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Section: The Practice of Health Sociology

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Section: The Practice of Health Sociology

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The Clinical Sociologist as Health Broker

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ABSTRACT

One of the key aspects that distinguish clinical sociologists from other sociologists is the former's more active role in intervention and change. The clinical sociologist performs several functions as a broker. This paper discusses the role of health broker and the opportunities it provides for clinical sociologists, especially in large organizations.

Clinical sociology entails the use of sociological knowledge and the sociological perspective in providing consultation and technical assistance to social units ranging in size from single individuals to large-scale organizations (Rossi and Whyte, 1983). The precise role of the clinical sociologist depends upon the situation and the nature of his/her involvement in it. Indeed, the clinical sociologist's role may change or he/she may function in several different ways while involved in a given situation. One of the key aspects that distinguish clinical sociologists from other sociologists is the former's more active role in intervention and change. The clinical sociologist may facilitate, advocate, negotiate, consult, advise, innovate, observe, or perform several of these functions as part

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of his/her role as broker. A broker is an agent or middleman, an essential third party in an interaction in which some type of change, involving two or more parties, is planned. The purpose of this paper is to discuss situations in which clinical sociologists might function as health brokers.

Newell (1984) has suggested that brokered partnerships will be a growing option for reducing health costs. The brokered partnership brings providers and purchasers of health care together into one self-regulating group. The group becomes a true broker, negotiating price, use, and quality of health care services from a competitive position, with both buyers and sellers participating in the decision making.

Brokering is not new to the health field. Third-party payers are probably the largest and most common of brokers. Nurses have functioned informally as brokers, providing health information to patients, assisting patients in making health care decisions, and matching the needs of patients with the resources of the health care system (Fine, 1982). Brokering has also been an integral function of other health professional groups such as social workers. The social worker seeks to match family realities and community resources with patient needs (Pruger, 1982). Brokering is not new to sociologists either, especially those involved in criminology (Alinsky, 1984), marriage and family counseling (Voelkl and Colburn, 1984; Church, 1984), organizational development, and employee assistance programs in industry and large business organizations (Gutknecht, 1984), and in universities (Miller, 1985). Health brokering is, however, a new role option for clinical sociologists. It can involve brokering health information to enhance health among employees in large corporations; assisting individuals and groups in assessing health care resources; facilitating change in the health behaviors of individuals or families; or helping to ameliorate intraorganizational or interagency problems which affect the availability or quality of health care. Brokering health is an important and, as yet, unfilled gap in the health care system and in society at large. The clinical sociologist is in an excellent position to help fill this gap.

The Health Broker and the Concept of Health

The clinical sociologist must have a view of health that goes beyond treatment and rehabilitation and includes health promotion and disease prevention. Brokering health involves helping to create optimal or maximal opportunities for the well-being of individuals, groups, and organizations. The health broker is concerned with the social definition and implications of health and normality (Bruhn, 1974). Health and normality are not discrete states and their determination is not a completely objective process. Before a broker can intervene to create change, a determination of what is to be changed, why, and the possible

effects of the change must be made. Since health is a continually changing process, no single intervention is likely to have a permanent effect. Indeed, health and human behavior have continually changing interactive effects. One job for the clinical sociologist is the delineation of those aspects of human behavior and lifestyle that facilitate the degree and duration of stages or phases of "positive health." This is important to health maintenance organizations and to businesses and industry with health programs for employees.

The clinical sociologist broker must be familiar with and comfortable in working with a variety of health models, i.e., medical model, wellness model, epidemiological model, nursing model, and others. Since the broker must often facilitate multidisciplinary teamwork, it is advantageous for the broker to have an interdisciplinary perspective and a degree of optimism about interdisciplinary outcomes. Perhaps even more challenging is the need for the broker to be knowledgeable about strategies and tools for assessing change and measuring outcomes related to a variety of data types and sources. Finally, if the broker is brokering health, it is important that he/she provide a personal model for positive health behavior. For example, a broker who smokes tobacco may not be the appropriate person to facilitate an organization's consideration of a non-smoking policy.

An excellent example of brokering health in an organization is that in which curricular changes that incorporated the teaching of health promotion and disease prevention were implemented in a school of allied health sciences with the help of a clinical sociologist (Bunker et al., 1986). A federal grant provided the initiative and fiscal support for the effort, with strong support from the school's administration. Over a period of three years, Bunker and a committee of colleagues developed 14 student learning modules on health promotion topics. These were incorporated into the curricula of different disciplines through existing courses. The modular format allowed for flexibility by enabling faculty to select modules relevant to a particular profession or to a particular course and, after completion of two core modules, to select them in any order. The same committee initiated a health-screening clinic and health-risk appraisal for all faculty in the school. Faculty in various allied health disciplines performed different aspects of the screening. About 80% of all faculty participated. Clinic participants were given feedback on how to reduce their health risks. The school initiated an exercise program composed of a variety of types of exercise, a smoking cessation course, and a stress management course. The committee led an initiative for a stricter smoking policy in the school, which was endorsed by the faculty. In all of these efforts, a clinical sociologist and a faculty team acted as brokers with an emphasis on advocacy, facilitation, coordination, counseling, and evaluation.

Brokering—Aspects of the Role

Cousins (1985) described four types of sociological practitioners. The consultant offers advice to individuals, groups, and organizations about issues ranging from interrelationships to the purpose, function, and structure of groups and organizations. The counselor is more concerned with interindividual and group relationships and issues surrounding role, status, power, decision making, and adjustment to change. The internal analyst is concerned about the internal “climate” of groups or organizations. The external analyst is concerned about how groups or organizations relate to other social configurations with which they have contact. In all of these roles, the sociological practitioner performs the dual role of inquirer and implementor. These roles require the sociological practitioner to view participants as amenable to change and enlightenment, to utilize strategic reasoning, to adopt a practitioner model compatible with his/her personality, and to be sensitive to ethical issues and able to resolve them (Cousins, 1985).

The more generic term “health broker” includes these and other roles for clinical sociologists. The term “broker” is advantageous because the act of brokering is necessary in situations in which inquiry is a goal, as it is in sociology. The term “health broker” is appropriate for the clinical sociologist who is concerned with problems of health and disease in the broadest sense; it incorporates a unified conceptual view of health and disease that is not fragmented by nosology or diagnostic labels (Engel, 1960). In addition, brokering conveys an active, innovative role for the clinical sociologist in health promotion and community health planning (Rogers, 1968; Rice, 1985).

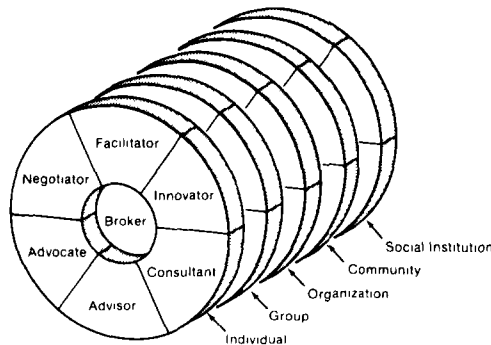


Figure 1. Aspects and Levels of Complexity of Broker Role

Figure 1 shows the interrelationships of various aspects of the broker role with different levels of social interaction in which the clinical sociologist may act as a broker. The figure shows how a broker may perform several different

aspects of brokering which cut across more than one level of interaction at any given time.

Brokering—Levels of Interaction

Figure 2 provides examples of possible broker involvement at different levels of social interaction.

	Individual	Group	Organization	Community	Social Institution
Individual	<ul style="list-style-type: none"> • Marital counseling • Divorce arbitration 	<ul style="list-style-type: none"> • Family therapy 	<ul style="list-style-type: none"> • Stress management • Employee assistance programs 	<ul style="list-style-type: none"> • Environmental design and planning 	<ul style="list-style-type: none"> • Health promotion programs
Group		<ul style="list-style-type: none"> • Understanding of role and function of new specialties in hospitals 	<ul style="list-style-type: none"> • Acceptance and use of PAs in hospitals and private practice 	<ul style="list-style-type: none"> • AIDS education and prevention programs 	<ul style="list-style-type: none"> • Health needs of refugees
Organization			<ul style="list-style-type: none"> • Interaction of community agencies with similar goals 	<ul style="list-style-type: none"> • Environmental protection groups 	<ul style="list-style-type: none"> • Mothers Against Drunk Drivers (MADD)
Community				<ul style="list-style-type: none"> • Area-wide emergency medical services • Joint disaster planning 	<ul style="list-style-type: none"> • Family planning adolescent pregnancy, child abuse
Social Institution					<ul style="list-style-type: none"> • Programs to meet the needs of the poor, elderly or homeless

Figure 2. Matrix Showing Examples of Possible Broker Involvement at Different Levels of Social Interaction

At the individual level, the broker commonly interacts with two people, together or separately. The purpose of brokering at this level is to decipher commonalities and differences which might be producing interpersonal conflict or obstructing progress in reaching an organizational goal. The broker seeks and gives information and, as such, is a facilitator, counselor, or coordinator. The two parties may be brought together to achieve reconciliation, to force confrontation, to correct misinformation, or to plan further steps. The recruitment of a broker at this level is usually initiated by the individuals concerned, their supervisors, or friends and peers. The broker is usually perceived as a “neutral” but helpful party.

Brokering at the individual level is often done either to “get people together” or to “keep people apart.” For example, a broker, who is a neutral party, might be asked by the leader of an organization to determine the barriers that are preventing a proposed policy change from being accepted, or to offer observations and advice as to why certain individuals in the organization are disenfranchised

or isolate themselves. A broker at this level offers perspectives to individuals about barriers and potentials that they may not perceive or know about due to their position in an organization. Because brokers often have "nothing to lose," they can be valuable resources to individuals in planning, problem resolution, thinking through the effects of proposed policies, examination of new markets, etc.

The group level involves brokering in two types of situations: between an individual and a group, and between groups. The former elicits the common example of family therapy in which an individual family member might be the focus of concern or the precipitant for the family to meet as a group. Although brokering for groups involves some of the same types of approaches used in brokering for individuals, it is more complex due to the number of individuals involved. There are numerous examples in which brokers could be used to facilitate the formation of group coalitions, such as providing daycare services to the elderly, or assisting in accepting new groups into existing social institutions, such as the use and hiring of physician's assistants in hospitals. Brokering for groups is also complicated by the fact that group members may change. Hence, the broker may be the primary provider of continuity. One of the difficult aspects of performing the broker role under these circumstances is the need to avoid assuming a leadership position in the group, taking responsibility for group decisions or indecisiveness.

