

Primary Care Renewal: Regional Faculty Development and Organizational Change

Mark E. Quirk, EdD; Heather-Lyn Haley, PhD; David Hatem, MD;
Susan Starr, MEd; Mary Philbin, EdM

Background: *Many reports, including the Future of Family Medicine, have called for change in primary care, but few have defined, implemented, and evaluated mechanisms to address such change. The regional, interdisciplinary Primary Care Renewal Project was designed to address problems in primary care practice and teaching related to practice management, compensation, increasing responsibility for teaching, and faculty development. Methods:* Twelve northeastern US medical schools assembled a conference attended by teams of key stakeholders representing both clinical and educational missions. Teams developed and implemented an institutional plan to address identified needs. Outcome data was collected during, and for 1 year after, the conference. **Results:** *Findings demonstrate novel ways of improving learning experiences, coordinating and centralizing planning efforts, and addressing faculty needs. The magnitude of organizational change ranged from establishing new administrative units with significant institutional authority (eg, restructuring dean's office) to enhancing the strategic planning process and refining mission statements to reflect emphasis on primary care. Conclusions:* *A well-planned, regional interdisciplinary effort that fosters the development of concrete plans can be associated with significant change in medical education. A central theme emerged—that primary care medicine will survive only if institutions align their educational and clinical missions and foster system-wide change.*

(Fam Med 2005;37(3):211-8.)

Many agree that the morale of primary care physicians and teachers in the United States is low.¹⁻⁴ Practice management and compensation issues, competition among disciplines, staying abreast of medical advances, and increasing responsibility for teaching and faculty development have all burdened primary care practice and training. The potential effect of these factors on primary care practice and teaching, and in particular on the recruitment of new physicians and students into primary care, could have lasting effects. Concern about the effect of these changes has caused primary care physicians' organizations to examine the future of their respective specialties and training.⁵⁻⁸ Most recently, the Future of Family Medicine project called for new strategies to enhance communication of the principles underlying family medicine and collaboration between primary care practice and education.

This paper describes and presents the results of the Primary Care Renewal Project, a longitudinal, regional, interdisciplinary intervention designed to produce change in primary care practice and teaching. The Renewal Project grew out of the Regional Advisory Committee (RAC) of the Community Faculty Development Center (CFDC) at the University of Massachusetts. The RAC is comprised of physicians and educators with expertise in faculty development from medical schools throughout the Northeast United States region. It allows multiple institutions to collaborate in the training of preceptors, as well as to share ideas and resources that enhance faculty development and teaching within their institutions. The Renewal Project reflected a broadened definition of faculty development that includes organizational and leadership development in addition to the traditional focus on teaching skills.¹⁰⁻¹² Seventeen members of the RAC, representing 12 medical schools and their clinical partners, were instrumental in conceiving, planning, and implementing the Renewal Project.

The Renewal Project involved the establishment of teams of "change agents" (associate deans, chairs, program directors, vice presidents of clinical systems, and

From the Department of Family Medicine and Community Health (Drs Quirk and Haley), Department of Internal Medicine (Dr Hatem and Ms Philbin), Department of Pediatrics (Ms Starr), and Community Faculty Development Center (all), University of Massachusetts.

fiscal officers) in each of 12 medical schools in the Northeast, with the aim of developing and implementing institutional plans to address their combined educational and clinical needs, values, and resources as they relate to primary care. The centerpiece of the project was the implementation of a conference attended by all team members. The conference enabled participants to address the state of primary care practice and education in four ways. First, they identified aspects of primary care education that add value to academic health centers, medical education, and the community. Second, they defined features of the academic-clinical system that lead to sustainability of excellent primary care teaching. Third, they collected information and understanding necessary to produce an institutional plan. Fourth, they made suggestions for a national policy on integration of primary care education into academic health centers and medical schools.

Methods

Renewal Team

Table 1 presents institutions that provided teams of change agents to participate in the project. These change agents represented both the clinical and educational missions of their institutions. The teams met before, during, and after the conference. The RAC members from each institution served as team coordinators.

Preconference Needs Assessment

The first task of each team was to document its institution's need for renewal in primary care. Preceptors from participating institutions were asked to rate their satisfaction with their clinical practices and teaching roles, the influence of recent changes (decreased reimbursement, productivity pressures) on their teaching, and the importance of teaching to their professional identity. They were also asked what the clinical system and the medical school could do to make teaching more satisfying.

