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Commentary

The Role Of Physicians In Promoting Health
by Robert S. Lawrence

To link physicians and health promotion will sound to some like an oxymoron. The medical profession has focused on disease and its treatment rather than its prevention, on the pathogenesis of poor health rather than the promotion of good health. Even the alter ego of health promotion—disease prevention—has struggled to find a significant place in medical research, education, and practice despite the more technical nature of immunizations, screening tests, and chemoprophylaxis (pharmacologic treatment to lower risk, such as aspirin to reduce cardiovascular risk).

In health promotion, we encounter issues of personal behavior, culture, values, and law. The triumphs of modern medicine are the results of experimentation and reductionism, of systematic attempts to remove all considerations of personal behavior, culture, and the like, to understand biologic systems. Given these seemingly countervailing forces separating medicine and health promotion, why should we expect physicians to become more involved in the latter?

The notion of primary prevention, that is, altering risk factors before they have even begun to influence human physiology in preclinical states, is something that most physicians still relegate to the domain of public health practitioners. In fact, at the turn of the century, the first great public health revolution in this country was carried out by the public health workers who gave us potable water, inspection of food to guard against contamination, and a safe sewage system and by the microbiologists and basic scientists who developed the vaccines that altered forever the picture of child health.

This Commentary examines recent developments that compel physicians to take a more active role in health promotion, as well as the barriers that must be overcome to achieve this goal.1

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The Challenge For Health Promotion

Shortly after World War II, the declining mortality rates from infectious diseases intersected the rising mortality rates from chronic diseases of the cardiovascular system, cancer, and unintended injuries. In many instances, the agent responsible for death or disability had shifted from the microorganism to the person; the vector also shifted from being contaminated water supplies or insects to being diets laden with fat, calories, and salt; the automobile; or drugs. The relationship between human behavior and increased risk for certain chronic diseases was established. Awareness of the “new morbidity” produced the call for a second public health revolution.²

More than 60 percent of all Americans who die each year do so prematurely, that is, before age sixty-five. Given the actual life expectancy for Americans, this percentage is an underestimate. In 1986, according to data from the Centers for Disease Control (CDC), more than twelve million years of potential productive life were lost by Americans dying before age sixty-five.³ As many as three-quarters of these premature deaths could be prevented, were people successful in adopting healthier behavior. Through early detection and intervention, immunization, and motivating change in individual behavior, we could eliminate an estimated 45 percent of cardiovascular deaths, 23 percent of cancer cases, and over 50 percent of the disabling complications of diabetes.⁴ These three conditions dominate the current practice of medicine and, with the enormous potential for prevention, offer an ideal entree for physician involvement in health promotion. With better control of fewer than ten risk factors such as poor diet, inadequate exercise, the use of tobacco and drugs, the abuse of alcohol, driving unsafely, and a few others, we could prevent between 40 and 70 percent of all premature deaths. More than one-third of acute disabilities and over two-thirds of chronic disabilities are preventable by improving risky behavior.⁵

The Physician’s Role

Given these data, the great challenge for physicians is to pay more attention to helping patients adopt healthy behavior. Physicians’ desire to intervene with the power of modern medicine, with the diagnostic and therapeutic armamentarium now at hand, is insufficient. They must also counsel patients to modify their risk factors, help them quit smoking, help them initiate an appropriate exercise program, and engage in safer sexual practices. The counseling benefits will be measured many, many years later—long after patients have forgotten their physician’s involve-
ment. Reducing patients' risk factors poses a particular challenge to physicians because of two contravening forces within the profession itself. The more immediate feedback provided by successful treatment of symptomatic disease reinforces the physician's interest in pathology and therapeutics rather than in prevention or health promotion, while the inability to alter the end stages of chronic disease may stimulate greater interest in prevention.

Health promotion services provided in the clinical setting are not the exclusive nor, by any means, the most effective way for physicians to help Americans modify their risk. Evidence from community-based interventions demonstrates that spot announcements on television; labeling of food products in grocery stores; health education programs in the schools; and peer counseling programs by middle-school students to teach them to say “no” to cigarette smoking, drug experimentation, and other habits have proved more effective in changing behavior than most interventions using a purely medical model. The medical model is better suited to secondary and tertiary prevention than to health promotion, Early detection and treatment of hypertension contributed to the decline in mortality from strokes, and similar screening for cervical dysplasia using the Papanicolaou (Pap) test accounts for some of the sharp decline in mortality from cervical cancer during the past three decades.