An example of dependence upon the broker-consultant for solving problems was experienced by the author. The "outsider" (broker) was asked to meet with two groups of health workers in a medicine outpatient clinic—clerks and professional nurses—who were at odds with each other. Clerks controlled the patient flow through appointments, and sometimes more patients were scheduled than could be seen by available physicians. The control clerks had over patient appointments was often interrupted by "no-shows," walk-ins, or patients who came on the wrong day or at the wrong time. Physicians were not always available even to see scheduled patients on time due to emergencies, meetings which ran overtime, etc. Nurses, who were the link between the patients and the physicians, caught the wrath of the clerks if the patients who could not be seen were asked to rebook an appointment or were given a return appointment without the clerk's knowledge. Nurses felt ineffective in controlling the availability of physicians, especially to see unscheduled patients. The clerks and nurses actively sabotaged each other's functions, and the patients were often the victims of the clerks' and nurses' angry outbursts and rudeness. The broker was asked to meet with the clerks and nurses together to see if they could work out their differences. Open discussion occurred when the two groups met with the broker, but the broker's suggestion that these groups meet directly with their clinic

supervisors was rejected. Members of both groups did not want to risk their jobs by confronting their supervisors with complaints or suggested solutions. The level of distrust between clerks and nurses was such that anyone seen talking with a supervisor was thought to be either "feathering his/her own nest" or complaining about certain individuals. Short- and long-range solutions were only possible when the broker insisted that the supervisors become part of weekly group meetings with the broker. When paranoia lessened, tension lessened, and the groups began to work together for the benefit of the patients.

The broker may be involved in several different types of situations when working with organizations. The broker may interface between an individual and an organization (usually management), between a group or groups inside or outside of the organization and representatives of the organization, or between organizations. Perhaps one of the more frustrating aspects of brokering at the organizational level is the usual delay in decision making, although this will vary with style of management. Communication channels and established lines of power and authority may complicate the broker's role, especially if one of the groups or organizations did not support the involvement of a broker.

Committees, especially in universities, are a way of life (Bruhn, 1981). Committees often function as brokers themselves between the administration, the community and alumni; between administration, faculty, and students; between faculty groups; or between faculty and students. Committees can facilitate or obstruct progress. A broker, especially one outside of the organization, can often provide advice about whether a committee is necessary in accomplishing an objective, and suggest a workable committee structure. When committees bog down, the problems are not always obvious to the involved parties. A broker may be valuable in facilitating compromise, especially if factions have ceased communication with each other. Brokers often perform their role best as listeners and reporters of observations. It is not the broker's job to make a committee work effectively or to accomplish its goal. It is the broker's role, when asked, to comment on behavior and offer suggestions.

Brokering at the community level is a comfortable role for the sociologist as a researcher; however, as an innovator or change agent, the clinical sociologist may become a focal point for individuals, groups, or organizations who might feel threatened by what they perceive the broker's role to be. There may be many different perceptions of the broker's role and, as these create misunderstanding, the perceived threat of a broker may become more real. A broker at the community level requires a variety of skills. He must have the broad perspective of a systems analyst, observing norms and values, interpreting group dynamics, and facilitating individuals and groups having different attitudes. The broker must have a sensitivity to timing when working at the community level, especially

when acting as an innovator or change agent. Often, a broker is employed as a consultant, so personal involvement in community change is limited. The broker can become the focus of anger for community groups, and his/her advice can be used as an excuse should the community fail to achieve its objective.

The current epidemic of Acquired Immune Deficiency Syndrome (AIDS) offered the opportunity for brokering in the author's community. While Texas ranks fourth in the total number of diagnosed AIDS cases in the United States, Galveston (City and County) has only 25 cases. Yet, the university hospital, as a multicategorical referral center, receives AIDS patients from across Texas, especially those without financial resources. This created a community problem and the opportunity for a broker. AIDS patients who could be discharged to outpatient status had no place to go in the community. Apartment owners would not rent to AIDS patients; therefore, patients were kept in the hospital, further escalating hospital costs. The broker, with the assistance of a university administrator, met with the mayor and county judge to inform them of this problem and its likelihood of increasing as the number of AIDS patients grows. The broker first had to educate the officials about AIDS, which was seen by the officials as a problem of larger cities. The officials also resented the idea that the local community should have to cope with housing problems and resultant costs created by patients who were not residents of Galveston County. Both officials finally agreed to appoint a task force to examine the problem and to suggest immediate and long-range solutions, one of which was a half-way house for AIDS patients. The broker, in this example, was able to educate, initiate action toward solving a community problem, and emphasize prevention and planning rather than wait until the problem reached a crisis.

Perhaps the most difficult situation in which to act as a broker is that which might occur at the level of the social institution. This may involve one or more individuals, groups, organizations, or communities in interaction with a social institution. The most common examples are the issues surrounding busing in the public schools, drug use and law enforcement, abortion and religious institutions, and mentally ill transients and mental health institutions. Brokering at the social institutional level undoubtedly involves politics and special interest groups. Social institutions are not easily changed. They usually have a public image based on long-standing traditions and are sources of support and stability for their members and advocates. Usually, it is not possible for one person to serve as a broker between institutions because of the complexity of the situation. A team of colleagues would provide a more effective approach to brokering at this level.

Brokers at the institutional level are more likely to be perceived as advocates or change agents, especially if they have an active and visible association with

individuals and groups who are known for creating change. While brokering for change can occur within a social institution, the area of change must be viewed as a high priority by gatekeepers or it will not be permitted to be addressed. A well-known technique for stalling change in social institutions is the appointment of a study committee. The nature of the problem or issue may change substantially by the time a committee drafts its findings and recommendations, or the problem may have resolved itself.

Brokering to create change in social institutions is, perhaps, most timely when an institution is experiencing change. Universities provide an example of a social institution that generally undergoes little change except, perhaps, when a new president is appointed. If the appointee is an outsider, considerable anxiety may be created among insiders, whose jobs may be altered or eliminated. Yet, new leadership also provides an opportunity to advocate and help create change. Brokers are often used by new administrative appointees to "sense the environment" and assemble facts about relevant information from components of the institution. In this way, brokers can be especially helpful in program development. This has been done in many universities in developing, for example, health promotion and gerontology programs. A distinguished professor might be recruited to provide leadership in getting a program off the ground. The professor serves as a broker in coalescing divergent components that could not get the program moving without an outside stimulus. Brokers are of key importance in developing most interdisciplinary programs.

The Health Broker as a Lifecycle Interventionist

Another way in which to view the health broker is as a lifestyle interventionist. All organisms have lifecycles and undergo change. Change, or the lack of it, creates dysfunctions in systems at various points in their development and, often, creates the need to seek special advice, direction, or support. A broker can help to alleviate problems in adjusting to change that occur in the process of growth and development, whether it be that of an individual, group, organization, community, or institution. One cannot intervene in a situation without considering the interaction between the demands on a system and its resources for coping at any point in time. French et al. (1974) refer to this as "person-environment fit." The person-environment fit framework considers the consequences of interaction in terms of growth and dysfunction. Much of the initial empirical work using this framework has been in the domain of organizational stress and studies of the effect of the work environment. The person-environment fit concept has the advantage of simultaneously considering individual differences, environmental factors, and their interaction in the development of dysfunction. In this view,

a broker could help to predict and, hence, to prevent problems in changing systems.

If we view organizations as entities that are never static, but are experiencing various degrees of decline or growth at any point in time, it is reasonable to expect that there will always be parts of an organization that are not in complete synchrony with other parts. In the same manner, individuals only rarely achieve a state of homeostasis. The ability of an organization to predict problems related to its growth or decline, and thereby minimize the problems associated with decline and maximize the opportunities associated with growth, may be enhanced by the services of a broker. A broker who is concerned with the total health of an organization, and not only with its problems or ills, may call upon colleagues in other disciplines to add to the skills needed to deal comprehensively with organizational health (Coelho et al., 1974).

Table 1 shows various types of needs organizations often have during periods of growth: the needs to reorganize, redevelop, and/or resocialize its employees.

Table 1
Brokering in Organizations: Some Needs, Approaches and Methods

Brokering Needs	Level of Intervention	Brokering Methods*
<i>For Organizations Experiencing Growth</i>		
Reorganization and Redevelopment	Structure and organization Employees	Role redefinition New skills training program Reward system Problem-solving groups
Resocialization	Philosophy of organization	Value clarification (individual and organizational)
<i>For Organizations Experiencing Decline</i>		
Revitalization	Financial structure External relationships Product or service	New markets Create new demands Public relations program Involvement in local community organizations
Rehabilitation	Physical and social environment or organization	Quality circles Incentive programs Health maintenance program Involvement in local community organizations

*These methods may be applicable in more than one area.

These needs may affect the entire structure of the organization, require modifications in its philosophy, or involve role redefinition among employees. A clinical sociologist has several tools or skills to assist the organization's leadership in coping with needed readjustments. Methods include: organizing problem-solving groups; discussing and clarifying issues related to power, authority, delegation, and reward systems with management and employees; and individual and group counseling.

When organizations undergo periods of decline, they need revitalization and rehabilitation. If an organization's survival is threatened, the basic structure of the organization—its financial system, external relationships, and even its product or service—may need to be reworked. Sometimes, an organization merely grows out of touch with its physical and social environment and its relationships with other organizations. The clinical sociologist can assist the organization in learning new or revamping old survival skills.

The Limitations of Health Brokering

The possible role of a health broker is very broad and, indeed, encompasses the spectrum of concerns in sociology. A health broker is a specialist with specialized interests and skills. A broker is not a universal problem solver, and must be aware of the limits of his/her knowledge and skills. A broker must be aware of, and willing to work with, other professionals who are also knowledgeable in human behavior in dealing with complex issues. Hence, the broker must be comfortable working in interdisciplinary teams. Finally, the broker must be willing to accept failure. Expectations of brokers and consultants are often excessive, especially when a broker is sought as a last resort. Brokers should be careful about setting forth what they can and cannot do at the onset in working with any social unit.

Conclusions

The role of the health broker provides an opportunity for clinical sociologists to play a significant part in coping with the effects of change in a variety of social units, ranging from individuals to social institutions. Brokering requires active involvement or intervention to enhance the health, and minimize the risks to health, among individuals, groups, and organizations. Health brokering is a positive, action-oriented, and futuristic role for clinical sociologists; it directly involves clinical sociology in such current health trends and issues as prevention and gerontology.

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Drug and Alcohol Abuse Prevention: Defining the Need in Organizations*

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ABSTRACT

This paper outlines initial interventions to prevent drug and alcohol abuse in organizations. Grounded in sociological theory, the first intervention is to define the nature of the problem through data gathering and analysis, particularly self-reports of drug and alcohol use by the organization's members. The self-report data, when compared with national data, provide a base of information from which direct interventions can be designed. Student, faculty, administration, and staff survey results from a university and their applications are reported as a case study. Interventions which center on peer prevention are briefly discussed. Self-report survey data of drug and alcohol abuse define the problem and the types of interventions that are likely to be successful.

