

Development, Implementation and Evaluation of an M3 Community Health Curriculum

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Abstract Objectives: This paper describes the development, implementation and evaluation of an M3 community health curriculum that responds to recent changes within the health care finance and delivery system.

Methods: The new curriculum was developed based on AAMC recommendations, LCME requirements, a national review of undergraduate community health curricula, and an internal review of the integration of community health concepts in M3 clerkships.

Results: The M3 curriculum teaches: 1) the importance of being a community responsive physician; 2) SES factors that influence health; 3) cultural competency; and 4) the role of physicians as health educators. Student evaluations for the first twelve months of implementation indicate that students are most satisfied with presentations and less satisfied with required readings and a patient interview project.

Discussion: Most students agree that at the completion of the course they understand what it means to be a community-responsive physician, and they have developed skills to help them become more community responsive. Evaluation tools need to be developed to assess if students' behavior has changed due to course participation.

Keywords: undergraduate medical education; community health curriculum; community responsive physician

Changes in health care finance and delivery, due partially to the growth of managed care and increased competition, require physicians to practice cost-effectively, work in interdisciplinary teams, and maintain the health of the population in addition to that of the individual.¹ In 1991 the Pew Health Commission identified a core set of competencies that health care providers must possess to meet the changing demands of the health care system. Included in this list are: care for the community's health; practice prevention; involve patients/family in decision making; promote healthy lifestyles; understand the role of physical environment; and participate in a culturally diverse society.² The Commission called for a change in medical education that would incorporate these competencies into the traditional individual-based, disease-specific medical curriculum. Since the work of the Pew Health Commission, Greenlick,³ Foreman,⁴ Rubenstein et al,⁵ and Peabody,⁶ as well as others, have also recommended revising undergraduate medical education to better respond to the demands of the changing health care system.

The Association of American Medical Colleges' (AAMC) Report II of the Medical Schools Objectives

Project (MSOP) emphasized the importance of integrating a community and public health perspective into the undergraduate medical education curriculum. "MSOP defines a population health perspective as one that encompasses the ability to assess the health needs of a specific population; implement and evaluate interventions to improve the health of that population; and provide care for individual patients in the context of culture, health status, and health needs of the populations of which the patient is a member."⁷

Similar to MSOP, the 2002 Liaison Committee on Medical Education (LCME) requires that medical students "demonstrate an understanding of the manner in which people of diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments. Medical students must learn to recognize and appropriately address gender and cultural biases in themselves and others, and in the process of health care delivery."⁸

To assess the extent to which medical schools have incorporated the above recommendations into their curricula, the AAMC analyzed information from their Medical School Graduation Questionnaire (GQ)

Table 1
Our Institutions GQ Responses Compared to the National Average

| Topic | School | Year | % Rating of Appropriateness |
|--|-----------------|-------------|------------------------------------|
| Public Health and Community Medicine | Our Institution | 2000 | 60.8 |
| | Our Institution | 2001 | 66.7 |
| | All Schools | 2001 | 69.2 |
| Role of Community Health and Social Service Agencies | Our Institution | 2000 | 55.4 |
| | Our Institution | 2001 | 58.9 |
| | All Schools | 2001 | 60.9 |
| Health Issues for Underserved Populations | Our Institution | 2000 | 54.6 |
| | Our Institution | 2001 | 64.1 |
| | All Schools | 2001 | 68.4 |
| Cultural Differences and Health Related Behaviors | Our Institution | 2000 | 67.7 |
| | Our Institution | 2001 | 59.9 |
| | All Schools | 2001 | 63.8 |
| Culturally Appropriate Care for Diverse Populations | Our Institution | 2000 | 64.1 |
| | Our Institution | 2001 | 59.4 |
| | All Schools | 2001 | 63.5 |

for years 1998 – 2001. Students’ perceptions about the adequacy of time devoted to instruction of public and community health increased from 59% in 1998, to 69% in 2001. Students’ perceptions about the adequacy of time dedicated to the instruction of community health and social service agencies also increased 10% between 1998 (51%) and 2001 (61%).⁹

GQ responses from our institutions’ students showed a similarly positive trend between 2000 and 2001 (most recent available data). However, our students’ responses were still below the average for all medical schools participating in the survey, and in some cases, our scores declined between 2000 and 2001.¹⁰ Table 1 compares responses from our institution to the national average.

