PERSPECTIVES

Breaking down silos: engaging students to help fix the US health care system

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Problem: The field of health care is becoming a team effort as patient care becomes increasingly complex and multifaceted. Despite the need for multidisciplinary education, there persists a lack of student engagement and collaboration among health care disciplines, which presents a growing concern as students join the workforce.

Approach: In October 2013, the Emory–Georgia Tech Healthcare Innovation Program organized a student driven symposium entitled "US Healthcare: What's Broken and How to Fix It: The Student Perspective". The symposium engaged students from multiple disciplines to work together in addressing problems associated with US health care delivery. The symposium was organized and carried out by a diverse group of student leaders from local institutions who adopted a multidisciplinary approach throughout the planning process.

Outcomes: The innovative planning process leading up to the symposium revealed that many of the student-discipline groups lacked an understanding of one another's role in health care, and that students were interested in learning how to work together to leverage each other's profession. The symposium was widely attended and positively received by students and faculty from the Atlanta metropolitan area, and has since helped to promote interdepartmental collaboration and multidisciplinary education across institutions.

Next steps: The student symposium will become an annual event and incorporate broader discipline representation, as well as a patient perspective. Proposals for additional institution-wide, multidisciplinary educational offerings are being addressed with the help of faculty and health care providers across the network. Accordingly, the implementation of student-driven symposia to engage students and stimulate institution-wide changes may be a beneficial and cost-effective means for academic health centers looking to facilitate multidisciplinary health care education.

Keywords: multidisciplinary health care education, multidisciplinary student engagement, multidisciplinary team-based learning

Problem

In the era of US health care reform, providers, payers, and patients across the country are being held more accountable to improve the quality, access, and cost of health care. Given the multifactorial nature of health care, it is no surprise that initiatives including accountable-care organizations and patient-centered medical homes are emerging as viable new care models across the country. These new approaches have one resounding goal in common: to bring multiple professions together in teams to provide better patient-centered health care. In fact, more than a decade ago in 2001, the Institute of Medicine (IOM) report *Crossing the Quality Chasm: A New Healthcare System for the 21st Century* called for such a multidisciplinary approach to health care.[1] More recent

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reports from the IOM have established guiding principles and values for team-based health care while reiterating the need for health care practitioners to embrace the transition from being soloists to members of an orchestra.[2] Adding to the urgency is the ongoing transition from a predominantly volume-based health care system to one governed by value.[3]

Multidisciplinary teams have the potential to create value by increasing quality and patient satisfaction while simultaneously decreasing costs.[2] Additionally, such teams allow individuals with different expertise to complement one another for the holistic care of the patient. One study has estimated that the average primary care physician connects to 266 other physicians when assessing the medical care network of his or her Medicare patients over a span of 1 year.[4] However, this estimate does not include the interaction with other professionals, including nurses, physician assistants, pharmacists, social workers, dieticians, technicians, administrators, and many other integral team members. Given the diversity and quantity of health care disciplines, it is imperative for all health care professionals to understand the issues afflicting one another for increased transparency and communication.

The problem of ill-equipped health care professional graduates is not local to the US. The international community has also underscored the need for interprofessional collaboration; in fact, the World Health Organization has indicated that interprofessional education is necessary in creating a "collaborative practice-ready health workforce" capable of improving health outcomes.[5] Similarly, the groundbreaking report *Health Professionals for a New Century* featured professional and academic leaders from around the globe who beckoned for an end to the "tribalism of professions", while sharing a global vision and framework calling for change and system redesign of professional health care education.[6]

As noted in the IOM report, change begins in the classroom. To help students and future health care workers prepare for this transition, educators and institutions should provide a means for students to learn and actively problem-solve with one another. Eventually, integration of interprofessional collaboration and endorsement of a team mentality into educational programs will increase multidisciplinary competence, thus leading to better patient outcomes as students join the workforce.

The Emory–Georgia Tech Healthcare Innovation Program (HIP) is a multi-institutional network focused on facilitating health services research, education, and service (http://www.hip.emory.edu). As part of its activities, HIP hosts quarterly symposia with prominent guest speakers from

around the country on the topic of "US Healthcare: What's Broken and How to Fix It?" In October 2013, HIP organized its first-ever student-driven symposium to feature the multidisciplinary student perspective on the challenges facing the US health care system.