Guided by theory, sociological practitioners can take a leadership role in identifying and intervening with drug and alcohol abuse within communities (Watts, 1989; Watts and Wright, 1990), professions (Watts and Short, 1990), and social organizations. Sociological theory provides a rich conceptual base for analyzing and intervening with problem behaviors, such as drug and alcohol

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abuse. This paper outlines the initial interventions for sociological practice to prevent drug and alcohol abuse in organizations, using a university as a case study. The emphasis here is on defining the nature of the problem and developing strategies for intervention.

Theory

As discussed elsewhere (Watts, 1989), drug abuse can be conceptualized as occurring at three different levels of social response and control: the individual, community or organization, and society. Intervention strategies may cut across different problem levels. For example, education is a strategy for preparing individuals for the risks of drug and alcohol use, whether as students or employees. National education and advertising campaigns to increase knowledge and awareness of drug and alcohol use are strategies to prevent abuse on the societal level. Before education and other prevention strategies can be effective, drug abuse as a problem must be recognized.

The first theoretical and practical problem in intervention with drug and alcohol abuse, whether at the community or organizational level, is definition of the situation. The process of defining the existence of drug use, recognizing that drug use is a problem behavior, and the recognition that drug use occurs in specific organizations can be explicated with social construction theory. The second theoretical perspective, peer or work culture, is useful for understanding drug and alcohol use in organizations as well as adolescent groups. Focused research defines the nature of the drug and alcohol abuse problem in each organizational environment and develops strategies for intervention from the correlates of abuse. These two theoretical models will be applied to data from a university, illustrating the interactive relationship between theory, data, and practice.

Definition of the Situation

Denial of drug and alcohol abuse is common, whether by an individual, family, organization, or community. Individuals who abuse drugs and alcohol deny that they have a problem, while many work associates almost consciously ignore that a co-worker or colleague has a problem with drugs. Even when other problems are consequences of drug and alcohol abuse, these problems may be recognized, but not the drug abuse. Organizations are no different in the reliance upon denial. In American universities, for example, student drug and alcohol abuse has been endemic for decades and acknowledged with a wink and a nod. Only recently have universities addressed themselves to problems of drug abuse among students, and they are just beginning to examine drug and alcohol abuse

among faculty and staff. In many other organizations, drug and alcohol abuse is not perceived as an important issue affecting the organization; instead, worker productivity, management expertise and decision-making, or marketing are seen as problems that the organization must resolve. Indeed, even though drug abuse may be an outcome of organizational dysfunction, organization members may interpret it as contributing to group cohesion and morale.

How can organizational denial be overcome? Social construction theory can be applied successfully to the problem of denial. As described by Berger and Luckmann (1966) and Straus (1984), socially constructed reality delimits the range of social action by defining norms legitimated in the society's symbolic universe. In American society, facts are an important element in the knowledge base that structures role performance and group action. For individuals, the macro-factual or empirical reality may not be as effective as the concrete, interpreted experience of everyday life; however, data which define a problem on a societal or institutional level can affect indirectly individuals and their behavior. For example, the increasing recognition in the United States over the last 25 years that cigarette smoking increases rates of lung cancer, heart disease, high blood pressure, and other illnesses has resulted in reduced tobacco consumption. Macro-data have successfully affected social behavior mediated by social institutions, groups, and processes.

Definition of the problem with data also can be accomplished in organizations. Data can identify empirically for employers the presence of a drug and alcohol problem within organizations. Since drug and alcohol abuse are factors which impact on productivity, morale, and absenteeism, the demonstrated existence of abuse can affect employers' decisions to implement prevention efforts like employee assistance programs.

A number of techniques exist for assessing the extent of drug abuse in the workforce. Estimation of the proportion of workers who use drugs in different types of industries, occupations, and professions is possible with the National Household Survey (Voss, 1989). The National Household Survey (1989), which uses door to door interviews with masked responses, assesses the prevalence and frequency of eight drugs including cigarettes and alcohol for the population aged 12 and older. Prevalence and frequency data, when cross-tabulated with occupation, can yield significant information about employee drug abuse. Data from this survey are particularly useful for establishing validity parameters for drug abuse information gathered in specialized populations, such as organizations.

Self-report surveys are the most common mechanisms for tracking prevalence and frequency of drug and alcohol use. On a regional, national, and international basis, self-report studies are important tools for assessment, monitoring, and evaluation of drug and alcohol abuse in different populations. The availability of

national, self-report data serves as an important means for checking the validity of local, organizational, or professional assessments.

Sociologists can contribute to the recognition of drug abuse as a problem through knowledge production techniques which alter the definition of the situation. Knowledge of the prevalence and frequency of drug and alcohol abuse is the first level of sociological intervention to socially construct the group or organization's definition of the situation regarding drug and alcohol abuse. Second, appropriate statistics on arrests for drug and alcohol related offenses, such as driving while intoxicated, possession, and sale, can provide useful information. Mental health data regarding commitments or treatment for substance abuse, along with data on alcohol sales, can document the prevalence of serious drug and alcohol abuse. Third, the sociologist can contribute to the social process of defining what is the problem with drugs and alcohol in the social group organization.

Organizations: Drug Prevention in the University

Within an organization, sociologists can play a leading or central role in the creation of and awareness about drug and alcohol abuse. While gaining access to some organizations may be problematic, many sociologists are associated with universities. Perhaps more so than other formal organizations in modern society, universities have been affected by the prevalence of drug problems. In the sixties, drug use on college campuses became fashionable and continued to grow in the seventies. Only in the mid-eighties was there a challenge to the tolerance of drug and alcohol use on American college campuses. The national surveys of high school seniors have been expanded to include college students and other young adults, thereby providing a routine source of information on a national basis to track the prevalence and frequency of drug and alcohol abuse (Johnston, 1986). These data do not tell any specific campus (except those that participate in the survey in any single year) about the prevalence and frequency of drug and alcohol abuse on that campus. Sociologists have an opportunity to assist university administrators in defining the nature of the problem and developing interventions by gathering and analyzing drug abuse data.

In addition to student drug and alcohol problems, some researchers have identified the academy as a organizational environment conducive to alcohol and drug abuse by faculty and staff. Thoreson (1984) identified job characteristics, such as low visibility and minimal supervision, maximum security, minimum opportunity for advancement, collegiality (which eliminates the distance needed for effective supervision), and an aging professoriate, as contributing to alcoholism. Since universities, by their very nature, are places for original and creative activity which require a high tolerance for idiosyncratic behavior, they

are good environments for drug and alcohol abuse (Donovan, 1990). Instead of a peer culture that actively promotes drug use, the university may passively support drug and alcohol use by culturally and organizationally ignoring it. While the need to examine faculty drug and alcohol abuse has been identified, little attention has been given to administrators, clerical and physical support personnel.

Due to external pressures, universities have had to become more aware of drug abuse. First, they are required by law to certify that they maintain a drug-free workplace. Second, grant money is available to universities to implement drug abuse prevention programs on their campuses. The former requirement is not as draconian as it sounds; it simply requires the university to certify that it has and enforces rules to prohibit drug possession and use on campus. In conjunction with the latter, sociologists can use their research skills to investigate the prevalence and frequency of drug abuse and their practice skills to prevent it.

Defining University Student Drug Use

The strategy suggested here uses self-report surveys to measure the extent of drug and alcohol abuse and to develop strategies to deal with it. At one university, located in the southwestern United States, surveys of a large sample of students are conducted annually to assess the amount and frequency of drug use. The data have documented the extent of the need for drug and alcohol abuse prevention programs on campus. With these data, the campus has successfully obtained funds to develop programs to prevent drug use and to reduce alcohol consumption. Follow-up surveys have documented a reduction in drug use since the programs sponsored by the grant have been in place.

The first data were gathered to assess the relative amount of student drug use on this campus. The data showed that attitudes toward drug and alcohol use were tolerant and even favorable. As displayed in Table 1, the rates of drug use, particularly for marijuana, alcohol, and other drugs, were significantly higher for the campus under study than national data when focusing on use in the last 30 days. These data became the basis for a drug abuse prevention program to change attitudes and behaviors.

These efforts included the establishment of a peer assistance network, designed to train students in the psychological, physical, and social consequences of drug use. Peer assistance students, in turn, would then train others in the student community about the dangers of drug use. The need for peer prevention is demonstrated by the high correlation (.67, $p < .001$) between the student respondent's drug use and friends' drug use. Data define not only the extent of the problem but the nature of the interventions to be undertaken.

Table 1
 Local University and National Sample Student Trends
 in Annual and 30-day Prevalence of Drug Use by Sex
 (N=853)

		<i>Percent Use in Last 12 Months</i>	
		National Sample*	Local University
Any Illicit Drug		46.3	52.6
	Males	50.9	56.7
	Females	42.7	49.8
Any Illicit Drug Other Than Marijuana		26.7	33.8
	Males	29.7	35.0
	Females	24.4	33.1
Any Illicit Drug Other Than Marijuana or Stimulants		21.4	31.2
	Males	24.4	33.2
	Females	19.0	29.9
		<i>Percent Use in Last 30 Days</i>	
		National Sample	Local University
Any Illicit Drug		26.1	34.3
	Males	29.9	40.9
	Females	23.2	29.0
Any Illicit Drug Other Than Marijuana		11.8	17.8
	Males	12.7	20.5
	Females	11.2	15.6
Any Illicit Drug Other Than Marijuana or Stimulants		9.1	16.3
	Males	10.6	19.4
	Females	3.0	13.9

*Adapted from Johnston, Lloyd D. et al. (1986) *Drug Use Among American High School, College Students, and Other Young Adults: Trends through 1985*, Rockville, MD: NIDA.

Other prevention activities included faculty course changes and proposals for new courses. The drug abuse prevention program sponsored a number of events throughout the year, such as alcohol awareness week and the pre-spring break drug and alcohol awareness campaign. One element that became clear in the data collection is that students who use drugs are more likely to report having sex without condoms and with multiple partners. On the basis of this information, the university initiated an AIDS awareness campaign both together with, and separately from, drug abuse education.

Data analysis serves at least three functions from the perspective of social construction theory. First, data demonstrate that a problem exists. While there are problems with the validity of self-report surveys (Nurco, 1985), no other methods of estimating the rates of drug use offer significant advantages over the self-report technique. One of the functions of data gathering and analysis is to define for the community the outline of the problem that exists. As shown in Table 1, the data identified that this university had an excessive amount of drug and alcohol use among its student population; the nature of the problem was defined sufficiently that the university was able to document the need for and obtain funding to implement a prevention program. The second purpose of data gathering and analysis is to outline the nature of the interventions to be undertaken. The information showed some striking things about the drug and alcohol abuse problem that, to some extent, were specific to this university. For example, the drug "ecstasy," while not common at other universities during the time of the initial survey, was clearly identified as a problem. Appropriate intervention steps were designed to deal with it. Third, continued data collection provides a foundation for assessment and modification of prevention programs that initially have been put in place.

