

Developing a Novel Poverty in Healthcare Curriculum for Medical Students at the University of Michigan Medical School

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Abstract

Nearly 90 million Americans live below 200% of the federal poverty threshold. The links between lower socioeconomic status and poor health are clear, and all physicians face the resulting challenges in patient care. Current medical school curricula do not adequately prepare students to address this issue despite recommendations from the Association of American Medical Colleges and the Institute of Medicine. In response, students and faculty at the University of Michigan Medical Center established the

Poverty in Healthcare curriculum, which encompasses required learning experiences spanning all four years of undergraduate medical education. This article describes the design and implementation of this curriculum. The authors provide thorough descriptions of the individual learning experiences, including community site visits, longitudinal cases, mini-electives, and family centered experiences. The authors also discuss the history, costs, challenges, and evaluation process

related to the Poverty in Healthcare curriculum, including issues specifically related to medical students' involvement in developing and implementing the curriculum. This information may be used as a guide for other medical schools in the development of curricula to address this current gap in medical student education.

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Thirty-seven million Americans live below the federal poverty threshold, representing 12.6% of the U.S. population.¹ Even more—nearly 90 million Americans—live below 200% of the federal poverty threshold,² an income at which many struggle to “make ends meet.”³ Given these realities, most physicians will work with low-income patients, regardless of their specialty or practice location. Countless studies have shown that lower socioeconomic status (SES) is associated with unique challenges to health, higher disease burden, and poorer health outcomes.^{4–6}

Socioeconomic status and its impact on health are topics about which physicians need knowledge and awareness.

Professional organizations, physicians, and, indeed, the general public increasingly recognize the important links between poverty and health care. The Association of American Medical Colleges (AAMC), as part of its Medical Schools Objectives Project (MSOP), specified that medical schools must ensure that students can demonstrate “the ability to obtain an accurate medical history that covers all essential aspects of the history, including issues related to age, gender, and *socioeconomic status*.”⁷ Similarly, the Institute of Medicine cites as a high-priority topic for medical school curricula “the impact of social inequalities in health care and the social factors that are determinants of health outcomes.”⁸ Perhaps an equally important goal of medical education is instilling in students a sense of social responsibility, professionalism, and service toward the underserved. The AAMC MSOP recommends that graduating medical students should demonstrate “a commitment to provide care to patients who are unable to pay and to advocate for access to health care for members of traditionally underserved populations.”⁷

Yet, most medical schools do not adequately train students to deal with poverty's impact on health care. One survey reported that fewer than one third of first- and fourth-year medical students were aware of the number of uninsured Americans, and that fourth-year students were no more knowledgeable about health care access than first-year students.⁹ Other studies have shown that students' attitudes toward the underserved actually become more negative throughout medical school.^{10,11} To our knowledge, based on the AAMC Medical School Curriculum Directory¹² and an extensive literature review, only one other medical school—Michigan State University—currently requires all students to complete courses or activities spanning all four years specifically addressing this topic.¹³ A few medical schools have implemented mandatory curricular elements during just one year of medical school, such as a required activity addressing care for the underserved during a third-year pediatric clerkship¹⁴ and a structured service learning activity spanning four months during a primary care clerkship.¹⁵ With a topic so complex, however, transient exposure is unlikely to optimally prepare students to care for underserved patients. Kalet and colleagues¹⁶ recently described a five-medical-school partnership in New York City focused on health centers at

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primary and secondary schools, which often serve underserved populations. The curricular activities offered at each participating medical school vary, however, and have not yet been comprehensively described in the literature. Other medical schools have begun laudable elective courses, service learning opportunities, or four-year “tracks” on care for the underserved.^{17–26} Unfortunately, such electives often primarily reach students with preexisting knowledge or at least interest in this topic.

In the spring of 2004, a small group of University of Michigan Medical School (UMMS) first-year students conducted a needs assessment and determined that students could benefit from education related to care for lower-SES patients. A survey of their first-year classmates (n = 100) revealed, for example, that fewer than 15% knew about basic governmental programs for low-income patients such as MICHild (Michigan’s version of the State Children’s Health Insurance Program [SCHIP]) and WIC (Women, Infants, and Children). Student-run free clinics offered the opportunity to work with low-income patients but were often attended primarily by those with preexisting interest and knowledge in this area. In addition, third-year students at UMMS

can choose to rotate in medically underserved communities for certain clerkships and fourth-year students can do an elective with migrant farm workers, but these opportunities again reached primarily a small group of interested students. The UMMS curriculum was also advanced in its inclusion of an effective Sociocultural Medicine Program (described by Tang and colleagues²⁷), but it primarily emphasized culture and race rather than SES. To address these concerns, in 2005 UMMS accordingly implemented a *Poverty in Healthcare* curriculum.