The lesson to be learned from the successes of community-based health promotion (primary prevention) and physician-provided screening and treatment (secondary and tertiary prevention) is that a combination of techniques is necessary for optimal effect. By bringing health promotion into the physician’s office and by involving more physicians in community-based programs, the medical expertise and authority of the physician can enhance the health promotion endeavor and reach patients during a teachable moment of acute illness. Studies of smoking cessation and health education for improved hypertension control have demonstrated the efficacy of physicians as health promoters. One recent study showed that physician health education for smoking cessation is as cost-effective as most other preventive services.

Clinical preventive services. To accomplish this integration of health promotion and disease prevention in the clinical setting, physicians will have to provide the following services: (1) counseling for behavior change in the context of the specific risk profile of the individual patient; (2) screening tests to detect early, presymptomatic disease (mammography for breast cancer) or risk factors (hypertension or elevated cholesterol); and (3) immunizations and chemoprophylaxis. The recent publication of the U.S. Preventive Services Task Force, Guide to Clinical Preventive Services, provides a blueprint for the delivery of these services.
The product of over four years of literature review and debate by a panel of twenty specialists in preventive medicine and related fields and a professional staff, the guide evaluates the effectiveness of 169 health promotion and disease prevention interventions. Most of these are in the counseling domain, reflecting the importance of personal behavior in the etiology or amelioration of the sixty disease conditions and risk factors reviewed by the task force.

The influence of the guide on physician behavior will be determined by how widely physicians adopt the recommendations and adhere to them in practice. Predicting this is made complex by the number of topics reviewed and the varying levels of scientific data supporting each of the screening or counseling maneuvers and the immunization/chemoprophylaxis guidelines. Rather than targeting a narrowly defined group to receive the recommendations, the entire population—with differing values and constraints for the many subgroups within the population—is defined as being at risk.

Some recommendations, such as immunizations and screening tests, are more technical, while the counseling ones emphasize behavior change and process. These differences influence the rate of diffusion, shape the nature of the barriers to change, and should guide policymakers in planning for implementation. J.D. Eveland described a good diffusion system as “one that facilitates the sharing of helpful knowledge in a fashion that it can be used by others to achieve their goals and purposes.” For our discussion, the goals and purposes of health promotion—shared by physicians and patients alike—are the enhancement of physical and emotional well-being and the lowering of risk for premature death and disability.

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**Barriers To Implementation**

**Disease orientation.** A number of barriers to diffusion of health promotion recommendations exist in medical practice, none more important than the disease orientation of clinicians. Physicians are trained to be problem solvers and to focus on the needs of the individual—and usually symptomatic—patient. The diagnostic and therapeutic tools of modern biomedicine capture physicians’ attention and the attention of the public and, when successfully applied, reinforce interventionist behavior. Health promotion presents no “problem” for physicians to solve; the emphasis is on health, on nonevents. Richard Pels and colleagues described health promotion as entailing “no dramatic surgical intervention, and the grateful patient is replaced by someone unlikely to credit, much less praise, the physician for improving the probability of a longer and
better life. . . . Both physicians and patients tend to discount the value of a future gain when compared with the immediate cost of time, inconvenience, and discomfort experienced in regimented physical activity or in abstinence from tobacco, alcohol, or saturated fats."

Among preventive services, those most closely resembling disease treatment fare better. Self-reported information from the 1985 National Health Interview Survey showed that 85 percent of the 33,000 subjects had had their blood pressures measured during the previous year and that almost two-thirds of “everhypertensive” subjects were receiving treatment. Less than half of the females, however, had had their breasts examined during the previous year.

**Financial barriers.** Reimbursement policies also discourage physicians from spending more time delivering health promotion services. Medicare, Blue Cross/Blue Shield, and commercial insurers offer partial coverage at best for some preventive services. The RAND Health Insurance Experiment showed that patients who received free care had more preventive services, although no group had adequate levels of care (57 percent of women ages forty-five to sixty-five received a Pap smear, only 2 percent had a mammogram, and 4 percent of adults had adequate tetanus immunization). Analysis of the 1982 National Health Interview Survey showed “reverse targeting” of preventive services with those at highest risk and uninsured receiving the fewest preventive services. A study of health maintenance organizations (HMOs) showed that the greater amount of preventive services provided to subscribers compared with those insured in the fee-for-service system could be attributed to better insurance coverage and not to the organization of HMO services.

