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HEALTH
PROMOTION AND
DISEASE PREVENTION
IN HMOS

by Susan Wilner

Prologue: Life-styles and their link to disease have been part of the body of human knowledge since the time of ancient Greece. Hippocrates, the father of the medical profession, offered persuasive arguments linking disease with environmental factors, nutrition, and modes of life in his treatise “Airs, Waters, and Places,” written more than 2,300 years ago. Until recently, though, Americans have by and large failed to act on a compelling accumulation of knowledge linking individual life-style with individual health status. Now, concern with health promotion is growing, as individuals recognize the dangers of eating wrong, smoking, drinking to excess, and failing to exercise regularly. In this essay, Susan Wilner, who holds a doctorate of science degree from the Harvard School of Public Health, argues that health maintenance organizations (HMOs) have a golden opportunity to capitalize on the growing interest in health promotion and disease prevention by developing new strategies and by being entrepreneurial in their approach. HMOs, as the name implies, long have enjoyed a reputation for conducting innovative programs for health maintenance, but all too often, as Wilner describes, the programs are quite traditional. With an enrolled population and special incentives of the HMO system to work with, the author argues that HMOs that invest in the development of innovative health promotion strategies could be a natural laboratory for determining which approaches work best. Wilner won a prestigious Pew Health Policy Fellowship in 1983 and devoted the next two years to studying public policy issues that surround health promotion and disease prevention. She did her work at the Institute for Health Policy Studies at the University of California, San Francisco. Wilner is currently a lecturer on the faculty there and special assistant to the executive director of the United Way of San Francisco.
The design and role of health promotion and disease prevention strategies in the nation's evolving delivery system have come to the forefront of health policy discussions. Researchers, policymakers, and managers are continuously searching for innovative and effective activities which promote the health of people. In this context, one might expect that health maintenance organizations (HMOs), given the spirit in which the concept was developed and the special opportunities that organized delivery systems afford for research, would be in the vanguard of this movement. Yet most experts agree that “HMOs have no more distinguished themselves in health promotion than anyone else in the health field.”

HMOs have developed and implemented a variety of creative strategies to both manage the delivery of medical care services more effectively and to reduce their costs. However, most HMOs have not applied the same degree of innovation to the provision of health promotion programs and activities. This article, which seeks to demonstrate the value of an increased emphasis on health promotion, is directed to HMO managers, providers, and third-party payers who finance the care provided in this delivery setting. The reluctance of HMO care providers to make a substantial commitment to health promotion activities stems, in part, from long held doubts about the benefits of these activities and, in part, from a fear that a greater emphasis may lead to uncontrollable demands for such services.

Many of the ideas that I set forth derive from a series of conversations with some of the nation’s leading experts in this field, including directors of health promotion departments, health policymakers, knowledgeable academicians, and HMO chief executive officers. The article’s intent is to persuade HMOs to examine more closely opportunities for health promotion, both within their organizations and their surrounding communities, that match the commitment and spirit of innovation that has contributed to their rapid enrollment growth.

Why Should HMOs Invest In Health Promotion?

Before describing the special opportunities and capacity that HMOs have for health promotion innovations, it is relevant to ask why should such plans invest their limited resources in this area. First, HMOs need ways to distinguish their service products in an increasingly competitive health care market—both from among other HMOs, as well as other alternative delivery settings, and traditional fee-for-service medicine. Rick Carlson, president of the Newhealth Croup and a longtime participant in health promotion and HMO activities, said in an interview: “HMOs
no longer have a competitive advantage in the health industry because most of the other systems are developing cost-saving capacities. The real opportunity for a well-managed and innovative organization to distinguish itself is by offering the best curative care and an array of programs for disease prevention." Carlson believes that such initiatives can both help to attract and retain enrolled HMO members.

A second rationale is that provision of health promotion services is an integral component of the delivery of quality medical care services. A primary barrier to their integration is the continued skepticism about the cost-effectiveness of health promotion activities. While more evidence is being accumulated by researchers, these efforts are not complete. But even when more documentation becomes available, most of the experts with whom I discussed this believe that the emergence of health promotion activities is likely to derive more from belief than from evidence. Most pointed out, candidly, that the medical care system was built more on belief than on the efficacy of the services rendered. The standards applied to health promotion have been higher than those applied to most common medical care practices currently in use.

