

Chronic Disease—The Need for a New Clinical Education

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IT IS AXIOMATIC THAT MEDICAL EDUCATION SHOULD PREPARE students well for the clinical problems they will face in their future practice. However, that is not happening for the most prevalent problem in health care today: chronic disease.

The inadequacy of clinical education is a consequence of the failure of health care and medical education to adapt to 2 related transformations in the past 50 years that are central to good health care today. In the first, chronic disease replaced acute disease as the dominant health problem. Chronic disease is now the principal cause of disability and use of health services and consumes 78% of health expenditures. In the second, chronic disease dramatically transformed the role of the patient.

The differences between acute and chronic disease are substantial. Acute disease is episodic. The patient is usually inexperienced and passive while the physician administers treatment. There is commonly a cure and the patient returns to normal. None of this is true for chronic disease. Chronic disease is continuous. There is rarely a cure. The patient usually lives indefinitely with the disease and its symptoms, with persistent treatment and with multiple consequences, including necessary behavioral changes to forestall worsening of the disease, social and economic dislocation, emotional turmoil, financial fear, lowered self-esteem, and depression. As a result, the patient becomes experienced, is often more knowledgeable than the physician about the effects of the disease and its treatment, and has an integral role in the treatment process.

Chronic disease requires a practice of medicine quite different from that used for acute disease:

With chronic disease, the nature of care changes. In the absence of cure, chronic disease must be managed over time as it evolves with shifting severity, pace, and treatments. Good management is an unfolding process. Because of the many facets of a chronic illness, management is best provided by a coordinated team of health care professionals (eg, physician, case manager, patient educator, social worker) whose members can deploy the appropriate service when needed. Over time, the patient may see many physicians and other health care professionals. Therefore, continuity and integration of care are essential. Continuity, especially by the physician, creates a healing relationship and efficient orga-

nization of care. Integration of care provided by all professionals undergirds effectiveness; in particular, specialists need to understand the overall management plan for the patient and weave their contribution into it.

With chronic disease, the role of the patient changes. Because the patient must usually engage in unending treatment, make behavior changes, and adjust to consequences of the disease, the patient inevitably becomes a principal caretaker. Preparation of the patient for that role is necessary. Such preparation requires that patients be educated not just about the disease, its treatment, and its prognosis but also about how to interpret symptoms, understand medications, manage symptoms like pain and fatigue, cope with emotional distress, and communicate effectively with the physician, family, and friends. Such education is the joint responsibility of the health service, the health care professionals, the patient, and sometimes the family.

With chronic disease, the role of the physician also changes. While still the professional guide and advisor, the physician now teaches health care skills and shares decision authority with the patient and other health care professionals. To do this well, the physician must come to understand what it is like to experience a chronic disease and how to adapt a treatment program to the specific needs and wishes of the patient.

With chronic disease, the sites of care change. Chronic disease treatment occurs primarily in ambulatory settings and consists largely of changes in medications and behaviors. It can often be provided well by different members of the care team in the home, schools, and community centers or by telephone, e-mail, or group educational programs.

With chronic disease, the changed roles of the patient and the physician bring complementary knowledge and reciprocal responsibilities to the health care process. A partnership of patient and physician that embodies a central role for the patient is the crux of appropriate care for chronic disease.

Will such approaches work? The evidence is favorable. Few would deny that continuity and integration of care are essential for an evolving and varying chronic disease. Evidence strongly suggests that a knowledgeable patient achieves better outcomes.¹⁻³ A collaborative physician improves both

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understanding by patients and health outcomes.⁴⁻⁶ Four recent Institute of Medicine reports underscore how quality in health care depends on change in current medical practices and medical education.⁷⁻¹⁰ Powerful evidence reveals that different modes of clinical practice can yield favorable health outcomes with significantly less expense, especially for patients with chronic disease.¹¹⁻¹⁴ Specific system changes have been identified, and some have been tested.¹⁵⁻¹⁸ The necessary new roles of patients and physicians have been strikingly underscored by a recent Johns Hopkins School of Medicine consensus conference of 200 patients and physicians.¹⁹

Unfortunately, few if any schools are preparing their students adequately for the roles they and their patients will need to play. Although many schools have programs and faculty that address one or more of the above issues, they are rarely central to the curriculum. Recent academic medical center initiatives to teach management of chronic disease such as the “Partnerships for Quality Education” program of the Robert Wood Johnson Foundation focus primarily on residents. The deficiencies in student training, described in the Institute of Medicine reports, have been given specificity by a revealing study.²⁰ Seventy directors of required clerkships and courses at 16 representative medical schools were surveyed about the teaching in their curriculum of 49 different skills or practices that are widely considered relevant for the management of chronic disease. The directors were asked to rate the importance of each skill or practice for their clerkship or course. Only 29 of the 49 were rated as moderately important or more, and none was considered essential by the group.

