HEALTH PROMOTION AND DISEASE PREVENTION **A Handbook for Teachers, Researchers, Health Professionals and Decision Makers**	
Title	**Old Paradigms and New Programs: The Need for an Interactive Device for Promoting Health and Preventing Disease**
Module: 0.6	**ECTS: 1**
Author(s), degrees, institution(s)	**Edward J. Eckenfels,** Emeritus Professor Rush University Medical Centre Chicago, Illinois, USA
Address for correspondence	**Prof. Edward J. Eckenfels** 5344 S. Hyde Park Blvd. Chicago, Illinois 60615 USA Tel: 011+773-667-5986 Fax: 001+773-667-6986 E-mail: ed_eckenfels@rush.edu
Key words	disease prevention, health promotion, social medicine, health care ecology model, health care belief model
Learning objectives	After completing this module students and public health professionals should: • be aware of the limitations of conventional methods to promote health and prevent disease and the need for new programs based on a synthesis of social medicine and health care ecology; • recognise the interrelationship between individuals, families, the community, and society and the accompanying interaction between biological, psychological, socioculural, and behavioral factors in disease prevention and health promotion; • increase their knowledge of how to institute disease prevention and health promotion interventions in the doctor-patient relationship, the family care situation, the community network, and societal institutions; • understand the strengths and weaknesses of the health belief model; • differentiate between social medicine and health ecology as a basis for synthesesizing a new programatic device; • be able to conceptualize what is needed to design, implement, and evaluation an effective disease prevention and health promotion program for a designated geographical area or population.
Abstract	To understand the complexities of creating an effective health promotion and disease prevention strategy, conventional wisdom in this field must be assessed critically and thoroughly. The rapidity of change—scientifically, clinically, and politically—in the health care sphere, requires a holistic understanding of the health of the public, the evolving patterns of disease, and the efficacy of the health care system.

	This paper provides a framework for assessing the current state of disease prevention and health promotion, integrating traditional paradigms into new programs for confronting changing socio-cultural as well as biomedical forces. Particular eras and paradigms in public health will be examined and discussed. The interdependency of human phenomena—biological, psychological, socio-cultural, and behavioral—is explained. Misconceptions of aspect of how individuals respond to the theory and practice of health behavior such as the health belief model will be discussed. Building on classic conceptual schemes in social medicine in conjunction with the health care ecology model will be explored in terms of a potential synthesis of concepts and applications. The aim of this proposal is to update and reinvigorate disease prevention and health promotion perspectives by demonstrating the significant role they play for improving the health of the public.
Teaching methods	A well-planned sequence of six lectures that begin with the definition of terms and include a brief history of eras and paradigms, major components of contemporary human growth and development, misconceptions of health care interventions, the social medicine and health care ecology models, and ending with a focus on a post-modern paradigm for planning, implementation, and evaluation. Each lecture will be followed by small group discussion providing the students opportunities to digest and discuss the topics presented. When possible a guest lecturer in public health, social medicine, or social thought and philosophy should participate
Specific recommendations for teachers	The continuity and sequencing of material is of utmost importance. The personal learning and development of the students should follow a heuristic approach of continuing education and based on synthesis and exploration.
Assessment of students	A five minute quiz of one or two questions should start each lecture. The first one should be the students' statement on what they expect to learn from the course. Based on small group discussions, students should explore sources (the internet, the library) to find evidence supporting or rejecting what is being disucssed. A one page summary of this material should be submitted at the end of each session. The summary of the first session submitted at the start of the second discussion group, and continues in sequence. A five page essay, follwing the criteria stated for exploration serves to demonstrate the students' understanding, application, and creativity regarding the concepts and modalities that consitiute the thesis of this module. The essay counts for 60%, the quizes 20%, and the summaries for 20%.

OLD PARADIGMS FOR NEW PROGRAMS: THE NEED FOR AN INTERACTIVE DEVICE FOR PROMOTING HEALTH AND PREVENTING DISEASE

Edward J. Eckenfels

Laying the foundation

The aim of this paper is to critique commonly held beliefs pertaining to disease prevention and health promotion as a basis for program planning, implementation, and evaluation.

