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## ADDRESSING TEACHING AND TRAINING GAPS

# Innovative Health Care Disparities Curriculum for Incoming Medical Students

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**PURPOSE:** 1) To pilot a health disparities curriculum for incoming first year medical students and evaluate changes in knowledge. 2) To help students become aware of personal biases regarding racial and ethnic minorities. 3) To inspire students to commit to serving indigent populations.

**METHODS:** First year students participated in a 5-day elective course held before orientation week. The course used the curricular goals that had been developed by the Society of General Internal Medicine Health Disparities Task Force. Thirty-two faculty members from multiple institutions and different disciplinary backgrounds taught the course. Teaching modalities included didactic lectures, small group discussions, off-site expeditions to local free clinics, community hospitals and clinics, and student-led poster session workshops. The course was evaluated by pre-post surveys.

**RESULTS:** Sixty-four students (60% of matriculating class) participated. Survey response rates were 97–100%. Students' factual knowledge (76 to 89%,  $p < .0009$ ) about health disparities and abilities to address disparities issues improved after the course. This curriculum received the highest rating of any course at the medical school (overall mean 4.9, 1 = poor, 5 = excellent).

**CONCLUSIONS:** This innovative course provided students an opportunity for learning and exploration of a comprehensive curriculum on health disparities at a critical formative time.

**KEY WORDS:** health disparities; curriculum; education; medical students; underserved.

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## INTRODUCTION

Health care disparities in the quality of care and clinical outcomes are important national problems, and there is a critical need to develop innovative curricula to teach medical students about these issues.<sup>1,2</sup> Key medical professional organizations like the Institute of Medicine and educational accreditation

agencies, including the Accreditation Council for Graduate Medical Education (ACGME) and the Liaison Committee on Medical Education (LCME), recommend training for health care professionals in the broad issues of health disparities.<sup>3–5</sup> However, there is currently no consensus regarding the best timing, setting or teaching modalities to effect changes in attitudes, behaviors, and skills.<sup>6,7</sup> Moreover, the major training focus has been on cultural competency, not the broader issue of disparities.

A systematic review of cultural competency education programs shows that they improve provider attitudes, knowledge, and skills regarding cultural issues.<sup>8</sup> Unfortunately, cultural competency programs have been criticized as lacking a comprehensive skill set, being limited in scope by not sufficiently addressing important social, political, and economic factors that contribute to health and health care disparities, and failing to demonstrate improved health outcomes or diminished health disparities.<sup>9,10</sup> The few existing evaluations of disparities courses are limited by the small number of students participating,<sup>11</sup> or evaluation tools that measured significant changes in attitudes but did not measure changes in knowledge or skills regarding health disparities.<sup>12</sup> Therefore, we developed and evaluated an elective course on health care disparities designed to: 1) introduce incoming first year medical students to health disparities issues and improve their knowledge, skills, and attitudes, 2) help medical students to become aware of personal biases regarding racial and ethnic minorities, 3) inspire medical students to make a commitment to serve indigent populations.<sup>13,14</sup> This paper describes the course and analyzes changes in knowledge.

## METHODS

### Course

**Overview.** The course “Health Care Disparities in America” was offered to all matriculating students to the University of Chicago Pritzker School of Medicine. The course was an intensive 5-day elective course the week before orientation week. Course requirements included presence at all lectures, small group discussions, and community site visits, as well as active participation in discussion. Recommended readings were provided in a syllabus and teams of students were required to make a poster on 1 of 5 health disparity topics. All grades during the first 2 years are pass/fail.

**Goals.** We incorporated the goals that the Society of General Internal Medicine (SGIM) Health Disparities Task Force developed for courses on health disparities<sup>15</sup>: 1) learners should gain knowledge of the existence and magnitude of health disparities, including the multifactorial etiology of health disparities and the multiple solutions required to eliminate them, 2) learners should examine and understand the potential for mistrust, subconscious bias and stereotyping that practitioners or patients or both may bring to the clinical encounter, 3) learners should acquire the skills to effectively communicate and negotiate across cultures, including trust-building and timely utilization of culturally appropriate interpreter services, and 4) learners should develop a commitment to reduce health disparities, particularly those caused by disparate health care.

**Teaching Methods.** Several teaching modalities were employed: didactic lectures lasting 50–60 minutes, 20-minute lectures on specific diseases important in Chicago’s South Side com-

munity, small group discussions led by 2 faculty members, and poster session workshops led by the resident teachers that utilized a teach back method designed to help students recognize their roles in teaching others about health disparities. Students had onsite access to the internet and Medline throughout the course.

The course primarily took place at the University of Chicago. However, 3 of the 5 afternoons were spent off site. Students traveled via buses to the University of Chicago Emergency Room, Stroger (formerly Cook County) Hospital, and local community health centers. At each site, the students were greeted by physicians who provided a tour of the facilities and described the patient population they serve, insurance patterns, resources, and specific needs.