What Are The Unique Features Of HMOs?

HMOs have certain features that make them, in essence, the perfect laboratory in which to develop and test innovative approaches to health promotion. First, HMOs are organized systems, with the capacity to plan and implement programs and new initiatives, and to take advantage of economies of scale. They have ready access to both providers and patients through existing communication networks in place for other purposes. Second, HMOs have access to descriptive characteristics and medical profiles of their members. Third, they have the capacity to redefine the concept of provider beyond the physician to the broader definition of the delivery system. Fourth, HMOs can extend their promotion efforts into the broader community and also market these services to other HMOs, at work sites and in other natural environments, such as schools, senior citizens centers, and health and social clubs. Fifth, they can test innovations on a sample of their members, evaluate their effectiveness and translate the lessons for their full membership. Lastly, HMOs have a financial incentive to keep people healthy.

In contrast, the fee-for-service system of the private solo or small group practitioner does not have the resources to organize and implement a coordinated effort to affect the health status of an enrolled group of patients. While some solo practitioners are diversifying their practices to include activities like cardiac rehabilitation, stress management, and smoking cessation programs, it is more expensive and difficult for them to organize and implement such efforts.
What Are HMOs Doing In Health Promotion?

Several excellent review articles have recently been published which survey the current range of programmed activities in HMOs and describe the practical needs and approaches for developing and implementing the programs within an organization.\(^3\) The vast majority of HMOs have established formalized programs or departments to organize and manage health promotion initiatives. The others have relied on the counseling strategies of their professional staff of nurses and doctors to fulfill their mission towards health promotion.\(^4\)

Organizations define health promotion and disease prevention activities in a variety of ways, often distinguishing between patient education, disease prevention, and health promotion. Patient education includes teaching the patient to improve compliance with medical procedures and therapeutic regimens or to improve management of common minor ailments. Classic examples of patient education activities are diabetes education classes, cardiac rehabilitation, and hypertension compliance programs. Disease prevention efforts are traditionally classified as primary, secondary, or tertiary. Primary prevention focuses on activities that prevent a disease from occurring, such as immunization programs, fluoridation, and smoking cessation. Secondary prevention activities are designed to detect disease before it is present, for example, pap smears or hypertension screening. Tertiary prevention activities are designed to ameliorate effects of established and recognized diseases or conditions, such as blood pressure control for hypertensives. Often through quality assurance programs, HMOs have distinguished themselves with high performance levels of immunization programs, pap smears, and hypertension screening.

This article focuses, for the most part, on opportunities in health promotion, that is, those activities designed to facilitate behavioral changes conducive to good health. They include any combination of health education and related organizational, political, and economic interventions.

In reviewing the approaches HMOs have taken in defining their priorities and health promotion policies, we find that most have adopted a very traditional model. The typical HMO offers a wide array of group programs or services dealing with smoking cessation, exercise, nutrition, stress management, weight reduction, and low back pain prevention.\(^5\) Most charge a reasonable fee for attendance in these programs and usually a preferred discount for members of the HMO. A fair amount of health promotion, particularly in terms of counseling, is essentially “hidden,” that is, it is difficult to quantify and maximize its potential.

The Importance Of Setting Priorities And Defining Policies

Allocating resources. Every manager responsible for health promotion
and prevention activities faces the challenge of allocating invariably scarce resources. Organized prevention activities and programming are usually among the lowest priorities within the organization. Unlike other departments or services provided by an HMO, the scope and content of health promotion is relatively undefined. The department's activities require interaction with every aspect of the organization. This can be rewarding, but at times extremely frustrating because it involves a certain degree of marketing of the department's activities and value within the organization. Survival of the program is often at stake. Allocation of resources for programming often lacks any strategic planning or setting of achievable goals because of the limited resources available for sound program planning and content. (The use of the term "program" is meant in its broadest definition to be any type of initiative to promote health and prevent disease including organizational policies such as nonsmoking, self-care initiatives, organized groups, and media campaigns.)

In her review article, Sigrid Deeds describes the varying range of activities in HMOs and challenges whether the marriage of health promotion and HMOs is indeed working. The reasons cited for the selection of the specific health promotion activities in the HMOs surveyed by Deeds ranged from the perception of health promotion as an integral component of quality care to the marketing potential to attract new members. Informal surveys in HMOs often suggest that the desire for preventive oriented care is among the reasons HMO coverage is selected.