To begin with, most health care interventions are taken for granted, that is, those who apply them implicitly believe that what they are doing is the right thing. Moreover, with the vast array of new "medical armamentarium" constantly being created, there is little time to question their efficacy. What has been lost in this avalanche of information is healthy skepticism and critical reasoning. The aim of this paper is to dig deeper than the current trend of medical advances, to question fundamental notions about health and illness, where they come from historically, and how a new perspective can be developed that integrates old paradigms with new programmatic efforts in the field of disease prevention and health promotion.

The need for a historical perspective

Pearce (1) points out that "to understand the causation of disease in a population, it is essential to understand the historical and social context and to emphasize the importance of diversity and local knowledge rather than only searching for universal relationships." Disease prevention and health promotion strategies must be framed in terms of the broader concept of public health if they are to be effective, i.e., reach *all* the people. A good place to start is the Sussers' conceptualization of *eras* and *paradigms* (2). Although their construct is epidemiology, the implications for disease prevention and health promotion should be obvious. In the first half of the 19th century, *sanitary conditions* were recognized as a major source of disease and death, with *miasma* the "poisoning by foul emanating from soil, air, and water."

In the early stages of the 20th century *infectious diseases* were characterized in the *germ theory* paradigm with the focus on how "single agents relate one to one to specific diseases." The last half of the 20th century has seen the emergence of *chronic diseases* with its paradigm of the *"black box,"* in which "exposure (input) is related to outcome (output), without necessity for intervening factors or pathogenesis." The Sussers are more concerned with the current era they called *eco-epidemiology* with its paradigm the *Chinese boxes* (one inside of the next larger one). Their observation of the importance of understanding "causal pathways at the societal level and with pathogenesis and causality at the molecular level" is pertinent to the direction disease prevention and health promotion must take.

Pearce (1) is justifiably worried that "modern epidemiology, with its emphasis on methodology and risk factor identification in the individual, has diverted epidemiologists from a primary concern in understanding the dynamics of disease occurrences in populations." The clinical trial and multivariate analysis have emphasized a reductionist approach by downplaying a population orientation. This model has become especially true in academic settings. The tendency to study factors that fit individualistic epidemiology has become the dominant paradigm of chronic disease and, in the process, has taken the investigation away from public health issues.

Nevertheless, a new framework is emerging that recognizes the complex interaction of biology with the social, political, economic, and cultural relations of the 21st century. A creative exploration of this type of paradigm leads to a better recognition of what is needed to prevent disease and promote wellness. But first, we need to better understand what is currently considered important in the etiology of disease and illness.

Emerging factors in health and illness

At the start of the 21st century, it is clear that *biology* has taken precedence over other factors in health and illness. There are many reasons for this but most obvious are the advances in the understanding of normal biological processes and their accompanying pathophysiology. As more disease processes are identified, so are new interventions for treatment and cure. The initial prominence given to infectious diseases has moved to chronic diseases and how to live with them throughout life. Chronic ailments continue to be subdivided with specialties and subspecialties to treat them. The conventional way of managing chronic illnesses, according to Porter, is through changing individual behavior, raising health consciousness, and promoting self-care (3). The latest breakthrough to assure biology its position in the hierarchy of causality is molecular biology, especially the creation of the genome. Preventing disease and promoting health gets lost in the potential of stem cells and transplantation. As the Sussers (2) have stated "a molecular paradigm is hugely attractive because of its explanatory power."

Classic *psychology* has also taken on a new thrust. Although the day of Watsonian behaviorism is far in the past, as is Freudian psychology, and other non-quantifiable conceptualizations, measuring attitudes and behavior have become the hallmark of contemporary psychology. The focus is on *cognitive* factors; through surveys and scales, attitudes can be measured and analyzed statistically. The American model of prevention applied most often focuses primarily on changing individual behavior. The *behavioral aspect* is added as a separate entity because in disease prevention and health promotion it becomes an essential protocol for making successful interventions operational. Socio-*cultural aspects* encompass two configurations: first a person's *social status* in a group, a community, or a society and, second, *culture,* which, in its simplest form, refers to the beliefs and values of a society or population group. In the broadest sense, the norms, the customs, and the beliefs form the moral order of a society and its social aggregates.