Sadly, my school is an example of the general problem. Stanford medical students have little experience managing patients with chronic disease over time. The main clerkships are hospital-based where the patients remain only a few days. The ambulatory care experiences commonly last only 2 to 4 weeks. For the past 10 years, in an annual survey by the Association of American Medical Colleges, Stanford graduates have rated their training inadequate or below that of other graduates in 11 areas central to the management of chronic disease (ambulatory care, primary care, follow-up on patients, long-term health care, geriatrics, pain management, communication between physicians, community and social agencies, public health and community medicine, medical needs of the underserved populations, behavioral sciences). The school's recent strategic plan did not mention the problems posed by chronic disease or the needed new roles for patients and physicians.

Why has there been little academic response to the rising prevalence of chronic disease and its challenge to medical practice and education? There is no simple answer; the forces at play are many.²¹ Over the years, there have been numerous studies and proposals by leadership bodies concerning the appropriateness of health care services and medical education, but they have largely addressed differ-

ent issues.^{7,22,23} Although the aging of the population and the increases in chronic disease have been recognized, there has been little attention to their implications for the way medicine is practiced except for encouraging development of geriatrics. The role of the patient has received attention but primarily for understanding and making medical decisions,²⁴ not as a central caregiver on the health care team. The Institute of Medicine Report *Crossing the Quality Chasm*⁷ concludes the section on clinical education and training by stating: “Despite changes that have been made, the fundamental approach to medical education has not changed since 1910.” As a result, both health care and medical education remain with basic structures and practices designed for acute disease.

What should medical schools be doing? For a start, they should create ambulatory care programs, such as the chronic care model¹⁶—which includes a practice team, information system, decision supports for practice, and patient self-management supports—to be the sites for new types of learning. Faculty interested in and capable of teaching with this mode of practice should be developed, preferably with an ability to design and evaluate new forms of practice and education. Students should be assigned to supervised longitudinal care of patients in these programs. In this setting, the students, whether they seek a career in primary or specialty medicine, can receive a meaningful experience in:

1. Caring for patients with chronic disease over time in the clinic, the community, and the home during which they learn the impacts of the disease and the elements of good care.

2. Educating patients in self-management methods.^{2,25,26}

3. Participating in group visits of patients with chronic disease with their physician for which the topics are often chosen by the patients. During such visits, patients learn from each other and physicians learn from the experiences of patients.^{3,27}

4. Working with patients and other health care professionals in a manner that shares medical management responsibilities and decisions.

5. Integrating care among the participating general physicians and specialists with development of a unified treatment plan, especially through use of an electronic medical record.

6. Providing care for patients without a physical encounter by using the telephone and e-mail.

7. Using relevant behavioral science concepts and methods to understand the adverse effects of chronic disease on a patient's life and how to reduce them.

Through such experiences, students will learn how the biology of chronic disease evolves and the impacts of treatment. They will gain understanding of what it is like for patients to live with chronic disease and how they adjust and cope. They will experience how physicians can efficiently use available treatments and other resources. They will learn

directly how the new roles of patients and physicians aid patients to adapt to the multiple consequences of chronic illness and also improve the effectiveness and efficiency of care.

Providing these learning experiences requires neither new construction nor new equipment but rather new understandings and new behaviors. The new understandings and behaviors have a sound basis in experimental and other types of studies; the task is to bring them into the mainstream of health care and education. And, such learning is not in conflict with medical science or care of acute disease; it is complementary to both, allowing the best application of science and technology to the care of patients.

By failing to address these issues with creativity and innovation, medical education is failing to prepare students adequately for their future practice.