Zapka and Mullen correctly assert that because HMOs now must compete with other increasingly efficient providers, many are reassessing the opportunities for cost control and other benefits resulting from properly financed and well-managed health promotion and education programs.

Therefore, setting priorities for well-planned and well-managed health promotion initiatives is critical. It has been the error of too many HMOs to try to be all things to all members. Few have designated a particular target population or problem area for an intensive investment of resources. Offering more types of group programs and increasing participation rates by members has been the traditional growth strategy of HMOs. Yet groups are not always an efficient nor effective model for health promotion activities. If, for example, an HMO has 100,000 adult members and 30 percent are estimated to be smokers, it is entirely unrealistic to target a strategy based on trying to enroll 30,000 smokers in group programs that are conducted on site at the health center. Yet, most have approached smoking cessation in this manner. Even self-help programs are rare. Fewer still have taken the more strategic approach of involving the primary care team as partners with their patients in the smoking cessation and maintenance process. Even fewer organizations have adopted visible no smoking policies for their staff people, who serve as important role models for the members, as well models for other employers. An exception is
Group Health of Puget Sound, whose fifty related sites have been totally smoke-free for over one year. Park Nicollet Medical Center, a Minneapolis plan of 210,000 members instituted a similar policy a year ago.

**Setting measurable objectives.** Because most HMOs have paid relatively little attention to strategic planning for health promotion programs, few have set measurable objectives. Evaluation mechanisms relate primarily to process and outcome indicators for those who participate in the program. Like other providers in HMOs, they have not taken a population approach to planning. They have not set forth a policy, for example, that aims to reduce smoking among 10 percent of their member population. Rather, they often take the more traditional approach of offering a quality smoking cessation program, with the expectation that 20 to 25 percent of participants will not have resumed the habit after one year.

The lack of strategic planning is apparent in many HMO health promotion programs. According to David Sobel, Director of Patient Education and Health Promotion for the Northern California Region of Kaiser Permanente, Kaiser has come to recognize that good health promotion programming requires considerable investment in the planning stages. “It is important to conduct the appropriate needs assessments and educational diagnoses to match the program intervention to the target population.” Often this presents a conflict with time demands and the time frame for marketing opportunities. He cautions that if marketing is the major incentive for an HMO investment in health promotion, there may be high visibility but low probability of actually achieving behavior change. “In the most extreme example, health educators feel like they are selling their soul, having a certain reluctance towards marketing.” Yet, he feels that Kaiser has the capacity to blend both, that is the provision of quality health promotion services can be the most effective marketing. “If we are going to move ahead in health promotion, we must develop the full potential for health behavior change in the clinical encounter and move out of the medical setting into the communities and work sites.”

**Choosing the best location.** In addition to a limited view of approaching both the content and setting of objectives for programming, the majority of HMOs have taken a very narrow view of where and how to offer health promotion activities. Because most HMOs have defined their strategy in terms of offering groups, space is often an important consideration in the number of programs that can be offered. Creating an extra health visit to the HMO is a barrier to reaching the maximum number of members. The vast majority of health promotion and prevention initiatives continue to occur within the setting of medical care delivery. While appropriate for certain problems, it is critical to broaden the focus of these initiatives.

Only recently have HMOs begun to explore the partnership with the work site for health promotion activities. According to Patricia Mullen, “HMOs in general have been late to come into work site health promotion
activities.” In part, this reluctance stems from concern that the HMO’s name and image will not be as prominent by offering a program outside of the HMO facilities, as well as the administrative issues of how to finance such arrangements. Yet, some HMOs have engaged in a variety of creative partnerships not only with employers but with other community organizations. Kaiser Permanente, for example, has offered their health promotion programs in such community settings as local YMCAs and churches. In so doing, they expand their visibility within the community. Offering programs to people in their natural environments, that is, in places where they are already likely to be, increases the likelihood of participation.

Another innovative approach to offering health promotion services is illustrated by Group Health, Inc. in St. Paul. For their members, they provide a stipend towards participation in programs offered by local community colleges and YMCAs ($10 per class, up to $30 per year). To do so, they publish the “Health Education Opportunities” catalogue, a listing of programs and activities available in their community which the HMO recommends. In so doing, they are likely to increase access for members to health promotion services, but probably limit the marketing and visibility advantages associated with programs developed and sponsored by the HMO.