These responses suggest that the time dedicated to population and community health at our institution does not meet students’ expectations and AAMC recommendations. To address this issue, the Center for Healthy Communities in the Department of Family and Community Medicine developed a community health curriculum to be integrated into a required third-year (M3) Family Medicine Clerkship with a goal to train future physicians to be community responsive. This article describes the process and rationale used to develop the curriculum,

outlines the curriculum content, provides results from student evaluations, discusses limitations of the curriculum, and summarizes lessons learned while implementing the curriculum.

Methods

Five faculty and two staff from the Center for Healthy Communities established a workgroup in January 2002 to develop a M3 Community Health curriculum. The community health material was to be included in a required M3 Family Medicine Clerkship that consists of eight half days per week of clinical placement, two half days per week of Problem Based Learning small groups, and 1.25 hours per week of community health lecture and discussion. In total, the community health portion of the curriculum would account for five and one half hours per month of class time. The Family Medicine Clerkship is offered every month as part of the 12-month M3 academic year. Approximately 15 to 18 students rotate through the clerkship monthly.

The workgroup followed a deliberate process to review the existing clerkship curriculum and select topics for the course. The team reviewed 1) LCME Accreditation Standards, 2) USMLE Step 2 Exam, 3) existing curricula at our institution, and 4) community health curricula at other medical

schools.^{11,12,13,14,15,16} After much discussion, curriculum workgroup members decided to provide students with information about important core community health concepts that will help strengthen the physician-patient relationship and work with populations and individuals with diverse socio-economic, cultural, and educational backgrounds. Thus, the curriculum addresses many of the components included in MSOP's definition of a "population health perspective."

Workgroup members divided into teams of two or three to address the following topics: becoming a community-responsive physician, effects of socio-economic status on health and illness, cultural competency, and the physician's role as health educator. Each team researched and developed content for a 70-minute, interactive educational module, and presented its module to the larger group for review and revision on three separate occasions. Once modules were finalized, team members identified several relevant articles as required readings, and wrote two multiple-choice questions to be included in the final clerkship exam. Table 2 describes the module assessment, development and implementation phases.

Overview of Curriculum

The community health curriculum is comprised of four sections: 1) becoming a community-responsive physician; 2) effects of socioeconomic status on health; 3) cultural competency; and 4) physicians as health educators. Students are also required to demonstrate their understanding of these concepts through a patient project. At the completion of the community health curriculum, third year medical students will be able to: 1) explain how social and economic status affect the health status, health seeking behaviors, and access to health care of interviewed patient; 2) explain how private and public health insurance systems affect access to health care of interviewed patient; 3) identify public safety nets, and their limitations, that are available to underserved patients; 4) begin to acknowledge and understand one's own cultural definitions of health and illness and the culture of medicine; 5) explain how cultural differences have influenced the health and health seeking behaviors of interviewed patient; 6) identify strategies for eliciting patients' beliefs about health and illness; 7) identify an appropriate community resource for interviewed patient; and 8) demonstrate two strategies to explain a health condition to a patient with low health literacy.

Three, two-member teams teach the curriculum on a rotating basis with each team teaching four months per year. Team members include four faculty and two staff from the Center for Healthy Communities who helped develop the curriculum. Three of the faculty and one staff have backgrounds in sociology while a fourth faculty is a family medicine physician, and another staff has a public health and social work background.

