Jon Gilbert Fox

Geisel First-Year Students are MaD (Making a Difference)

~ by Susan Green ~

In a format similar to Shark Tank, the popular reality television series where aspiring entrepreneurs pitch their ideas to potential investors, medical student Emily Dollar makes her pitch.

Poised and confident, she launches into an assessment of obesity counseling for adolescent patients. Research, she says, suggests clinicians are uncomfortable raising the topic of obesity during patient wellness visits, but when they do many use inconsistent language that sends subtle and shaming messages. Current counseling is often ineffective and perhaps harmful—though inadvertent, these messages have the power to cause self-esteem damage during this tender stage of human development. She wants to change this dynamic.

On this sunny Monday morning in mid-May, Dollar is among eight student finalists pitching proposals designed to address serious issues affecting health care or population health during the Make a Difference (MaD) Project and Symposium, the culmination of a new first-year course—Patients and Populations: Improving Health and Health care—that launches Geisel's health care delivery science curriculum.

The brainchild of course director Brenda Sirovich, MD, MS, an associate professor of medicine at Geisel and at The Dartmouth Institute for Health Policy and Clinical Practice, the MaD Project and Symposium coalesced broad course themes around actionable student-initiated proposals to improve medicine, health care, or population health—proposals designed to be realistically implementable by a small team of students. Medical students can't wait to be practicing medicine, "and this project allows them to see themselves as players leading change in the world of medicine and health care," she says.

Many students viewed the symposium as the course highlight.

breaking new ground

Today's physicians need to possess a host of capabilities that extend far beyond the conventional biomedical and clinical science curriculum—cultivating these has not conventionally fallen under the purview of undergraduate medical education. Responding to unprecedented progress in biomedical science and increasing complexity of clinical practice, Geisel, along with medical schools both here and abroad, has been grappling with how to best prepare students to both thrive in the increasingly complicated world of medicine, and to help inform or lead needed change.

Medical schools are adapting to this new charge with varied approaches. Patients and Populations is Geisel's first step on a measured and flexible path toward incrementally introducing curricular changes within an evolving four-year health care delivery science curriculum.

Top row, L-R: Megan Bunnell, Ahmad Dbouk, Sandy Rao, David Leander.
Seated, L-R: Simrun Bal, Jordan Wong, Emily Dollar, Tommy Flynn.

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Creating a new course is far from simple—especially one intended to teach medical students adaptability and leadership in the face of emerging and shifting priorities in health care.

Patients and Populations' four primary modules, each initially designed as a standalone course under a more ambitious curricular overhaul, addresses these capabilities along with the tools to address errors and failures in delivering care within local systems, an understanding of the cultural, regulatory, and financial context in which medicine is practiced, and the ability to make statistical sense of local data and published research. Proficiency in clear communication is an overarching theme of the course.

Co-led by four faculty co-directors, the course's goal is to foster in medical students the knowledge and capabilities to allow them to make a difference in the health of communities and populations, and advance the effectiveness and value of health care.

Sirovich and the course planning team—an impressive group of faculty, along with an instructional designer and a biomedical librarian with expertise in pedagogy—spent a great deal of time hashing out both the big picture and the nitty-gritty details of the course. Debating whether the course's four modules should be discrete or interwoven, deciding on an order for the modules, content should favor concepts or applications, how to best support engagement with key ideas, and how to foster students' curiosity and determination to harness evidence to lead change.

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"One of the first things we said to students was, 'We are doing this for the first time and what we can guarantee is it's not going to be perfect,'" Sirovich recalls. "'We are going to miss—and you'll tell us how we missed ... we'll be counting on you to help us make the course and our teaching better.'"

There were rough patches as the new course unfolded. The misses were both operational and pedagogical, and students weren't shy about bringing these to the attention of Sirovich and her team. At the end of the day, Sirovich says she and other faculty learned as much this first year as did students, including recognizing aspects of the course that did or did not resonate.

"Our first two class sessions began by motivating and demonstrating the overarching course goal of addressing issues that undermine health or health care—and then we immediately launched into the first module: epidemiology and biostatistics," Sirovich explains. "For many students, it felt like a left turn that had them wondering what was going on. We've learned we need to be clear as to how the modules are distinct but complementary, and how each remains connected to the big picture. Our mistake was not continually reinforcing this throughout the course."

Carolyn Murray, MD, MPH, an assistant professor of medicine at Geisel and The Dartmouth Institute, who leads the Medicine in Context module observes, "We are trying to show students the big picture of the US health care system—how it has been financed, including the historical aspects of why we have employer-based health insurance, and factors outside of health care that are the major drivers of the health status of our patients and the population overall.

"Understanding how and why we have been incentivized to treat disease, not prevent disease is critical," Murray adds. "The Dartmouth Institute is known for its research into geographic variation in health care services, and the lack of a relationship between more health care and better health. Students also explore geographic variation in other health determinants, such as health behaviors, and socioeconomic status and how these factors are far more predictive of health status. Both of those concepts, woven into this course and throughout the curriculum, are central to addressing health disparities."

