

Section II: Major Lessons Learned in the Nine Content Areas of the UME-21 Project

Health Care Economics, Financing, Organization, and Delivery

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Background: *The US health care system is in a state of rapid evolution, with changing payment, organizational, and management structures. To learn how to function optimally in a system in which care is increasingly managed and competitive, today's medical students must understand the structural and economic underpinnings of the system within which they will practice. At the outset of the Undergraduate Medical Education for the 21st Century (UME-21) project, the great majority of medical school curricula were lacking in areas of health care financing and organizational structure. The institutions involved in the UME-21 project sought to address curricular deficiencies in two broad areas: (1) the structure and financing of the US health care system ("health policy") and (2) the manner in which this system is reflected in the organization and activities of health care providers ("care delivery"). This article discusses the development, implementation, and evaluation of the first of the two areas. **Methods:** Data were abstracted from written reports provided by each of the UME-21 schools to the project's Executive Committee and sponsor. In selected cases, additional data were obtained by personal communications with project directors and evaluators. Local UME-21 project leaders verified all data presented. **Results:** Curricular philosophy and teaching methods varied widely, but health policy curricula were predominantly preclinical and didactic in nature. At the school level, much was achieved in terms of student knowledge, curricula were generally well received by students, attitudes toward managed care generally moved in a positive direction, and behavior may have been positively influenced as well. At the project level, many potentially interesting changes exist within the 18 schools and between the UME-21 and other schools, but it is not clear whether or what parts of the health policy curricula were responsible for these changes. Nonetheless, as measured by changes in health policy-related items on the Association of American Medical Colleges Graduation Questionnaire, it appears that UME-21 schools outperformed their non-UME-21 counterparts. All of the UME-21 schools were enthusiastic about their health policy innovations, and this extended across all key stakeholders. Most schools avoided focusing on managed care and instead adopted more neutral themes that introduced the same material. Integrating the new material in conjunction with the more traditional aspects of the curriculum was also an effective implementation strategy. **Conclusions:** Health policy should be incorporated into both the preclinical and clinical years. The former emphasizes health care economics as one of the foundations of medical practice, whereas the latter provides the opportunity for its use on a daily basis in clinical settings. However, like any new curriculum, to achieve equal status with the traditional biomedical curriculum, it must be presented in a scholarly, rigorous, and reasonably comprehensive fashion. Mounting a scholarly health policy curriculum requires a wide-ranging, interdisciplinary faculty. If it is to become a central component of the medical school curriculum, creative approaches to faculty recruitment and development will be needed. This will require both careful educational policy formulation and new investment.*

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The US health care system is in a state of rapid evolution, with changing payment, organizational, and man-

agement structures.^{1,2} These changes, often indiscriminately lumped together in the term *managed care*, were initially driven by concerns about the cost of health care,^{3,4} but access is also a problem for many,⁵⁻⁸ and in the past few years, there have been increasing concerns about the quality of care.⁹⁻¹¹ The changes in health care financing and organization over the past decade have

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had an enormous effect on medical education as well as on the delivery of care. Today's medical students must understand the structural and economic underpinnings of the US health care system to function optimally in a system in which care is increasingly managed and competitive.¹²⁻²⁰

At the outset of the Undergraduate Medical Education for the 21st Century (UME-21) project, the great majority of medical school curricula were lacking in areas of health care financing and organizational structures.²¹⁻²⁴ Managed care executives, health policy analysts, medical educators, and even medical students themselves had all identified important deficiencies in the preparation of the next generation of physicians for practice in the future health care environment. The institutions involved in the UME-21 project sought to address these deficiencies.^{25,26}

One of the nine major UME-21 content areas—health care economics, financing, organization, and delivery—is a broad and ambiguous term, including the structure and financing of the US health care system (“health policy”) and the manner in which this system is reflected in the organization and activities of health care providers (“care delivery”). In this article, we use “health policy” to indicate a curricular topic that addresses underlying health system themes—what might be thought of as representing the “basic science” of health care systems education. Topics in this category include health care economics; health care financing, medical insurance, and provider payment; and the overall organization of the US health care system, including structural care models. The emphasis of the present article will be on the didactic health policy curriculum; a companion article²⁷ in this issue of *Family Medicine* will deal more fully with the experiential care delivery curriculum.