Analysis of the most recent college student data on drug and alcohol abuse on this campus shows reductions in both alcohol frequency and drug use prevalence and frequency. Student awareness of the harmfulness of drugs appears to be increasing. Students have a higher awareness of cocaine's physical consequences and its addictive potential than in the first survey. While it is too early to show the effects of the peer assistance program in actually reducing student drug use, it is clear that through data gathering, analysis and systematic efforts at prevention, the frequency and prevalence of drug and alcohol abuse among college students can be affected.

Defining Faculty and Staff Drug Use

The formal organization, like a family or nation, can be seen as an interdependent community. The existence of a problem behavior in one sector, while not necessarily repeated in the same form, also affects other components of the

organization. The university as a community is no different. The university atmosphere of tolerance for exploration and creativity (which some suggest is the soul of a university) may have provided supportive environmental conditions where not only students, but faculty and staff, have become vulnerable to drug and alcohol abuse. The tolerance of student drug use has affected faculty, staff, and administrative drug use if, for no other reason, than by the advancement of generations.

In an effort to establish a comprehensive prevention program in a university, how does one assess the prevalence and frequency of drug and alcohol abuse among faculty and staff? While there are a number of direct and indirect measures available (for example, the number of cases seeking treatment for substance abuse as reported by the institution's insurance office), drug and alcohol abuse is a form of hidden deviance. The autonomy and collegiality that are the hallmarks of a university mask members' problems from one another and require denial even when problems are known to exist. Who wants to deal with the mess of personnel issues that are created when either administrators or faculty actively intervene with a colleague who is abusing alcohol or other drugs? While problems with self-report validity are greater in employee surveys than in other types, due primarily to the perceived threat that an anonymous survey implies to employees, the other alternatives for prevalence and frequency data have even more severe limitations.

Increasing attention has been given to urinalysis as a valid and reliable means of assessing the prevalence of a drug problem among existing and prospective employees. A number of studies (Sheridan and Winkler, 1989; Axel, 1989; Normand and Salyards, 1989) have examined the effectiveness of drug testing programs, focusing particularly on pre-employment screening. Anglin and Westland (1989), reporting for the California Drug Abuse Information and Monitoring Project, which compiles urinalysis results from the criminal justice system, drug treatment programs, the medical community, and employers in the state, found that of the four populations studied, employee drug use was the lowest.

While the validity of urinalysis has been questioned, the principal objection has been to the intrusive nature of the test and the violation of privacy that is widely recognized to be occurring with the procedure. Random urinalysis is probably not an effective way to gain a picture of the rate of substance abuse in a higher education community, since it so clearly violates the relationship of trust between faculty, staff, and administration that must exist for universities to be effectively operated. Instead of urinalysis on the college campus, the self-report test, with its limitations (see Nurco, 1985; Cook, 1989) can be a useful means for gathering information on the frequency and prevalence of drug and alcohol abuse in a higher education community.

In the same university discussed above, an anonymous, confidential population survey of all faculty, clerical staff, physical/custodial personnel, and administrators was undertaken with an instrument which measured drug and alcohol use, demographic data, leisure patterns, and perceived job stress. The complete results of that survey are reported elsewhere (Watts et al., 1990), but for the purposes of this paper it is useful to summarize some of the drug use findings. For hallucinogens and narcotics, lifetime drug use was measured, but most measures were limited to within the last year and last month. The response rate on the survey was 55 percent, produced with a round of follow-up cards after the initial mailing of the questionnaire.

The faculty/staff drug use findings, as displayed in Tables 2, 3, and 4, show that this institution had higher rates of use than national comparison data for alcohol, for lifetime drug use of hallucinogens, and for use in the last year of cocaine and tranquilizers. Most surprising are the findings that the local organization use rates exceeded the national rates for use in the last month on all drugs (cocaine, barbiturates, amphetamines, and tranquilizers) except marijuana. These findings are conservative estimates of drug use in this institution given the self-report method limitations and the disproportionately high response rate by females in the sample. If males had responded proportionate to their numbers in the population, it is expected that usage rates for marijuana would have been higher.

Table 2
Alcohol Use in Percentages

Main Duties	Alcohol Last Year N=838	Alcohol Last Month N=808	5 or more drinks at a time last 2 weeks N=837
Teaching	83.8	74.9	11.7
Administration	80.2	68.1	14.1
Clerical Support	74.3	58.4	13.7
Physical Plant/Custodial	66.3	50.6	22.0
Local All	78.9	67.0	13.7
Nation*	63.3	48.0	N/A

*Derived from the southern region by age group as reported in National Household Survey on Drug Abuse: Population Estimates 1988, (1989) Rockville, MD.: US Department of Health and Human Services, ADAMHA.

The most widely used drug is, of course, alcohol. However, the total sample's use rate in the last month and year, as shown in Table 2, exceeded the national rates by 19 percent and 15.6 percent, respectively. The use rates in the last year for faculty were 20.5 percent higher than the national sample and 26.9 percent higher in the last month. Unfortunately, it is not possible to compare the heavy drinking measure (five or more drinks at a time in the last two weeks) with the national data, but the local rates appear high. Certainly for the physical plant personnel, 22 percent of whom report that rate of use, heavy drinking is quite high.

Table 3
Lifetime Drug Use

Main Duties	Hallucinogenics N=840				Narcotics N=837			
	No Use	1-2	3-14	15 or More	No Use	1-2	3-14	15 or More
Teaching	91.4	3.3	2.8	2.5	95.0	3.1	0.8	1.1
Administration	91.1	4.7	4.2	—	95.8	1.6	2.1	0.5
Clerical	95.6	3.9	—	0.5	95.6	3.4	0.5	0.5
Physical Plant	92.8	2.4	1.2	3.6	96.3	1.2	—	2.5
Local All	92.5	3.7	2.3	1.6	95.5	2.6	1.0	1.0
Nation*	95.5				95.5			

*Derived from the southern region by age group as reported in National Household Survey on Drug Abuse: Population Estimates 1988, (1989) Rockville, MD.: US Department of Health and Human Services, ADAMHA.

Lifetime drug use was measured with only two drugs: hallucinogens and narcotics. For the population as a whole, as displayed in Table 3, lifetime hallucinogenic drug use was 7.5 percent, and for faculty it was 8.6 percent. These rates significantly surpass the national hallucinogen lifetime use rate and support the hypothesis that some of yesterday's student hallucinogen users are today's college professors. Narcotic use was 4.5 percent of all respondents and 5.0 percent for faculty. These rates, which are tied with or exceed adults in the National Household Survey, are sufficiently high to suggest the need for interventions to assist faculty and staff to prevent drug and alcohol abuse. As problematic as lifetime use may be for institutions of higher education, current use by faculty and staff is of greater concern.

As shown in Table 4, the most popular illegal drug used in the last year was marijuana (6.7 percent), followed by cocaine. For the faculty, marijuana use was 5.6 percent, followed closely by cocaine at 4.6 percent. Last year's cocaine use

rate by faculty and clerical personnel is almost double the 2.7 percent rate of the national sample. Barbiturate use in the last year by administrators exceeds national rates as does amphetamine use by clerical personnel. The rates for marijuana use in the last month were quite low: 1.8 percent for the whole sample and ranging from 0.6 percent for faculty to 3.2 percent for physical plant and custodial personnel. The last month cocaine use rate for faculty and staff tied the national use rate, while cocaine use by administrators, clerical staff, and physical/custodial personnel was slightly higher than the national rate. As shown in

Table 4
Current Drug Use

Drug Use in Last Year in %					
	Marijuana	Cocaine	Barbiturate	Amphetamine	Tranquilizer
Main Duties	N=837	N=830	N=841	N=839	N=842
Teaching	5.6	4.6	0.8	0.6	3.1
Administration	7.3	3.2	2.1	1.0	2.1
Clerical Support	7.8	4.4	1.0	1.9	2.9
Physical Plant Custodial	7.2	1.2	1.2	1.2	2.4
Local All	6.7	3.6	1.2	1.1	2.7
Nation*	7.8	2.7	1.4	N/A	2.5
Drug Use in Last Month in %					
	Marijuana	Cocaine	Barbiturate	Amphetamine	Tranquilizer
Main Duties	N=828	N=824	N=834	N=834	N=835
Teaching	0.6	0.6	0.6	0.3	0.1
Administration	2.1	1.1	1.0	0.0	1.0
Clerical Support	2.9	1.5	0.0	1.2	1.5
Physical Plant Custodial	3.2	1.3	2.5	1.8	1.2
Local All	1.8	1.0	0.7	0.6	1.2
Nation*	4.6	1.0	0.4	0.6	0.4

*Derived from the southern region by age group as reported in National Household Survey on Drug Abuse: Population Estimates 1988 (1989) Rockville, MD.: US Department of Health and Human Services, ADAMHA.

Table 4, barbiturate use in the last month by faculty, administration and physical plant staff exceeded the national rate. Among physical/custodial personnel, the use is six times the national rate. Amphetamine use in the last month by clerical and physical/custodial personnel is two to three times the national rate, while tranquilizer use by administration, clerical support and physical/custodial personnel is two to three times greater than the national sample rate.

Perhaps the most striking measure of drug and alcohol related problems and the need for the organization to take steps to actively intervene is shown by the proportion of respondents who reported that there was a drug or alcohol abuse problem in their families. Twenty percent of all respondents reported such a problem: 17.6 percent of faculty and 25.2 percent of clerical staff. In other words, approximately one in five employees report a drug or alcohol abuse problem among family members. Since most members of these families are covered as dependents on university group insurances, it may be a cost effective measure for the institution to establish an employee assistance program that actively intervenes with families.

Identifying Prevention Strategies

Data explicating the nature of the drug and alcohol abuse problem within an institution can be useful for establishing prevention programs. Correlates of drug and alcohol use are keys to defining directions for intervention with the different cultures that exist in the university. The student culture is complex and heterogeneous, yet, through analysis of the student self-report data, it is clear that student drug use can be most effectively prevented by peer prevention. Focus on ancillary issues, such as drug education in classes, while furthering the educational mission of the university, will not contribute substantially to drug use reduction (Tobler, 1986; Perry, 1987). Suggestions for implementation of a peer prevention program have been offered elsewhere (Watts and Wright, 1990), but the need for peer prevention can be identified only through research which defines the problem.