In sum, under the rubric of *biology* we know how the human body functions and what can be done to keep it functioning. *Psychology* tells how we think (rationally) and our emotional responses (not rational) to certain stimuli. *Culture* provides the patterns of attitudes, values, and beliefs that have a powerful influence on our identity and our behavior. *Social and economic* factors (class) determine where we fit in the social hierarchy (a social stratification system). *Behavior* means simply how we behave in conjunction with these human conditions.

Shortcomings of single factor causation

Each of these factors needs to be looked at more critically. *Molecular biology* allows for the study of disease causation from a strictly biophysical perspective. The precision of molecular biology makes it possible to determine the means and the timing of transmission and to find a way of interrupting it. It is seen by the public as well as scientists and health professionals as the closest thing yet to the magic bullet. An unanticipated consequence is taking the focus away from a social perspective. If human nature rests in the biophysical person

and the discernible component is genetic, then the focus of disease prevention and health promotion is the person. Not only does this leave environmental and cultural perspectives out of the model, but it becomes the basis for education and training in the health professions. Eisenberg (4) succinctly states that in contemporary medical education, "the tendency is to ask only biological questions about what are in fact biosocial phenomena."

In the *doctor-patient* relationship the biomedical diagnosis and treatment take precedence. This is how physicians are trained. The old adages of "Doctor's orders," and "quit smoking and lose some weight" become the accepted protocol for disease prevention and health promotion. This is how doctors and nurses interact with patients. The primary tasks of clinical medicine may be preventing premature death and disability and improving the lives of those under care, but medical professionals are not trained to understand social structure and the need for intervention at the structural level (5). As Kleinman (6) has recognized, "the need to routinely ask patients (and when appropriate family members) what matters most to them in the experience of illness and treatment tends to be left out of the interaction." He also observes that, "*cultural competency*, as taught in most medical schools, suggests culture can be reduced to a technical skill for which clinicians can be trained to develop expertise. It becomes a series of 'do's and don'ts' that define ways to treat a patient of a given ethnic background."

When it comes to promoting health in an interpersonal vein, the Holy Grail for reaching patients is the *health belief model* (HBM). This model is based on the work of Kurt Lewin and was developed by social psychologists working with public health specialists in the 1950s. As Hughes (7) as pointed out, "belief served as an unexamined proxy for culture." The assumption was that one's *beliefs* about health and illness were not the same as *knowing* what caused the illness in the first place. Furthermore, correcting false beliefs among the sick should be a first priority of public health. The situation was defined as scientific medicine versus myths and folklore.

The HBM is a rationalist's paradigm. It presumes that "perceived susceptibility and perceived severity of disease, combined with perceived benefits of preventive actions minus perceived barriers to taking those actions, explains the likelihood of an individual taking preventive health measures, complying with prescribed regimens, or utilizing medical services" (8). This model presents a very narrow view of culture and human action. Sahlins (9) called the HBM "subjective utilitarianism," whereby the sick person responds to *incentives* the way Economic Man does to capital. In other words, the person proceeds rationally toward the goal of positive health. This theory is fraught with narrow renderings of culture as health belief. It is built on the premise that the "rational, autonomous care seeker is an empirically-based, value-free conceptualization" (8). This too is a myth since, for one thing, it leaves out the role of the family, the community, and society. It is really an *ideological model* that applies to reasonable and educated people and excludes those who have less control over their lives. Moreover, "health decisions are far more constrained by *objective social factors* and macro-level *structures of inequality* . . . than by subjective beliefs or cognitive factors" (8). Many practitioners of public health have been seduced by the HBM, and, in some situations, blame the victim for not following the prescribed treatment plan.

The two most misunderstood concepts in health care are *culture* and *social status.* Culture has particular meaning not only because it is basic to understanding all social phenomena, but, in particular, because it is relevant to how health is fostered and disease is prevented. All human actions are filtered in some way through culture. A misconception of the power

of culture, however, can lead to opposite conclusions such as potentially harmful attitudes and stereotyping of "others" from different racial, ethnic, and social groups (10). When the focus is solely on learning specific characteristics of various "ethnic groups" lumped together and viewed as one inevitable identity, then prospects of how "to reach them" regarding their health and illness will be static and one dimensional.