Methods

Data were abstracted from written reports provided by each of the UME-21 schools to the project Executive Committee and sponsor. In selected cases, additional data were obtained by personal communications with project directors and evaluators.

Project directors categorized UME-21 activities into nine separate content areas. Because of overlap between categories, available outcome measures do not easily lend themselves to a comprehensive analysis of specific curricular innovations.^{28,29} This is especially true in the case of the health policy curriculum, where it is often difficult to isolate the effects of the health policy curriculum from that of the care delivery curriculum.

Results

Curriculum Content

Sixteen of the 18 UME-21 schools developed curriculum in the broad area of health care economics, fi-

ancing, organization, and delivery (Table 1). Seven schools dealt with health policy. In contrast, all schools addressed care delivery, but some to a greater extent than others. The health policy component was largely, but not exclusively, located in the preclinical curriculum, was largely didactic in nature, and was developed with the rationale that familiarity with basic health policy issues is a prerequisite to understanding how care is managed in the modern practice environment. In contrast, the care delivery component was almost always experiential in nature and frequently involved clinical or administrative partnerships with managed care organizations and community-based primary care networks.

Not surprisingly, no two UME-21 curricular initiatives in this broad content area were completely alike. Rather, they spanned an entire spectrum—from predominantly health policy, through more balanced health policy and care delivery, to predominantly care delivery curricula (Tables 1 and 2). Curricular philosophy differed considerably even in the latter group of schools. Although all schools incorporated health policy curriculum into one or more primary care clerkships, and some provided introductory lectures, others used a more integrative approach. Yet other schools built a care delivery curriculum on a preexisting, preclinical health policy curriculum.

The health policy curriculum at different schools involved a variety of topics (Table 2). The topics included health care economics, the organization and financing of the US health care system, employer-based indemnity insurance and managed care, the major public medical insurance programs, medical practice organizations, the health care workforce, cost-effective care, access to health care, and the politics of health care and organizational development.

Teaching Methods

Lectures and small-group discussions were the predominant educational vehicles, but panel discussions were also common. Syllabi, some of which were extensive and included reading materials, were almost invariably used, and case-based material was common. Several schools also used Web-based exercises. With few exceptions, new courses were required components of the overall curriculum, so that all students were exposed to the new curriculum. The majority of UME-21 innovations were completely new additions to the curriculum. Some were stand-alone courses. Others were more subtly integrated into either existing or new, more-traditionally oriented courses.

External Partnerships

Two types of partnerships predominated. The first were those with regional (eg, AVMed Health Plans/University of Miami, Brown & Toland Medical Group/

Table 1

UME-21 Schools That Developed Curriculum in
 “Health Care Economics, Financing, Organization, and Delivery”