Introduction: Becoming a Community Responsive Physician - This section is taught on the first day of the clerkship and is part of the larger half-day clerkship orientation. In an effort to get students to begin to conceptualize health more broadly to include social, economic and community factors, instructors begin this section of the curriculum with a discussion of "what is community health?" Students are asked to share their thoughts on this topic and their experiences working in the community. This discussion is followed by a power point presentation that introduces students to key community health concepts including: 1) health is defined beyond the absence of physical disease; 2) health promotion/disease prevention is important; 3) the patient is considered in the context of community; and 4) the community is viewed as a resource for health. The presentation also emphasizes the need for students to become community-responsive physicians who understand, value, and use the community context to care for patients. A community focus is emphasized because individual risk factors are often insufficient explanations of illness and disease.¹⁷

Students are taught that care of the patient occurs at the intersection of social, economic and community factors as they interact and affect health care delivery and the health of patients. Health promotion is emphasized as a process that can enable people to gain some control over the state of their health.

Medical students are also taught the range of community resources available to assist patients in achieving and sustaining health. Students are asked to identify potential community resources available to patients, such as health departments, community-based organizations, and churches. Instructors share their experiences working with these and other community-based resources to address health concerns of underserved populations.

Table 2
Community Health Curriculum Assessment, Development and Implementation Process

| Phase I: Assessment | |
|---|--|
| Action | Outcome |
| Reviewed LCME Accreditation Standards to identify community health requirements. | No specific mention of community health. |
| Reviewed USMLE Step 2 exam to identify questions related to community health. | No specific community health questions; a few questions about prevention and public health. |
| Contacted Associate Dean for Curriculum at our institution to identify where in the curriculum concepts of community health are addressed. | Community health concepts are mentioned in the Health Policy lecture of the M1 – M2 Clinical Continuum and sporadically throughout other medical college courses. Only one of the eight required M3 clerkships addressed some concepts of community health. |
| Reviewed community health curriculum at other medical schools to identify strategies for teaching community health to undergraduate medical students. | Community health is interpreted in many different ways and as a result there is no standard undergraduate medical school curriculum. Some schools incorporate community health concepts into required first and second year courses, while other schools offer courses in Community-Oriented Primary Care (COPC) and require students to participate in COPC projects. ^{11, 12, 13, 14, 15, 16} |
| Phase II: Development | |
| Action | Outcome |
| Identified topics to include in the curriculum. | Curriculum emphasizes core community health concepts and is comprised of four sections: 1) becoming a community responsive physician; 2) effects of socioeconomic status on health; 3) cultural competency; and 4) physicians as health educators. |
| Created teams of two faculty/staff to each develop one of the four components of the curriculum. | Teams presented their modules to the larger group on three separate occasions for review and revision. |
| Developed guidelines for Patient Project. | Students must select one patient and conduct an in-depth interview with the patient and one family member applying core community health concepts. |
| Identified relevant articles for assigned readings and wrote two multiple choice questions per section for final clerkship exam. | Curriculum completed. |
| Phase III: Implementation and Evaluation | |
| Action | Outcome |
| Developed teaching schedule. | Three teams of 2 faculty/staff teach the curriculum on a rotating basis for a total of four months per team per academic year. |
| Taught curriculum on a monthly basis. | Teaching teams developed a teaching format/style that works best for them. |
| Required students to complete patient project on monthly basis. | Students give an oral presentation and brief written essay applying core community health concepts to patient interview. |
| Conducted student evaluations at end of each month. | Minor revisions in the curriculum and teaching styles/formats were made throughout the academic year in response to student feedback. |

This section of the curriculum concludes with an overview of the next three sessions, required readings, and patient project. See Appendix A for a list of required readings.

Social and Economic Factors that Influence Health - The objectives of this section of the clerkship are to: 1) provide an overview of access issues, including public and private health insurance systems and safety net programs; and 2) discuss other

important social and economic factors that affect health. This session begins with a discussion of the required readings. Students are asked to identify the key findings in the research articles, provide feedback on the research results, and discuss how the results will (or won't) affect how they practice medicine in the future.

A power point presentation follows the discussion. Comparative data from the United States and other countries are presented on health care spending, infant mortality, and life expectancy rates. The students are asked to discuss the differences in per capita spending on health care and health status measures in various countries. Statistics about private and public insurance coverage are presented and eligibility requirements for Medicaid, Medicare, Wisconsin State and Milwaukee County programs are discussed. Students are given a handout that describes these programs and their eligibility requirements. The risks of un- and underinsurance are presented, such as limited or no access to a primary care provider, limited physician visits per year, and inability to pay for preventive health services.