Myths about human nature and culture abound such as "conflict between people of different cultures, races, or genders is inevitable"; "biology is destiny"; "culture is immutable"; "poverty, inequality, and suffering are natural states"; and "people in other societies who don't want to live just like Americans are afraid of 'modernity'" (11).

Culture (6) is "inseparable from economic, political, religious, psychological, and biological conditions. [It] is a process through which ordinary activities and conditions take an emotional tone and a moral meaning for participants. Cultural processes frequently *differ* within the same ethnic or social group because of differences in age cohort, gender, political association, class, religion, ethnicity, and even personality." Furthermore, the "stuff of culture" is absolutely necessary to see how culturally derived attitudes and beliefs affect the health and well-being of people from different cultural backgrounds. In particular, the implications of cultural sensitivity are significant for creating healthy lifestyles and disease awareness. Finally, whether it is from the perspective of a region, a community, a family, or a person, lack of knowledge about cultural norms, values, and beliefs creates an invisible barrier to fostering health and wellness.

Every society has some form of *social stratification*. When it comes to one's health within the hierarchy, Marmot (12) has demonstrated, through decades of carefully conducted empirical research, "as bad as poverty is for health, what is really at issue here is inequality." He calls this phenomenon the *status syndrome*. He further states, "All societies have rankings because individuals are unequal in a variety of ways; but not all societies have the same gradient in health. What matters is the degree to which inequalities in ranking lead to inequalities in capabilities—being able to lead the lives they most want to lead. Central to these capabilities are *autonomy* and *social participation*." He goes on to say, "Control over one's life and opportunities for meaningful social engagement are necessary for health. It is also likely the relationship goes the other way; without good health it is hard to achieve autonomy and full social engagement." Implicit in Marmot's analysis are the *cultural constraints* that limit capabilities.

This convergence of culture and status is an essential factor in what is needed to develop effective health promotion and disease prevention programs at the community and society levels. Breaking through the social shield of poverty and deprivation is essential for making these programs work for the disadvantaged. To be healthy, let alone happy, people need control over their own lives. In addition, they need a social network of support that they can trust. This social and physical environment is the setting for fostering systematic program interventions.

Behavioral constitutes the interaction that occurs in all of these social settings. Communication between the doctor and the patient must be reciprocal and acknowledged if the patient is to comply with the health care plan. If strict adherence to a treatment regimen is required, the family care takers, if any, must be involved. How the community behaves toward "outcasts" determines their fate when it comes to sickness and health. Community-based programs can be organized to sustain the health of the residents. This area can be a great source of innovation and creativity.

A just and fair society has a moral obligation to eliminate social injustice and all forms of inequality. Farmer (5), through his work in Haiti and other truly disadvantaged countries, has turned his attention to *structural violence,* which, according to Galtung (13), is the "avoidable impairment of fundamental human needs or . . . the impairment of human life, which lowers the actual degree to which someone is able to meet their needs below that which would otherwise be possible." The health of the public is primary to a society's fiduciary responsibilities.

Paradigms and programs

The last half of this paper discusses two important and too often misunderstood paradigms: *social medicine* and the *health care ecology model* and how they can be integrated to serve as a basis for developing new programs for preventing disease and promoting health. *Social medicine* is making a remarkable comeback in developed countries. The stark fact is that most disease on the planet is attributable to social conditions in which people live and work. As Eisenberg (4) has observed, "all medicine is inescapably *social*." Even the human genome is inescapably social, in term of the benefits, the risks, and the costs of genetic screening. Large-scale social forces give rise to human disease and affect its distribution around the world. In 1848 Virchow (14) concluded that poverty and living conditions, not biology, were the prime causes of the typhus epidemic in Silesia.