**Instructors.** Thirty-two faculty members from multiple institutions and different disciplinary backgrounds participated. Half were women. Over a third were African American or Latina.

Table 1. Course Topics Stratified by Goals and Teaching Modalities

Teaching Modality	Goal 1. Learn Existence and Magnitude of Health Disparities	Goal 2. Examine and Understand Mistrust, Bias, and Stereotyping	Goal 3. Improve Communication Skills	Goal 4. Develop Commitment to Reduce Health Disparities
Lecture	<ol style="list-style-type: none"> <li>1. Overview of Health Care Disparities</li> <li>2. Medicare/Medicaid</li> <li>3. Obesity</li> <li>4. Breast Cancer</li> <li>5. Hypertension</li> <li>6. HIV</li> <li>7. Diabetes</li> </ol>	<ol style="list-style-type: none"> <li>1. Race and Ethnicity</li> <li>2. Racial/Ethnic Biases</li> <li>3. Tuskegee Experiment</li> <li>4. Latino Health</li> <li>5. Asian American Health</li> <li>6. Immigrant Populations</li> <li>7. Women and Children</li> <li>8. Lesbian, Gay, Bisexual, Transgender Populations</li> </ol>	<ol style="list-style-type: none"> <li>1. Cultural Efficacy</li> <li>2. Health Literacy</li> <li>3. Language Barriers/ Interpreters</li> <li>4. Social Worker Roles</li> </ol>	<ol style="list-style-type: none"> <li>1. Community Physicians Describe Their Mission</li> <li>2. Role of Free Clinics</li> <li>3. Hospital Roles in Reducing Health Disparities: Community Affairs Office, Describes Its Mission, Resources and Limitations</li> <li>4. Medical Students as Leaders: Medical Students Describe Their Roles and Impact on the Community</li> </ol>
Workshops and Small Group Discussions		‘First Thought’ Exercise Demonstrating Biases and Stereotypes*	<ol style="list-style-type: none"> <li>1. Language Barrier Role Play</li> <li>2. Role of Patient–Doctor Relationship, Biomedical Vs. Psychosocial Model</li> </ol>	Academic Faculty, Community Physicians, Researchers and Administrators Share Personal Stories, and Provide Inspiration and Mentorship
Poster Session Work	<ol style="list-style-type: none"> <li>1. Populations at Risk</li> <li>2. Access to Health Care on the South Side of Chicago</li> <li>3. History of Medicare and Medicaid</li> </ol>	African American Health History		Potential Solutions to Health Care Disparities
Community Expedition	<ol style="list-style-type: none"> <li>1. Understand Access and Resource Limitations</li> <li>2. University of Chicago Emergency Room</li> <li>3. Cook County Stroger Public Hospital</li> <li>4. Local Community Clinics</li> </ol>			View Health Care Delivery On Site at: <ol style="list-style-type: none"> <li>1. The University of Chicago Emergency Department</li> <li>2. Cook County Stroger Public Hospital</li> <li>3. Local Community Clinics</li> </ol>

\* First Thought exercise description: students privately listed the first words that came to their minds when they heard the words “physician” and “welfare recipient.” The results were tallied and shared with the class for comments on potential biases.

Table 2. Student Knowledge of Health Disparities

Factual Knowledge of Health Disparities (%)*			
	Pre-course N=62	Post-course N=64	P value
1. Physicians should attempt to ignore their own cultural background and biases when delivering health care to patients. (F)	32	53	.02
2. If all patients are offered the same amount and type of medical care in exactly the same way and time, gender and cultural issues should not impact outcome. (F)	68	75	.37
3. The Tuskegee Experiment was conducted to treat adult African Americans suffering from syphilis. (F)	60	80	.01
4. Research has found different referral patterns for treatment by physicians based on the patient's race and gender. (T)	98	98	.98
5. From 1997 to 2001, the proportion of physicians serving Medicaid patients steadily declined. (T)	73	86	.06
6. Certain racial/ethnic groups may have variable responses to medications. (T)	94	98	.16
7. If you are poor, then you qualify for Medicaid insurance. (F)	79	84	.44
8. About 50% of adult US citizens have deficient reading skills (functionally illiterate or have marginal reading skills). (T)	61	100	<.0001
9. Young children within a non-English patient's family should be used as interpreters as they are an excellent resource to diminish language barriers. (F)	74	98	.0001
10. Although Americans are healthier today, the gaps between minority and white groups remain nearly the same as they did a decade ago. (T)	79	90	.07
11. Patient satisfaction tends to be higher if the patient and provider come from the same racial or ethnic background. (T)	85	97	.02
12. Even after adjustment for insurance status and income racial and ethnic minorities tend to have lower-quality health care than non-minorities. (T)	97	100	.15
13. 15–20% of the US population cannot afford access to health providers. (T)	90	89	.82
Average correct answers	76	89	<.001

\*F false, T true

**Course Content.** Table 1 shows how different educational modalities addressed each course goal.

**Resources.** Course director Dr. Vela's time (0.125 full-time equivalent  $\times$  4 months) and the posters (\$500) were funded by the Department of Medicine. The Office of Medical Education funded buses for site visits (\$2,500).