Approach

"It's about the journey, not the destination": this popular sentiment aptly embodies the planning process behind the student symposium. From the initial formation of the student planning committee to the final symposium presentations, a multidisciplinary mindset was adopted and integrated throughout the entire process.

Student planning committee

The initial student planning committee was comprised of ten student leaders from the HIP Student Advisory Group, representing different departments, schools, and universities, with each bringing a different discipline, perspective, and context. Many of these students were selected by the program director based on their leadership positions within various student organizations related to their respective disciplines. The different disciplines represented by the planning committee included public health, medicine, nursing, allied health, business, and engineering. Members of the planning committee included students from Emory University, Georgia Institute of Technology, Georgia State University, and Morehouse School of Medicine. The planning committee members were responsible for 1) selecting a student speaker on behalf of their respective discipline, 2) identifying faculty members from their respective disciplines as mentors for the student speakers, 3) organizing meetings with each of their own respective student organizations, and 4) providing multidisciplinary feedback for the student presentations.

Student speakers

Seven different student disciplines were selected for the symposium: public health, prehealth, medicine, nursing, allied health, business, and engineering. These disciplines were chosen based on their extensive presence across the multiple institutions. The prehealth discipline was designated for an undergraduate student, while all other disciplines were represented by graduate students. The designated planning committee members were asked to select student speakers based on who they thought would best represent their respective discipline, as well as who provided the best response to the question of "Why is a multidisciplinary approach needed in healthcare?" Student speakers representing each

discipline were selected through various methods, including submission of YouTube videos, written essays, and personal interviews. Upon selection, student speakers were asked to 1) present one health care-related problem associated with their discipline, 2) identify the contributing factors associated with the problem, and 3) propose a potential multidisciplinary solution. To assist with their presentations, student speakers were paired with a faculty mentor and provided access to consult the deans of their respective schools. Additionally, student speakers were encouraged to attend the meetings of other student clubs and organizations across the network.

Open-call student roundtable

To further assist student speakers with their final presentations, weeks prior to the symposium, an open-call student roundtable was held by the planning committee. The roundtable was organized loosely on the concept of speed dating. Seven roundtables were organized, with each table comprised of approximately five students from the same discipline who were handpicked and selected by the respective planning committee member. The student speakers began at their respective "home" tables, and were asked to rotate to another table every half hour until they received input from students across all seven of the disciplines represented.

Prior to the roundtable, planning committee members researched and printed a "startling" fact pertaining to their discipline. These facts were meant to be provocative, and were used to help stimulate conversation during the roundtable discussions. Overall, the roundtable process was both organic and refreshing: it offered students the opportunity to uncover the real issues troubling each of the other disciplines. It also provided a means to better understand the nature and scope of one another's discipline. Most importantly, the roundtable helped cultivate an environment where students were able to candidly voice some of their concerns, opinions, and questions.

Frequent questions brought up at many of the different roundtables included: "What is the role of your discipline in healthcare?" and "What can we do to help make your job easier?" Fittingly, the student roundtable revealed two salient themes: 1) there was a lack of understanding of one another's profession and role in health care delivery, and 2) students were interested in learning how to work together to complement one another's role. Overall, the open-call student roundtable provided the student speakers with valuable feedback and an exposure to diverse viewpoints outside their respective disciplines. As such, the process was able to inform and help the student speakers formulate multidisciplinary solutions for their final presentations.

Outcomes

The symposium attracted hundreds of students and faculty from the Atlanta metropolitan area, with additional participants joining via webcast. The student presentations addressed multiple topics within the US health care system, including public health awareness, health care-delivery models, nursing scope of practice, the evolving role of allied health, the medical education curriculum, insurance-led quality improvement, and the risk-averse culture of biomedical engineering. All student speakers successfully presented a health care problem associated with their respective discipline and subsequently provided a multidisciplinary framework to address the problem (see Table 1; access to all the student presentations and a video stream of the symposium is available in Figure S1). Throughout the symposium, social media sites, including Twitter and Facebook, were used to help engage students. Following all the presentations, student speakers formed a panel to entertain an interactive question-and-answer session with the audience.