Social medicine in the 21st century is concerned with which social forces operate at different levels. Eisenberg (4) has developed four domains for delineation. The *first domain* consists of the cultural and social aspects (values and status) of the relationship between patients and health professionals. This relationship is the basis for important health outcomes and is universal. The *second domain* involves the patients' beliefs, practices and experiences. Patients' experiences of and responses to suffering are not confined to the clinical encounter and vary dramatically among different populations. The *third domain* is the culture of medicine itself. This consists of how health professionals are socialized beginning with medical education and continuing throughout their careers. Health systems and health research have their own agendas. Understanding the culture of medicine is essential to understanding health professionals' attitudes toward illness, patients, and treatment. The *fourth and final domain* brings us back to Virchow and the large-scale forces shaping health that have become known as the social determinants of disease.

To give substance to these concepts, the classic paradigm of social medicine created by Alwyn Smith in 1970 is especially valuable (15). Smith was well ahead of his time in trying to integrate the major variables that constitute how illness and health are distributed in any give *social aggregate.* He also believe social medicine was a *discipline* like any other field in medicine and public health with clearly discernible *principles* about how disease and health were distributed in society using the *methods* of epidemiology and biostatistics to demonstrate that social factors are significant determinants of disease and illness. His thesis was simple but deceptive. The *changing* distribution (the model had to be dynamic) of disease and wellness in any social aggregate is the function of the *population*, which includes *geographical area* (urban, rural, climate, physical environment, etc.) and *social structure* (age, gender, ethnicity, religion, social status); patterns *of disease* (infectious, chronic, genetic, etc.); and the *health care system* (professional and ancillary personnel, facilities, technology, folk healers, etc.). For Smith, a starting place for integrating these variables was to show the prevalence of morbidity and mortality in terms of differentiated stages along the

life cycle—infancy, childhood, adolescence, young adult, adult, elderly, and very old. This conversion of morbidity and mortality rates with select population characteristics could be applied to specific geographical regions ranging from a country to a neighborhood. This mechanism provides structure for ascertaining the state of health in a community, which is the baseline for prevention and promotion interventions. Without data, of course, the model remains only a theory. Furthermore, the health care system's role in the paradigm is not easy to define without data because it is difficult to determine where and how it fit in. The lesson learned here is that even the most creative exercises in disease prevention and health promotion cannot be effective without current and valid data.

It is also necessary to reflect on an important point, that is, a search for a level of *generality* that applies to all situations in which the goal is to promote health and prevent disease. As the Sussers (2) state, "when we enter the physical, biological, and social realms of the human world, we need a parallel set of ideas interwoven with the search for generality. [In the realm of social medicine] the poor fit of *universalism* with human reality is better replaced by a contrasting construct of *ecologism*." (As noted earlier, the Sussers' primary focus is epidemiology, but the conceptualization applies to the broader discipline of social medicine.)

In proposing a paradigm in the vein of ecologism, the health care ecology model, initially presented by Kerr White in a 1961 publication of the *New England Journal of Medicine* (NEJM) entitled "The Ecology of Medical Care" is essential (16). This classic paradigm provides a framework for thinking about the *organization* of health care, medical education, and research.

The original model was based on multiple sources of information, mostly from the United States and Britain, dating from 1928. There were a number of estimates ("intelligent guesses") when no data were found. White and his colleagues derived a model whereby in a population of 1000 adults, in an average month, 750 reported an illness, 250 consulted a physician, 9 were hospitalized, 5 were referred to another physician, and 1 was referred to a university medical center. (Keep in mind these results are not nested, i.e., they are not subgroups of one another; all are based on a denominator of 1000.) To the surprise of White and his colleagues, this model has been used repeatedly in papers, textbooks, by investigators, and policymakers. Despite the incredible changes in medicine, scientifically, clinically, financially, and organizationally, Green et al. (17), who incorporated data on children and additional sites and types of health care services, found some variation but overall stability of the relationships proposed 40 years ago. (Two charts depicting these subdivisions of a population denominator of 1000 are found in "Occasional Notes", *New England Journal of Medicine,* Vol. 344, No. 26, June 28, 2001.)