School	HP	CD	PC	C	Theme	Curriculum Objectives
Dartmouth College	-	+	+	+	Managing care	Understand the rudiments of fee-for-service and capitated care, how office-based physicians interact with third-party payers, the key features of the day-to-day administrative functioning of an office practice, the impact of financial and management issues on patient care from the viewpoints of doctor and patient, and the variation among medical practices relative to the process of practice management, resource inputs, and financial productivity.
University of California, San Francisco	-	+	-	+	Managing care	Gain the knowledge and skills required to practice in managed care systems, with emphasis on: providing quality care while restraining the growth of health care costs; access to care, coverage policies and referral procedures; prescription management; clinical practice guidelines; and the organization of health care delivery in the San Francisco area.
University of Miami	+	+	+	+	Health care environment	Understand the growth of managed care in a historical perspective; the current health care environment; managed care basics; the differing perspectives of managed care organizations, patients, and physicians of the current health care environment; health policy and resource allocation; and the importance of medical record documentation.
University of Nebraska	+	+	+	+	Managing care	Understand the history of health care financing in the United States, the growth of managed care, and current debates about the success or failure of managed care; different models of managed care; government insurance programs and how care is provided to the uninsured; resource allocation; the impact of managed care on workforce needs and opportunities for practice; and billing, office laboratory, medical record, and credentialing regulations and procedures.
University of Pennsylvania	+	+	+	+	Clinical decision making	Understand the fundamental principles of health care economics, financing, and organization; that economic, social, and political forces significantly impact clinical decision making; and that effective patient management in the modern health care environment requires a systems-based approach.
University of Pittsburgh	+	+	-	+	Economic forces and organizational responses	Understand the major economic forces that influence health care delivery; ways in which government, business, and individuals finance health care in the United States; and the different types of medical practice organizations that have developed in response to these forces and financing mechanisms.
University of Wisconsin	+	+	+	+	Managing care	Understand the financing and organization of health care services, the evolution of the present system and potential future directions, and how resource allocation is handled by managed care organizations and society.
Wayne State University	+	+	+	+	Managing care	Understand health care expenditures and the organization of health care systems by (1) recognizing that health care plans focus on value, not quality or cost alone and (2) directly managing the care of patients (with emphasis on patient demand versus patient need for diagnostic testing, specialist referral, and medical intervention; office system processes and procedures, including scheduling, billing and case management, and documentation.

Table 1
(Continued)

School	HP	CD	PC	C	Theme	Curriculum Objectives
Case Western Reserve University	-	+	-	+	Health insurance coverage	Illustrate the complexity employees face when choosing health insurance for themselves and their families. Students are expected to be able to define and contrast different types of managed care plans, compare benefits across plans, and recognize that patients have different insurance needs at different times in their lives.
Jefferson Medical College	-	+	-	+	Organizational development and leadership	Understand (1) the evolution and principles of managed care, the different types of managed care organizations, the history of Medicare and Medicaid, and the principles of managed Medicare and Medicaid; and (2) the politics of health care organizational development.
Drexel University*	-	+	-	+	Economic forces and clinical decision making	To increase awareness of the costs and benefits of diagnostic tests and medications, and the impact of different types of insurance coverage on patient care.
University of Kentucky	-	+	-	+	Managing care	Understand the key concepts of managed care, the evolution of health care delivery systems, the benefits and limitations of different health care plans, the role and application of medication formularies in cost-effective care, and the role of medical specialists and other health care professionals in capitated systems. Demonstrate the ability to provide comprehensive, cost-effective care in a capitated system.
University of Massachusetts	-	+	-	+	Managing care	Understand how to: (1) organize and use the ambulatory medical record to effectively manage patient care and (2) incorporate managed care principles into patient care (including the use of guidelines, formularies, referrals, alternate care settings, etc).
University of Minnesota	-	+	-	+	Health insurance coverage	Understand the basic structure of health plans; methods for ensuring quality of care for populations, including those with special needs; the use and effectiveness of physician incentives; and the media portrayal of managed care.
University of New Mexico	+	+	+	+	Managing care	Understand the history of the US health care system, the evolution of current incentives and care delivery models, and the impact of managed care on patients, physicians, and practice management.
University of North Carolina	-	+	-	+	Managing care	Understand basic managed care concepts; incorporate cost, benefits, and health care coverage as factors in medical decision making; and appreciate how physicians and patients interface with managed care organizations.

HP—health policy curriculum, CD—care delivery curriculum, PC—preclinical curriculum, C—clinical curriculum