Murray says equipping medical students with better skills in population health is critical if this generation of doctors is going to make a difference in improving population health. For many students, thinking about these issues and concepts is what first attracted them to medicine.

"In many ways we are already doing this throughout the four-year curriculum," says Greg Ogrinc, MD, interim senior associate dean for medical education at Geisel, who was instrumental in getting the course off the ground. "But what's new is everything is now being taught during the first year, giving students a depth of knowledge to build on throughout their medical education."

population and clinical convergence

Geisel's goal is to graduate physicians who excel in basic biomedical sciences, who are capable of delivering high-quality, evidence-based patient care, who are skilled in discovering and disseminating new knowledge, and who can improve the health care delivery system.

"The reality is there are so many pressures on health care—there is exponential medical knowledge, cost pressures, the need to understand health care at a systems level, and the Affordable Care Act that challenges delivering high-quality care while we have increased the number of insured individuals in the US," Ogrinc says. "You can feel overwhelmed if you don't understand the larger context of health care delivery."

As a physician who has worked in public health, Murray is aware of the division between clinical medicine and population health. "But those disciplines are converging now in a way that is very satisfying for me, because in the past people didn't understand what doctors do at the popu-

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Brenda Sirovich, Patients and Populations course director.

lation level to improve health—they didn't view you as a real doctor."

Practicing medicine at both the clinical and population level means doctors are not simply treating the patient in front of them, but they are using data to help them to consistently treat all of their patients who have the same health issue so there is more focus on improving health outcomes.

This convergence of clinical care and population health isn't a new concept at Geisel—the medical school has been steeped in it for decades because of the pioneering work being done at The Dartmouth Institute.

"Since the beginning of the Center for Evaluative Clinical Sciences back in 1988 with Jack Wennberg, Paul Batalden, and Gerry O'Connor," Ogrinc says, "understanding the outcomes of care, delivery of care, and quality of care have been a focus." The Center for Evaluative Clinical Sciences became The Dartmouth Institute in 2010.

And the interdisciplinary work in health care delivery science being done at The Dartmouth Institute has influenced Geisel's curriculum by putting greater emphasis on how the health care system functions. Health care delivery science is designed to bring everything together—moving the delivery of care from an either/or population of patients to both/and.

Systems exist at many levels. All of these changes, he notes, filter down to the micro-systems where care is delivered to patients and families—to individual clinician/patient interaction whether as part of the broad US health care system, clinical team, intensive care team, or surgical team.

Ogrinc devotes a significant amount of time thinking about this process and how it affects both medical education and patient care.

"It is satisfying to be able to work on the educational side of this to develop individuals who will be part of that system. We need to develop physicians who are responsive to change and who are comfortable with change—we don't practice medicine the same way we did ten years ago," he notes, "and it will continue to change in the future. We need to train students who can practice in and be leaders in this health care system."

Murray agrees. "We are trying to give medical students the skills and competencies they need to navigate the changing health care system," she says. "This is a very fluid period of time—all of the systems are changing as they are sitting in the classroom."

Ultimately, Geisel wants medical students to be adaptive learners who can easily access and interpret continually evolving information and who understand how to use new data to provide excellent patient care within the context of rapid change. And there is evidence medical students are motivated to think more broadly about health care.

Not all students, of course, were enthusiasts. Some were unconvinced the course goals matched their own—in a sea of biomedical sciences, how the course applied to them was an enigma. Others, more inclined toward studying the underpinnings of health care delivery and the broader determinants of health, yearned for deeper exposure and an enhanced opportunity to think about these concepts at the undergraduate medical education level.

Though there was a bit of dissent, Sirovich believes the idea for the class resonated with most students. "My sense is that even with some rough patches, we fulfilled our mission of delivering a course that helped students hold onto their idealism, endorsed their drive to make a difference, and helped them develop capabilities to go forth to lead change in medicine and health care. I think in that way, it will have been value added for most students."

This is what Sirovich wants for the course.

"It's never going to be right—students will always say things need to change, and faculty are continually seeing ways to tinker and improve. As I said in my closing remarks at the MaD Symposium, on the last day of class: 'What I've learned in the past six weeks is that the ideas that fueled this project—and this course—were right ... even if we didn't execute as well as we could have.' It's so important that we put the modules together in a way that makes sense to students; that we make sure to keep an eye—and students' eyes—on how each lesson applies to health and medicine, AND that we demonstrate, continually, how each connects back to the big picture. In many ways that last piece should be our most important focus going forward."

For Dollar, the course was a success. "The Patients and Populations MaD Symposium was a great way to begin my research experience," she says. Last summer Dollar completed a research internship with Anna Adachi-Mejia, PhD, assistant professor of pediatrics at Geisel and deputy director of the Health Promotions Research Center at Dartmouth, where she further explored the issues in her MaD proposal.

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