White has added his own perspective on the validity of the model in a 1997 NEJM article with specific implications for population-based health care research (18). He takes great care to emphasize that the perspective presented in "The Ecology of Medical Care" drew attention to several distinct *denominators* (epidemiology is the science of denominators and numerators) that extended from general or geographically defined populations, to populations of sick people, those consulting physicians, those admitted to community hospitals, those referred to other physicians, and those referred to university medical centers. The three major classes of populations were: First, the general population denominator defined by a geopolitical jurisdiction such as a country, state, county, or metropolitan area. Second, there is the health care system, preferably a vertically integrated system, in which all of the enrollees

or subscribers constitute the denominator. Finally, there are specialized denominators such as all patients using specific practices, services, or institutions. A major question, of course, is where does the data come from? This includes death certificates, discharge hospital records, patients' records, and even the labeling of health and medical problems. Regarding this latter point, the *International Classification of Primary Care* was derived in 1993 based on the original *International Classification of Diseases* by the World Health Organization in 1975. This new classification scheme recognizes the long-standing observation that patients' problems, concerns, complaints, symptoms, and other conditions include a wide variety of social and psychological states that are not strictly biomedical.

In this paper White is primarily concerned about the implications of his model for population-based health care research. He states that there are three arenas in which the problems of health and disease may be studied: the laboratory, the one-to-one clinical settings, and the population. As biomedical research advanced in the study of microorganisms and their eradication there was a diminished study of health and disease in populations. It is only in the last few decades that the population perspective has returned for serious consideration.

White's contribution to the empirical and substantive effectiveness of population research is found in the personal collection of health resources he donated to the Claude Moore Health Sciences Library at the University of Virginia in 1992. Of particular significance to this discussion is the emergence of *health services research* as a new field for investigation. In many ways it has revolutionized the way to look at how medicine and its related fields are organized and made operational. The field has grown so much that virtually all academic health centers in the U.S. conduct health services research. Health services research is a worthy companion to biomedical research in improving individual and collective health. White's papers also include cogent analyses of the importance of *health statistics and epidemiology, primary medical care, public health and population health,* and *care and curing.* These separate fields are subsumed under the recent construct of the *health of the public research* as: population-based research into the promotion and maintenance of health; the frequency, burden, and causal pathways of ill health; and effectiveness of interventions designed to reduce or prevent ill health.

A synthesis with implications for disease prevention and health promotion

Before continuing, a summary of what's been said so far is needed. This essay is framed as a "thinking person's paper" because this approach to the topic that overarches this book's major thesis requires a systematic critique of the knowledge and assumptions surrounding the nature of health and illness in the 21st century. It begins by giving a brief historical description of evolving conceptualizations of the "human condition." It is followed by showing the need to assess the current status of biology, psychology, culture, social status, and behavior for explaining health and illness. Short commentaries on the dominance ascribed to each discipline and how that dominance or its decline has evolved is also presented. In light of what we know about human nature, the shortcomings and reductionism of each field if taken by itself as the explanatory force is critically reviewed. When applicable, examples like the health belief model are used. Following the assessment of these underlying factors, attention is turned to two important perspectives that provide worthwhile insights for addressing the challenges of promoting health and preventing disease in our rapidly changing world. *Social medicine* is then described as a discipline with principles and methods that integrate the biosocial factors that had tended to be given little if any attention when it comes to understanding the health

of the public. Finally, the health ecology model is presented as a way of providing structure and space for empirical analysis. Other evolving fields such as public health, epidemiology, and primary care fit nicely into this paradigm.

A *synthesis* of these various conceptualizations allows us to develop a more crucial and efficacious approach to health promotion and disease prevention. In short, it is a move from the theoretical to the programmatic. To achieve this, requires both horizontal and vertical integration. *Vertical* means two things: first, the interconnectedness from the individual to society, and, second, the specific area of study from biogenetic to public health. *Horizontal* means the convergence of these factors in time and space, which is manifested in the ecology of health care addressing disease and illness in a population and/or geographically defined area. Such an endeavor is based on multiple levels of interactive systems. As stated earlier, the conventional approach to health promotion and disease prevention tends to be unilateral with the focus on one particular discipline such as theories about a person's motivation for getting the individual to quite smoking. This narrowness excludes the social, cultural, environmental, and other factors that affect why an individual wants or continues to smoke regardless of the physical harm it does. What is proposed instead is to use *social medicine* as the conceptual framework for developing constructs and the *health ecology model* as a method for delineating particular segments—regions or population—for proposed interventions and evaluation.