Defining the problem with data is the first step in creating a culture of prevention in an organization, community, or group. The more complex the structure of the organization or community, the greater the need for the sociologist to define the problem with data. In a complex institution like the university, with many occupational and professional roles that cut across a wide array of demographic characteristics, the identification of similarities and differences in alcohol and drug abuse is important for planning prevention efforts. Knowing that over one-fifth of physical/custodial personnel are heavy drinkers suggests that training for these workers needs to focus on alcohol. The large proportion of heavy drinkers suggests that a culture of drinking exists in the physical maintenance division

of this organization. A training program which uses physical plant and custodial employees as trainers on drug and alcohol abuse has a better chance of successful intervention with the worker-drinking culture than other more conventional training models. The problem is compounded by the fact that this university exists in a larger community which culturally supports heavy drinking.

The institution also must focus on other patterns of drinking and drug use. The fact that the university community as a whole drinks more than the nation suggests the need for greater awareness of the problem. For example, the data on faculty cocaine use suggest that prevention efforts for faculty should emphasize cocaine and other drugs for which faculty are at risk. Within each occupational subculture specific rationales, contextual cues, and opportunities for drinking and drug use occur. Institution-wide prevention campaigns can miss the differences among these subcultures. For example, cocaine prevention aimed at faculty may miss secretaries and physical plant personnel who are the most prevalent users. Prevention programming needs to be data-based and culturally specific.

In addition to specific drugs, prevention programs must take into account correlates of drug and alcohol abuse. For example, for faculty and staff, depression is correlated with drug use in the last year (.175, $p < .001$), last 30 days (.178, $p < .001$), lifetime hallucinogenic drug use (.162, $p < .001$), and heavy alcohol use (.111, $p < .001$). It is also correlated with family alcohol and drug problems (.136, $p < .001$), absences from work (.122, $p < .001$), and reported suicidal thoughts (.406, $p < .001$). For this university, prevention efforts need to be targeted at the work and cultural conditions that support depression, which is associated with a range of psychosocial problems, including drug use.

Drug use and its prevention are interwoven with a range of other problems, including depression. The high rate of respondents who report that someone in their family has a problem with drugs or alcohol and the consistent correlation of depression with other problem behaviors, including drug and alcohol abuse, reinforces the need for this institution to establish an employee assistance program. Such an office may assist with a range of acute problems, while developing and coordinating peer prevention with other drug and alcohol training opportunities.

Of course, collecting and analyzing data are not enough. The information must be presented to the organizational leaders who have the authority and power to take steps to intervene. When dealing with data on drug abuse, care must be taken to empower decision makers and other community leaders. Simply publicizing the findings of a survey is not an effective way to initiate interventions with drug and alcohol use. Working with key institutional or community leaders, who recognize the existence of a problem with the help of data, empowers them to exercise a leadership role. The sociologist works through the

legitimized authority structure, serving as an expert consultant, while organization leaders are empowered by the sociologist to carry out their role vis à vis drug prevention.

Conclusions

What are effective drug prevention strategies in organizations? Effective drug prevention strategies differ according to the culture of the organization in which they are to be applied. The practicing sociologist, by collecting and analyzing self-report drug and alcohol abuse data, can identify patterns of abuse, their correlates, and recommend to organizational leaders a prevention program that is institutionally specific and empirically grounded.

Sociological practitioners, who seek to apply theory and method to the improvement of widely recognized social problems, have a rich field of opportunities in the area of drug and alcohol abuse. Based on work in a university, theoretically based strategies for drug abuse prevention in organizations have been discussed. Assessment of the prevalence and frequency of drug and alcohol abuse in an organization is necessary for problem definition and the identification of correlates upon which prevention strategies can be built. Since peer use of drugs is a strong correlate of drug use, peer culture theory has been used to develop strategies to prevent student and faculty/staff drug use.

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AIDS and the Challenge of a Plague

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Introduction

Throughout history, the psychosocial consequences of the plagues which have beset humanity have been predictable. These outbreaks of disease threatened the sense of control underlying most forms of social organization. The potential threat was profound, particularly when the existing social order, the theological bases, the feudal system, or the assumed biomedical-technological preeminence of a society appeared powerless to provide the protection implicitly promised. Because the cause was seen most often to originate from infected “others” (some stigmatized and easily identifiable subgroup), the sense of risk or threat was further increased, leading to fear, anxiety, hysteria and scapegoating, and intensifying the need for more stringent “control” measures.

By examining the historical parallels and similarities of society’s responses to past plagues and its response to the present day scourge of AIDS, we can learn how fear and prejudice affect the providing of empathy and mercy. This added understanding may facilitate a more compassionate response by caretakers and the nonafflicted public to the victims of this terrible disease and minimize the fear and discrimination subverting the drafting of more effective public health policy.

Sontag (1978) has written graphically of the metaphorical uses of illness. Terminal diseases can be seen as morally, if not literally, contagious and experienced as a supernatural punishment for immoral behavior, a symptom of

demonic possession, or a reason to blame the victim. Western culture has a long history of reacting this way to outbreaks of illness that can not be treated.

Historical Overview

Plagues have beset the Eastern and Western world at least from the times of the Egyptian pharaohs in the second century B.C. (McNeil, 1976). The first pandemic, *Justinian's plague*, led to the death of a quarter of the population. With accompanying diseases, social disruption and wars, the population in many parts of Europe fell by half between the sixth and eighth century. Moslem religious leaders at the time saw the plague as sent by God as a mercy and martyrdom for the faithful, and a direct invitation to Paradise (Simpson, 1988). For the infidel, it was merely a horrid death with no consequent benefit.

The Black Death

A well-documented example of a plague was the "Black Death," or the Bubonic Plague, which decimated one third of the world's population. Peaking about 1350 and lasting for about 60 years, its origins are unknown. In an early outbreak, Tartars, besieging a city, used catapults to lob the corpses of victims over the citadel walls, leading to the spread of the plague to the Christians within.

Science was helpless to prevent or treat the epidemic because it was unaware that transmission was through fleas from the brown rat. In fact, anyone who had any unprotected contact with the body or clothing of a plague-afflicted person had a high probability of contracting the disease, and died within one to five days.

Attribution

Religion in the East first saw the "Black Death" as an expression of the just wrath of God; this belief spread to the West where it was viewed as a punishment for wrongdoers, for sexual excesses, and as a punishment God inflicted on whom He willed, clemency being granted to the faithful (Fulton and Owen, 1988).

Others believed the plague was caused by the influence of the stars. This started with the unbelievers who came to Italy and crossed the Alps to France, Spain and Germany. Jews, hated because they were money lenders, were quickly made the scapegoats, and were blamed for poisoning the water and spreading the pestilence. Quickly rounded up, they were attacked and killed, often burned alive. In fact, the reason they survived the plague was because of their superior health habits.

The Response of Society

Society's response to plagues was individualistic, with the exception of some monastic orders and medical schools. Among the first to care for the victims, entire monastery populations and medical school staffs consequently perished. In many towns, timid priests and physicians withdrew, leaving the exercise of their ministry to the more daring. Fox (1988) documented how the medical profession responded with remarkable continuity to the threat of contagion. Many physicians treated most of the patients who sought their help, though they frequently charged higher fees. These physicians ended up being ostracized by their peers. Other physicians fled from the cities, as was common in times of plague. Galen left Rome in the second century A.D.; Sydenham fled from London in the seventeenth; and some leaders of the profession in Philadelphia and New York left during outbreaks of yellow fever in the eighteenth, and cholera in the nineteenth centuries. Many doctors who did not flee reportedly refused to visit patients who were acutely ill and told surgeons "who had lower status" to treat the ill in their own locales (Fox, 1988:6).

The population at large reacted to the plague by abandoning the sick, so that many died alone. In the belief that God was punishing city dwellers, huge portions of the population fled from the city. Others totally ignored the situation by shutting themselves up in their houses. Some attempted to cope with the situation by carousing and making merry, satisfying the appetite in every way possible, and laughing at what befell others. Suggestions for remedies abounded and included daily lovemaking or no lovemaking, prayer, superstitious rituals, starvation or overeating. Groups of flagellants appeared in different parts of Europe and beat themselves and others in acts of propitiation and atonement, so as to allay the wrath of God.

Meanwhile, many of the afflicted breathed their last in the open street, and others made their deaths known to their neighbors by the stench of their rotting bodies. In one year, 100,000 died in the city of Florence alone. In Siena, where 100,000 also died, the entire city was said to be stupefied by seeing the pain.

Aftermath

When the pestilence ended, those who survived gave themselves over to pleasures, glad to be alive. Afterward, many ignorant, incompetent and corrupt men were hired to replace the skilled officials who had died, because the offices had to be filled and the government kept running at all costs. The church was no better off. Decimated by the plague and anxious to keep huge monasteries in existence, it admitted, professed, and ordained poorly educated men and

professed illiterate and even retarded men and women. Complaints then arose against political and administrative corruption, the increase and prevalence of crime, the lightness of mind and looseness of morals, the high prices, the profiteering, industrial and farm strikes, the extravagance, the indolence or refusal to go to work, and the cry for reform gradually became widespread. As a result of the Black Death there was a universal upheaval and transformation of society.

The plague was seen as a watershed between a Middle Ages marked by hope and optimism (and some would say a degeneration of family life and morals), and a new epoch in medieval society that witnessed the growth of institutions founded solidly on deep human needs, and more compassionate care of the sick (Helgelund, 1984). Even national peace temporarily increased as the kings of France and England, the pope, and the Italian republics renounced their extensive political and military activities because the plague had made the raising of armies difficult.

AIDS as a Plague

The Plague Mentality

Despite outstanding medical advances, a pandemic has developed over the last decade which has infected over two and a half million Americans, and inhabitants of over eighty-five other countries (Fulton and Owen, 1988). In some cities, such as New York, autopsies have found one in seven infected (Lambert, 1990). Gallo, instrumental in first isolating the AIDS virus, recently wrote: "AIDS is a modern plague: the first great pandemic of the second half of the 20th century" (1989:47). A disease which physically afflicts mostly socially stigmatized groups, it affects all of humanity psychosocially.

We twentieth-century humans initially have responded to this epidemic as our ancestors in the Middle Ages did when dealing with plagues. The same fears (however irrational) of contracting a terrifying illness, the despair of a terminal prognosis, the resulting anger at oneself, someone else, or God, the projection of blame onto others, and the ostracizing of stigmatized populations are some of the compelling issues which confront society. Extremely destructive stereotypes and deep-seated prejudices about homosexuals, IV drug users and prostitutes have allowed the general population to be detached and unempathetic (Foster, 1988).

