Changing the Culture of a Medical School by Orienting Students and Faculty Toward Community Medicine

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Abstract

Oklahoma's health status has been ranked among the worst in the country. In 1972, the University of Oklahoma established the Tulsa branch of its College of Medicine (COM) to expand the physician workforce for northeastern Oklahoma and to provide care for the uninsured patients of the area. In 2008, the Tulsa branch launched a distinct educational track, the University of Oklahoma COM's School of Community Medicine (SCM), to prepare providers equipped and committed to addressing prevalent health disparities.

The authors describe the Tulsa branch's Summer Institute (SI), a signature program of the SCM, and how it is part of SCM's process of institutional transformation to align its education, service, and research missions toward improving the health status of the entire region. The SI is a weeklong, prematriculation immersion experience in community medicine. It brings entering medical and physician assistant students together with students and faculty from other disciplines to develop a shared culture of community medicine. The SI uses an unconventional curriculum, based on Scharmer's Theory U, which emphasizes appreciative inquiry, critical thinking, and collaborative problem solving. Also, the curriculum includes Professional Meaning conversations, small-group sessions to facilitate the integration of students' observations into their professional identities and commitments. Development of prototypes of a better health care system enables participants to learn by doing and to bring community medicine to life.

The authors describe these and other curricular elements of the SI, present early evaluation data, and discuss the curriculum's incremental evolution. A longitudinal outcomes evaluation is under way.

Culture change is hard. Changing a medical school's culture is particularly daunting, especially when the change aims to focus on health disparities and the social determinants of health. In this report, we describe how, in 2008, the University of Oklahoma College of Medicine's (COM's) School of Community Medicine (SCM), located in Tulsa, initiated a process of culture change at the Tulsa campus with the creation of the Summer Institute (SI), a prematriculation immersion experience in community medicine. The SI brings medical school faculty and entering medical and physician assistant (PA) students together with students and faculty from other disciplines to develop a culture of community medicine. The SCM's concept of community medicine merges care for individual patients across all stages of health and illness with civic responsibility and public health principles to improve the health of whole communities. In our view, community medicine is not restricted to primary care practice but, rather, focuses on the interrelatedness of social, behavioral, economic, and environmental factors affecting the health of individuals, and the collaborative and coordinated care that can be provided by every health care discipline.

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Background

Social inequities in our communities result in dramatic differences in morbidity and mortality for underserved populations.[1] Over the past two decades, medical schools were urged to examine their social missions in preparing new physicians for care of the entire population.[2–7] The civic engagement movement in higher education encourages academic health centers to reduce health disparities and to better educate health professionals in the realities of issues faced by vulnerable populations.[8,9] Embarrassingly, many communities that are suffering from dramatic health disparities, poor health outcomes, and low access to health care are located so close to health sciences campuses that they are called "shadow communities."[3] The University of Oklahoma COM established its Tulsa branch in 1972 to train more providers to serve northeastern Oklahoma and to provide much-needed care for uninsured patients in the region.

Paradoxically, the challenges that prompted establishing the Tulsa branch four decades ago may be more acute today. Oklahoma ranked 50th on the 2011 Commonwealth Fund's State Scorecard on Health System Performance.[10] The poverty rate and the number of uninsured are higher in Oklahoma than the national average.[11] More than a quarter (26%) of children, 14% of the elderly, and 35% of the rural population live below the federal poverty level.[11] Similarly, almost 20% of Oklahomans lack health insurance. Minority groups in Oklahoma experience higher rates of poverty and are less likely to obtain and maintain health insurance.[11]

Furthermore, dramatic disparities in access to health care exist in Tulsa. Although 40% of the population resides in north, east, or west Tulsa, these areas have only 4% of the health care providers. Not surprisingly, these underresourced areas have the worst health outcomes.[12,13] An analysis, by Tulsa ZIP codes, of age of death revealed that those living in north Tulsa died on average 14 years earlier than those in south Tulsa.[14]

To better address the disparities in health access and outcomes, the Tulsa campus has embarked on a process of institutional transformation. In 2008, a generous gift from the George Kaiser Family Foundation enabled the creation of a distinct educational track: the University of Oklahoma COM's SCM, as the Tulsa campus is now known. This change signaled the university's commitment to improve the health of the entire community by focusing its education, service, and research capabilities on the prevailing health inequities in the community.