*Formerly MCP-Hahnemann University

Table 2
Preclinical and Clinical Curriculum at the UME-21 Schools

School	Preclinical Curriculum	Clinical Curriculum
Dartmouth College	Basic office operations are presented and discussed in the first and second year "On Doctoring" course	Selected components of Integrated Primary Care Clerkship: 1. Seminars (Fee-for-Service Versus Capitation—What Does It Mean? Where Does the Money Come From? Where Does the Money Go?) 2. Interactive financial spreadsheet (used to evaluate the effects of payer mix on patient care, doctor-patient interaction, and practice revenue) 3. Observation of front and back office functions Evaluation: Student satisfaction questionnaires
University of California, San Francisco	No preclinical component.	Selected components of PLACE (Partnerships for Longitudinal Ambulatory Care Education): 1. Seminar (Overview of the US Health Care System) 2. Student projects: (a) two managed care case vignettes, with discussions framed by benefits/drawbacks of managed care, how coverage decisions are made, role of financial incentives in clinical decision making; (b) managed care topic listserve presentation 3. Managed care preceptorship 4. Group discussions (student impressions of managed care practice) Evaluation: Student satisfaction questionnaires
University of Miami	1. First-year lectures and panel discussions: Health Care Delivery in Historical Perspective, Current Health Care Environment, Basics of Managed Care (supplemented by a Web tutorial), Managed Care Perspective, Patients' Perspective (panel), Physicians' Perspective (panel), Health Care Policy and Allocation of Resources (panel). 2. Second-year lectures: Coding and Documentation—Getting Paid, Paying for Health Care—A Look at Three Encounters and the Bills, Paying the Bill—Charges and Reimbursements. Evaluation: 1. Some items included on examinations for courses into which didactic sessions were integrated (but not scored separately). 2. Sessions evaluated for clarity, relevance, and quality using a 5-point Likert scale. 3. Attitude survey administered at start of every year (three items specific to health policy)	Site visits observing decision making and policy formulation: 1. AvMed Health Plans Inc. 2. Miami-Dade County Health Department
University of Nebraska	1. First-year lecture (Introduction to Medical Insurance), panel discussion and billing exercise (students work up videotaped patient and then bill for the visit based on patient's insurance coverage). 2. Second-year lectures in Integrated Clinical Experience course: Medicare, Medicaid, Principles of Managed Care, Ethics and Resource Allocation.	1. Pediatrics clerkship: Web-based modules on Managed Care Basics, Managed Care in Pediatrics (including case-based material). 2. Family medicine clerkship: Managing Care in Family Medicine (a day in the office making financial and organizational decisions). 3. Internal medicine clerkship: mock pharmacy and therapeutics committee and utilization review experience. 4. Site visits: half day observing phone triage in Nebraska Health System medical call center; three 1-day visits to local managed care organizations observing decision making and policy formulation. 5. Senior project: comparison of the actual care provided one of the student's patient with an existing guideline, with an evidence-based discussion of differences, including costs and proposed improvements. Evaluation: Written examination in fourth year (multiple choice questions, short answers).

Table 2
(Continued)