Institutional needs data included numbers of students, residents, preceptors, and training sites actively involved in primary care clerkships and residency programs, as well as financial, compensation, and recruitment data for primary care faculty and preceptors. In addition to collecting quantitative data, Renewal Teams convened before the conference to qualitatively define the state of primary care practice and education in their institutions. All needs assessment data received prior to the conference were summarized and presented in the conference workbook as reference material to support discussion and decision making during the Renewal Team meetings.

The Conference

The conference agenda was designed to guide the participants from a broad, national perspective on the state of primary care medicine and education toward a

Table 1

Medical Education Institutions Involved in October 2002 Primary Care Renewal Conference

1. Albany Medical College
 2. Boston University
 3. Brown University
 4. Dartmouth Medical School
 5. Harvard Medical School
 6. New York Medical College
 7. Tufts University
 8. University of Connecticut
 9. University of Massachusetts
 10. University of New England College of Osteopathic Medicine
 11. University of Vermont
 12. Yale University
-

focus on specific conditions at their home institutions. Conference events were planned to maximize the potential for information sharing among and within institutions.

The initial keynote address by the president of the Association of American Medical Colleges (AAMC) helped frame the theoretical issues. Participants were then given a case study that described a hypothetical medical school struggling with specific issues selected from those commonly mentioned in the needs assessments. These issues involved the effects of less time, decreased reimbursement, and increased practice pressures on teaching. For discussion purposes, participants were categorized on two dimensions: (1) position/role (senior clinical, senior school, chairs and department heads, community leaders, pre-clerkship course directors, and program directors) and (2) institutional affiliation. These categories were then used in the formation of two sets of small discussion groups.

The first small-group discussion was composed of participants with similar positions/roles from different medical schools. The goal of this group was to help participants refine their professional perspectives by providing questions to identify the most significant problem(s) or issue(s) to be addressed, suggest changes, identify useful resources, assign responsibility, and initiate collaboration.

The second discussion group, composed of participants with different positions/roles representing different medical schools, continued the case discussion while broadening their understanding of the problems and solutions by comparing institutional barriers and resources.

On the second day of the conference, a medical school dean presented a keynote address that outlined solutions and resources for renewal, including a model of medical practice that uses information technology to enhance patient care and medical education. Conference participants then had a choice of seminars that

focused on faculty development, supporting clinical education networks, encouraging primary care research, developing institutional and community partnerships, assessing clinical and educational outcomes, and understanding the costs of education. The goal of the keynote address and seminars was to provide information that could be used to develop methods for institutional plans.

Teams from each institution met separately both days to review their needs and develop specific objectives and a plan. The teams were joined by CFDC faculty who summarized and recorded the group discussions.

Institutional Plans

The goal for each Renewal Team was to complete an institutional plan. Teams reviewed, refined, and prioritized needs; defined specific objectives and methods; assigned responsibility for implementation; and developed plans for evaluation and follow-up.

In the final large-group session of the conference, team leaders shared their institutional plans in progress. Draft copies were collected by the CFDC immediately following the conference. RAC members were asked to report progress on their institutional plans 1 year following the conference. Outcomes identified in progress report data were then collated with the objectives stated in institutional plan data.

Evaluation

The conference was evaluated with a questionnaire consisting of focused and open-ended questions. Focused questions rated conference components on a 1–5 Likert-type scale. Responses to open-ended questions were qualitatively analyzed. Initially, two coders independently reviewed the entire data set identifying salient broad themes related to conference process and outcomes. Together they reached consensus on the final set of themes. Subsequently, the five authors blindly coded all comments according to the themes to establish inter-rater reliability.

Following collection of 1-year post-conference outcome data, one author collated outcome reports with the institutional plan data, aligning outcomes with the corresponding objectives. Institutional data were randomly sorted and coded by letters A–L to assure confidentiality. Two authors then systematically reviewed all of the institutional plans with the 1-year follow-up data. Following initial refinement of the data, a team comprised of all authors reviewed and confirmed the coding of outcomes into categories.