The UMMS Poverty in Healthcare Curriculum

The Poverty in Healthcare curriculum is required of all students at UMMS and consists of multiple learning experiences spanning the four years of medical school that are integrated into the overall curriculum (see Figure 1). This required participation is intended to pique the interest of students previously uninterested in or unaware of the role of poverty in health. It also provides every student with the baseline knowledge, skills, and attitudes they need to treat and advocate for low-income patients. Furthermore, the four-year longitudinal nature conveys to students the importance of this issue in their professional

development. Intended learning outcomes build on each other as students advance, creating a longitudinal, spiral learning approach. As students progress, the corresponding learning outcomes they are expected to master address the issues of poverty in health care recurrently but with increasing levels of complexity. Particular emphases also evolve with students’ progression through medical school. A detailed outline of intended learning outcomes and their progression is available at (<http://sitemaker.umich.edu/povcurric>). The Poverty in Healthcare curriculum has four overarching goals:

- Students will be sensitive to lower-SES patients. They will recognize the unique needs of lower-SES patients by understanding how SES affects health and health care.
- Students will feel comfortable and efficacious in working with lower-SES patients, including in taking a history and formulating a plan for care.
- Students will have knowledge of governmental programs, community resources, or other sources of aid for lower-SES patients, and will possess the skills to utilize them appropriately.
- Students will graduate with a sense of social responsibility toward lower-SES patients and a vision of future careers that include public service.

The Poverty in Healthcare curriculum is focused on poverty within the United States because that is where most UMMS graduates eventually practice medicine. Also, although the term “poverty” is used for simplicity’s sake, our scope extends to all patients whose low SES may affect their health.

Individual learning experiences

A variety of discreet learning experiences comprise the major curricular elements of the Poverty in Healthcare curriculum. New learning experiences have been added yearly as the curriculum continues to expand. The following discussion offers a description of each of these activities.

Community site visits and discussion.

This activity occurs as part of the UMMS Clinical Foundations of Medicine (CFM) course. CFM consists of nine dedicated, weeklong modules interspersed throughout students’ first

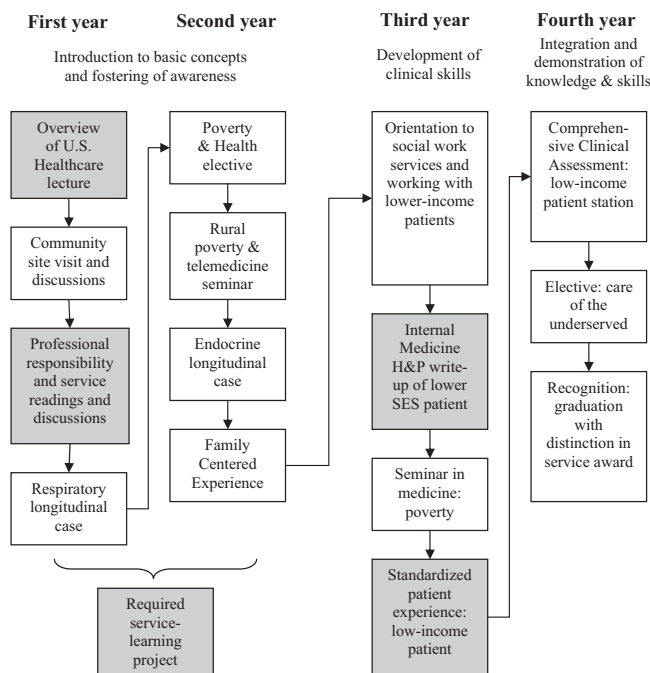


Figure 1 Timeline of learning experiences for the University of Michigan Medical School Poverty in Healthcare curriculum. Shaded blocks indicate future goals; all other components are currently implemented.

and second years. The modules include hands-on physical examination sessions, patient demonstrations, and small-group discussions on nonbiomedical subjects such as professionalism and the doctor–patient relationship. CFM weeks are also used to introduce topics not covered elsewhere in the curriculum, such as complementary and alternative medicine and geriatrics. Learning experiences in the Poverty in Healthcare curriculum thus fit nicely into the existing CFM model.