The SI: Fostering an Orientation to Community Medicine

The SI provides students in the SCM Track an immersive experience in the Tulsa community. The weeklong (50-hour) residential, prematriculation course allows students to experience community medicine as a lived experience. The SCM senior administration leads a four-month planning committee of faculty and staff to structure the SI each year. A project manager coordinates the SI logistics.

Structure of the SI curriculum

The SI curriculum follows the path of emergent design described by Otto Scharmer and named Theory U. Theory U is a framework for learning, leading, innovating, and profound systemic renewal.[15] The SI's adaptation of the "U Journey," described in more general terms in Figure 1, consists of five steps.

- First, all of us—faculty and students—who are participating in SI engage ideas about community medicine from multiple perspectives, with respect to both academic disciplines (e.g., medicine, social work, or urban design) and relationship to the health care system (e.g., patient, payer, or advocacy group) through interviews, discussions, and lectures.
- Second, we travel into the community to become aware of needs and resources firsthand. Through a simulation experience, we learn about living in poverty, and we interview patients and other community members about their health care needs and their goals for an improved health care system.
- Third, reflecting on our experience, we feel the moral imperative to take action.
- Fourth, we cocreate prototypes of a future health care system.
- We end the journey committed to advancing the practice and science of community medicine.

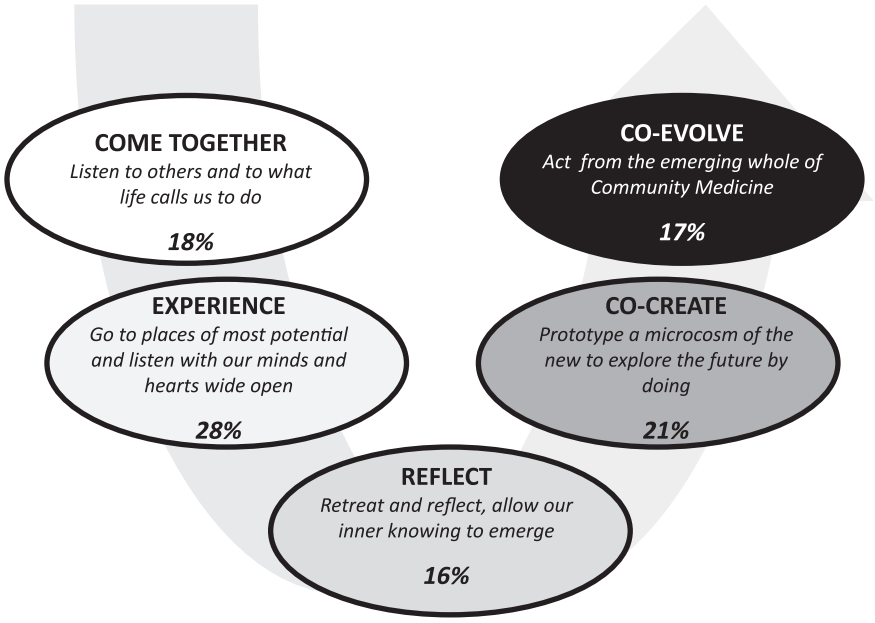

Figure 1 The steps of the U Journey of the Summer Institute, University of Oklahoma College of Medicine, School of Community Medicine; percentages indicate the approximate amount of time spent on each step. The SI curriculum follows the path of emergent design described by Otto Scharmer and named Theory U, which is a framework for learning, leading, innovating, and profound systemic renewal. By taking their U Journey, students and faculty acquire the knowledge that their thoughts and actions influence the whole system—they themselves are community medicine. They cease to see themselves only as passive and unconnected specialists in the health care ecosystem and learn to see themselves as empowered and integrated actors in the ecosystem that is the future of the whole community. (This figure adapted with permission of the publisher of the original figure in Theory U: Leading From the Future as It Emerges. Copyright © 2007 by C.O. Scharmer. Barrett-Koehler Publishers, Inc., San Francisco, California. All rights reserved. www.bkconnection.com.)