School	Preclinical Curriculum	Clinical Curriculum
University of Pennsylvania	<ol style="list-style-type: none"> 1. First- and second-year Health Care Systems (HCS) course. Lectures and panel discussions: The Changing Health Care Environment; Fundamental Principles of Health Care Economics; Principles of Medical Insurance; From Indemnity Insurance to Managed Care; Medicare; Medicaid; S-CHIP; Comparative Financing Mechanisms; Health Care Workforce—Size, Composition, Diversity, and Distribution; The Uninsured; Public Health—A Case Study—The City of Philadelphia; Racial/Ethnic Disparities in Health Care; Quality Measurement; Medical Errors; Solving the Quality Problem. 2. Selected components of first- and second-year Clinical Evaluative Science (CES) course. Lectures, small-group discussions, and case studies of Cost Effectiveness and Clinical Decision Making showcasing clinical epidemiology, evidence-based medicine, and differing perspectives of physicians, patients, and payers. 3. Selected component of Introduction to Clinical Medicine course. Expanded medical interview (“financial interview”) that requires attention to insurance coverage and its impact on clinical management decisions. <p>Evaluation:</p> <ol style="list-style-type: none"> 1. Students evaluated with multi-item examinations, problem-solving exercises, class presentations (CES and HCS courses), written reports (HCS course); and patient write-ups and standardized patient exercise (“financial interview”). 2. Sessions evaluated for clarity, relevance, and quality using a five-point Likert scale. 3. Attitude survey administered at start of every year (approximately half of the 49 items related to health policy) 	<ol style="list-style-type: none"> 1. Community-based primary care clerkships: family medicine (100% community-based), internal medicine (33%), pediatrics (50%), obstetrics and gynecology (40%). 2. Selected components of primary care clerkships. Interdisciplinary seminars including discussions of cost-effective patient management (eg, in Chest Pain In The Primary Care Office, students consider economic considerations in establishing a diagnosis of non-cardiac chest pain; in Low Back Pain, students compare their management plans with the University of Pennsylvania Health System disease management guidelines for cost-effective, evidence-based care). <p>Evaluation:</p> <ol style="list-style-type: none"> 1. Student evaluation form includes “cost-consciousness” item, directed at assessing cost-effective practice behavior 2. Student satisfaction questionnaire (community-based primary care clerkships evaluated on a 9-point Likert scale)
University of Pittsburgh	Preexisting health policy course in first year.	<p>Selected components of Community and Ambulatory Medicine Clerkship (CAMC), a 12-week multidisciplinary primary care experience:</p> <ol style="list-style-type: none"> 1. Self-directed learning assignments (eg, review monograph on managed care, which covers basic concepts and terminology) 2. Weekly didactic curriculum into which health financing and organizational issues are interwoven (eg, Extremes of Age includes discussion of S-CHIP; Hidden Problems includes discussion of financial entitlement programs such as Medicare; Patient and Community raises issues of equality of access to care). 3. Small-group discussions of issues relating to health care finance and delivery systems (eg, referral denials, insurance co-payments, and provider networks). 4. Emergency Department rotations exemplify financial and access issues (eg, admission denial), the charges for common outpatient and emergency procedures and treatments, and the difference between charges and costs. <p>Evaluation:</p> <ol style="list-style-type: none"> 1. CAMC course written exam included relevant health policy items. 2. CAMC course evaluation instrument (based on the critical incident technique) included questions on the impact of health policy issues on ambulatory care

Table 2
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School	Preclinical Curriculum	Clinical Curriculum
University of Wisconsin	Second-year Patient, Doctor, and Society course includes lectures on Health Care Financing, Health Care Access, Rationing Health Care. Evaluation: Some items on course examination directly related to lectures (but not scored separately).	<ol style="list-style-type: none"> 1. Lectures and small-group case presentations: Managed Care, Managing the Cost of Care, Prescription Writing and Formularies, Practice Guideline). 2. Third-year primary care clerkships. Case-based, small-group discussions include relevant material (eg, cost-effective use of drugs). 3. Fourth-year 8-week required community preceptorship. Orientation lecture on Managed Care; patient care management project.
Wayne State University	First- and second-year Preventive Medicine and Public Health course (lectures on access to care/physician accountability and measuring health outcomes). Evaluation: Some items on course examination directly related to lectures (but not scored separately).	Selected components of the Continuity Clerkship Clinic (CCC), a half day per week, 6-month primary care office practice experience. Three of 15 clinical learning exercises (CLEs) address this content area (Documenting the Level of Visit for Tracking/Billing Physician Services, Monitoring Patients Following an Office Visit, Patient Education Regarding "Demand" and "Need").
Case Western Reserve University	No preclinical component	Selected component of Contemporary Learning in Clinical Settings (CLICS) course. Two-hour case study (Choosing Health Insurance) with supplemental insurance information, including coverage and premiums, provided. Background reading on managed care is also provided.
Thomas Jefferson University	Preexisting health policy course in first year.	<ol style="list-style-type: none"> 1. Third year. Two self-study modules on health insurance. 2. Fourth year. One-week interactive seminar course covering: The Politics and Organization of Health Care, Evidence-based Medicine and Disease Management, Strategic Planning and Network Development, Provider Relations, Performance Improvement, and Managed Care Ethics. The course includes a managed care site visit.
Drexel University	No preclinical component.	The ambulatory component of the internal medicine clerkship requires completion of a Clinical Encounter Form (that includes the cost of each diagnostic test ordered and drug prescribed) on at least one patient daily. Students are provided with a "cost handbook" containing this information. Students must describe how each test will influence management, whether there are any less expensive but equally effective medications, and how the patient's insurance coverage might influence the care provided. A videotaped orientation is available to students and preceptors.
University of Kentucky	No preclinical component	<ol style="list-style-type: none"> 1. Third year: Orientation to Managed Care (lecture and case discussions); three computer-based patient management simulations focused on practical application of health care financing principles, followed by seminar and debriefing session (Primary Care and Women's Maternal and Child Health clerkship). 2. Fourth year: Seminar during the Dean's Colloquium, focused on providing solutions for a health plan that is losing money.