As part of the Poverty in Healthcare curriculum, all students complete community site visits during the first CFM week in their first year. Students visit local agencies serving lower-income patients; past community sites have included free clinics, a Head Start center, a WIC center, and homeless shelters. Each site agrees to host two groups of 10 to 15 students during the day. Each group visits for two hours, during which time students receive a tour and other education specific to the individual site. Students provide their own transportation and visit one site each. They convene afterwards for one-hour small-group discussion sessions led by third- or fourth-year students. A short introductory talk by a faculty member emphasizes the legitimacy of the curriculum. The small groups comprise students who visited different sites, allowing them to share their experiences. The small-group sessions also provide an opportunity for discussion of issues such as whether physicians have an obligation to do service. Required essays demonstrate students' proficiency in recognizing obstacles and making recommendations for helpful community resources, using the case of "Mrs. K, a low-income pregnant woman with a four-year-old child who has recently lost her job."

Voluntary, anonymous feedback surveys (95% response rate) indicate that students appreciated the chance to get out of the classroom to actually *see* the community site, and to learn about resources that can help their future patients. Community sites remarked that they enjoyed having medical students tour their facilities and were pleased at UMMS's commitment to training future physicians to care for their clientele.

Longitudinal cases. The UMMS preclinical curriculum includes

longitudinal case studies and small-group sessions designed to help students learn about how patients and families experience illness. Two existing cases were modified to encompass issues of poverty in health care. A case in the first-year curriculum deals with a young girl with asthma whose family faces unstable income, poor housing, and unreliable transportation. Students are asked to research racial and socioeconomic disparities in asthma prevalence. They also discuss socioeconomic barriers to asthma treatment plans and insurance options for low-income children. As a group, they debate physicians' roles in the psychosocial elements of chronic disease management, as well as their place in larger-scale health advocacy.

A longitudinal case in the second-year curriculum involves a pregnant woman with diabetes who is low income and uninsured. Students research the cost of diabetes medications and find practical resources that can help patients pay for them. They grapple with the ethics of drug company free samples. They also discuss whether physicians have a moral obligation to care for Medicaid patients. Finally, they discuss current national issues in health care access policy. Background handouts and discussion guides are available in advance to prepare faculty facilitators for the nuances of the discussion.

Poverty and Health mini-elective. In the fall, second-year Clinical Foundations of Medicine sequence students choose one six-hour elective from a wide variety of topics ranging from fad diets to medicine in literature. If they select the Poverty and Health elective, students have the opportunity to shadow a clinician at one of the following sites for the underserved: homeless clinic, teen clinic, community health center, or school-based clinic. Students meet as a small group with a faculty facilitator for two hours both before and after the shadowing experience. The initial session involves readings as background for a discussion about students' expectations and prior relevant experiences. The session then covers the nuances of performing a history, physical, assessment, and plan for lower-income patients. During the shadowing experience, students are able to see patients, learn about community resources, and interview nurses, social

workers, and other team members to attain a multidisciplinary perspective. At the final small-group session, students share their experience and new knowledge with their peers. In the future, we hope to include more discussion of advocacy in this session.

Family Centered Experience. The Family Centered Experience (FCE), an established component of the UMMS curriculum, assigns pairs of medical students to families of patients with chronic diseases recruited from the community. Students visit their families four to five times during the preclinical years. Each visit focuses on a particular theme, and is followed by a small-group meeting where groups of students who have recently visited with families share their experiences. The Poverty in Healthcare curriculum was integrated into the final FCE visit, for which one recommended topic of discussion is "financial issues"—specifically, how the family pays for its health care, and whether they have had any problems with insurance. Some students were wary of discussing financial issues, but those who did reported that the families were usually open to discussing it. We are working on strategies to help students become more comfortable addressing financial issues with their families. One longer-term goal of the Poverty in Healthcare curriculum is to recruit a more diverse spectrum of families into the FCE program; currently, most of the families who have volunteered are middle- or upper-middle class.

Second-year CFM. Time in the weeklong spring installment of CFM for second-year students has been dedicated to the Poverty in Healthcare curriculum. In 2006, students divided into groups to perform one of two tasks: to research the scientific literature on the impact of SES on one particular illness, or to complete a budgeting exercise designed to illustrate the difficult choices low-income families must make in deciding on health care expenditures. They had one hour to complete this assignment, and then they reconvened in small groups to share their findings. Classmates with relevant extracurricular experience volunteered to serve as small-group leaders. In a survey of second-year students ($n = 152$, 88% response rate), 72% agreed or strongly agreed that the budgeting exercise provided a convincing illustration of the

financial difficulties faced by low-income patients. Sixty-nine percent agreed or strongly agreed that student presentations on the links between poverty and disease provided a convincing illustration of the scope and importance of the problem. Students enjoyed the new learning techniques tried in this learning experience: 91% agreed or strongly agreed that having a classmate lead small groups was effective. The experience did not, however, make them “feel more confident about caring for low-income patients”—only 39% agreed or strongly agreed with this statement (40% felt “neutral”). Perhaps this was because the connection between the experience and how to use this new information as a physician was not made explicit.