Chart 1 shows a representative schedule of the SI. The shading of each activity corresponds to an identical shading in Figure 1 that indicates a phase of the U Journey.

Participants

Each year, the SI invites faculty from across the health professions, social work, urban design, education, human relations, organizational dynamics, and library sciences. In 2008, only first-year medical and PA students were included; however, since 2009, students from other disciplines, including undergraduates, have been invited. The addition of students from social work, pharmacy, nursing, public health, and other fields greatly enhances the interdisciplinary experience. From 2008 through 2013, 174 medical students, 148 PA students, 103 other health profession students, and 21 non-health-professions students participated. Faculty participants were 139 medical faculty, 50 from other health professions, and 82 non-health-care faculty. Overall, 64% of participants were from medical professions, 21% from other health professions, and 14% from nonhealth professions.

Teaching and learning methods: Small-group activities

Large-group activities shape the SI's learning community; however, 80% of the SI activity occurs in small groups to encourage meaningful dialogue with interdisciplinary peers and members of the local community. Participants are members of four types of

Chart 1

A Representative Schedule of the Summer Institute, University of Oklahoma College of Medicine, School of Community Medicine, 2008–2013[a]

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8:00		Lecture	Lecture	Lecture	Lecture	Lecture
9:00		Community Interviews	Poverty Simulation	World Cafe	Professional Meaning	Poster Evaluation
10:00				Prototyping Orientation	Prototype Work Group	
11:00						
12:00		SNAP Lunch	World Cafe	Idea Market	World Cafe	Celebrate Community
1:00		Community Interviews	Shadow Patients	Prototype Work Group	Prototype Work Group	
2:00						
3:00						
4:00	Welcome Reception	Professional Meaning	Professional Meaning	Prototype Feedback		
5:00						
6:00	Lecture	PhotoVoice	Free	Social Event	Free	
7:00	Free					

Abbreviation: SNAP indicates Supplemental Nutritional Assistance Program.
[a]The Summer Institute (SI) is a weeklong, prematriculation immersion experience in community medicine. It brings entering medical and physician assistant students together with students and faculty from other disciplines to develop a culture of community medicine. The shadings in the chart indicate the steps in the SI's U Journey that are shown by corresponding shadings in Figure 1. See the text of the article for descriptions of the various activities shown in the chart.

transgenerational and interprofessional teams: Appreciative Inquiry Teams, World Café Groups, Professional Meaning Groups, and Prototype Development Teams, each described below.

Appreciative Inquiry Teams. Appreciative Inquiry (AI) Teams include one faculty member from medicine and one from another discipline, and three to five students from at least three disciplines. There are 20 to 25 AI Teams in each SI. AI Teams conduct interviews of community stakeholders to see firsthand where they live or work and to learn their perspectives on the challenges and opportunities that have an impact on health. Stakeholders include traditional and nontraditional health care providers, social service agencies, health policy experts, administrators, elected officials, payers, community leaders, small-business owners, and patients. AI Teams use travel time to prepare interviews and to debrief lessons learned. Teams experience different sections of the city and observe the community's inequities by contrasting opulent living conditions with impoverished and unsafe ones.

In 2009, AI Teams gathered standardized information to create a Living Exhibit. Photos of stakeholders and their environments, along with statements of their contributions to health care, were mounted and displayed around the meeting room, creating, as the week progressed, a visual record of the community. The Living Exhibit is now on permanent display in the SCM. Realizing that participants had not heard the *voice* of the typical community member, in 2010 the social science and urban design departments implemented a PhotoVoice research project. Community members, not from the health care sector, took a series of photos representing various themes pertaining to health assets and challenges. AI Teams used the photos to guide interviews that allowed the community members to narrate their lives through photos.[16–18] In 2011, the SI replaced PhotoVoice with patient interviews in order to better appreciate their experiences of health and health care.