Results

Renewal Teams

Twelve medical schools assembled Renewal Teams. They met at their respective sites to assess needs prior to the renewal conference, attended the 2-day confer-

ence in October 2002, and worked within their institutions to implement their institutional plans. Ninety-nine faculty and administrators participated. Table 2 presents information on the positions/roles of Renewal Team members.

Preconference Needs Assessment

Nine of the 12 medical schools gathered and submitted preconference needs assessment data. Three additional participating institutions had recently completed preceptor surveys of their own design and summarized this information for use by institutional teams from their schools.

Results from the preceptor needs assessment suggested that the majority of preceptors across institutions were at least somewhat satisfied with their clinical practices and their teaching roles. However, they reported that changes in clinical medicine such as decreased reimbursement and increased paperwork negatively influenced teaching and practice. Preceptors felt teaching satisfaction would improve if institutions would redefine productivity (reduce clinical requirements, provide monetary compensation for teaching, reduce time constraints), provide educational support, provide respect and acknowledgement for teaching, and facilitate administrative changes in the clinic.

Conference Evaluation

The conference received an overall mean rating of 4.39 (standard deviation [SD]=.66) on a scale of 1 to 5, with a 5 indicating high satisfaction. Inter-rater reliability was established for themes that emerged from the conference evaluation data. There was unanimous agreement among five raters on categorizing 61 of the 94 response statements to open-ended questions soliciting comments (64%). Four of five raters agreed on 70 comments (74%); three of five raters agreed on 83 comments (88%). There was no agreement among raters

Table 2

Small Groups Assigned by Position/ Role Within Institution

<i>Position/Role Groups</i>	<i># in Group</i>
• Senior clinical (CEOs, clinical system directors, etc)	8
• Senior school (chancellors, deans, associate deans, etc)	24
• Chairs and department heads	12
• Pre-clerkship course directors	14
• Program directors (clerkships and residencies)	24
• Community leaders (AHEC directors, community teaching programs)	15
Total	97

AHEC—Area Health Education Center

on 11 (12%) of the comments, which were excluded from the analyses and discussion.

Participants expressed that the keynote speakers offered practical information, inspired them to change, and provided a unique perspective on the issues. Words used to describe the keynote sessions were “provocative,” “refreshing,” “energizing,” and “incredibly inspiring.” However, the insights and perspectives gained led many participants to lament the chasm between “what is” and “what could be.” After the presentation on new models of primary care practice and teaching, one participant noted: “Looking at the distance between here and there is very demoralizing.” Comments indicated that the discussion groups provided a mechanism for networking and sharing ideas. Many agreed that the seminars provided valuable information: “Extremely helpful in refocusing goals and future plans for projects in my department.” However, some would have liked more applicable solutions. In particular they called for “nuts and bolts” and “how-to” advice. There was also a call for more concrete examples of “innovative programs” and “importable models.”

The themes for renewal team meetings included the opportunity to meet outside the workplace: “Best meetings were here [at conference] away from other demands when at home,” group process: “We dug into some complicated, longstanding issues . . .,” and concern over ability to accomplish change: “Hopefully the concept will become a reality.”

Institutional Plan Objectives

The number of objectives included on institutional plans immediately following the conference ranged from three to 14 per school, with a total across all institutions of 62 identified objectives. Objectives were organized into six categories on the structured data collection forms: Institutional/Organizational, Faculty/Preceptor, Student/Resident, Community, Clinical, and Curricular. A seventh category, Research, emerged from the data as six teams included objectives centered around research goals. Five of the participating schools addressed organizational or institutional needs, while only one chose to focus on a clinical need. Ten of 12 schools identified curricular needs, and every team included at least one objective to address faculty and preceptor needs.

Of the 62 objectives initially submitted, 40 (64.5%) were linked with achieved outcomes at 1-year follow-up. Table 3 provides an outline of the eight areas of common objectives with corresponding 1-year outcomes.

Conclusions

The findings presented here demonstrate that a well-planned, regional effort can be associated with the development and implementation of institutional plans for

change that promote primary care medicine and teaching. A direct causal link between the renewal project and outcomes observed at 1 year cannot be proven. Nonetheless, it is clear that institutional changes occurred and that in many instances (1) team members who participated in the intervention were integral change agents and (2) the changes were recommended in the Institutional Plans developed during the Project. Although possible, it is unlikely that these changes would have occurred in such a timely fashion without the conference; some may never have occurred at all.