Utilizing non-HMO health promotion services touches upon a major policy issue all HMOs face, that is, whether to create or buy. According to David Sobel, “There is a certain vitality when an organization creates their own product.” A somewhat similar approach has been developed by Kaiser, Santa Clara, where the HMO developed the curriculum, but it is implemented in local community colleges at a member’s discount. Through this approach, the community services are improved, and sufficient credit is afforded to the HMO.

Recently, one HMO has taken a very bold and innovative approach to creating partnerships for health promotion services. Maxicare Health Plans, Inc. and Pritikin Trademarks, Inc. have formed a new corporation to market, promote, and manage the Pritikin health and fitness programs on a nationwide basis. Maxicare plans to make the Pritikin program available to Maxicare members on a physician referral basis as a “major commitment to directly improving their health status.”

Creating incentives for members to participate. An important policy consideration for health promotion in the HMO is the concept of the health promotion “benefit.” Some HMOs have allocated a per capita amount that each member is entitled to use towards health promotion programs of their choice; others such as Multi-Group in Massachusetts define their benefit in terms of the number of programs in which a member can participate at no charge. Kaiser Permanente defines all patient education (such as diabetes education and cardiac rehabilitation)
as free, whereas health promotion/wellness programs (such as smoking cessation and weight control) are provided for a nominal fee. Few HMOs have experimented with incentives for members to either participate in activities or to maintain their health. Many have rejected these approaches because of the administrative costs to manage such policies.

Creating incentives for members to participate can also be accomplished through nonmonetary means. Essentially, the HMO has the opportunity to market their programs and initiatives to members. Most HMOs utilize their member newsletter and waiting room area to promote such activities. Unfortunately, few have conducted coordinated campaigns to encourage strong interest and participation in a health promotion initiative. Most have failed to recognize that it takes repeated “doses” of health education messages to motivate, initiate, and sustain a particular health action. The type of marketing, campaign will vary if the desired effect is information in contrast to behavior change. Relatively limited resources have been made available for high-quality marketing campaigns. In essence, much of health promotion is social marketing, and there is the need to invest the same quality of resources to such initiatives as to recruitment of new members.

**Creating incentives for staff to participate.** In addition to marketing and incentive programs for members, it is also important to “sell” the health promotion program to the providers. Physicians, nurses, and receptionists provide a critical link to the health actions taken by their patients. These providers serve in a variety of health promotion roles, including counseling and instruction in self-care, referral to special programs, and provision of support and reinforcement to sustain behavior change. The Tufts Associated Health Plan in Boston is currently conducting an innovative effort to train physicians how to counsel their patients to stop smoking. Attendance at a seminar to learn the necessary skills for effective counseling is maximized by providing incentives to the provider. Further, one group of providers receives financial reimbursement for their time. Preliminary data after three months of follow up, reported by Jim Hyde, the project’s coinvestigator, suggest that those providers who are reimbursed are more effective in counseling their patients than those who are not. The Tufts HMO is a network model individual practice association (IPA), and one of the few to integrate health promotion as a priority. While financial incentives per visit may not be appropriate within many HMO models, incentives could be provided both in terms of performance review or bonuses. It may be unrealistic to expect the busy HMO provider in the average twelve-minute visit to remember to conduct effective counseling or referral. Reminder systems can be designed for the physician and nurse which facilitate these important processes as well as reward the provider for doing so.

Another key issue which determines the success of health promotion
within an HMO are the organizational readiness and politics. According to Jane Zapka, organizational issues often have hampered the success of a well-intended health promotion program. She stresses that too often directors of health promotion are given a great deal of responsibility, with relatively little authority. Issues that are critical include: organizational placement, budget, qualifications of director, and expectations.

These, then, are some of the policy issues that HMOs have had to address. The consensus is that, for the most part, they have done so without a great deal of imagination.

**Recommendations And Model Plans**

It is strongly recommended that more HMOs consider the strategy of doing a few initiatives very well, rather than offer too broad an array of programs. The opportunities are unlimited; the resources, however, are not. Most operational HMOs cannot afford the large investment of resources required for new program planning. It may, therefore, be more appropriate to select one or two new priority areas per year, and develop an intensive campaign for it.