World Café Groups. World Café Groups (WCGs) allow SI participants to learn from other AI Teams, with six participants from different AI Teams meeting at a table in a café simulation.[19] Like travelers sharing stories at an inn, participants share their community interview experiences. One WCG participant hosts the conversation, capturing emerging themes by writing them down on a paper table cover. At the halfway point, participants are dispersed to other tables to cross-pollinate ideas from other interviews.[20] During the WCG, the stories of at least 12 different interviews weave a fabric of community needs and services.

Professional Meaning Groups. Professional Meaning Groups are formed when the SI combines two AI Teams to explore the ethical and moral structure of participants' professions in response to the interview experiences. Professional Meaning Groups take participants to the bottom of the U in the U Journey (shown in Figure 1) to reflect on what the community is calling them to do. A designated facilitator ensures respectful sharing and resolution of any interprofessional conflict stirred by differing views about the community's needs and types of professionals who should address those needs.

Prototype Development Teams. Prototype Development (PD) Teams self-organize around an idea presented by one or more participants ("idea vendors") in an "idea market" using open-space technology.[21] PD Teams, comprising students and faculty from various disciplines, move up the right arm of the U Journey by cocreating prototypes (e.g., a redesigned letter with lab results for patients with low health literacy) that contribute to better health or health care.

PD activities in the SI have evolved greatly. In 2008 and 2009, members of these teams gave oral presentations and received feedback through questions and comments. In 2010, teams created a Lean A-3 diagram to demonstrate a flawed process and a plan to improve it.[22] In 2011 and 2012, teams wrote abstracts, created posters, and engaged content experts to advise them. In 2013, the SI worked with the Oklahoma University Center for the Creation of Economic Wealth to add a Lean LaunchPad business model that identified a value proposition for each prototype for a specific stakeholder or customer and proposed a financial and operational plan to implement the prototype.[23]

Teaching and learning methods: Large-group activities

Large-group experiences build a community of learners and coordinate small-group work. The SI begins on Sunday evening with a welcome orientation. Nametag lanyards and

T-shirts in the colors of participants' academic hoods highlight the diversity among participants. AI Teams meet and plan for the next day's interviews. The orientation ends with an anchoring lecture that sets the tone for the week's learning journey.

Each morning, faculty and staff participants review logistics and lessons learned, while students mingle over breakfast, building a learning community. Midweek, SI participants meet for a social evening. Friday at noon, SI participants celebrate community medicine with community stakeholders who contributed to the success of the learning.

Anchoring lectures. The formal educational program begins each morning with a lecture related to community medicine. Some speakers have devoted their careers to framing and solving challenges in public health. Other speakers share their life experiences that highlight issues in community medicine. Some lectures are delivered by panels of speakers—patients, interdisciplinary faculty teams, or community spokespersons—underscoring the collaborative nature of community medicine.

Poverty simulation and Food Stamps lunch. A poverty simulation was introduced in 2009 in which participants spend a simulated month attempting to keep their families afloat while navigating social service systems and coping with the pressures of life in poverty.[24] The simulation creates an awareness of life in poverty by emphasizing the frustration of standing in lines, the pressure of feeding a family, and the challenges of navigating difficult agency guidelines. In 2010, we added a Supplemental Nutritional Assistance Program experience, in which AI Teams were allocated $2.50 per person (the approximate amount available per meal for Oklahomans on Food Stamps) to provide lunch for the team.

Health care for vulnerable patients. Students attend the student-run University of Oklahoma–Tulsa Bedlam Clinics, where they join an uninsured patient in the waiting room and see a medical visit from the patient's viewpoint. By shadowing patients rather than doctors, students witness the complexity for patients of health care for the poor.