The renewal project helped to convene the change agents from clinical and educational sides of the system, coalesce around the theme of renewal, collect and consider needs, and define an action plan. The teams helped centralize the mission and enhance communication, both essential elements of constructive change.¹³ Importantly, the intervention included a mechanism for follow-up through the previously established RAC. The RAC was an essential element of the model from planning through implementation to follow-up. A centralized organizing group, such as our RAC, is perceived by some as a prerequisite for change.¹⁴⁻¹⁶

Using a regional approach to “renew” primary care empowered leaders to demonstrate to their individual institutions the seriousness of the educational challenges facing medical schools. Gaining strength in numbers is not a new idea in the development of primary care education. National initiatives such as the Robert Wood Johnson Generalist Initiative, the Interdisciplinary Generalist Curriculum, and the Undergraduate Medical Education for the 21st Century project accomplished important goals in this regard.¹⁷⁻¹⁹ However, regional inter-school collaboration to share institutional problems and suggest solutions around a specific topic—renewal—that affects both clinical and educational outcomes has, to our knowledge, not been used. Even more novel was the creation of renewal teams to develop and implement institutional plans. As several of our conference participants stated, faculty who are responsible for the educational mission of medical centers are rarely seated at the same table as the financial leadership. The renewal project offered an opportunity to use peer pressure to assemble the correct blend of educational and clinical leaders for their respective institutions.

The process for change adopted by medical schools and their clinical partners as a result of this project is a model that could be applied to other settings. The process started with securing buy-in from the institutional leadership at the highest levels. Convening an interdisciplinary team of change agents, providing them with opportunities to interact with leaders from their own and other institutions, and developing plans that included a follow-up component helped to ensure success. The renewal conference made it possible for people

Table 3

Highlights of Renewal Project Institutional Plan Objectives and Outcomes From Multiple Sites

Objectives Written October 2002

1. Reengineer primary care with emphasis on technological infrastructure.

2. Implement a system of rewards and supports for faculty teaching primary care.

3. Increase and improve students' and residents' experiences in primary care.

4. Coordinate the administration of the teaching programs across the primary care disciplines.

Outcomes as of October 2003

- Renewal Team members have been appointed to key educational and clinical infrastructure technology committees.
- New and current faculty are provided dedicated time to reengineer ambulatory practices.
- Development of new technologies (EMR, PDA applications for tracking patients, videoconferencing) is progressing.
- Discussion and development of model practices is proceeding.
- Multi-institutional meetings (local health plans, the state malpractice insurer, the county medical association, AHEC, the medical school) on developing a mechanism to improve outcomes in community primary care offices have been held.
- The mission statement in the new college strategic plan has been changed. The hospital will develop a primary care hospital within the hospital.
- Preceptors in the primary care clerkship and patient-doctor sequence will be paid a significant sum of money (consistent across disciplines and courses) for their teaching to help relieve productivity pressures.
- Preceptors will be provided faculty development and library access.
- Faculty appointments (instructor designation from the dean), though still awarded through specialty rather than teaching department, can be awarded for programs where community-based faculty are recruited for limited teaching roles.
- A recognition dinner for clinical faculty, hosted by the dean, was held with top clinical teaching awards given.
- Faculty receive letters of recognition, and "certificates appropriate for framing" are given to residents for teaching excellence.
- The Education Office has provided more support to faculty in their teaching roles, helping with material preparation, etc.
- The Education Office has increased capacity to assist faculty in applying for education and training grants, through the assistance of our senior medical educator and a new director of programs. Several grants were submitted this year that could not have been done previously without the additional support.
- The Office of Medical Education has developed and distributed a Web-based Faculty Appointment and Promotion Guide, including a template for CVs.
- Monthly focus groups through the primary care clerkship have been conducted to learn more about students' clinical experiences and what can be done to enhance teaching and learning in primary care offices.
- An integrated clerkship has been designed that includes a focus on mentoring (implemented 2004–2005).
- Curriculum coordination has resulted in better integrated teaching of history and physical exams and has emphasized patient-centered, culturally competent care.
- Efforts have been made to increase the proportion of ambulatory time in the third-year internal medicine clerkship.
- Changes have been made in the undergraduate curriculum to provide an adequate foundation for residency training. A Clinical Sciences Task Force is identifying gaps in the clinical curriculum. Key faculty have been identified to incorporate content addressing ACGME competencies.
- A teaching role for fourth-year students is being developed.
- A cross-disciplinary primary care retreat will be included in the National Primary Care Week celebration.
- Electives/selectives in community health will be jointly developed by internal medicine and family medicine residency directors.
- A new PDA system was reviewed and purchased; it is currently being customized and piloted by students in ambulatory courses. The data generated will ultimately be used to enhance courses, students' experiences, and for scholarly activities (publications, grant applications, etc).
- Chair of Pediatrics is an active participant and advisor for the Pediatrics Club.
- Second-year Pediatrics Club students have been trained to work as small-group leaders for first-year students in the pediatrics module.
- Discussions are underway for creating Offices/Departments of Medical Education at each major affiliated hospital to coordinate educational activities from student through faculty levels at each site across all disciplines to support the educational activities of those departments.
- A HRSA working group formed to coordinate all data gathering and reporting for all funded grants in pediatrics, internal medicine, and family medicine.
- The Office of Medical Education coordinates data gathered on current students.
- The Office of Community-based Education and Research serves as the central repository of data needed.
- The Center for Primary Care Research and Development is now the Office of Undergraduate Medical Education and Primary Care.
- The dean was invited to participate in a discussion with state leaders on the stresses of primary care.
- Primary care disciplines created an ad hoc committee and proposed a year 1 and year 2 continuity curriculum, to be presented to department chairs.