From the review of discussions, several key themes and trends emerged about what HMOs should do: (1) increase the trend towards self-care, and integrate self-care teaching and practices into primary care settings; (2) market health promotion initiatives to members and providers; (3) do a few things very well and develop measurable objectives for an initiative; (4) focus on special target populations, for example, senior health promotion and family health initiatives; (5) expand the work site role; (6) provide incentives to reward positive health behaviors; (7) develop maintenance strategies to reinforce and sustain behavior changes; (8) develop a strong organizational commitment to health promotion, in terms of values and financial resources; (9) conduct trend analyses to anticipate needs of patients and assess risks; and (10) develop an explicit policy and benefit related to health promotion programs and services available to members.

**Group Health Cooperative of Puget Sound program.** Before describing suggestions for what HMOs could be doing to maximize the opportunities afforded by their unique delivery system, it is worthwhile to describe a noteworthy exception. Most experts agree that the Group Health Cooperative of Puget Sound serves as one model of an HMO which has made an extraordinary commitment to health promotion. Due to the vision of Gail Warden, chief executive officer, a Center for Health Promotion has been created, and over $1.2 million is allocated annually. While Group Health serves over 330,000 members, their target audience extends to the broader community. By defining their population in this manner, they recognize the potential for a marketing advantage as well as increasing their efforts towards improving the health status of the community.
Warden views the purposes of health promotion to improve the health status of people in the HMO, as well as to teach members about the health care delivery system, so that it is used more appropriately.\textsuperscript{14}

According to Bill Beery, director, the strategy of the center has been to develop four work units: (1) work site and community, (2) health education and group intervention, (3) new initiatives, and (4) health program integration. For their work site and community component, Group Health works with those work sites which have the largest number of enrollees. They sell their health promotion products to these employers and develop a partnership with them. Among their most innovative approaches is the exploration of nonhealth sectors which have potential for health promotion programming integration, such as local parks and recreation.

These managers of Group Health, like many who were interviewed, advocate greater attention to self-care and fewer group programs. This is a resounding trend, as many HMOs recognize that groups are limited in effectiveness as well as efficiency. Related to their interest in developing more self-care programs is how to effectively integrate these programs into the delivery system. The health promotion integration unit receives the largest proportion of their resources, and it addresses a variety of populations including the elderly, underutilizers, and overutilizers.

According to Warden, the greatest barrier to increasing health promotion efforts in HMOs is the continuing skepticism by some chief executive officers of the return on their investment. He is optimistic that the “data are just around the corner,” and Group Health has an active evaluation strategy for these purposes.

**Targets Of Opportunity For An HMO**

To translate some of the themes identified into creative examples, the following strategies are offered for HMOs to incorporate into their health promotion efforts.

**Extend health promotion into existing community programs.** Many women are participating in aerobic classes in communities throughout America. While some HMOs may consider sponsoring such classes for their members, they could also utilize the classes for a second health promotion purpose. Most women do not examine their breasts routinely because they are not confident of their skills to do so and because they need to be reminded. Since women are already participating in a group activity in their community, an opportunistic HMO could teach aerobic instructors how to instruct the attendees in examination of their breasts at the end of the class. As women are in a setting appropriate to this activity, this is an ideal teachable moment. In so doing, the HMO could both capitalize on the promotional aspects of teaching the examination, as well as eliminating the need to offer special classes which are usually
poorly attended.

Child care is a major concern of working parents. Child care centers, however, often are the primary source for numerous infectious diseases. In turn, such children who receive their care from an HMO are high utilizers of medical care. HMOs could provide technical assistance to child care centers on strategies for infectious disease control, as well as using the center as a mechanism to educate parents about how to evaluate problems; parents could learn when to seek professional care and when to apply home treatment for their children.

Create a partnership and expand self-care. A recent Louis Harris survey reported that only 36 percent of adults say that in the past five years a doctor has given them advice about improving their health habits. While it is unknown to what extent this differs in HMOs, it is certain that providers can play the critical link to creating a partnership with their patients for managing and improving their health status and health care.

A variety of excellent self-care protocols and manuals are available for distribution to patients, designed to improve lay decision making. These can be tailored to reflect the specific organizational policies and can contribute towards more appropriate utilization of the delivery setting. HMOs must be realistic in accepting that for certain conditions such initiatives may increase utilization, but it may indeed, be towards appropriate utilization. The Vickery and Fries book, Take Care of Yourself, has been used for such purposes.