In 2007, this Poverty in Healthcare learning experience was significantly changed because, by 2007, second-year students had already completed multiple Poverty in Healthcare learning experiences, and, thus, more advanced intended learning outcomes were needed to match their knowledge base. Additionally, we recognized that many students think of poverty as a solely urban problem, and that the curriculum had not addressed rural poverty specifically. We therefore initiated collaboration with the University of Michigan Health System Telemedicine Resource Center. Students received a handout providing basic information regarding rural demographics, poverty, and health disparities. A one-hour lecture explored the various uses of telemedicine, focusing on how it can overcome some of the unique barriers to health care for the rural poor. Students were then introduced to health care advocacy, researching a specific health disparity experienced by underserved rural populations and writing a policy proposal for a creative yet practical solution. Next year, we plan to formally introduce the basics of writing to policy makers and other forms of advocacy. With knowledge of the issues, tools for advocacy, and experience from the assignment, students will be better prepared to be agents of change throughout their careers.

Orientation to the third year. All UMMS medical students engage in a one-week orientation to the third year before starting work on the wards. In 2006, for the first time, this orientation included a

one-hour session, Orientation to Social Work Services and Working With Lower-Income Patients. First, two social workers from the University of Michigan Health System talked about how medical students can best work with social workers to improve patient care. Next, a pair of volunteer student actors playing a patient and a medical student presented two scripted patient encounters. In the first case, the medical student does not take the patient’s SES into account. In the second case, the student does address these issues and learns that instead of simply being noncompliant, the patient could only afford one medication each month. These cases were made as realistic as possible to show students what was expected of them in outpatient interactions. Finally, students participated in a large group discussion of the cases. In addition to these activities, students were given a number of resources to use in their clerkships. These included a pocket card with tips for working with low-income patients²⁸ and two *Adapting Your Practice* guidelines for treating homeless patients.^{29,30} The last item was a five-page document written by medical students for medical students to provide an introduction to community resources and governmental programs. Students were encouraged to carry these resources in their white coats.

Third-year Seminar in Medicine.

Seminars in Medicine is a series of required two-hour sessions for third-year students, occurring each Friday afternoon throughout the year. These sessions provide students with important clinical and professional knowledge in a variety of areas that cross disciplinary boundaries (e.g., ethics, law, medical economics, regulation in medicine, health policy). Whereas poverty issues had been touched on in a few sessions prior to the Poverty in Healthcare curriculum, a dedicated seminar was designed in 2006. This “Poverty Seminar” consists of a panel of physicians and administrators whose primary mission is serving the underserved. Issues for discussion include physicians’ various responses to poverty and potential roles for students’ future careers, strategies for successful physician–patient relationships in the face of socioeconomic differences, and the scope of professional responsibility to patients and society.

Fourth-year elective. For students in their final year, a new elective focusing on care of the underserved was established by an associate professor of internal medicine and the associate dean for diversity and career development. Though developed independently of the Poverty in Healthcare curriculum, the intended learning outcomes of this elective intentionally build on those of earlier Poverty in Healthcare curriculum activities. The elective, which was offered for the first time in 2007, provides interested students with the opportunity to work in “safety net” clinics and participate in graduate-level seminars on care for the underserved.

Student evaluation

Students are formally evaluated on their effort and proficiency in the Poverty in Healthcare curriculum. In the preclinical years, this evaluation occurs through assignments tied to the various curricular activities and follows the same format as other elements of the UMMS curriculum. Grading is pass/fail, as it is for all other courses in the preclinical years. For example, first-year students are evaluated for their fall Clinical Foundations of Medicine (CFM) week through a take-home essay exam; essay questions pertaining to the Poverty in Healthcare curriculum activity have been added to the exam. Likewise, students’ second-year CFM activities are evaluated through written assignments. Involved faculty and student leaders read and provide feedback for each essay. Curricular elements included in the longitudinal cases and FCE are evaluated using the classroom assessment method by faculty small-group leaders who follow students through their first two years. Rigorous faculty development ensures that faculty are proficient in analyzing students’ conversations and contributions to small groups to determine what students have learned and whether they have accomplished intended learning outcomes.