With AIDS, scapegoating is encountered on a societal level as well as in individual care. For example, the early inadequate funding of research betrayed the popular perception that since the population most afflicted by AIDS was gay people, AIDS was "their" problem and not "ours" (Gebbie, 1989). Stigmatization of gay men has resulted in an atmosphere in which even a medical journal

published editorial remarks by a minister suggesting that AIDS may be the divine punishment of "a transgression of universal and natural moral law" (Selby, 1985:275). A physician recently described homosexuality as "a psychobiological perversion" and argued for mandatory testing for HIV (Tanay, 1988). Although public opinion about AIDS exists today in a context of little personal experience with the epidemic, 82 percent of the general public believe that the disease is a threat to them (Katz, et al., 1987), and attitudes are heavily weighted by a belief that the disease is a punishment for deviant behavior (Nichols, 1984).

Fear is the initial reaction in both laypersons and health care providers, with its level similar to the societal reaction to leprosy in premedieval Europe, syphilis epidemics in the late fourteenth century, or the Bubonic Plague. Although education about AIDS (as much as we know today) should result in a better understanding of AIDS, phobic blocks—both in the practitioner and the patient—preclude this transition from occurring. These phobias can focus on death and dying, premature death, having a protracted wasting state culminating in death, contracting a new infectious disease that has no cure or vaccination and which can extend to family members or friends, disfigurement, diminished life qualities (loss of mental capacity, body control, ability to generate income) and/or a phobia of social isolation (Bartnof, 1988). Fear is a normal human emotional reaction to contagion and death, but phobias are not.

Almost daily, the news media reports incidents or issues involving the disease in response to the public's growing awareness and concern. These concerns include the risk which infected children pose to classmates, the advertisement of condoms on television, the distribution of free needles to drug addicts, and the legal and civil propriety of identifying seropositive persons in official records. Still other news reports tell of persons with AIDS who have lost their jobs, homes, medical insurance, or the support of families and friends. Documented are disapproval of, or prejudice against, homosexuality, including homosexual lifestyles; abhorrence of persons who use drugs, who prostitute, and who are prisoners.

Anxiety within the Medical Professions

In 1984, Ostrow wrote: "We physicians have come to hysterical, emotional, and sometimes irrational reactions to anxiety about AIDS, and to further anxieties produced by our responses to AIDS" (1984:95). By 1987, the American Medical Association (AMA) had to mandate that "a physician may not ethically refuse to treat a patient whose condition is within the physician's current realm of competence solely because the patient is seropositive. . . . The tradition of the AMA, since its organization in 1847, is that: 'when an epidemic prevails, a physician must continue his labors without regard to the risk to his

own health. That tradition must be maintained" (AMA, 1988:263). However, fear of contagion still induces physicians to refuse to treat persons with AIDS (Annas, 1988), and uncomfortableness with sexuality still leads to the avoidance by physicians of obtaining a sexual history as part of the medical history. Only 11 percent of nurses polled were willing to work with persons with AIDS and 60 percent feared HIV infection (Douglas and Kalam, 1985). The authors commented: "These studies and others show that getting AIDS from a patient is a frightening possibility for many health professionals" (Douglas and Kalam, 1985:3481). Health professionals must become more aware of their attitudes about the care of AIDS patients and come to terms with their fear of contagion. "Unless educational and psychiatric resources are developed to facilitate these goals, patient care will suffer and the level of emotional stress of hospital staff may prove overwhelming" (Wallack, 1989:510).

Impact on Persons with AIDS

Facing a fatal and mysterious illness such as AIDS is a horrendous task and facing the same circumstances as a member of a stigmatized group is even worse. The public's reactions to AIDS have become sources of significant psychological distress for persons with AIDS and others at risk (Siegel, 1986). Our culture has not yet understood how isolation affects our capacity as individuals or as a community to care for its members. Despite the fact that AIDS is not generally contagious, its victims may be shunned as if they were lepers, denied the rights of employment, armed service, or the sacrament. There have been many treatment ramifications. People are not coming forward to be tested, nor supplying names of sexual contacts, because of the fear of stigmatization and discrimination. Many AIDS patients are being severely isolated because of the social stigma attached to AIDS (Salisbury, 1986). Funding and treatment decisions for the patient have been subtly influenced by prejudice. Turmoil has been created for families who are faced with the knowledge that a family member belongs to a stigmatized group. Worse yet, this prejudice can be incorporated by the person with AIDS, and one can spend the last days of one's life tormented by self-blame and self-hatred, remorse, and a feeling that one deserves retribution (Krajeski, 1984).

The Future of the AIDS Epidemic

Today, persons with AIDS cannot be offered reassurance against discrimination, because a substantial number of Americans still display outright hostility. Public health education alone is not enough to prevent this, and perhaps

only legal mandates can prevent discrimination and encourage public health and other health workers to care more appropriately for people infected with AIDS (Blendon and Donelan, 1988).

The future of the AIDS epidemic will depend on many variables, including our ability as world societies and individuals in those societies to take responsibility for ourselves and others, not only in preventing people from getting infected with the virus, but in caring for those who are ill. Currently, we are almost immobilized from providing support and care for the seriously ill and dying persons with AIDS. Our abilities and willingness to discover and apply therapeutic and preventive agents to combat the disease must not be encumbered by the stigma against it or the tendency toward any irrational or biased fear of contagion. The current tragic dilemma of choosing between the duty to protect patients versus the obligation to protect the health of society will need to be resolved. Society at large has a challenge to become so creative in its thinking that it can accept with new insight the person with AIDS who needs our care. The AIDS patient, sick and certain to die too soon, has a similar challenge to accept dying as a process of moving toward a completion of one's life.

If we can meet these and other challenges of AIDS, responding appropriately to its medical, social, psychological, and spiritual crises, true social progress can result. The epidemic is bound to have a lasting impact on our society. It can influence current biomedical research and medical therapeutics, affect our cultural mores, our attitudes about death and dying, and many of our basic assumptions about the primacy of technology as a solution to problems.

Conclusion

Although epidemics are first and foremost medical phenomena, they are also extraordinary catalysts for societal change (Valdiserri, 1988). If America can meet the challenges of AIDS, overcoming the "plague" mentality and responding appropriately to its medical, psychological, and social crises, true social progress can result.

In *The Plague*, Camus (1946) demonstrated how a dreaded disease, as horrible as it was, gave the community of Oran an opportunity to transcend its petty existence. Through the townfolks' honesty in the face of terror, their compassionate moral choices, and finally, their commitment to their fellow men and women, they achieved a new awareness of the meaning of life and of love (Broadsley, 1988). The havoc wrought by our modern-day plague is forcing our culture to also redefine its values, behaviors and ethics. Although there is no formal quarantine system in the United States, we do have intense, informal pressure which isolates people with AIDS from the support normally granted to those with handicaps, illness or terminal disease. Camus insists that love

demands a total surrender to the service of others in the face of a terrible, widespread disease.

In America, there are now signs that the importance of community services for AIDS is beginning to be recognized. In the major cities, men and women are creating humane educational, support, and treatment programs to serve the needs of seropositive, ARC and AIDS patients and their loved ones. Slowly, policies based on love, rather than the Plague mentality of fear, are helping AIDS sufferers. The challenge of the Plague can be met!

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Black/White Differences in Cancer: A Framework for Intervention Linking Social Structure and Survival*

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ABSTRACT

Black/White differences in cancer survival persist. Factors shown to be differentially related to survival, and to differ by race, include the extent of disease present at diagnosis, disease classification or tumor histology, and host vulnerability. It is suggested that efforts to reduce this survival differential generally have been unsuccessful due to a failure to accurately identify the sources of this differential. Differences in the extent of disease present at diagnosis, for example, may not be a function of failure to seek physicians or dollars spent on health care, but may be due to differences in the nature of health care provided. Similarly, differences in socioeconomic status, lifestyle characteristics, and occupational exposures between blacks and whites may be correlated with histologic differences and the level of host vulnerability. Differences in relative survival rates are viewed as resulting largely from structural sources. Some mechanisms for modifying these structural producers of survival inequality are suggested.

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Introduction

Ample precedent exists for linking social stratification with survival. Perhaps the most dramatic illustration of the relationship between one's place in society and one's survival is the sinking of the H.M.S. *Titanic*. As most introductory level sociology textbooks illustrate, over 60 percent of those passengers with first class passage survived, while only 36 percent of those with second class tickets and 24 percent of those with third class tickets survived drowning. One's life chances, and it would seem one's death chances, are linked to one's position in a stratified social fabric. Differences between blacks and whites in the rate of mortality from homicides, house fires, drowning, and pedestrian accidents have consistently been noted (MMWR, 1989). Mortality rates with respect to disease entities, however, have been linked less frequently with social stratification. Yet evidence suggests that social structural mechanisms impact here as well.

Despite evidence of reductions in the incidence rates for some cancers, and the fact that incidence rates for some cancers are lower for blacks than for whites, black/white differences in cancer *survival*, with blacks exhibiting significant disadvantage, persist. Current evidence suggests that, in general, if you are a black American and you are diagnosed with cancer, you are more likely to die from that cancer, and to die more quickly from that cancer, than if you are a white American diagnosed with the same cancer (Freeman and Wasfie, 1989; NCI, 1989; Hankey and Myers, 1987; MMWR, 1987; Young, et al., 1984). Traditional explanations and solutions offered for this differential now appear overly simplistic or inaccurate (USDHHS, 1986). Efforts to reduce cancer incidence and mortality have focused on heightening cancer awareness and knowledge, lifestyle changes, and early detection. These interventions are based upon explanations emphasizing behavioral or lifestyle modifications and assumptions about health practices and lifestyle in relation to cancer etiology. Contrary to the assumptions supporting a behavioral approach, neither delay in treatment seeking, nor the extent of disease present at diagnosis, although contributing to the survival differential, appear to be adequate explanatory factors alone. The inability of current interventions to impact this survival differential can be attributed, in part, to a failure to take into account that structural factors associated with social class and ethnic group differences may impact an individual's survival chances regardless of individual actions (Navarro, 1989; Sterling and Weinkam, 1989; Herd, 1987). A more effective approach would include efforts to address the structural as well as behavioral causes of this survival differential.

A number of problems become apparent, however, when literature in this area is reviewed in an attempt to explain black/white differences in cancer survival. Studies of the etiology of cancer have been of limited utility, in part because the

social, behavioral, and environmental factors of potential impact may have occurred decades before the disease is diagnosed. Prospective studies are difficult and expensive to conduct. In addition, cancer is not one disease but more than 100 diseases, not infrequently occurring in combination. Compounding these difficulties, many of the sampling and measurement techniques employed are crude and often unreliable. Direct measures of socioeconomic status, for example, rarely are collected by tumor registries (a major source of our information) and are frequently estimated based on ability to pay or sources of payment for medical services, or estimated from census data. Despite these difficulties, the weight of evidence now accumulated does allow for some synthesis regarding factors contributing to differential survival rates between blacks and whites and means to reduce this differential.