(continued on next page)

Table 3

(continued)

- A collaborative OSCE has been proposed.
 - AHEC is taking leadership to raise awareness of financial stress in primary care practices.
 - The medical school is embarking on a strategic planning process; the primary care plan prepared for the Renewal Conference will be used as a starting point for developing a plan for primary care, with the acknowledgement of the dean of Academic Affairs.
 - A more-centralized form of curriculum governance has been proposed: a Clinical Curriculum Subcommittee will meet monthly and will include all clerkship directors. The directors will work to integrate clinical curricula across their clerkships and to develop a systematic approach to teaching clinical skills.
 - A director of clinical skills training has been appointed to coordinate clinical skills across clinical departments.
 - Cross-curricula committee that addresses faculty development, curriculum design and evaluation, biostatistics and epidemiology, grantsmanship, clinical research design, as well as IT, will become a "formal department" in 1–2 years.
 - Faculty services for physicians who teach medical students in any of several preclinical and clinical courses is being centralized through a society of clinical preceptors that will have its own Web site to direct preceptors to essential services, promotions information, etc.
5. Initiate and enhance faculty development and workforce training programs.
- The Office of Undergraduate Medical Education and Primary Care along with the Department of Family Medicine sponsors faculty development for small-group leaders and preceptors each fall and during the year.
 - A conference for key faculty focused on improving evaluation skills is projected.
 - A newsletter for teaching faculty has been developed.
 - Working through the AHEC with local foundations, health plans, the state malpractice insurer, and the county medical association, a mechanism to do on-site faculty development in systems and performance improvement techniques at community practices is being developed.
 - Increased opportunities for faculty development and intramural grant opportunities to encourage curricular innovations have been offered, as well as help on external grant applications.
6. Increase collaboration among institutions in the northeast region.
- Discussions among the dean for students, the dean for educational affairs, the clerkship directors, and chairs of the core disciplines has increased sharing of ideas and materials across clerkship sites. A new senior medical educator in the OEA is creating core materials to be shared through an on-line curriculum database/knowledge management system.
 - Affiliated sites now share information/expertise/materials across sites to reduce duplication of efforts and use of scarce resources.
 - Greater attention is being paid to identifying grant opportunities that will involve multiple affiliated institutions.
7. Expand the use of technology in teaching and assessment and develop on-line resources for community preceptors.
- A wireless pilot was completed across the university, and plans for increased "nodes" are underway. An on-line curriculum database/knowledge management system continues to grow both in content and new user tools.
 - Preceptor support is being further enhanced with special attention to electronic information access.
 - The Department of Family Medicine has been awarded a grant to provide PDAs and training to family medicine offices hosting students.
 - Two funded faculty development grants focus on increasing preceptors' knowledge of and access to library resources.
 - Preceptors are encouraged by Renewal Team members to increase use of current resources.
 - A grant submitted to the National Library of Medicine to support training in on-line resource use by preceptors receives "outstanding" score.
8. Increase the number of graduates choosing careers in primary care.
- In collaboration with deans and directors of admissions and alumni services, available data will be utilized or new data developed to identify and validate predictors of career choice for medical students.
 - A survey 2 years after graduation will be conducted to determine why they chose their current residency.
 - Admission data on an identified class will be analyzed for correlation with published literature about admission criteria for applicants who select primary care careers.