Prototype evaluation and feedback. On Friday morning, PD Teams display their prototype posters and receive feedback from SI participants. From 2010 to 2012, the feedback process included a rubric for group scoring of the prototypes. In 2013, we shifted to individual participant feedback using a mobile device application that captured individual ratings and aggregated them for analysis.

Evaluation

Quantitative data (pre-, post-, and follow-up SI surveys) and qualitative data (student journals, responses to open-ended reflective questions, interviews, and photographs) are collected each year as part of an ongoing longitudinal evaluation. Participants consented to include their deidentified data in the analysis we present here. The evaluation instruments and protocols were approved by the University of Oklahoma institutional review board.

We assessed the impact of the SI curriculum on students' attitudes toward the poor using the Medical Students' Attitudes Toward the Underserved instrument.[25] Table 1 shows the results of paired samples combining data from years 2009 to 2012 for all students, which indicate a statistically significant positive shift in mean scores of attitudes toward the underserved. When we limited the analysis to medical and PA students, the paired scores from pre- to posttest remained statistically significant.

Qualitative data show that students have powerful learning experiences during the SI. Particularly salient are the community interviews, exposure to underserved patients in the clinic, and the relationships forged with faculty and other students. Many students solidify their beliefs about the importance of serving underserved patients. For others, the SI introduces information that is new to them and that shifts their previous beliefs about the underserved, determinants of health, and causes of poverty. Participants value the poverty simulation, community interviews, shadowing of patients, prototype development, and the PhotoVoice interviews. One quote from a student captures this point:

> Going to visit patients, providers, community agencies, etc., to understand the real-world view from their vantage point, I was able to gather a better understanding of how things work or don't work out in the community, that we don't receive in the classroom.

SI participants learn to appreciate other disciplines and to value experiences and opportunities for interdisciplinary collaboration and teamwork. The qualitative data reveal important lessons related to communication across disciplines. The SI experiences allow for exploration of conflict related to professional biases. A student indicates this discovery in the following quote:

> I have learned that professions need to better communicate with each other in order to help the community as a whole. Egos need to be left aside, and people need to focus on the bigger picture, which is health care for all in the community.

Table 1

MSATU Mean Z-Scores at Pretest and Posttest, Summer Institute, University of Oklahoma College of Medicine, School of Community Medicine, 2009–2012[a]

Category of students	Number of students	Pretest score: mean (SD)	Posttest score: mean (SD)	Mean difference in pretest and posttest scores	*t* Value
All	150	–0.05 (1.00)	0.21 (0.98)	+0.26	+4.655[b]
Medical and physician assistant	96	–0.00 (1.02)	0.22 (1.02)	+0.22	+3.245[c]

Abbreviation: MSATU indicates Medical Students Attitudes Toward the Underserved instrument.
[a]The Summer Institute is a weeklong, prematriculation immersion experience in community medicine.
[b]$P < .001$.
[c]$P < .01$.

An analysis of prototype presentations provides insight into participants' understanding of issues in community medicine. We classified the focus of each prototype created from 2008 through 2013 according to eight general features of community medicine. Table 2 shows the numbers and percentages of the 74 prototypes that addressed each of these 8 features. On average, each prototype addressed 2.7 features.

For future analysis, we are using follow-up surveys, testing, and educational program data to track student attitudes regarding community medicine topics in the overall curriculum, their career choices, attitudes about care for the underserved, and their willingness to collaborate to better the health care system. Additionally, we are tracking collaboration among faculty and community agencies to better understand their contributions to community medicine.