Table 2
(Continued)

School	Preclinical Curriculum	Clinical Curriculum
University of Massachusetts	No preclinical component.	TheMcQ Family: a "standardized family" enrolled in a managed care plan, with various members encountered in each of the three primary care clerkships. Students manage health care needs of the family members in the context of their health plan. Medical records are provided for each family member, with the opportunity to enter SOAP notes and update problem lists.
University of Minnesota	No preclinical component.	Third- and fourth-year primary care clerkship: 1. Managed Care Colloquium (moderated discussion between students and health plan executives that includes preassigned readings to introduce students to specified objectives) 2. OSCE station designed around the choice of a health plan.
University of New Mexico	First year: Managed Care Basics (lecture and role-playing exercise). Evaluation: Rate understanding and confidence using a scale: "You have heard of the term and can give an example," "you have heard of the term and vaguely understand," and "you have no idea what the term means."	Case-based tutorials on managed care in the internal medicine and family medicine clerkships.
University of North Carolina	No preclinical component.	1. Introductory seminar on managed care concepts in the family medicine clerkship 2. Four Web-based, interactive clinical exercises (diabetes, asthma, breast lump, precocious puberty), one in each primary care clerkship, dealing with the application of managed care principles and evidence-based medicine. 3. Companion seminars to the breast lump and diabetes cases during the OB-GYN and family medicine clerkships, respectively 4. Practice management module (implemented at selected AHEC sites) in the family medicine clerkship that deals with managed care terminology, providing cost-effective, evidence-based care and financial management and includes selected readings, a quiz show-like game, and a patient-practice centered project (Junker JA, Miller T, Davis M. Practice Management: A Third-year Clerkship Experience. <i>Fam Med</i> 2002;34 (2):87-9).

University of California, San Francisco) or national (eg, Aetna US Health Care/University of Pennsylvania) managed care organizations. The second were those with community-based primary care networks either owned by (eg, Clinical Care Associates/University of Pennsylvania, University Services Organization/University of Pittsburgh) or affiliated with the school.³⁰

Managed care organizations provided support on several different levels, including advice on curriculum design, implementation, and oversight; clinical teaching sites; and administrative rotations. In some cases, managed care medical directors were actively engaged in teaching, especially in didactic components of the curriculum. Community-based primary care networks provided clinical teaching sites and preceptors well versed in the daily realities of practice in a managed care environment.

Evaluation and Assessment

At the school level, a variety of methods were used to evaluate health policy curricula, covering the spectrum of student knowledge, satisfaction, and attitudes. One school implemented a behavioral assessment specifically focused on health policy-related topics (using patient write-ups and standardized patients). For the most part, however, evaluations were based on a post test-only design, and few used control groups. Formal data on the opinions of faculty, preceptors, or managed care partners were not available.

The health policy curriculum at the University of Pennsylvania was perhaps the most ambitious and comprehensive. From that project, collected data suggested that much was achieved in terms of student knowledge. For example, examinations (single-best answer multiple choice, short answer, matching, etc) in the Health Care Systems course showed mastery levels of between

77% and 87%. Investigators at the University of Nebraska also noted high performance scores. At that school, beginning with the class of 2000, students completed a knowledge pre-test at the end of the second year. The post-test was completed in March or April of the fourth year. In two successive cohorts, all students passed the examination. At the University of Pittsburgh, investigators used the critical incident technique, asking students to consider a pair of questions that probed for recall of positive and negative experiences (“Did you observe an incident where a preceptor was able to apply his/her understanding of health care finance/economics to bring about a positive outcome or occurrence for a patient?” and “Did you observe an incident where a preceptor’s lack of understanding of health care finance/economics led to a negative outcome or occurrence for a patient?”). Affirmative replies were 61% and 14%, respectively.