EMR—electronic medical record

PDA—personal digital assistant

AHEC—Area Health Education Center

ACGME—Accreditation Council for Graduate Medical Education

HRSA—Health Resources and Services Administration

OSCE—Objective Structured Clinical Exam

IT—information technology

OEA—Office of External Affairs

from different areas within the same institution to meet and talk, some for the first time together, without the daily interruptions of the workplace. The combined members of institutional teams had the authority to link important needs to solutions that would succeed in their individual environments and were able to identify responsible individuals to carry out the plans. The objectives and outcomes documented in this study should be considered in light of the underlying processes of change that occurred.

The most significant outcome of the renewal conference was the emergence of a central idea that primary care medicine will survive only if institutions align their educational and clinical missions, seek collaboration as opposed to competition, unite missions, and seek system-wide change. Discussion focused on the inherent flaws in asking primary care physicians to keep working harder, see more patients, and continue teaching. Institutional plans underscored the importance of working within the system to effect change.

It was not surprising that several teams focused on identifying and using new technologies to address system-wide clinical and educational needs. Plans indicated that primary care should and will play a key role in reengineering medicine and medical education. It was also clear that the changes in the technological infrastructure of medical education would best be supported by external funding. This included securing funding from important and "usual" sources such as the Health Resources and Services Administration (HRSA) but also from less-traditional sources such as the National Library of Medicine (NLM) or innovative collaborations among medical schools, local health plans, malpractice insurers, medical societies, Area Health Education Centers (AHECs), etc. Reaching out to these new partners represents a novel approach to funding educational development activities.

Establishing a more-effective system of rewards for teaching has been cited in the literature as an important need.²⁰⁻²² Teams grappled with the issue of payment to preceptors, learning from each other how to secure funding, discuss the appropriate amount, and ensure consistency across disciplines. For some institutions, alternatives to financial reward, such as teaching awards and faculty appointments, were viewed as significant steps toward reward and recognition. Plans reflected the need to streamline such steps.

Plans offered novel ways of improving teaching programs (eg, teacher training for fourth-year students) and medical school administration to support primary care. The magnitude of organizational change ranged from establishing new administrative units with significant institutional authority (eg, restructuring dean's office) to enhancing the strategic planning process and refining mission statements to reflect emphasis on primary care. The outcomes reflected the need for greater vis-

ibility of a unified primary care contingent working within each institution to support clinical and educational change.

The conference and subsequent plans emerged from regional collaboration centered on faculty development. The expansion of the definition of faculty development to encompass organizational change provided a platform for the broadened activity.¹¹ The 6-year history of collaboration among schools was integral to the project's success. The structural characteristics of the project, including regional collaboration, team formation, and the development and implementation of a plan contributed to significant progress toward renewal in primary care medicine and medical education.

Acknowledgments: This project was partially funded by a Health Resources and Services Administration (HRSA) Primary Care Faculty Development grant. We acknowledge the efforts of the Regional Advisory Committee of the Community Faculty Development Center, including Dean Cleghorn, University of Massachusetts; Michele Cyr, Brown University; Lewis First, University of Vermont (UVM); Bruce Gould, University of Connecticut; Martha Grayson, New York Medical College (NYMC); Warren Hershman, Boston University (BU); Walter Kernan, Yale University; Donald Kollisch, Dartmouth Medical School (DMS); Mary Lee, Tufts University; David Little, UVM; Ellen Miller, NYMC; Alicia Monroe, Brown University; Antoinette Peters, Harvard Medical School; Henry Pohl, Albany Medical College (AMC); Karen Schifferdecker, DMS; Elaine Schulte, AMC; Evelyn Schwalenberg-Leip, University of New England College of Osteopathic Medicine; and Peter Shaw, BU.