Students are formally assessed in their clinical years through a Comprehensive Clinical Assessment (CCA). The CCA is a summative Objective Structured Clinical Examination that is formatted similarly to the United States Medical Licensing Exam Step 2 CS and is required of all fourth-year UMMS students. One half of these students are randomly assigned to a CCA case in which a patient with diabetes

presents to a free clinic, has lost her job, has no health insurance, cannot afford all of her medications or glucose test strips, and has multiple financial and social stressors. To receive maximum credit, students must ask the patient about how her socioeconomic situation is affecting her diabetes, suggest viable solutions to help her obtain her medications, and respond supportively to her concerns about losing her job. This CCA station, which started in 2003, predates the Poverty in Healthcare curriculum. Students traditionally perform poorly on this station in comparison with other stations; several students fail each year (range: 2–12) despite a low required score for passing (range: 53%–64%). The first group of students that began the Poverty in Healthcare curriculum in their first year will not complete the CCA exam until 2008. The most recent class taking the CCA did complete two of the Poverty in Healthcare components (second-year spring CFM and third-year orientation) and demonstrated a higher fail rate than in past years. We suspect that this may reflect changing emphases in the UMMS admissions process or the decreased preparatory material now given to students before the CCA (students previously had more “advance warning” that a station of this nature would appear on the exam). Also, because this CCA station was developed before the Poverty in Healthcare curriculum was, its checklist of evaluation criteria are not designed to match the Poverty in Healthcare intended learning outcomes. We plan to update these evaluation criteria in the future to better reflect our expectations of students completing the Poverty in Healthcare curriculum.

Evaluating the UMMS Poverty in Healthcare Curriculum

The CCA is one potential way to broadly evaluate the impact of this new curriculum. Particularly after modifying CCA goals to match the overarching goals of the Poverty in Healthcare curriculum, we will be able to use the CCA as a summative assessment of what students have gained in terms of knowledge, skills, and outwardly expressed attitudes. In addition, surveys for Poverty in Healthcare learning experiences have been developed; these quantitatively assess students' attitudes toward and knowledge about caring for low-income patients. Administered

periodically, they will allow us to identify changes in medical students' knowledge and attitudes after specific curricular interventions and as they progress through medical school. The first round of data we have analyzed has been very encouraging. First-year students' posttest knowledge scores were significantly higher ($P = .000-.045$) than their pretest scores after the 2006 community site visits and discussions. Attitudes significantly improved between pre- and posttests for five of seven measures. We plan to publish the details of these results, along with those from more distant posttests (to determine whether knowledge and attitude changes persist), within the next year.

Our preliminary findings that curricular interventions may positively affect students' attitudes and knowledge regarding the underserved join a small body of literature describing similar results. Evaluation of Michigan State University's required, longitudinal Caring for Medicaid program showed that students' attitudes regarding care for the underserved remained positive through all four years of medical school,¹³ in contrast to national data showing medical student attitudes to become more negative over time.¹⁰ Another study of a four-year curriculum, this one optional, showed that students' attitudes toward the underserved declined in all students over time but that this change only reached statistical significance in the students who did not participate in the elective curriculum.¹⁹ Participants in the curriculum showed lesser decline in attitudes toward the underserved than did nonparticipants, but this trend did not reach statistical significance, perhaps because of a small study sample. Selection bias may have certainly played a role in this trend given that students who select the elective program may inherently be more resistant to attitudinal changes in this area. A study of a pediatrics clerkship curriculum in which students learned a screening tool for underserved patients and helped an underserved family access a needed resource showed improvements in both positive attitudes and knowledge of students randomized to the new curriculum arms versus those in the control arm.¹⁴ Problems of this study include that students in the experimental arms had more positive attitudes toward the underserved at baseline despite

randomization, so the degree of effect of the intervention is uncertain. Also, the knowledge test included many questions on a screening tool that was taught only to students in the experimental arms, and it was unclear how much knowledge increased beyond this specific tool. A final study of a two-week, fourth-year elective about treating the homeless was found to improve student performance on knowledge-based tests compared with control students.²⁴