The symposium was unanimously well received, garnering positive reviews from both students and faculty members across multiple institutions. Since its inception, the student symposium has helped cultivate a greater interest by students across disciplines in health care delivery and multidisciplinary collaboration. It has led to the creation of multiple student "mixers" between various graduate school programs and student clubs, as well as new interdepartmental activities. Of note has been the development of a university-wide course at Emory entitled "SICK: Healthcare in the Modern

Table 1 Student-identified US health care problem and solution for each discipline

Discipline	Problem	Solution
Public health	The absence of public health awareness and collaboration	Development of properly aligned incentives across disciplines
Prehealth	The dispersed US health care-delivery model	A vertically integrated health maintenance organization
Nursing	The decline in primary care access	Increasing mid-level practitioner scope of practice
Allied health	The increasing provider shortage	Implementation of interdisciplinary care teams and care coordination
Medicine	The incomplete medical education curriculum	Teaching physicians how to teach to increase patient activation
Business	The absence of nonclinical quality improvement	A coordinated quality bonus-payment system
Engineering	The risk-averse culture of medical technology and innovation	Interdisciplinary refinement of medical regulation policies

Era", which was launched in the spring of 2014. The course was developed to provide students with a multidisciplinary and holistic understanding of the challenges facing the US health care system. The course is available to all students of all disciplines, and covers the US health care system from a myriad of different viewpoints through discussion panels and lectures covering topics in medicine, public health, business, law, ethics, policy, and informatics. Lectures are given by a multidisciplinary assortment of prominent university and health care professors and faculty members. Though the course focuses on US health care delivery, modules on international and comparative health systems are also explored. The course culminates with students forming multidisciplinary groups and presenting a capstone project addressing health care-delivery issues (Table S1; for course syllabus, visit https://scholarblogs.emory.edu/sick for additional information regarding the course). The introduction of this course has led the way for additional university-wide coursework, including a course that opened to all students in the fall of 2014 titled "Health Services Research", which aims to provide students with a better understanding of how multidisciplinary research can be used to improve health care cost, quality, and access.

The semiannual Healthcare Innovation Seed Grant Program is also sponsored by HIP to fund multi-investigator, multidisciplinary teams examining health care services and clinical effectiveness. Following the symposium, and for the first time in the 3 years of the program, a proposal was submitted by a group of students to examine the effectiveness of their own multidisciplinary volunteer health care-related programs.

Next steps

The success of this symposium and the processes that have engaged multiple student disciplines and activities will be extended to become an annual series of events, and will be expanded to include additional perspectives. The patient perspective will be an especially integral and enlightening perspective to include, mirroring the recent emergence of patient and family advisory councils across a majority of health care systems. Indeed, such a perspective can help reinforce the patient's central role in every health care team and the increasingly popular "nothing about me, without me" mentality.[7]

Initiatives similar to the student symposium, though small, can help lay the foundation and trigger a domino effect for multidisciplinary collaboration and education. Health care educators should view the open-call student roundtable as

evidence for the need and interest among students for multidisciplinary education. In addition, the student presentations should be a testament to how multidisciplinary collaboration can engage students and help them think "outside the box" to formulate innovative, multidisciplinary solutions to real-world problems.

As a parallel, business schools across the US have long been recognized for their team-based course structure, where students from all branches of business work together on case studies for which they share the same grades. In fact, certain business schools have recently adopted nondisclosure policies in which students' final grades are only disclosed to employers after being offered employment, as a means to reduce internal competition among students and increase collaboration within the classroom. Conversely, the majority of students pursuing fields in health care are often still taught in independent silos, despite being "graded" and assessed on the same common denominator of patient outcomes upon graduation. Consequently, a strong case can be made for health care educators to adopt a similar approach in which students from all branches of health care interact and work together prior to entering the workforce.

Although a multidisciplinary approach to health care starts at the bottom with students as the foundation, the adoption and implementation of such a philosophy starts from the top. Administrators and faculty members of all disciplines should seek to work together to transform the education system for future health care professionals. In addition, they must serve as role models when interacting and collaborating with one another. It is incumbent upon educational institutions to indoctrinate students into a culture of multidisciplinary collaboration. Though there is no quick fix to the US health care system, a cultural transition toward team-based care could certainly be one of the most crucial and enduring solutions for future generations.

Acknowledgments

Disclosure

The authors report no conflicts of interest in this work.