## Evaluation

This study was exempted by the University of Chicago Institutional Review Board.

## Study Instruments.

**Pre-Course Survey.** The anonymous numbered pre-course survey was comprised of several parts. Part one required the students to rate their own ability to describe health disparities and potential solutions, Chicago's patient population, the history of health care for African Americans, and which populations are at high risk for common illnesses. The students were asked to rate their abilities using a quantitative scale of poor, fair, good, very good, or excellent. Part 2 assessed knowledge and asked the students 13 true/false questions on cultural competency, health literacy, Medicare and Medicaid,

Table 3. Ability to Describe Health Disparities Issues\*

Rate your present ability to describe:		1 <sup>st</sup> row: Pre-course(%), N=62			P value
		2 <sup>nd</sup> row: Post-course(%), N=64			
		Poor/Fair	Good	Very Good/Excellent	
The hospitals, community health centers, and free clinics in Chicago that serve poor patients and racial and ethnic minorities.	Pre	88	10	2	<.001
	Post	2	17	81	
The history of health care for African Americans in the United States	Pre	90	7	3	<.001
	Post	3	31	56	
The causes of health disparities in America	Pre	56	31	13	<.001
	Post	0	8	92	
Potential solutions to health disparities in America	Pre	74	21	5	<.001
	Post	5	22	73	
Which populations are at risk for hypertension, diabetes and HIV	Pre	31	40	29	<.001
	Post	0	14	86	

\*Scale: "Poor, Fair, Good, Very Good, Excellent"

racial and ethnic disparities, language barriers and use of interpreters, historical discrimination issues, and trends in disparities. Part 3 asked a series of demographic questions including race, ethnicity, age, and gender.

**Post-Course Survey.** The students completed an anonymous numbered post-course survey. Parts 1 through 3 were identical to the pre-course survey. The students also filled out the medical school's standard course evaluation form.

**Data Analysis.** We performed analyses to describe student characteristics as well as their changes in knowledge and abilities to work with diverse populations. We used tests on the equality of proportion to compare the proportion of correct answers for students' pre- and post-course knowledge, as well as Pearson chi-square test to compare students' pre and post course responses to their abilities to describe health care disparities issues. All testing was performed in STATA 9.2 at a two sided significance level of  $p < .05$ .

## RESULTS

The pre- and post-course survey response rates were 97% and 100%, respectively.

### Student Characteristics

Sixty-four (60%) of 104 incoming first year students elected to participate in the course. About 50% were women, 10% were Hispanic, and 5% were African American. Nearly 20% of students had received or knew someone who had received inferior care because of disparities in health, and over 90% recalled reading or hearing about health disparities before the course. A survey (response rate 53%) of the students who did not take the course revealed no significant demographic differences compared with course participants.

### Student Knowledge About Health Care Disparities

Overall students' factual knowledge (76 to 89%,  $p < .0009$ ) about health disparities and abilities to address disparities issues improved after the course (Tables 2 and 3).

### Summary Course Evaluation

This course received the highest ratings in the entire curriculum. On a 5-point scale where 5 is the best, the mean+SD ratings for 3 key summary questions were: "The course met its objectives." (4.8+0.40); "I would recommend this course to my peers." (4.9+0.25); "Overall, this course was a valuable learning experience." (4.9+0.27).

## DISCUSSION

Our health disparities curriculum for incoming medical students improved their knowledge. The timing of the course before the start of medical school rather than during the school year allowed students to learn the content with fewer competing demands on the students' time and attention.

Our study has several limitations. First, self-selection by more interested and motivated students might have favorably skewed our results. Second, we did not use a preexisting psychometrically tested survey instrument because none was appropriate for our purposes. Third, many of the questions were the same in both pre- and post-course surveys, and thus students' post-course responses may have been influenced by their earlier exposure to the questions. Fourth, longer follow-up of both participating and non-participating students will be needed to determine impact on student behavior. Nonetheless, our course is innovative in that it is the first health disparities course for medical students incorporating the SGIM Health Disparities Task Force goals,<sup>15</sup> it used a variety of teaching modalities, and it occurred early in students' medical school careers.

The University of Chicago is now requiring this course for all first year medical students in the week immediately after orientation. Future plans include increasing patient contact by offering the course after students have completed HIPAA training, devoting more time to reflection and discussion, and reducing the number of lectures. We plan to create electives on health disparities for upperclassmen.

This study supports the adoption of the curriculum goals established by the SGIM Health Disparities Task Force.<sup>15</sup> Future research should focus on the prevalence and evaluation of other existing health disparities courses, adaptability of this curriculum to other medical schools, and its implementation as a required course.

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**Conflict of Interest:** None disclosed.

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