Course evaluations, gathered mostly with rating scales, showed a variety of results. At the University of Pennsylvania, overall evaluations of the Health Care Systems course were regularly better than “3” (good) on a five-point scale. However, these courses were usually viewed in a less favorable light than more traditional courses. When individual sessions were evaluated, such as they were at the University of Miami, students’ mean ratings suggested that they agreed that the sessions had relevance and were of high quality. Comments offered by project directors at several schools suggest that it may be important to integrate this content into existing courses rather than trying to carve out new time. Compared to traditional medical school curricula, students may view any new content as less important.

In at least three schools, students’ attitudes about managed care shifted in a positive direction over time, presumably because of increased learning and exposure to a variety of viewpoints. At the University of Miami, a 14-item attitude survey was developed and administered in a pre-post design to 150 students. On two of the three attitude items with content relevant to health policy, there were significant changes in scores, suggesting that students’ attitudes toward managed care were more positive. In one cohort of students at the University of Pennsylvania, the mean attitude score, on a five-point scale on which higher scores signaled more favorable attitudes, the mean shifted from 2.90 to 3.02 ($t=6.04$, $P<.0001$). Similar findings at the University of Minnesota are described in more detail in a companion article.²⁸

Behavioral changes were also noted at the University of Pennsylvania. Several months after students were taught how and why to do a financial interview when taking a history, 75% included relevant questions (eg, insurance status, out-of-pocket expenses) in a comprehensive history and physical examination session with

a standardized patient. However, only about one third of this same class of students included data from a financial interview in their patient write-ups. Although far better than the 3% of the historical control, this was less than what the course directors had hoped for.

At the project level, two main data sets were of interest in comparing data across schools. The UME-21 Graduation Questionnaire, a set of 26 attitude and 20 experiential items—each keyed to a UME-21 objective—provided for observations across and within schools. A total of three attitude items and seven experiential items were relevant to health policy curriculum objectives. Among the eight partner schools, the percentage of students agreeing with the statement “Capitated health care contracts sometimes lead to inappropriate rationing” ranged from 72% to 86%. Within these schools, the changes from one year to the next were relatively small, ranging from -8% to +3%. Greater diversity among and within schools is apparent in an example of an experiential item. For example, among the eight partner schools, the percentage of students who indicated that they had “identified the total cost of a hospital stay or other care” ranged from 6% to 80%. Within these schools, the changes from one year to the next ranged from 0% to 51%.

In the Association of American Medical Colleges Graduation Questionnaire, the external evaluators classified items into categories matching the nine UME-21 objectives. Their analytic approach was to compare percentages of students indicating “adequacy of curricular time” across schools as well as pre- and post-UME-21.²⁹ Two items in particular matched health policy content: “adequacy of instructional time in cost-effective medical practice” and “adequacy of instructional time in managed care.” For cost-effective medical practice, data for the 18 UME-21 schools shows a 15% increase in adequacy between 1999 and 2001 (the first post-UME-21 class for schools that put their curricula in the clinical years) compared with a 9% increase in all other schools. The parallel numbers for the managed care item are 7% and 0%.

Discussion

Despite the lack of comprehensive outcome measurements, project reports and follow-up discussions with key project personnel indicated that all of the UME-21 schools were enthusiastic about their health policy innovations. Moreover, this extended across the key stakeholders. Although concerned about what the rapidly changing health care environment might mean for their careers, students generally valued the insights that these courses provided about the medical practice environment. Educational and school leadership appreciated the resources and legitimacy provided by an educational demonstration project of this magnitude, and the interdisciplinary project teams developed a collaborative

esprit that will serve well in the future as similar curricula are developed and introduced. Managed care and community partners were likewise positive about becoming integral parts of a previously cloistered medical education process and optimistic that an undergraduate health policy curriculum would be an important tool for shaping the physicians of tomorrow.