Ideally, at UMMS, evaluation of students will continue past their graduation to determine the long-term impact of the Poverty in Healthcare curriculum on career choice, patient population served, and lasting knowledge or attitude changes. There is little good research examining the links between curricular interventions and eventual medical practice with the underserved. One national study of primary care physicians who graduated in 1983 and 1984 found that having clinical experience with the underserved during medical school was not associated with practicing in a federally designated underserved area or having a practice in which at least 40% of patients were medically indigent or poor.³¹ This study does not tell us much about the potential effects of a longitudinal curriculum like the UMMS Poverty in Healthcare curriculum, however, because curricular exposure to the underserved was defined very broadly, did not relate to any specific curriculum, and was measured by self-report on a *yes/no* scale. More recent studies of specific curricular interventions related to care for the underserved do show a potential impact on career choice. Participants in an optional, comprehensive clinical track based in an impoverished urban community were more likely than their nonparticipating counterparts to later practice in an underserved community.²³ And in an optional clinically oriented summer service program, a large majority of participating students reported that they believed the experience had influenced their career choice, though no data on actual career outcomes were collected.¹⁷ A study of students completing a four-year extracurricular program that included community service, faculty mentorship, and discussion sessions related to care for the underserved showed more mixed results; graduates between 1993 and 1997 who

completed the program were significantly more likely than their counterparts to practice in small communities, internationally, or with the Indian Health Service.¹⁸ There was no difference between the groups of graduates, however, in estimated percentage of Medicaid or poor patients. Clearly, the results of all three of these studies may be attributable at least in part to self-selection bias, because all described elective experiences.

Ultimately, however, the primary goal of the Poverty in Healthcare curriculum at UMMS is not to change students' career choices. The foundation for the Poverty in Healthcare curriculum rests on the fact that, given the pervasiveness of poverty in the United States, *all* medical students need to be proficient in working with low-income patients, regardless of their future careers. An interesting question is whether the curriculum will make students better at serving their low-income patients in their future practices, but actually measuring this would clearly be very difficult.

Student satisfaction with Poverty in Healthcare curriculum activities has been high, as determined by anonymous surveys completed by students after each activity. For example, in a survey after the first-year community site visits and discussion in 2006 (response rate = 95.3%), a majority of students strongly agreed or agreed that the experience was valuable (77%), was enjoyable (75%), and expanded their thinking about poverty (61%). Free-text comments made by students have also been very positive. We continue to collect student satisfaction data and hope to eventually publish it in greater detail.

The Poverty in Healthcare curriculum has provided an important opportunity to experiment with innovative styles of teaching. Examples include peer-led small-group sessions, simulated patient interactions presented to a large group, roundtable discussions, and community site visits. We have involved social workers and employees of community agencies, who have not historically been involved in the medical school curriculum. By evaluating the effectiveness of these novel teaching strategies, we may discover successful educational methods that can be used more widely.

Overcoming Challenges: Sustainability, Integration, and Support

Unique challenges of sustainability for a student-initiated effort

The Poverty in Healthcare curriculum was largely student driven in its inception and early implementation. In the spring of 2004, a small group of second-year students prepared a detailed written proposal outlining the rationale and specific recommendations for the new curriculum at UMMS. They presented this proposal to academic deans and key faculty in November 2004. Around the same time, academic deans within the medical school had identified several "special topics" that warranted educational attention; Poverty in Healthcare was added to this matrix and, thus, immediately fell under the auspices of the assistant dean for medical education responsible for curricular development. This dean identified a "faculty champion" for the Poverty in Healthcare curriculum, an emergency medicine physician active in medical student education and also experienced in working with underserved patients. The core group of medical students, faculty champion, and the assistant dean for medical education collaborated on a four-year timeline of learning experiences and wrote intended learning outcomes for each. Implementation of the Poverty in Healthcare curriculum began in the fall of 2005 and has continued with the steady addition of new components. A second faculty champion, a family medicine physician interested in care for the underserved, was identified and agreed to participate.

Each subsequent year, new medical students were recruited to assist in the development and implementation of the curriculum, so that by 2007 students from all four years were involved. Students were initially recruited informally through word of mouth, but 2006 marked the beginning of a formal application process that will be used yearly. All first-year students receive an e-mail that contains information about the Poverty in Healthcare curriculum student coordinator roles and responsibilities. Interested students answer two short essay questions, which are read by all current student leaders and scored using a predetermined set of criteria. Latent student interest in a

Poverty in Healthcare curriculum is perhaps illustrated by the fact that five impressive applications were received for the two available leadership positions this year. Strong student involvement benefits both the curriculum—in allowing it to be consumer driven and responsive to medical student needs—and the student leaders themselves, who universally feel that the opportunity to shape the curriculum has been a very valuable part of their medical school experience.