**Conflicting recommendations.** Several surveys have documented that physicians include among their reasons for not adhering to practice recommendations the ambiguous or conflicting nature of these recommendations. Physicians have been skeptical of the objectivity of the groups formulating recommendations; in one study, 79 percent of respondents thought that a national task force was necessary for developing a coherent set of guidelines. The lasting contribution of the U.S. Preventive Services Task Force may well prove to be the adoption and refinement of the methodology pioneered by the Canadian Task Force on the Periodic Health Examination to assess the quality of the evidence for or against any given health promotion recommendation. The use of a common set of decision rules for evaluating study design, interpreting experimental data, judging the efficacy and effectiveness of the preventive service, and formulating policy should serve to diminish conflict and increase the confidence of clinicians in the validity of the recommendations.
Lack of confidence levels. Several studies report that physicians lack confidence in their ability to motivate behavioral change in their patients and believe that they are poorly trained to practice preventive medicine. The physicians' self-assessment reflects the reality that most medical schools and residency programs have offered minimal education in preventive medicine. Confidence increased with level of training. Lack of confidence correlated with failure to attempt behavioral change in patients and with early cessation of counseling when dealing with poorly motivated patients.

Despite belief in the efficacy of mammography as a method of detecting early stages of breast cancer, concerns about the safety and reliability of the procedure cause some physicians to avoid ordering this test. Others believe that it is appropriate to provide nutritional counseling to lower the risk of heart disease, even when patients are not requesting that advice. The perception that patients do not want and would not follow the advice, however, discourages the physicians from offering them information about good nutrition. In fact, the perceived lack of patient motivation to adopt health-promoting behavior was identified as the major barrier to practicing preventive medicine by 324 family physicians in Michigan. Of these physicians, 57 percent thought lack of patient motivation interfered with helping female patients begin breast self-examination; 89 percent thought it interfered with helping patients stop smoking; and 91 percent, with advising patients to lose weight.

I add here that physicians with better personal health habits and with positive attitudes toward counseling are more likely to counsel their patients about smoking, alcohol, exercise, and weight. Physicians report higher levels of health-promoting behavior than the average citizen. White male physicians have an age-standardized death rate 75 percent of that for white men; the death rate of female physicians is 84 percent of population norms. The lower rate of cigarette smoking among physicians is the major contributor to their good health.

Practice setting. Constraints of the practice setting also interfere with health promotion. Lack of support services and the time pressures of busy primary care practices impede even the best intentions to deliver health promotion services. Most practice organizations do not include health promotion among their top priorities. Task force recommendations that conflict with the established agenda to focus on clinical care are unlikely to be adopted.

The attitudes of support staff are important to all aspects of practice function. If an expanded array of clinical preventive services is perceived as adding work and stress, the support staff is unlikely to facilitate diffusion. If, however, the support staff see their responsibility for adopt-
ing part of the prevention agenda as a gratifying expansion of their professional role, diffusion will increase. Many practices do not have easy access to dietitians, smoking cessation groups, alcoholism counselors, and other referral services that provide health promotion counseling and sustain the clinician’s motivation. Health education materials may be of uneven quality or in short supply. Also, few records systems are designed to monitor health promotion practices or to provide reminders and logistic support based on the risk factor profile of the individual patient.

**Strategies For Change**

Success in implementing health promotion as a priority requires sustained positive behavior change on the part of both physicians and patients. For physicians, educational programs or changes in the practice environment can help bring about this behavior change. However, many implementation strategies for health promotion have not been adequately evaluated; those that have been evaluated frequently use housestaff as their subjects and rely on computer technology. These studies may not be generalizable to nonteaching settings. The most successful strategies used multiple interventions with intensive applications. The following discussion explores these strategies in greater detail.

**Education.** Medical educators have faith that health profession students and graduate clinicians can improve their health promotion skills, knowledge, and attitudes as a result of effective teaching and training. Unfortunately, few published studies document the educational model as an effective diffusion strategy. Preliminary evaluations of a few curricula that integrate health promotion with basic science and clinical courses show some promise. A review of 248 studies on continuing medical education found that only 13 percent of the studies randomized subjects to study and control groups, 3 percent met a priori criteria for quality, and a mere three studies evaluated patient outcomes. Very few studies of continuing medical education evaluated health promotion education.

Three randomized trials of packaged educational materials produced mixed results. One showed that preexposure behavior predicted most of the postexposure variance, implying that the intervention reinforced preexisting dispositions to adhere to health promotion recommendations. Another study used as controls the 57 percent of the subjects who did not use the educational materials (articles and audio and video cassettes) sent to them. Both users and controls had significant posttest improvements. Either secular change overwhelmed any intervention effect, or some of the controls actually used the materials or were motivated simply by receiving them. The third trial showed that both recipients of articles
and controls improved the quality of care for common clinical problems of high interest. Only the intervention group showed improvement for topics of low interest.\textsuperscript{25}

Jerry Avorn and Stephen Soumerai used the marketing techniques of the pharmaceutical industry to discourage the use of inappropriate drugs. Educational materials alone failed to change physician behavior, they found, but the use of academically based “detailing,” conducted by clinical pharmacists, produced significant decreases in prescribing habits for overused drugs. Effects persisted for at least nine months.\textsuperscript{26} The effectiveness of this and other strategies in increasing health promotion activities among physicians, however, remains to be studied.