REFERENCES

- Greenfield S, Kaplan S, Ware JE. Expanding patient involvement in care: effects on patient outcomes. *Ann Intern Med.* 1985;102:520-528.
- Lorig KR, Mazonson PD, Holman HR. Evidence suggesting that health education for self-management in chronic arthritis has sustained health benefits while reducing health care costs. *Arthritis Rheum.* 1993;36:439-446.
- Beck A, Scott J, Williams P, et al. A randomized trial of group outpatient visits for chronically ill older HMO members: the cooperative health care clinic. *J Am Geriatr Soc.* 1997;45:543-549.
- Kaplan SH, Greenfield S, Ware JE. Assessing the effects of physician-patient interactions on the outcomes of chronic disease. *Med Care.* 1989;27:S110-S127.
- Kaplan SH, Greenfield S, Gandek B, Rogers WH, Ware JE. Characteristics of physicians with participatory decision-making styles. *Ann Intern Med.* 1996;124:497-504.
- Steward M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. *J Fam Pract.* 2000;49:796-804.
- Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington, DC: National Academies Press; 2001.
- Institute of Medicine. *Health Professions Education: A Bridge to Quality.* Washington, DC: National Academies Press; 2003.
- Institute of Medicine. *Priority Areas for National Action: Transforming Health Care Quality.* Washington, DC: National Academies Press; 2003.
- Institute of Medicine. *Improving Medical Education: Enhancing the Behavioral and Social Science Content of Medical School Curricula.* Washington, DC: National Academies Press; 2004.
- Wasson J, Gaudette C, Whaley F, Sauvigne A, Baribeau P, Welch HG. Telephone care as a substitute for routine clinic follow-up. *JAMA.* 1992;267:1788-1793.
- Fisher ES, Wennberg DE, Stukel TA, et al. The implications of regional variations in Medicare spending, I: the content, quality, and accessibility of care. *Ann Intern Med.* 2003;138:273-287.
- Fisher ES, Wennberg DE, Stukel TA, et al. The implications of regional variations in Medicare spending, II: health outcomes and satisfaction with care. *Ann Intern Med.* 2003;138:288-298.
- Aston CM, Soucek J, Petersen NJ, et al. Hospital use and survival among Veterans Affairs beneficiaries. *N Engl J Med.* 2003;349:1637-1646.
- Pawson LG. Chronic illness: implications of a new paradigm for health care. *Jt Comm J Qual Improv.* 1994;20:33-39.
- Wagner EH, Austin BT, Davis C, Hindmarsh M, Schaefer J, Bonomi A. Improving chronic illness care: translating evidence into action. *Health Aff (Millwood).* 2001;20:64-78.
- Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness: the chronic care model, II. *JAMA.* 2002;288:1909-1914.
- Glasgow RE, Davis CL, Funnell MM, Berk A. Implementing practical interventions to support chronic illness self-management in health care settings: lessons learned and recommendations. *Jt Comm J Qual Saf.* 2003;29:563-574.
- American Healthways/Johns Hopkins. *Defining the Patient-Physician Relationship for the 21st Century.* Nashville, Tenn: American Healthways Inc; 2004. Available at: <http://www.patient-physician.com/docs/PatientPhysician.pdf>. Accessed August 9, 2004.
- Pham HH, Simonson L, Elnicki DM, Fried LP, Goroll AH, Bass EB. Training US medical students to care for the chronically ill. *Acad Med.* 2004;79:32-40.
- Starr P. *The Social Transformation of American Medicine.* New York, NY: Basic Books; 1982.
- Christakis N. The similarity and frequency of proposals to reform US medical education. *JAMA.* 1995;274:706-711.
- Ludmerer K. *Time to Heal: American Medical Education From the Turn of the Century to the Era of Managed Care.* New York, NY: Oxford University Press; 1999.
- Gerteis M, Edgman-Levitan S, Daley J, Delbanco T. *Through the Patient's Eyes: Understanding and Promoting Patient-Centered Care.* San Francisco, Calif: Jossey-Bass; 1993.
- Bodenheimer T, Lorig K, Holman H, Grumbach K. Patient self-management of chronic disease in primary care. *JAMA.* 2002;288:2469-2475.
- Lorig K, Holman H. Self-Management education: history, definition, outcomes, and mechanisms. *Ann Behav Med.* 2003;26:1-7.
- Scott J, Gade G, McKenzie M, Venohr I. Cooperative health care clinics: a group approach to individual care. *Geriatrics.* 1998;53:68-81.