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Supplementary materials

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US Healthcare: What's Broken & How to Fix It
Healthcare Innovation Symposium VII
The Student Perspective

October 9, 2013
Emory University

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Figure S1 HIP student symposium presentations and video stream.
Abbreviation: HIP, Healthcare Innovation Program.

Table S1 SICK: Healthcare in the modern era, 2013: course prospectus and materials

#	Date	Category	Session topic	Lecture topic	School	Dept	Lecturer(s)	Min
1	1/16	General/ medical	Introduction	Introduction to course schedule and grading	Medicine	Neurology	Conveners	30
				Doctor's perspective with cases	Medicine	Neurology	Jaffar Khan Bob Gaynes	60
				A social perspective with cases	Arts and Sciences	Sociology	Jeff Mullis	60
2	1/23	Economics	Macro-economics	Overview healthcare economics US	Arts and Sciences	Economics	Sarah Markowitz	60
				Payment models: current and alternative	Public Health	Health Policy	Steve Culler	60
				Old and new care models	Medicine	Neurology	Gregory Esper	60
3	1/30	Context and comparison		Historical context for modern healthcare	Arts and Sciences	History	Elena Conis	90
				Comparative health systems	Public Health	Health Policy	Richard Saltman	90
4	2/6	Operations I	Operations management	Physician/provider financial challenges	Business	Neurology	Diwas KC	60
			Operations management	Workforce solutions and alternatives	Nursing		Dena Gilland	60
			Care models	Integrated care and other models	Medicine		Rick Gitomer	60
5	2/13	Operations II	Prevention	Cost control and prevention	Public Health	Health Policy	David Howard	60
			Measures	Outcomes/quality measures	Public Health	Health Policy	Kimberly Rask	60
			Measures	Benchmarking	Public Health	Health Policy	Edmund Becker	60
6	2/20			<<<Midterm presentations/evaluations>>>				90
7	2/27	Operations III	Access	Access to care, Medicaid	Public Health	Health Policy	Kathleen Adams	60
			Social determinants	Vulnerable populations: Indigence Pediatrics Elderly LGBT	Panel	Panel	Panel: Leon Haley Barbara Stoll Ted Johnson Schneider	90 20 20 20 20
8	3/6	Healthcare and politics	Healthcare policy	Doctors and congress: politician perspective	NA	NA	Tom Price	60
			Healthcare policy	Doctors and congress: lobbyist/liaison	Multiple	Multiple	Matthew Hicks Andy Lord	60
			Healthcare reform	Current healthcare reform and ACA	Medicine	Medicine	Maura George	60

#	Date	Category	Session topic	Lecture topic	School	Dept	Lecturer(s)	Min
9	3/20	Medicine and the law		Mass regulations on healthcare and ACA	GSU Law	Law	Fuse Brown	60
				Liabilities, regulations and implications	GSU Law	Law	Leslie Wdl	60
				Patient advocacy and vulnerable populations	Law	Law	Ani Staz	60
10	3/27	Ethics and philosophy	Ethics	Principles of medical ethics overview			John Banja	90
				"Death panels"/end of life	Medicine	Neurology	Adam Webb; Tammie Quest	90
11	4/3	Scholarship		State of health professional education			Melissa Faulkner	60
				The state of research in the US			David Stephens	60
				Academic medical centers	Medicine	Neurology	Fred Sanfilippo	60
12	4/10	Technology	Health and clinical informatics	Medical informatics Specifics TBD	Medicine/ GA Tech	Medicine	Dan Russler	60
			Health and clinical informatics	Medical informatics Specifics TBD	Medicine/ GA Tech	Medicine	Mark Braunstein	60
13	4/17	Special populations	Global health	International health and outreach	Public Health	Medicine	Carlos Del Rio	60
			Emergency care	Emergency care in the US	Medicine	Emergency Medicine	Jason Liebzeit	60
			Vulnerable populations	Indigent care and other vulnerable populations	Medicine	Emergency Medicine	Jada Bussey-Jones	60
14	4/24			<< Final presentations >>				

Abbreviations: ACA, Affordable Care Act; Dept, department; GA, Georgia; GSU, Georgia State University; LGBT, lesbian, gay, bisexual, and transgender; Min, minutes; NA, not applicable; TBD, to be determined.