Summary and Discussion

We have described a program that introduces future health care professionals and their teachers to the role of community medicine in addressing determinants of health, disparities, and innovations to improve the health of a community. We showed that the SI experience positively shifted student attitudes toward the underserved; future research will help us know how lasting these changes are. Interviews with patients and other community stakeholders provide students a real-world view of the complexity of caring for the underserved. Also, students gain an appreciation of the roles of other disciplines and the need for effective interdisciplinary communication. In fact, a major approach for culture change through the SI involves interprofessional team-based learning.[26] The literature suggests that learning with students from other professions will better prepare future health care providers to work respectfully and effectively in teams. The earlier in professional development these experiences occur, the more likely they will translate into practice.[27,28] In recognition of the value of interprofessional learning experiences, the Liaison Committee on Medical Education has adopted a new standard requiring educational programs to prepare students to function collaboratively on interdisciplinary teams.[29]

The SI educational methods encourage novel collegial interactions between students and a diverse group of faculty from across professions, working together as learners to discover the meaning and practice of community medicine. Shifting from a "sage on a stage" culture to faculty and students becoming colearners and coinnovators allows a level of collegiality and respect not often experienced in learning situations. In addition, we maintain that the key to framing the attitudes of medical practitioners towards the care for underserved patients requires the shift from faculty teaching their expert views to students, to faculty and students colearning the lived experiences of others.

The SI is a strong first step in creating a culture for learning and implementing community medicine. We have introduced a similar culture orientation for new residents in our GME programs and in a faculty development program across disciplines. We believe that the curriculum of the SI is transferable, and we hope that this article will encourage other schools to consider creating their own versions of the SI as a powerful way of teaching and learning about health disparities and social determinants of health.

A limitation of the SI in changing medical school culture is its short duration. The experience of a uniquely collegial culture of colearning ends with the beginning of a more traditional lecture-based health professions curriculum. Moreover, the focus shifts from the needs of patients and their lives in the community to the study of abstract basic sciences. The 100-mile distance between Oklahoma City and Tulsa hinders the continued development of relationships between students and Tulsa faculty forged in the SI, as all COM students complete their first two years on the main campus. To bridge this geographic and philosophical distance, community medicine faculty travel to Oklahoma City to teach Tulsa-bound students in the introduction to clinical medicine, medical ethics, and enrichment courses. A planned four-year track conducted entirely in Tulsa will help mitigate the two-campus separation. The limitations of the SI experience for students from other disciplines who remain in Tulsa are no less acute. The principles of democratic learning, collegiality, and interprofessional teamwork are not yet included in the curricula of nursing, social work, pharmacy, and other health professions at our university.

An Important First Step

Transforming the culture of a medical school to focus on health disparities and community medicine requires strong leadership, planned experiential learning, action-based participatory research, and a deep immersion in the community. This approach allows faculty and students to understand the issues faced by the community's most vulnerable members. Selecting a group of learners across the health professions and other disciplines creates a community of scholars who open their hearts, minds, and wills to bring a better health and health care future to their patients and clients. Beyond classroom learning, the education must include personal experiences that perturb our emotions and challenge our moral stance as helping professionals. The SI is an example of such a learning experience and is an early step toward wider cultural change on our campus. Short-term evaluations show that the SI experience changes attitudes and bonds

Table 2

Focuses of 74 Prototypes Created by Participants in the Summer Institute, University of Oklahoma College of Medicine, School of Community Medicine, 2009–2013[a]

Feature of community medicine that is a focus of a prototype	No. (%) of prototypes with the focus
Education	49 (66)
Care improvement	33 (45)
Community building	33 (45)
Lifestyle and prevention	29 (39)
Information technology	19 (24)
Social services access	18 (26)
Workforce capacity	16 (22)
Research	6 (8)

[a]The Summer Institute is a weeklong, prematriculation immersion experience in community medicine. Summer Institute teams, comprising students and faculty from various disciplines, cocreate prototypes of better health care. (An example of a prototype is a project to redesign the letter with lab results that is sent to patients with low health literacy.) The authors classified the focus of each prototype according to 8 general features of community medicine, shown in this table. On average, each prototype addressed 2.7 features. The example prototype stated above addressed 3 of these features: education, care improvement, and information technology.

groups to enjoy interdisciplinary work while focusing on community health problems. Subsequent studies are needed to determine how this type of experience might change the ultimate career choices of students who have the experience as they are beginning medical school or education in other health professions.

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