Nonetheless, numerous barriers to implementing a managed care curriculum were encountered during the UME-21 project. Managed care has such negative connotations in the medical community³¹⁻³³ that even the most innovative curriculum may struggle to replace opinion with fact. This is especially so when dealing with health policy, which, by its very nature, must include the recent history of managed care. As a result, faculty at most schools soon learned that their curricular innovations should avoid focusing on managed care and instead adopt more neutral themes that introduce the same material (Table 1).

A particular advantage of surrogates such as managing care and clinical decision making is that these themes are equally at home in both the preclinical and clinical curriculum and provide a malleable context for introducing diverse health policy content. Providing clinical context is especially important when dealing with a nontraditional, and yet to be institutionalized, area such as health policy and even more so when using the preclinical curriculum to lay the foundations of the field. Without an appropriate context, even the best-developed and best-intentioned health policy content may not take hold. For example, faculty at the University of Pennsylvania found it helpful to emphasize the interdependence of traditional biomedical sciences, the relatively new population sciences (epidemiology and decision science), social science (values, preferences, and utilities), and health care economics and policy in clinical decision making. In so doing, the spotlight was turned away from managed care and instead illuminated a central element of the care of individual patients as well as populations.

Many schools found that integrating the new with the more traditional aspects of the curriculum was an effective implementation strategy. Although not always possible, it is also helpful to introduce new, and especially nontraditional content, during reconstruction of the traditional curriculum. This strategy was effectively used at the University of Pennsylvania, allowing the introduction of an extensive health policy curriculum in the preclinical years, at the University of Pittsburgh, allowing the introduction of health policy and care delivery content into a new primary care clerkship, and at the University of California at San Francisco, allowing the introduction of care delivery content into a new primary care clerkship.

The organization and sequencing of a curriculum dealing with health care economics, financing, organi-

zation, and delivery can best be understood in terms of the entire continuum of medical education. Certain components, perhaps most notably health policy, may be especially well suited to the undergraduate curriculum during which most elements central to effective practice are first introduced. Placing health policy in the preclinical curriculum has at least two potential advantages. It emphasizes health care economics and policy as one of the foundations of medical practice akin to the biomedical and population sciences, and it provides a foundation for an experiential care delivery curriculum during clinical training later in medical school and residency.

Unfortunately, it also has two major disadvantages: competition from more traditional material in an already crowded preclinical curriculum and a potential lack of clinical context. However, as demonstrated by the UME-21 project, neither of these barriers is insurmountable. Time constraints are inevitable in any reform effort and are perhaps best handled by integrating new material into preexisting courses. Lack of clinical context is a potential problem with any material introduced into the preclinical curriculum and is best dealt with by providing the missing context.

If health policy is to achieve equal status with the traditional biomedical curriculum, it will do so only if presented in a scholarly, rigorous, and reasonably comprehensive fashion. Any new curriculum is expected to meet these standards, and health policy should be no exception. The scope of the curriculum is not so much a problem as securing faculty to teach it. Managed care organizations, although helpful in critiquing a proposed health policy curriculum, have more to contribute at the care delivery end of the spectrum, where experiential opportunities and the application of health policy concepts are required. In addition, changes of key personnel at managed care partners³⁰ sometimes frustrated ongoing consultation.

Conclusions

Mounting a scholarly health policy curriculum requires an interdisciplinary faculty, including, at a minimum, health care economists, experts in public health, and medical school faculty with interest and expertise in many and varied fields. Few medical schools by themselves can provide such broad expertise, and support from other schools and programs (eg, economics, history of science, communications, systems theory) is likely to be critical to the success of any such effort.

More broadly, if health policy is to become a central component of the medical school curriculum of the future, creative approaches to faculty development and sharing faculty among schools will be required. Both will require careful educational policy formulation as well as new investment. Only then will the initial steps taken by the UME-21 schools in this important area be

transformed into a larger and more readily exportable reality.

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