Corresponding Author: Address correspondence to Dr Quirk, University of Massachusetts, Department of Family Medicine and Community Health, Benedict Building, Room A3-232, 55 Lake Avenue North, Worcester, MA 01655. 508-856-3013. Fax: 508-856-2175. Mark.Quirk@umassmed.edu.

REFERENCES

1. Spickard AJ, Gabbe SGM, Christensen JFP. Mid-career burnout in generalist and specialist physicians. *JAMA* 2002;288:1447-50.
2. Wetterneck MD, Linzer M, McMurray JE, et al. Worklife and satisfaction of general internists. *Arch Intern Med* 2002;162:649-56.
3. Hoff T, Whitcomb WF, Nelson JR. Thriving and surviving in a new medical career: the case of hospitalist physicians. *J Health Soc Behav* 2002;43:72-91.
4. Linzer M, Konrad TR, Douglas J, et al. Managed care, time pressure, and physician job satisfaction: results from the Physician Worklife Study. *J Gen Intern Med* 2000;15:441-50.
5. SGIM Taskforce. The future of general internal medicine. 2003. www.sgim.org.
6. Future of Family Medicine Project Leadership Committee. The Future of Family Medicine: a collaborative project of the family medicine community. *Ann Fam Med* 2004;2:S3-S32.
7. Greer D, Nair-Bhak K, Zenker B. Comments on the AAMC policy statement recommending strategies for increasing the production of generalist physicians. *Acad Med* 1994;69(4):245-60.
8. Committee on the Quality of Healthcare in America. Crossing the quality chasm: a new health system for the 21st century. Institute of Medicine, eds. Washington, DC: National Academy Press, 2001.
9. Cohen JJ. A time for renewal in primary care medicine and medical education. Presented at The Renewal Project, University of Massachusetts Medical School, October 4, 2002.
10. Bland CJ, Seaquist E, Pacala JT, Center B, Finstad D. One school's strategy to assess and improve the vitality of its faculty. *Acad Med* 2002;77:368-76.
11. Wilkerson L, Irby DM. Strategies for improving teaching practices: a comprehensive approach to faculty development. *Acad Med* 1998; 73:387-96.

12. Irby D, Hekelman FP. Future directions for research on faculty development. *Fam Med* 1997;29:287-9.
13. Weiner BJ, Culbertson R, Jones RF, Dickler R. Organizational models for medical school-clinical enterprise relationships. *Acad Med* 2001;76:113-24.
14. Carney PA, Schifferdecker KE, Pipas CF, et al. A collaborative model for supporting community-based interdisciplinary education. *Acad Med* 2002;77(7):610-20.
15. Skochelak S, Barley G, Fogarty J. What did we learn about leadership in medical education? Effecting institutional change through the Interdisciplinary Generalist Curriculum Project. *Acad Med* 2001;76(4 suppl):S86-S90.
16. Kotter JP. What leaders really do. *Harvard Business Review* 2001; December:85-96.
17. Rabinowitz HK, Diamond JJ, Veloski JJ, Gayle JA. The impact of multiple predictors on generalist physicians' care of underserved populations. *Am J Public Health* 2000;90(8):1225-8.
18. Wartman SA, Davis AK, Wilson ME, Kahn NB Jr, Kahn RH. Emerging lessons of the Interdisciplinary Generalist Curriculum (IGC) Project. [comment]. *Acad Med* 1998;73(9):935-42.
19. Matson CC, Ullian JA, Boisauvin EV. Integrating early clinical experience curricula at two medical schools: lessons learned from the Robert Wood Johnson Foundation's Generalist Physician Initiative. *Acad Med* 1999;74(1 suppl):S53-S58.
20. Ullian JA, Shore WB, First LR. What did we learn about the impact on community-based faculty? Recommendations for recruitment, retention, and rewards. *Acad Med* 2001;76(4 suppl):S78-S85.
21. Levy BT, Gjerde CL, Albrecht LA. The effects of precepting on and the support desired by community-based preceptors in Iowa. *Acad Med* 1997;72(5):382-4.
22. Baldor RA, Brooks WB, Warfield ME, O'Shea K. A survey of primary care physicians' perceptions and needs regarding the precepting of medical students in their offices. *Med Educ* 2001;35:789-95.