Though we envision a Poverty in Healthcare curriculum that continues to involve input from students, we hope to no longer rely on student participation so heavily. To date, most activities have been designed and implemented primarily by students with the oversight and approval of administration and faculty. Though new students have volunteered each year to continue organizing the Poverty in Healthcare curriculum, and a formal process for selecting new student leaders now exists, there are fears that the program may dissolve without continued student commitment. This concern has been addressed in two ways. First, the Poverty in Healthcare curriculum has secured interdepartmental faculty support, with two official faculty leaders. These faculty leaders have experience in and commitment to caring for the underserved, and they will serve as continuous visionaries and guides. Second, a UMMS staff person was designated to address all administrative needs of the Poverty in Healthcare curriculum as part of her job description. This will aid in continuity and will free the students and faculty to concentrate on program development and evaluation. In addition, the assistant dean for medical education responsible for all preclinical curricula continues to be a strong supporter of the Poverty in Healthcare curriculum. We feel confident that a Poverty in Healthcare curriculum without students as the primary drivers can become a reality, as we have seen progressively increasing administrative and other support over the years.

Creating an integrated curriculum

A second challenge is integrating the Poverty in Healthcare curriculum internally, so that it forms a coherent and logical whole rather than a collection of individual activities. One of the curriculum's strengths—that its activities are successfully integrated into a variety

of existing UMMS curricular components—also presents the challenge that students may not recognize the “big picture” of the Poverty in Healthcare curriculum. Though the curriculum was designed thoughtfully to create a logical progression of learning through the four years of medical school, this may be difficult to see for students experiencing each element individually. To address this concern, we have designed a promotional-type pamphlet that explains the entire Poverty in Healthcare curriculum, which will be distributed during the annual UMMS first-year student orientation. In the future, we plan to create an “online portfolio” where each student can track his or her progress through the Poverty in Healthcare curriculum, view the timeline of curricular events and their intended learning outcomes, and have one-stop access to all syllabus readings and resources.

Student, faculty, and financial support

One anticipated challenge—that of student and faculty buy-in—did not prove to be a significant problem. Overwhelmingly, students have indicated that they believe they will work with low-income patients in the future. For example, a survey of third-year students ($n = 132$; 77% response rate) revealed that 82% agreed or strongly agreed that “I am likely to work with poor patients in my future practice as a physician.” Students also appear to value serving the underserved, with 97% of respondents to the same survey agreeing or strongly agreeing with the statement, “Physicians have an obligation to serve people who have limited resources yet still need care.” Finally, students seem to recognize the importance of understanding the impact of SES on health; a survey of students in their second year ($n = 152$; 87% response rate) revealed that 58% “strongly agreed” and 31% “agreed” with the statement, “Understanding the topics covered in this module [links between poverty and disease and difficult budget priorities for low-income families] is important to be an effective physician.” Qualitative feedback includes comments from students such as “I’m glad that the school values this aspect of medical education.” Likewise, UMMS faculty members have not voiced complaints about the general goals of this curriculum. This is perhaps because its activities are

generally integrated into existing curricular learning experiences or involve the addition of curricular time, rather than taking time away from other courses.

Cost has not been a barrier to implementing the Poverty in Healthcare curriculum at UMMS. By using existing resources to keep costs to a minimum, we have not needed special grants or other funding. Material expenses, such as photocopies, have been integrated into the UMMS budget for medical education. Community organizations and outside speakers have been generous in donating their time. The student leaders are volunteers and value being involved “behind the scenes” in the curriculum. Two fourth-year students received one month of elective course credit for researching the Poverty in Healthcare curriculum; other medical schools may also encourage student participation in curricular change by offering elective credit. Faculty time is, of course, a valuable resource; departments (mostly clinical) are compensated directly for the amount of time their faculty spend on the Poverty in Healthcare curriculum (lectures, course development, etc.) at the same level as for any other medical school curricular effort, demonstrating the crucial role of institutional support.

Discussion

Future plans

The Poverty in Healthcare curriculum continues to grow. Additional learning experiences planned for implementation in the future include an introductory lecture for new students, a lecture on the impact of poverty on mental health, an interactive nutrition exercise, and inclusion of a low-income patient as part of UMMS’s Standardized Patient Instructor program. A proposal that we plan to focus on in the coming year is the addition of required community service for preclinical students. Students would choose when and where to complete the service, with a proposed requirement of 20 hours during their first two years. Community service would be supplemented with independent readings and small-group workshops to create a service-learning experience. This program would be in line with the LCME’s recent proposal to require that all medical schools offer service-learning opportunities.³² It is not unrealistic to

imagine a future where community service or service-learning is mandatory for all medical students.