If a state of well-being is our aim, then a *structure* is needed to see how these human factors interact. This structure can be diagramed as a series of concentric circles with the individual in the center followed by the doctor-patient relationship, the family, the community, and society as the outer ring. The doctor-patient relationship is included because it is a dyad, that is, one construct removed from the individual. A short-hand device (19) is the *Mckinlay model* which consists of three levels: *downstream* where the focus is on the individual and his or her lifestyle or behavior; *midstream* where the focus is on communities and institutions within communities; and *upstream* where policies that support our endeavor must be made.

An important underlying concern, for our purpose, is to show how the distinction between disease prevention and health promotion operate in the process. Of course, they overlap in many ways and are also interdependent. Nonetheless, for explanatory reasons, it is possible to look at them independently and then show how they interact.

To foster *health* in the *individual* requires, at the basic level, self-awareness. In other words, how healthy am I and what can I do to remain so as I age. We know that key factors in a healthy life include diet, exercise, healthy living (sexually and interpersonally). Providing information is not enough; there is an emotional side to who we are and how we behave. Stress plays an important part in how healthy we are both physically and emotionally. The physical environment, where you live, and what kind of work you do also have a significant effect on your health.

In the *doctor-patient relationship* the health professional stresses the need to be healthy by focusing on getting us to quite smoking, cutting down on our alcohol consumption, eating a healthy diet, exercising, and trying to relax. The role of our *family and close friends* is to support us in these endeavors. In some cases it might mean literally looking after us. At the *community level* local, trained health care workers and an atmosphere of concern serve as support mechanisms. Community institutions such as places of worship, social centers, schools, and other places where people gather voluntarily are important sources of reaffirmation and support. At the *societal level*, the government must support social institutions invested in

keeping society physically and emotionally well. Personal health and hygiene are important topics in public education. The education of competent health professionals to understand sociocultural factors is a top priority. When there are proven methods to stop premature death and sustain quality of life, laws and regulations must be passed to assure the health of the public such as no smoking in public places.

When we experience *disease* (including anxiety about how we feel), we seek help from some knowledgeable source, primarily a health professional or, in some cases, a person with special status in the culture who is perceived to have healing powers. In developed countries it is the doctor who cures or prevents our ailment in two ways: prescribing medications and initiating procedures, if not personally, then through a specialist. Our own responsibility is to comply with "the doctor's orders." We are taught that if we don't take the prescribed medications our blood pressure will remain high and the HDL "good cholesterol" will remain bad. We are told that it is essential to understand that controlling chronic diseases can be a lifetime undertaking. Family and friends fill the gap between the diagnosis and treatment prescribed by the physician and the personal responsibility to follow the regimen. Ideally, there would be local clinics in the community, teams of local health care workers, and social settings where systematic screening and interventions are accessible. Society's duty is to make sure all members receive fundamental preventive care, from childhood immunizations to "flu shots" for the elderly. The national government also has the responsibility to detect and remedy environmental hazards such as air pollution and poor sanitation.

Clearly these distinctions between health and disease are arbitrary whereas in reality they are closely intertwined and interconnected. Nonetheless, they provide a first-level approximation of the complexity of the situation and what needs to be taken into account to be successful in promoting a healthy society and stopping preventable diseases. The health ecology model serves adequately as a frame for organizing the multiplicity of components essential for effectiveness. This model is especially useful in differentiating particular geographical areas such as a community. Even a sample population of 1000 (a neighborhood) represents a unit that is manageable for assessment. To follow the paradigm components—the defined population, the proportion who are sick, those who seek professional care, are referred to a specialist, and end up in a tertiary medical center—allows a basis for finding where and how to best intervene from a health and disease perspective. This approach gives specificity to the interventions. For example, if the population under evaluation are elderly, poor, disadvantaged, and alien to the predominant culture, we need to understand these social, economic, and cultural factors in designing our approach. From a societal level, there are significant political and ethical considerations, for example, finding a non-threatening way of reaching the Roma regarding their health and well-being. Also, whatever the level of the approach—small community or entire country—it cannot be static, i.e., it must be capable of formulating as well as instituting change and potential reform.

