Redesigning Medical Education in Internal Medicine: Adapting to the Changing Landscape of 21st Century Medical Practice

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INTRODUCTION

Practicing internal medicine in the 21st century has changed. Novel scientific discoveries, diagnostic technologies and therapeutic interventions have evolved rapidly. At the same time, external forces have altered the interactions between internists, their patients and the new healthcare delivery systems incorporating those interactions in ways unforeseen a decade ago. Although most institutions strive to keep the scientific aspects of their curricula current, teaching learners to use this new science effectively in present and future healthcare environments is addressed less commonly. Adopting new models of education can be difficult. Educational change occurs slowly within the confines of the extant system, but the shifting landscape demands rapid change, and many "traditional" medical teachers find themselves on unfamiliar terrain. In the last 10 years, the Society of General Internal Medicine (SGIM), the American College of Physicians (ACP), and the Alliance for Academic Internal Medicine (AAIM) have all published position papers on redesigning Internal Medicine training.[1-3]

The medical education community is recognizing the necessity for learners to demonstrate objectively their ability to care for patients, a so-called "competency-based model" for training and education. Likewise, educational regulatory bodies have deemed that physicians should demonstrate competence for certification. Traditional clinical training, however, inserts learners into established patient care experiences in a fashion that minimally disrupts the system. This current "system-centered" clinical structure limits the role learners can play and makes assessing their competence a struggle for educators. Thus, an endless loop is created; learners cannot fully participate until they are competent, yet they cannot easily be declared "competent" because there are limited arenas in which they can fully participate. Education is not given as top priority in this "system-centered" structure and adjustments that may be needed to satisfy any new educational requirements are also done in a way that is minimally disruptive for the system. Thus, our learners are having training in a clinical system that is not necessarily designed for education.

There are crippling problems with the modern day healthcare system that require superior physicians to be apart of the solutions needed to create a solvent system. Internal medicine training must evolve to become proactive and evidence based, opposed to reactive and systems-centered, with respect to educational curricular design, implementation, assessment and evaluation to produce physicians that are leaders, innovators and system changers. The framework created by the Commission on Education of Health Professionals for the 21st century should be adopted. In this framework, patient-centered care is taken at a systems level. The needs of patients dictate the qualities and services the educational system and healthcare system must provide. This fundamental change would alter our culture from one where the educational system and healthcare system are in competition to one where they are both patient centered.[4] This article identifies 3 systematic changes that we believe must occur in internal medicine training if we are to create produce physicians that are leaders, innovators and system changers within a patient centered system:

1) The educational system in the 21st century should be a proactive, pedagogically sound and deliberately competency-based system that trains learners to be not only experts in the pathophysiological aspects of a disease but also effective members of interprofessional teams that are responsive to the needs of individual patients, their families and the communities in which they live.
2) Training a cadre of master educators who are skilled in a broad range of mentorship, teaching and evaluation techniques to be able to teach all aspects of physician development may be one successful strategy for supporting a robust and deliberate competency-based educational system.
3) The funding of medical education, at both the Undergraduate Medical Education (UME) and the Graduate Medical Education (GME) levels, must be better understood and reconfigured for transparency, accountability and long-term sustainability to fund the increased supervision and observation

necessary to support a competency-based educational system.

Each of the following sections analyzes the stated problem and speculates on potential solutions to consider for solving the problem (Table).

Competency-Based Training Through Team-Based Patient, Family and Community-Centered Experiences

For most of the 20th century, medical students were taught in what some have described as a "Flexnerian" fashion. Influenced by Abraham Flexner's review of medicals schools in 1910, medical school curricular structure became appropriately science focused. Early learning in medical school focused upon the factual basic science disciplines, for example, anatomy, biochemistry, histology, physiology, immunology and microbiology. Learning what was normal then evolved into learning "abnormal" and a disease-oriented focus emerged. The student's learning was often categorized through an "organ systems" approach where an ability to list and describe the different potential pathologies, an organ might develop, was greatly rewarded. After learning "all" of basic science normality and abnormality, the students then entered the clinical medicine of the inpatient wards, operating rooms, emergency departments and outpatient.[5]

TABLE. Summary of proposed changes needed to Internal Medicine Education in the 21st century

Competency-based training through team-based patient, family and community-centered experiences	• Implementation, assessment and evaluation of identified competencies, milestones and entrustable professional activities • Asynchronous learning possibilities • Accelerated programs shortening the length of training • Increased exposure to ambulatory medicine with team-based care	
	Undergraduate Medical Education (UME) • Immerse learners in the patient-centered medical home • Early experiences patient centered care • Collaboration with other health professional colleges to teach team skills	Graduate Medical Education (GME) • Identify rotations based on training needs for competency • Increase and enhance ambulatory training • Interdisciplinary residency activities to teach team skills
Master teachers	• Will dedicate their careers to education and patient care • Will be measured on their ability to advance educational curriculum • Will hold key education roles within their institution • Will be experts in a broad range of mentorship, teaching and evaluation techniques within the competency-based model • Development of teaching academies to promote the streamlining of UME and GME faculty development	
	UME • Specific and ongoing faculty development in UME • Experts in mentoring students • Resident teaching academies to improve student teaching	GME • Will receive specific and ongoing faculty development in GME • Experts in mentoring residents
Budget	• Educational value units (EVUs) to faculty • Funding of appropriate faculty development • Taxes on clinical care to support education • The Academic Health Center or practice plan should weight clinical care in the teaching setting above clinical relative value units • Philanthropic efforts for education	
	UME • Transparency of funds from the student tuition and state dollars	GME • Transparency of funds from Medicare and state dollars • Indirect medical education allocation should go to GME training programs • Assign support to medical educators to allow for direct observation