The impact of socioeconomic status on health and findings that people with lower socioeconomic status generally have worse health, higher infant mortality rates, and a lower life expectancy are discussed. The impact of socioeconomic status on health is described in terms of factors such as health care access, health care quality, health behaviors, social networks, social supports, acute stressors, chronic stressors, self-esteem and coping resources, and neighborhood/community socioeconomic context.

At the conclusion of the power point presentation, students are challenged to consider what they can do as physicians to respond to the socioeconomic factors that contribute to the poor health of their patients. At the individual level, physicians can be active in community-wide initiatives to improve health, coordinate services for individual patients, provide care to the medically indigent, and keep the patients' social and economic context in mind during visits. At the community level, physicians can advocate for improved access and health policies, and support community-based services.

Cultural Competency in Health Care - Because we live in a multicultural society in the United States, it is necessary for physicians to understand the relationship between their patients' cultural context and their health care beliefs and

behaviors. The goals for the cultural competency component of the clerkship are to: 1) increase students' awareness of their own cultural frameworks and assumptions; 2) increase knowledge of the ways that cultural differences can influence the clinical encounter; and 3) develop skills to communicate more effectively with patients. As a result of the cultural competency component, we expect students to be able to define the components of culture, define their own cultural beliefs and values, recognize their own process of acculturation into medical school, and understand that health and illness are not defined the same way in all cultures. The student learns that there may be differences between the patients' and clinicians' understanding of disease and the necessity of eliciting patients' illness beliefs in order to provide quality care. We present cultural competency as a skill that exists on a continuum and becoming culturally competent as an on-going learning process.

The class begins with a discussion of the assigned readings that address what it means to provide culturally competent care, and sequenced questioning as a method to elicit the patient's perspective on illness. Students are encouraged to share what they think it means to be a culturally competent health care provider and experiences they have had with physicians who they consider to be culturally competent. The discussion is followed by an explanation of differences between cultural knowledge, cultural awareness, cultural sensitivity, cultural competence, and cultural humility, which entails a life-long commitment to self-evaluation and self-critique.

The culture of western medicine is discussed and students are encouraged to understand and question both the biases in medical culture as well as understand why many patients do not feel comfortable in a medical setting. The process of the students' acculturation into western medicine is reviewed, as well as the effects of western medicine's beliefs, values and norms on the physician-patient encounter.

Students are taught the distinction between disease and illness and models used to elicit a patient's illness experience and beliefs are reviewed. Specifically, instructors present the eight questions developed by Kleinman¹⁸ to acquire information about patients' explanations of the disease including cause, symptoms, severity, prognosis, treatment, duration, and impact. The patient-centered clinical method¹⁹ and case studies are also used as guides for discussion. Case studies are based on experiences of Department of Family and Community Medicine

faculty from our institution. Although these are third year medical students in their first year of clinical experience, we encourage them to think about and ask these questions of patients.

Physicians as Health Educators - In this section students are introduced to the concept of physicians as community health educators and are taught strategies to communicate health information to individual patients and the public. Instructors begin this section with an explanation of health literacy as the ability to “obtain, interpret, and understand basic health information and services, as well as competence to use such information and services in ways that enhance our health.”²⁰ The lack of health literacy among patients is presented as a possible barrier to physician-patient communication. Students are encouraged to share examples of incidents in which they or their preceptors worked with patients who they thought had limited health literacy. A video developed by the American Medical Association is then shown to the students depicting actual patients discussing the impact of their low literacy skills on their health and health care experience.²¹ Through the video, assigned readings, and group discussion, students are taught methods to help translate complex health information into a language that is understandable to low-literate patients.

Students learn strategies to overcome possible physician-patient communication barriers that include: 1) tailoring educational material for their patients and avoiding technical language; 2) using visual diagrams and analogies; 3) speaking clearly; 4) considering print size of materials; 5) using culturally appropriate materials; and 5) checking the patients’

understanding frequently. Students are asked to select a partner and are then given an opportunity to practice these strategies.