Regardless of where we start, we need to remain holistic, that is, keep the total picture with all of its interactive elements in mind. White's analysis (18) of the power of his model has direct application to health promotion and disease prevention. "Health care can be organized effectively and managed efficiently . . . through comparisons of these interventions over time, place, institutions, and systems. [This evaluation] requires *rates* that are appropriately standardized or adjusted for differences in the distribution of groups by age, sex, and other attributes." He goes on to say, "Such interventions require rational distribution of energy and resources in education, services, and research".

With this overarching perspective in mind, it is possible "to identify effective programs or program elements and to disseminate them, to scale them up to the state and national level, and to ensure that the programs reach the populations most at risk is the ultimate objective". A practical and substantive place to start is the "community model of health promotion and disease prevention including educating individuals and changing the social and physical milieu that cue and reinforce health-related behavioral choices".

Taylor (20), in his review of *Radical Hope: Ethics in the Face of Cultural Devastation,* by Jonathan Lear, offers two final important points that are relevant to my thesis. "If we interpret people's attitudes and behaviors psychologically [as in the HBM] we are being guided by our own sense of what is true and ignoring the particular cultural circumstances of those people". This is a major mistake health professionals make in health promotion and disease prevention activities even though they are convinced they are doing the right thing for the right reasons. If this were so, then people would adhere to their prescribed medical regimens, put in the needed energy to live healthy lives, and sustain those behaviors for themselves, their loved ones, and their fellow travelers.

To further quote Taylor:

Along the same lines, many well-meaning (and sometimes not so well-meaning) interventions from governments [as well as NGOs, and philanthropic organizations] not only don't work but in some cases make the situation worse. One main reason for the failure of many of these interventions is that they don't manage to imagine the lives of the supposed beneficiaries themselves or engage with their feelings; and so they can't break the cycle of apathy, despair, and self-destructive behavior, and this induces further apathy and despair. A program imposed from the *outside* can only help if it can support a project espoused by the group itself." [Italics added.]

The take-home message is simple, and hopefully, straightforward. Checklists, formulae, and protocols can't capture the rich, full meaning of a cultural narrative. Even within what seem to be rigidly defined social structures, there is some fluidity and change. Interventions to improve people's health and help them deal with their illnesses must grasp the totality of such conditions if they are to succeed. The health practitioner must strive to know his or her patient as a person influenced by one's status in a socio-cultural system. The health education and public health specialists must design and implement programs that can reach the most vulnerable populations and not only the educated and informed. Health services research provides the data needed for program design and evaluation. Assessments must be perceived as longitudinal and dynamic. In democratic societies governments must sponsor health-related programs through established institutions such as education, law, and health. Regarding the latter, the model is public health which serves as the primary mechanism for reaching all the people.

***Task*:** Hypothetically, or when possible using available data, design a health promotion and/or disease prevention program utilizing the concepts of social medicine and health care ecology for a particular geographical or population group. Describe the area, the salient characteristic of the population, and provide mortality and morbidity rates for the different population cohorts (e.g., asthma among children). Propose interventions that incorporate individual responsibility, doctor-patient interaction, familial and community support, and societal authority.

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Recommended readings

1. Health Services Research: An Anthology, Kerr L. White, Editor in-chief, Pan American Health Organization, WHO, Scientific Publication No. 534, 1992.
   This 1081 page anthology contains Kerr White's original paper on the health care ecology model. In addition, it is superb compendium of a broad range of research studies, articles, and essays that include disease prevention and health promotion.
2. Marmot M. The Status Syndrome: How Social Standing Affects our Health and Longevity. New York: Times Books; 2004.
   Marmot is recognized for his ground-breaking research showing the relationship between social status and health and illness.
   Good BJ. Medicine, rationality, and experience. New York: Cambridge University Press: 1994.
   The brilliant book contains Good's Lewis Henry Morgan Lectures on the role of culture in all aspects of how we perceive states of health and illness. The chapter on how medicine constructs in objects is especially illuminating.
3. Fadiman A. The Spirit Catches You and You Fall Down. New York: Farrar, Straus, and Giroux: 1998.

The beautifully written book tells the story of a Hmong child, her American doctors, and the collision of two cultures.