgia Tech Healthcare Innovation Program on topics including creating value in health care and service-oriented approaches to health care delivery. Over 100 students across graduate programs learned from health care leaders from outside institutions, such as Geisinger Health System, Jefferson University Hospitals, and Harvard Business School.

Clinical Applications

For both pre-clinical and clinical students, we offer a monthly Quality Improvement in Clinical Practice Lecture Series designed to dovetail with the first- and second-year medical school curriculum. We invite physicians with research and clinical interests in quality improvement to speak to our group. In the last year, we coordinated quality improvement lectures in the fields of pulmonary medicine, cardiology, digestive disease, renal medicine, endocrinology, and neurology, as well as in law and business in attendance. We also organize a Surgical Quality Improvement Journal Club for students and general surgery residents. We help connect students to Medicine Grand Rounds and Surgical Grand Rounds presentations focused on quality and patient safety.

Skill Development

We design and implement quality improvement training sessions, which we call Skills Labs, that allow students to focus on the application of didactic knowledge alongside students from a range of disciplines. Each semester, we organize a variety of Skills Labs, including 1) our half-day Healthcare Quality Improvement Training Day & Skills Lab for 50+ students (See Figure 3), 2) a 1-hour PDSA cycle Skills Lab at the Rollins School of Public Health for 30 students, 3) a six Sigma Skills Lab at the Goizueta Business School for 40 students, 4) a 2-hour Microsoft Excel Skills Lab for 40 students.

Figure 3.

Healthcare Quality Improvement Training Day & Skills Lab

We have started a multi-year, student-led quality improvement team at the Good Samaritan Health Center in Atlanta to provide experiential learning experiences for students. The team of 12 students aims to improve diabetes care at the clinic through a variety of projects, one focused on improving continuity of diabetes care and another focused on diabetes prevention through lifestyle intervention or the drug metformin.

Future Directions

We will continue to work together to supplement the curricula of various graduate schools (including medicine, allied health, public health, nursing, and business) with meaningful learning experiences in health systems science into next year. We will strive to reach more students and students at more schools (such as law and business). We hope to share the success of our efforts with administrators at various graduate schools and to discuss ways in which the learning experiences can be more fully integrated into the curriculum.

References