**Practice audit and feedback.** Feedback based on audits of physicians’ records is limited to the physicians’ own reports of tests ordered and advice given. Direct observations are needed to assess the quality of counseling skills and other health promotion activities, and few studies have been reported. Feedback alone produced significant improvement in one study of housestaff compliance with preventive services recommendations but not in another. Feedback about individual performance, individual performance compared with peers, and group performance improved physician compliance with preestablished criteria. Common elements of these successful interventions are the use of individualized, specific, and timely feedback.

**Reminder systems.** Most reminder systems in clinical practice are computer-based. First demonstrated at the Regenstrief Institute, computer reminders about abnormal test results and monitoring of drug side effects improved adherence to predetermined standards. Other studies produced similar results for blood pressure screening, cancer detection, immunization, and prenatal care. Clement McDonald’s hypothesis that the practice environment, rather than lack of knowledge, was the principal barrier to adherence to standards appears to be confirmed by these studies.\textsuperscript{27} The reminder systems improve performance but do not address deficiencies in knowledge or skills.

Data from the INSURE project suggest that paying physicians for health promotion and disease prevention services improves adherence to standards in fee-for-service group practices but produces inconsistent changes in behavioral risk factors in an HMO setting.\textsuperscript{28} The Health Care Financing Administration’s demonstration projects on preventive services seek to establish the importance of financing incentives to the delivery of health promotion/disease prevention services.

**Multiple interventions.** The combination of educational interventions plus practice setting changes such as reminder systems or payment for preventive services produced positive changes in mammography and
immunization rates in an internal medicine clinic.\textsuperscript{29} A study of hypertension control produced similar results in a fee-for-service setting but not in an HMO.\textsuperscript{30} Other controlled trials have produced conflicting results. A combined interventions trial in a Veterans Administration medical clinic showed no increase in preventive services compared with controls.\textsuperscript{31} In contrast, a similar study of housestaff in a medical clinic showed that a combined intervention produced significant improvement in adherence to standards and that this effect persisted in a second setting despite the discontinuation of the environmental cues.\textsuperscript{32}

**Conclusions And Recommendations**

The shift in the burden of illness in the United States to chronic diseases, injuries, and sexually transmitted diseases demands that physicians devote greater attention to health promotion. As outlined above, many obstacles impede the process of encouraging physicians to counsel their patients to adopt behavior that promotes health. Lawrence W. Green and colleagues reviewed three categories of behavioral influence that apply to clinicians and preventive services: predisposing, enabling, and reinforcing factors.\textsuperscript{33}

Predisposing factors include the knowledge and attitudes of physicians toward health promotion and disease prevention, their own personal health behavior, their confidence in their own ability to counsel, and their beliefs about patients’ interests in health promotion advice. Enabling factors include competence to perform preventive services, adequate payment for rendering preventive services, a practice setting that is organized to facilitate counseling activities, sufficient time in the schedule to provide health promotion services, an efficient reminder system, and a coherent set of guidelines that are perceived as scientific and unambiguous. Finally, reinforcing factors include peer support, positive feedback from patients, evidence of intermediate results such as improved health behavior among patients that are predictive of ultimate favorable outcomes, and enhanced self-efficacy about fulfilling one’s role as a healer.

An “educational diagnosis” is necessary to develop the appropriate combination of education, training, modification of practice setting, and reward system to bring about the desired change in physician behavior. The data suggest that a multifaceted approach to helping physicians expand their knowledge and increase confidence in their counseling skills should be combined with a reminder/feedback system that is tailored to the practice setting. These goals deserve our best effort, because the potential benefit to the health of the American people is so great. While much about the determinants of human behavior remains to be learned
through research, the urgency of the acquired immunodeficiency syndrome (AIDS) epidemic, the mounting toll from intended and unintended injuries, unwanted teenage pregnancies, and the health consequences of tobacco, alcohol, and drugs demand that physicians begin to preach what so many already practice.

NOTES

1. At the request of the editors, only selected references are cited here. For a complete set of references, contact the author at the Department of Medicine, Cambridge Hospital, 1493 Cambridge Street, Cambridge, Massachusetts 02139.


11. “Health Promotion and Disease Prevention, United States” (Data from the National Health Interview Survey, Series 10, no. 169, 1985).


27. Space limitations preclude a complete listing of these studies. For further information, contact the author.