The medical education context

We believe that our curriculum intervention is taking place at an opportune moment in the overall evolution of U.S. medical education. The specific topic of poverty in health care has clear ties to broader issues such as the right to health care, caring for the uninsured, and the obligations of medical professionals to society, all of which have played recent prominent roles on the stage of public discourse. For example, the majority of *Academic Medicine’s* August 2006 issue was focused on the uninsured and the role of academic medical centers in their treatment. It is difficult to open a newspaper or turn on the television without hearing something about the growing number of uninsured. Such issues seem even more pertinent to the Poverty in Healthcare curriculum when recognizing that lack of health care coverage and lack of money go hand in hand.³³

In addition, it seems that the definition of medical professionalism has been expanding recently to include spheres relevant to poverty in health care. As stated by Gruen et al³⁴ in *JAMA*, “Physicians have professional obligations to promote access to care and address socioeconomic factors that directly influence individuals’ health.” Others have suggested that physicians have a responsibility not only toward their individual patients, but to the larger community and society in which their patients reside. Thus, obligations of physicians could also include community involvement and political advocacy. Physicians seem to agree with this sentiment, but their actions do not always match their rhetoric. Indeed, in one recent survey, more than 90% of physicians considered themselves civic minded, yet only 65% participated in community or political activism in even a minimal capacity.³⁵ An important strength of the Poverty in Healthcare curriculum is that it exposes students to this issue and encourages them to have greater participation in their communities and explore their future roles as physicians in society.

Conclusion

We have described the efforts of one medical school in implementing a Poverty in Healthcare curriculum designed to teach students about the impact of socioeconomic status on health and to prepare them to work with low-income patients. The long-term impact of this curriculum will be assessed as it continues to develop and as more classes of medical students have participated. We hope that the experience described in this article may be useful to other medical schools in developing their own curricular interventions. Given current and projected patient demographics, the proven impact of SES on health, and the increasing emphasis on wider professional obligations of physicians, we feel strongly that a Poverty in Healthcare curriculum is timely and necessary.

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Cover Note

Ponce School of Medicine

The Ponce School of Medicine is located in the second-largest city in Puerto Rico, on the southern coast of the island. Ponce was founded in 1692 and was named after Juan Ponce de León, the first Spanish governor of Puerto Rico.

The development of a medical school was on the agenda of the Ponce community since the early 1940s. It became a reality in 1977 when the Catholic University of Puerto Rico established its school of medicine in Ponce with a charter class of 26 students. Two years later, the university decided to phase out the program, with the intention of closing the medical school. In 1980, a group of dynamic leaders from the Ponce community incorporated the Ponce Medical School Foundation, under the laws of the Commonwealth of Puerto Rico, and was able to obtain the necessary permits to operate the medical school. The new administration successfully handled the challenge of maintaining the medical program's continuity under a new name—Ponce School of Medicine (PSM).

In July 1980, the Council of Higher Education of Puerto Rico (CHEPR) accredited the school. In 1981, the Liaison Committee on Medical Education authorized the school to grant the MD degree. Under the new administration, governed by a board of trustees, the new free-standing school graduated its first class of 23 students in 1981. The institution is also accredited by CHEPR and the Middle States Commission on Higher Education.

Recognizing the need to establish a solid research program, PSM applied for funds under the Minority Biomedical Research Support Program and the Research Center in Minority Institutions Program in 1983. The award of both grants permitted PSM to create an infrastructure for the faculty to develop research activities. In 1988, PSM initiated a doctoral program (PhD) in biomedical sciences. A research building was inaugurated in January 1995.

PSM offers other health-related programs: an American Psychological Association (APA)-accredited doctoral

program in clinical psychology (PsyD), a master program in public health (MPH), a fifth pathway program (FPP) for foreign medical graduates, and a program in continuing medical education (CME).

Driven by its mission to “provide high-quality health services, education, and research,” PSM has implemented six mental health clinics across the southwest of Puerto Rico, an ambulatory center for medical research, and a multispecialty ambulatory care group practice. PSM continues with its plans to expand its academic offerings during the next three years to include master specialties and doctoral degrees in public health and a doctor of philosophy degree in psychology.

For more information about the Ponce School of Medicine, see (www.psm.edu).

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