Concepts of Survival and Race

Before examining the existing evidence, some concepts need to be defined. The endpoints of this analysis are relative survival rates and correlations with the concepts of race and ethnicity. The relative survival rate is, in a sense, a synthetic concept. It is the ratio of the observed survival rate to the expected survival rate for persons in the general population similar to the patient group in age, sex, race, socioeconomic status, and year of observation. While the measurement of relative survival rates varies in the literature depending on the statistical method used and whether or not the primary cause of death is cancer, a relative survival rate generally can be interpreted as an estimate of the probability of escaping death due to cancer related causes for a prescribed period of time. Since a five year interval of time without recurrence beginning with the date of diagnosis generally is accepted as a minimum indication of a cure, studies reporting five and ten year survival rates were viewed as the most useful.

The meaning of race in the literature of epidemiology is the subject of some debate. Some researchers would argue that the first step in an epidemiologic investigation is the description of host characteristics including age, sex, and race (Mausner and Bahn, 1974). There exists much confusion regarding this concept, however, for as Damon (1971) points out, race implies a biologically distinct group which shares a large percentage of genes in common and usually certain distinguishing physical features. An ethnic group is one that is culturally distinct. Cooper argues that whereas race continues to be a widely used concept in public health and medicine, when racial differentials are addressed, concern is not primarily with "true genetic markers," and "the relationship between genotype, and phenotype is almost universally ignored" (1984:718). Similarly, Navarro (1989) observes that the United States is unique among western industrialized nations as perhaps the only one recording its health data on the basis of race,

gender, age and other biological categories and largely excluding any measures of social class. While there is considerable overlap between these designations, each may separately, or in combination with the other, exert an influence on disease patterns (Navarro, 1989; Wilkinson and King, 1987).

Differences in Cancer Survival

As indicated at the outset, there is persistent evidence that blacks in the United States have a poorer cancer prognosis than whites. Although there is no single repository of cancer data, a consistent pattern can be seen across studies of tumor registries. In one of the first comprehensive evaluations of this pattern, Axtell, et al. (1975) compared five year relative survival rates for blacks and whites diagnosed between 1955 and 1964. In twenty-four out of the thirty-one sites compared for all stages of disease combined, whites evidenced higher rates than blacks, and equalled the survival rate in three other sites. The difference was particularly great in the case of bladder cancer and corpus uteri carcinoma. In a subsequent study of patients diagnosed between 1964 and 1973 (Myers and Hankey, 1980), evidence of a survival deficit was again found among the black patients studied, even when controlling for age and stage of disease. In this study whites exhibited a higher five-year relative survival rate than blacks in twenty-three of the twenty-eight sites examined and equalled the relative survival rate for blacks in one additional site. Further, none of the differences found in relative survival rates which favored blacks were large or statistically significant.

Prior to 1973, data were derived from only a small number of tumor registries which made generalizations and analyses of trends difficult. The most uniform and representative data currently available are collected by the Surveillance, Epidemiology and End-Results (SEER) program of the National Cancer Institute. The SEER program collects data with a uniform instrument from eleven tumor registries representing approximately 12 percent of the U.S. population. Recent analysis of trends in black/white cancer survival based on data collected between 1974 and 1985 indicates that this differential has not been significantly reduced despite prevention and control efforts (NCI, 1989). For all sites and stages combined, the five-year relative survival rate for whites diagnosed between 1980 and 1985 was 13 percent higher than for blacks diagnosed during the same period. Whites evidenced higher relative survival rates in seventeen of the twenty-four sites compared, and equalled the survival rate for blacks for one additional site.

In comparisons of five-year relative survival rates for those diagnosed between 1974 and 1976 with those diagnosed between 1980 and 1985, whites exhibited statistically significant increases in survival rates in sixteen of the

Table 1
Trends in 5-Year Relative Survival Rates (1974–1985)
for Selected Cancer Sites by Race/Ethnicity.

SITE	YEAR OF DIAGNOSIS					
	WHITES			BLACKS		
	1974–76 (%)	1977–79 (%)	1980–85 (%)	1974–76 (%)	1977–79 (%)	1980–85 (%)
All sites	49.9	50.3	51.1*	38.6	38.4	38.1
Oral cavity and pharynx	54.5	53.4	53.8	35.8	35.9	30.6
Esophagus	5.1	5.5	8.1*	3.9	2.8	5.8
Stomach	14.1	15.9	15.5*	16.3	14.9	18.5
Colon	50.0	52.4	55.2*	45.1	47.3	47.9
Rectum	48.4	50.3	52.9*	41.3	38.2	38.8
Liver	4.3	2.7	4.3	1.2	3.6	2.3
Pancreas	2.8	2.1	2.7	2.3	3.7	4.8
Larynx	66.1	67.5	68.2	58.3	55.6	52.9
Lung & Bronchus	12.2	13.4	13.1*	11.2	10.8	11.6
Melanoma of the skin	79.2	80.8	81.0*	66.5‡	37.3‡	66.4
Breast (females)	74.6	74.7	76.3*	62.6	62.2	63.5
Cervix Uteri	69.0	68.4	66.9	63.0	61.4	59.3
Corpus Uteri	89.0	86.5	83.4*	62.2	57.1	52.0*
Ovary	36.1	37.2	38.4*	40.8	39.1	38.3
Prostate gland	67.4	71.3	73.4*	57.6	61.9	62.8*
Testis	78.4	87.5	91.4*	77.2†	—	90.9
Urinary bladder	73.3	75.1	77.7*	47.0	54.2	56.1*
Kidney and renal pelvis	51.3	50.0	52.4	49.5	52.5	55.4
Brain and nervous system	21.8	23.6	23.5*	27.6	27.7	29.5
Thyroid gland	91.9	92.0	93.3	88.1	91.7	95.6
Hodgkin's Disease	71.5	72.8	75.7*	68.2	73.1	72.6
non-Hodgkin's lymphoma	47.3	47.8	50.9*	47.5	48.9	44.1
Multiple myeloma	23.8	23.9	25.8*	28.0	32.4	28.9
Leukemia	34.0	35.8	34.2	30.4	29.7	27.4

Source: *Cancer Statistics Review 1973–1986 including a report on the status of Cancer Control*. National Cancer Institute. USDHHS. Bethesda, MD. [Surveillance, Epidemiology, and End Results (SEER) Program] May 1989. Reprinted with permission of the National Cancer Institute.

*The difference in rates between 1974–76 and 1980–85 is statistically significant ($p < .05$)

†The standard error of the survival rate is between 5 and 10 percentage points

‡The standard error of the survival rate is greater than 10 percentage points

twenty-four sites examined (see Table 1). Only three sites showed statistically significant changes in relative survival rates for blacks and only two of those sites evidenced increases in survival rates. Closer inspection of the data revealed that the most significant change in five-year relative survival was experienced by black women diagnosed with corpus uteri carcinoma.

The five-year relative survival rate for white women diagnosed with corpus uteri carcinoma is now thirty-one percent higher than for black women diagnosed with corpus uteri carcinoma. Similarly, the relative survival rate for whites is 23 percent higher for cancers of the oral cavity and pharynx and 21 percent higher for urinary bladder cancer than the relative survival rate for blacks with these diagnoses. Further, of the thirteen sites where black/white differences in relative survival rates were statistically significant for those diagnosed between 1980 and 1985, all stages combined, the relative survival rate for whites was more than 10 percent higher than the rate for blacks in over half the sites. Again, differences found to favor blacks were generally small or not statistically significant.

Factors Related to Differences in Survival

In any attempt to derive meaning from research data, it is important that the methodology and sampling be examined as well. The large racial/ethnic gap in survival observed in the SEER data may, in part, be a function of the fact that a significant proportion of the data on blacks derived from low income and indigent patient populations. However, rather than introducing a confounding bias, this artifact may more clearly demonstrate the influence of socioeconomic status (SES) on survival outcome and potentially, the influence of a relationship between race/ethnicity and SES on sources of tertiary care. While few direct measures of SES have been available in cancer data, it has been well documented that significantly more blacks than whites are among lower socioeconomic groups (Farley, 1984; U.S. Bureau of Census, 1979). Current economic indicators also would suggest that the relative economic status of blacks is declining (Cotton, 1989). Further, early investigations of registries with relatively homogeneous, lower socioeconomic patient populations failed to find significant survival differences along racial or ethnic lines (Correa, et al., 1980; Page, et al., 1978). A number of independent studies also supported the view that observed differences in black/white survival were actually a function of SES (Savage, et al., 1984; Berg, et al., 1977). However, researchers have also reported findings which appear contradictory with respect to race/ethnicity and SES and suggest that observed racial differences in survival are a somewhat more complex phenomenon (Freeman and Wasfie, 1989; Mayer and McWhorter, 1989; Hayward, et al., 1988; Valanis, et al., 1987; Funch, 1986).

Although the evidence varies from one study to another, stage at diagnosis, tumor histology, and host vulnerability have been shown to be differentially related to survival and to differ by race. There is evidence that blacks tend to have more advanced disease at diagnosis, more aggressive tumors, and greater host vulnerability and fertile "site soil" for tumor implantation than whites. There are some interesting anomalies as well. For example, evidence also suggests that in some instances, racial differences in survival persist even when controlling for such factors as stage at diagnosis (Hankey and Myers, 1987). At issue are those factors contributing to the survival differential between blacks and whites and the extent to which those factors are a function of SES.

Early Detection and the Extent of Disease Present at Diagnosis

Certainly the existence of a relationship between the extent of disease present at diagnosis (stage) and survival outcomes has been well established throughout the cancer literature. That the extent of disease present at diagnosis also is correlated with race/ethnicity raises some significant questions, chiefly questions regarding those mechanisms which contribute to the extent of disease present at diagnosis. A tacit assumption is often made that knowledge and attitudes toward cancer somehow determine one's readiness to act "appropriately" in the presence of cancer signs and symptoms or when opportunities for screening and detection are present. This is a largely untested assumption and there is even a certain amount of evidence that it is patently false. What is known is that blacks and whites differ in this regard.

Blacks generally have been found to exhibit less knowledge about cancer and to hold different beliefs and attitudes regarding cancer than whites (Price, et al., 1988; NCI Technical Report, 1986; Michielutte and Diseker, 1982; ACS, 1981). In addition, blacks tend to be less likely to participate in screening programs (Adams and Kerner, 1982; Gould-Martin, et al., 1982; Grover, et al., 1982), and report receiving or practicing early cancer detection techniques such as breast self-exams (BSE), Pap tests, rectal exams, and physical examinations less frequently than whites (ACS, 1981; National Center for Health Statistics, 1977).

