



From the Association
of Departments of Family Medicine

Ann Fam Med 2007;5:376-377. DOI: 10.1370/afm.726.

PRIORITIES IN MEDICAL STUDENT EDUCATION IN THE FACE OF INCREASING CLASS SIZE

The Association of American Medical Colleges (AAMC) and the Council on Graduate Medical Education (COGME)¹ have called for an increase in the size of medical school classes to address future physician workforce shortage projections. This increase in learners poses major challenges to curriculum planners and clinical departments.

Departments of Family Medicine (DFMs) are uniquely challenged because they provide decentralized clerkships and often have disproportionately large and valuable teaching roles in early clinical skills development. The required individual and small group instruction central to these clinical experiences makes DFM's teaching capacity particularly vulnerable. If schools of medicine simultaneously address specialty maldistribution or implementation of educational innovations, challenges for DFMs will be exacerbated.

Increased class size and the unique position of family medicine in medical school education provides opportunities to influence curriculum planning which can lead students to a better understanding of the content and values of the discipline and provide a more accurate representation of the critical role family medicine has in the healthcare delivery system.

ADFM's Predoctoral Education Committee has had a series of discussions to determine some emerging priorities for DFMs in student education in the current medical school environment. These have included informal discussions with members of the predoctoral education community at STFM's 2007 Predoctoral Education and Annual Spring meetings and a 2007 ADFM Survey. While a diversity of viewpoints have been expressed, 4 dominant themes have emerged.

Family Medicine Clerkship is a Top Priority

On the ADFM survey of chairs (82% response rate), member chairs rated the family medicine clerkship highest for its importance and cost-effectiveness in reaching the goals of educating all medical students in the discipline of family medicine and impacting students' specialty choice. Evolution of the family medicine clerkship is a major curricular priority as it represents the most

effective curricular element to teach continuous and comprehensive care across clinical settings.

The diversity of patient care experiences and teaching settings is both a challenge and an opportunity. The family medicine clerkship rests on the tenuous funding platform created by the volunteerism of an aging and increasingly stressed population of community-based family physicians. All family medicine offices used as student teaching sites may face obstacles in implementing components of the new model of family medicine even further straining community practices as teaching venues. Learner saturation and diminishing sites creates competition for new sites that may increase the community physicians' requests for financial reimbursement for teaching time.² Diversity in experience harkens the call to standardize curriculae, student assessment strategies and competency measurements which can facilitate the development of relevant national assessment tools.

The Relevance of the Learning Environment to New Models

Do academic health centers and community practices facilitate the development of models of care that demonstrate the effective delivery of primary care to patients, families and populations? Student education in emerging models of care should demonstrate constant experimentation to improve health while upholding values of family medicine/patient centered care. Students also must have experiences which define and address the needs of vulnerable populations. Effective student education in academic health center practices with emphasis on training and discovery must demonstrate effective delivery of patient services while community practices with emphasis on service must demonstrate the pursuit of clinical quality and the use of evidence-based care.

Adherence to Quality in the Learning Environment

This theme relates to advancing an aspect of family medicine scholarship through practice quality improvement. Teaching practices should utilize interventions to improve quality of care, adhere to practice guidelines, and use best available evidence to demonstrate to students the impact of appropriate care on the health of individuals and populations.

Enhancing Student Interest in Family Medicine

Finally, increased class size provides an opportunity to experiment with choosing different types of students, particularly those who would more likely enter careers in primary care/family medicine. Maintaining and increasing faculty involvement in the admissions process and in mentoring students across the educa-

tional spectrum will be critical to ensure production of primary care and family physicians. There is a need to facilitate student involvement in specific clinical activities that address the social responsibility of medicine for medically vulnerable local, national and international patient populations to demonstrate the broader scope of family medicine. An appreciation of the diversity of family medicine professional activities and the impact that this career decision has on the health and welfare of society is needed to facilitate student interest in family medicine at this critical time when their numbers are increasing rapidly.

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From the North American
Primary Care Research Group

Ann Fam Med 2007;377-378. DOI: 10.1370/afm.727.

COMPLEXITY SCIENCE AND ITS RELEVANCE FOR PRIMARY HEALTH CARE RESEARCH

Concepts from complexity science are familiar experiences for those working in primary health care. We work with people, each one different from every other. We have the privilege of knowing our patients over long periods of time, and this helps us understand them better. We are not surprised by how differently patients respond to a particular treatment. We witness the influence of family and community on our patient's experience of health and illness and the opportunities and constraints of health care provision within our organizational and policy context.¹ As clinicians, we may work within organizations comprised of many individuals and experience the effect of the quality of communication on the organization.² When we visit a different primary care practice, even though they may have similar objectives and resources and work in a similar way to our own, the difference in the character of the practice is often striking.³

Complexity sciences seek to understand complex systems. People and primary care organizations are examples of complex systems. They have emergent properties that are not explainable using linear models

of interaction or causality. Seemingly similar complex systems such as people or organizations become diverse as small differences become amplified through interaction and feedback. The history of a complex system influences its current properties and these constantly evolve. The system is engaged within its context, changing it and being changed.⁴

Despite the apparent fit between complexity sciences and primary health care, what complexity sciences have to offer primary care research is still an open question. As a novel approach to research, complexity science challenges us to think clearly about the nature of reality and how we come to understand it, questions of ontology and epistemology, and challenges our understanding of causation and how we detect it. Where we are stuck on a particular problem, complexity sciences may offer an innovative way of thinking about it without necessarily needing new research methods. Studying interaction and its dynamics, and studying emergence may be of particular importance for primary care research and require learning or developing new research methods.

Arguably the most robust current research in complexity sciences looks inside complex inanimate or cellular systems. Examples include energy networks, computer networks, moving fluids, and cellular enzyme systems. Large volume longitudinal data is collected and analyzed using data mining techniques. Computer simulation of the system can be compared with real life. Mathematics succinctly describes the structure and dynamics of the system. These research approaches require data that capture interaction. We have data about information exchange within our primary care organizations that can be analyzed in terms of network structure and dynamics. Similarly, patient interaction with health care may be explored through case by case longitudinal analysis of our patient data. However, our patients interact with their social and environmental context, and this influences their health.⁵ This dynamic interaction is poorly documented within available health care data. Linkage of large data sets from social surveys, census, and health care may provide future opportunities for analysis of this dynamic interaction; however, smaller scale mixed-method longitudinal research is likely to be more productive in the short term.

Although medical science can claim many successes, there are health problems, for example low back pain and depression, where it can be argued traditional research approaches seem to be stuck. A complexity sciences approach may consider such health problems emergent phenomenon arising from the interaction of many different factors, biological, psychological, technological, social, and environmental. Emergence cannot be tracked back to