Organizations have to be creative in how self-care is integrated into the delivery system. It is naive to think that mere distribution of an informational packet would result in appropriate utilization of the information. Rather, providers need to be trained on how to use it as a counseling tool, and members need to be educated as well. Creative systems can complement health promotion strategies, thus ensuring their utilization. For example, HMOs can uniquely develop reminder systems, using the medical record for providers and mailings for patients.

One excellent way to begin the process is to develop a system in which health hazard risk appraisal tools are integrated into the medical history and used at subsequent visits. HMOs are uniquely suited to identify and deal with high-risk patients.

Select a theme and create priorities. For HMOs which are beginning their health promotion efforts, it is reasonable to rely on the national priorities developed to serve as a guide for planning. “Promoting Health/Preventing Disease: Objectives for the Nation” sets out quantified statements for the attainment of health goals. While it would be necessary to modify the goals to complement the specific HMO’s patient population and become realistically achievable, utilizing national priorities as a model is a reasonable first step.

Limiting the types of services and programs developed in-house may
be necessary. However, it is recommended that HMOs consider providing access to a broad variety of activities. These could include a subscription to a health newsletter, discounts or benefits for local community health promotion programs, access to books on self-care at cost or for free. However, for a long-term strategy, an HMO may consider selecting a theme for a more intensive investment of resources.

If an HMO has a large proportion of young families, the opportunistic HMO might select a family-oriented theme, for example, focusing on a healthy pregnancy series. One aspect might be “The Pregnant Smoker.” The rationale for intervention is compelling—by helping the pregnant woman stop smoking one can not only improve the health outcome of her pregnancy, but if cessation is maintained postpartum, then the health hazards of smoking to the woman can be averted. Since most HMOs have a large proportion of pregnancies each year, and it is estimated that over 30 percent of such women smoke, this initiative can affect a large number of members. There are a number of well-designed programs already available for implementation in operational settings. What the HMO must do is tailor a marketing campaign both internally and externally to draw attention to this initiative. After the campaign has been developed, the operational costs of maintaining it are far less.

The proportion of elderly HMO members is growing. Senior health promotion development is receiving national attention, and HMOs could adopt programs which have been developed for the Administration on Aging by the Institute for Health and Aging for use by their members, or the Healthy Older American Series.

Become a laboratory for innovative services. HMOs have the ability to become a “laboratory” for the development of innovative services and products concerned with health promotion and disease prevention. In so doing, they can establish a leadership role within their community. The investment of resources can be regained, in part, by marketing these new “products” to industry, other HMOs (noncompetitors in other communities), and other health care professionals. These products can include self-care protocols, training seminars for providers, media campaigns, curriculum for group programs, and seminars. The unique advantage of an HMO for these purposes is that it is already organized to develop and evaluate such efforts. Members of an HMO’s staff can, in turn, become consultants to others within their community who wish to establish such program initiatives. The types of innovations that HMOs can experiment with also relate to financial benefit packages and incentives for participating in health promoting behaviors, activities, and programs.

Conclusion

Expanded HMO involvement in health promotion will be a function
of resource allocation, commitment by the chief executive officer, and an understanding of the variety of benefits such activities can offer the organization. It will also require support from members, doctors, and nurses. Too many HMOs have only considered short-term benefits, and accordingly have discounted the value of investing in a long-term health promotion strategy. These benefits cannot be realized in one or two fiscal years. HMOs will need to take a leap of faith and strong leadership to maximize their special opportunities.

NOTES

2. Ibid.
4. Zapka and Mullen, “Financing Health Promotion.”
5. Ibid.
7. Zapka and Mullen, “Financing Health Promotion.”
8. Interview with Bill Beery, director, Center for Health Promotion, Group Health Cooperative of Puget Sound, 10 December 1985.
9. Interview with David Sobel, director, Patient Education and Health Promotion, Kaiser Permanente, Northern Region, 20 December 1985.
10. Interview with Patricia Dolan Mullen, associate director, Center for Health Promotion Research and Development, University of Texas Health Science Center at Houston, 4 December 1985.
11. Interview with Sobel.
12. Interview with Jim Hyde, assistant professor, New England Medical Center, 16 December 1985.
13. Interview with Jane Zapka, associate professor, University of Massachusetts, 19 December 1985.