Each student pair is given a case in which the patient is a 40 year old male truck driver who, unknown to his physician, has a fourth grade reading level. The patient is seeing his family practice physician to obtain test results from a recent physical exam. The physician must explain to the patient that he has elevated blood pressure and an carotid bruit. The physician must further explain the relationship between hypertension, a carotid bruit and risk for stroke. One student plays the role of the patient while the other student is the physician. Students are given 12 minutes to complete the exercise. A large group discussion follows that focuses on what strategies were used and their effectiveness as perceived by the “patient” and “physician.”

This session concludes with a discussion of the need for physicians to be knowledgeable about resources in their community that can help address patient concerns. Students are taught how to identify community resources that are geographically, culturally, and financially appropriate.

Patient Project - In their role as clinician, advocate, and educator, students are required to conduct an in-depth interview with a patient and a family member, demonstrating their ability to apply core community health concepts through an in-class oral presentation and a brief written paper. Students must also identify a beneficial and appropriate community resource, and collect information about the resource to share with the patient and the class. To assist with identification of an appropriate resource, students have access to a

Table 3
Reflection Questions*

1. State three (3) assumptions you had about the patient that were confirmed by your patient interview, specifying your assumptions, how they were confirmed, and what you learned from this.
2. State three (3) assumptions you had about the patient that were challenged by your patient interview, specifying your assumptions, how they were challenged, and what you learned from this.
3. Do you think your experience will affect the way you interact with underserved patients in the future? If yes, how? If no, why not?
4. What did you learn about the patient from the patient interview that you might not have learned in a typical clinical encounter? Did this information change the treatment plan you prescribed for the patient? If yes, how? If no, why not?
5. Based on interactions with your patient, what can you say about his/her definition of health or illness? How does that compare to yours? How did your patient’s definition of health or illness affect how you provided care (be specific)?

*Students choose two of the five questions to answer

Personal Digital Assistant (PDA)-accessible database of community resources in a tri-county area. Finally students are required to discuss the role of the family physician and personally reflect on the experience. See Table 3 for a list of the reflection questions.

During the final community health class session, students divide into three small groups and give a brief 10 – 12 minute oral presentation of their patient project. Small groups are used to ensure that students have enough time to present their project, and to encourage group discussion.

Results

Each month the students are requested to complete an evaluation of the course. Evaluation results are currently available from approximately 200 students who participated in the clerkship from July 2002 through June 2003. The evaluation is a nine-item questionnaire with a six-point Likert scale in which 1 = Strongly Agree and 6 = Strongly Disagree. The evaluation results are presented in Table 4.

Students were most satisfied with the presentations (average scores ranged between 2.0 and 2.2) and least satisfied with the readings and

patient project (scores of 3.1 and 3.0, respectively). Students were also asked to comment on the curriculum.

Following are examples of positive student comments:

Even though the patient project was some work, there was merit to it.

Very interesting readings – important topics.

Sessions were very informative and good discussion.

Following are examples of negative student comments:

Decrease the writing. Decrease the length of report. Stress more doing for patients instead of reporting of what students have done.

Instead of writing a paper and thinking about these issues, I think it would be more valuable to actually find 2 or 3 resources for the patient and set them up with them. Then we could do a brief presentation about what

Table 4
Student Evaluation Summary

- | | |
|--|-----|
| • Instructors were prepared and knowledgeable about the topics, and presented the material in a clear, organized fashion. | 2.0 |
| • Presentations effectively demonstrated the impact of culture on the patient-physician relationship. | 2.4 |
| • Presentations effectively demonstrated the impact of socio-economic status on the patient-physician relationship. | 2.2 |
| • Presentations effectively demonstrated the impact of patients' health education needs on the patient physician relationship. | 2.2 |
| • Articles and readings were effective tools in demonstrating non-medical influences that affect a patient's health. | 3.1 |
| • The patient project was an effective tool to facilitate understanding a patient's concerns in the context of his/her culture, socio-economic status, and health education needs. | 3.0 |
| • The PDA-accessible community resource databases are effective tools to help identify appropriate community resources. | 2.7 |
| • At the completion of this clerkship I understand what it means to be a community-responsive physician. | 2.2 |
| • At the completion of this clerkship I have developed new skills or enhanced existing skills that will help me become a more community-responsive physician. | 2.3 |

1 = Strongly Agree; 6 = Strongly Disagree

we did and about the resources.

The community resources on the web for PDA download should also be available on the web or a hardcopy because the info doesn't download properly and sometimes the PDA has other necessary important information that can be deleted for community resource info.

Evaluation results indicate that most students agree that at the completion of the curriculum, they understand what it means to be a community-responsive physician, and they have developed some skills to help them become more community responsive. Most students also agree that the material presented in class effectively demonstrates the connection between a patient's health and socio-economic status, culture, and health education needs. Students were less satisfied however, with the effectiveness of out-of-class teaching aids such as required readings, the patient project, and the PDA-accessible community resource database.

Since most medical education exams follow a multiple-choice format, it is not surprising that students are not positive about the written patient project. Nevertheless, students' written reports and oral presentations continually indicate that they are able to apply community health concepts covered in class to a real-life situation. It is less clear why students are dissatisfied with the required readings and the PDA-accessible resource database. Students have expressed that the clinical and Problem-Based Learning demands of the course do not allow enough time to read the ten required articles. Thus, they may be voicing their frustration by negatively evaluating effectiveness of the articles. Some students have also stated that the PDA-accessible database is difficult to use. These complaints are difficult to understand given that all M3 students are required to have a hand-held computer and are given extensive instruction on its use at the beginning of their third year.

Limitations

The curriculum is limited by the current evaluation tool that only collects students' subjective perceptions as to whether they liked or disliked the curriculum. We have not objectively assessed potential changes in students' behaviors due to involvement in the curriculum. For instance, we have not observed students before and after they complete the curriculum to determine the extent to which they ask patients any of Kleinman's questions, or apply

other techniques used to assess a patient's health belief model. Likewise, we have not observed student-patient interactions to identify possible changes in communication strategies on the part of students if they perceive a patient to have low health literacy. Lack of objective assessment data make it difficult to measure the full impact of the curriculum.

Assessment of the curriculum is also limited by lack of information about students' background. We have not collected demographic data, such as age, race, economic background, or place where they grew up (e.g. rural, urban, suburban, etc.), or experiential information (previous community-based experiences with diverse populations) about students that could affect curriculum outcomes.

The curriculum is further limited by the time constraints of the clerkship. Five hours within a one-month curriculum is not sufficient time for students to identify, absorb and integrate core community health concepts; especially if this is one's first exposure to such information.

Lessons Learned and Next Steps

To gain a better understanding of the full impact of the curriculum on students, we plan to develop more comprehensive assessment strategies that include both subjective and objective measures.

Many preceptors may also be unfamiliar with some of the topics covered in class, and therefore do not reinforce the concepts or suggested strategies in a clinical setting. For students to see core community health concepts modeled by their preceptors, some form of faculty development is needed for some community-based preceptors.

Additionally, community health is best taught experientially, and many students are interested in community-based experiences. In this pilot year, time and financial constraints however, prevented the students from participating in community-based activities on a monthly basis.

Using a continuous quality improvement approach, in Spring 2003 the community health curriculum workgroup reconvened to review the results to-date of the curriculum. Some of the required readings and presentations have been updated, and efforts are underway to develop new assessment tools. However, the biggest change is the inclusion of half-day community-based experiences including shadowing public health nurses, giving a health education presentation to public housing

residents, and assisting at a free health clinic. Students are randomly assigned to one of the community-based experiences, or the patient project. Additional community sites will be added throughout the academic year. Through this on-going improvement process, the community health curriculum will strive to address the important issues facing today's continually changing and complex health care system and better prepare future health care providers.

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health curriculum.

Med Educ Online [serial online] 2004;9:5. Available from
<http://www.med-ed-online.org>

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