Where symptom response and delay are concerned with respect to influencing stage at diagnosis, evidence does suggest that blacks tend to delay seeking treatment longer than whites (Ansell, et al., 1982; Funch, 1986; Gould-Martin, et al., 1982; Valanis, et al., 1987). A number of explanations have been offered for this differential including knowledge of cancer, attitudes, perception of symptoms as illness, availability of paid time off and insurance (Berkanovic and Telesky, 1985; MacRae, et al., 1984; Warnecke, 1981).

The treatment facility used, the design of screening programs, the general organization of health care services, health insurance and, to some extent, age, also appear to be factors in cancer detection (Hayward, et al., 1988; Baquet and Ringen, 1987; Funch, 1986). In contrast to the results of other screening programs, for example, Ansell, et al. (1987) report a significant level of success in both the adoption of Breast Self-Examination (BSE) techniques and participation in mammography screening in a health care facility serving a predominantly black, indigent population. While screening efforts targeting an existing patient population base would seem to yield an advantage over mass population screening efforts, this factor alone does not appear to account for the program's success, since successful recruitment of black populations generally has not been evidenced in either type of screening program (Willis, et al., 1989). Rather, the success of the Cook County Hospital Breast Cancer Detection Program (BCDP) appears to rest with the design and structure of the program. One illustration of the impact of program design on the effectiveness of the screening program is the method used to schedule return appointments. Appointments to return to the BCDP were made with the patient while the patient was still in the clinic, for the same day as the individual's return appointment for the General Medicine/Primary Care Clinic in the same facility. This practice increased the possibility that patients would return to the screening program.

A growing body of evidence further suggests that the organization and delivery of health care may not be conducive to the early detection of cancer among blacks. For a number of reasons, blacks tend to get their medical care in emergency rooms and clinic settings (National Center for Health Statistics, 1979). In these acute care and treatment-oriented settings, prevention and detection techniques, such as breast examinations, Pap tests, colonic surveillance, testicular exams, and mammograms, generally are not performed in conjunction with examinations (Blendon, et al., 1989; Hayward, et al., 1988; Howard, 1987, 1982; Funch, 1986). Conversely, a number of studies have supported the conclusion that adoption of effective breast self-examination techniques, for example, is contingent upon (1) having been taught to do BSE and been asked to demonstrate proficiency in the technique, (2) having a regular physician, particularly a gynecologist, and (3) a belief that your physician feels the examinations are important (Rimer, et al., 1989; Zapka, et al., 1989; Roberts, et al., 1986; Sheley and Lessan, 1986; Celanto, et al., 1982). Continuity of care in health care services used by many blacks and the poor also appears to be lacking and to negatively influence disease detection. Not only does the increased fragmentation of services decrease the likelihood that a patient-physician relationship would develop which could encourage adoption of prevention and detection

techniques, but health care service components as basic as adequately following up women whose Pap tests are returned from the lab as abnormal also may be lacking (Baquet and Ringen, 1987).

Clearly not all cancers are amenable to highly effective early detection techniques. Factors such as differences in the site where disease is found, variations in symptom manifestation, and the patient's previous history (Valanis, et al., 1987; MacArthur and Smith, 1984; Adam, et al., 1980) also appear to influence the early detection of disease independent of the individual's actions. To illustrate, Johnson, et al. (1988), in a study of colorectal cancer, found that in whites the lesions tended to manifest themselves in the lower part of the colon and rectum, while in blacks the disease was more likely to be found in the upper parts of the colon. The significance of this finding for the topic at hand is that physicians have not, traditionally, performed total colonic surveillance in the course of routine examinations. In order for this cancer to be detected, as it appears to manifest itself in blacks, physicians will need to develop greater awareness of these differences and modify their examination practices.

Host Vulnerability and Tumor Histology

For a number of reasons as well, delay in treatment seeking, either through a failure to utilize early detection techniques or a failure to respond quickly to symptoms, cannot be globally linked to the extent of disease at diagnosis, nor to black/white differences in survival. There is evidence to suggest that for some cancers, delay alone may not result in survival differences. Vernon, et al. (1985) found that while blacks and Hispanics differed in the rate of survival, they did not differ in the number of months treatment-seeking was delayed. Hankey and Myers (1987) found that black/white survival differences persisted even when controlling for the extent of disease present at diagnosis and the potential effects of lag-time bias. Further, as noted previously, black/white differences in the way the disease manifests itself also may account for some of the differences noted in survival. This suggests that other factors, some of which may be impacted by socioeconomic or racial/ethnic differences, account for some of the survival differences observed.

Host vulnerability also appears to be a factor in cancer survival and to vary by race/ethnicity and socioeconomic status (Berg, et al., 1977). Host vulnerability refers to the ability of the organism to either fight off the causative agent or, potentially, to resist development of the tumor itself. The level of host vulnerability may be a function of genetics, lifestyle characteristics of the individual, or other previous or concurrent disease. From a sociological perspective a number of social and behavioral factors can be cited including smoking, patterns of alcohol consumption, estrogen use, nutrition, co-morbid conditions and the

extent of care received for these conditions, area of residence, and occupation (Feldman and Gerber, 1990; Pope, 1989; Patterson and Block, 1988; Austin and Roe, 1979).

Nutrition is perhaps the most straightforward illustration of the relationship between race/ethnicity, SES, host vulnerability and survival. Lower socioeconomic status is associated with compromised nutrition. Race/ethnicity also is associated with SES, cultural nutritional habits, and nutritional deficiencies. Some of these nutritional habits and deficiencies have been shown to result in a compromised host. Nutritional deficiencies over a long period of time may lead to a more amenable host or environment for cancer development. A compromised host also has been implicated in the speed at which cancer is able to grow and spread. Nutritional compromise, then, rather than delay in responding to symptoms, could be responsible for the extent of disease present at diagnosis in some cases. Certainly the effects of long-term nutritional deficits coupled with the disease process have been shown to negatively impact a person's ability to tolerate and benefit from cancer treatment (Savage, et al., 1984).

Histology, or disease classification, is somewhat more complex in its relationship to survival. The issue, with respect to survival differences, is the differential development of cancers which tend to be more aggressive, and less amenable to survival. While some cancers of the corpus uteri, for example, are detectable from a Pap test, these cancers are less likely to be detected in an early stage than cervix uteri under normal cervix screening regimens. This is particularly true of uterine sarcomas which tend to be most prevalent among black females (Turner, 1990; Christopherson and Nealon, 1981). Corpus uteri is also among those cancers exhibiting the greatest differential in black/white survival rates. Further, the greatest decrease in survival rates between 1974 and 1985 has been experienced by black women with corpus uteri carcinoma (NCI, 1989).

The development of cancer of the esophagus has been associated with alcohol consumption patterns, in particular, drinking heavy or dark liquors such as whiskeys. There is evidence to suggest that blacks are more likely to consume dark or heavy liquors while whites are more likely to consume beer and wines (Rothman, et al., 1989; Caetano and Herd, 1988). Here again, socioeconomic structural influences may be found as well. Sterling and Weinkam (1989), in a study of lung cancer risk factors, compared black/white differences in smoking patterns related to lung cancer (e.g., smoking prevalence, amount smoked, and age started) and occupational exposure. They found less smoking associated risks among the blacks in the study than whites and attributed the higher incidence of lung cancer among blacks to occupational differences. While research findings vary with respect to black/white differences in smoking, the additive effects of smoking and occupational exposure certainly have

been implicated in the increased incidence of some forms of cancer (Brownson, et al., 1987).

Occupational Exposure

Some of the disparity noted in SES findings may be explained by the use of ability to pay or existence of health insurance as a measure of SES, coupled with the influence of occupational exposure. Perhaps one of the most significant components of lifestyle for the majority of Americans is their occupation. Further, the types of carcinogens and risk factors one is exposed to during this large segment of one's life are likely to influence both the type or site of cancer reported and the histology of that cancer (Claude et al., 1988). Among the few studies which have examined occupational exposure among blacks, Silverman, et al. (1989) examined occupational risks of bladder cancer among nonwhite males in the United States and found elevated risks among those ever employed as auto workers, dry cleaners, ironers, and pressers. In comparing their findings to the risk of occupational exposure for bladder cancer in whites they concluded that "... the risk of occupational bladder cancer among white and nonwhite men is similar. When inconsistencies between whites and nonwhites did occur, they appeared either due to chance or possibly racial differences in exposure among men within the same industry and occupation" (1989:480).

Because blacks are a small cohort in any occupational group, elevations in exposure in this group are likely to escape enumeration or not be statistically meaningful in an industry-wide study (Brownson, et al., 1987). However, careful occupation-related studies which take into account differences in jobs within industry have been undertaken in a few industries. Michaels (1982), in a detailed examination of minority workers and occupational cancer, notes that in the steel industry, coke ovens are the greatest source of carcinogenic exposure. He reports that the elevated cancer rates for blacks in the steel industry at the time the study was conducted were due to employment patterns in the industry. The majority of black workers (almost 90 percent) were found to be employed on the coke ovens compared with 31 percent of the white workers. Further, black workers were five times as likely to remain in that job as white workers. Similar examples were noted in tire-making, the rubber industry, refining and chemical production, and the ship-building industry with respect to lung cancer, bladder cancer, and prostate cancer. In the chemical industry, for example, Michaels reported that while very few of the workers employed at a New Jersey plant were black, all of the workers employed in the building dedicated to the production of hexamethylenetetramine at that plant were black. A study commissioned by the National Cancer Institute (Clark, et al., 1977) found that workers in the "hexa"

building suffered seven times the expected lung cancer rate, a rate also exceeding levels for all other areas in the plant.

Although greater incidence among blacks of cancer sites which are more aggressive and less amenable to survival, e.g., lung and pancreas, should not necessarily be expected to translate into differential survival rates for those afflicted, studies suggest that the nature and duration of the carcinogenic exposure influences the histology as well. In a study of the relationship between occupation and lung cancer histologic types, Zahm, et al. (1989) found that carpenters, cabinet and furniture makers, and plumbers were more likely to develop adenocarcinomas of the lung, while electricians and welders tended to develop "other" or mixed cell types and squamous cell carcinomas of the lung as well. Differences have been related to the particular carcinogenic exposure in the job and to the duration of exposure.

It would appear likely, then, that a combination of factors related to both race/ethnicity and SES such as lifestyle, nutrition, organization of health care delivery, differences in symptom manifestation, definition, and detection, coupled with variations in exposure to carcinogens and resulting histologies, contribute to the observed differences in cancer survival between blacks and whites. Further, this would appear most likely to be evidenced by significant black/white differences in the rate of survival for those cancers with the lowest survival rates in the general population, and those cancers where occupation related exposure is most likely to result in differences in histologic classifications for the same site.

Type of Cancer Treatment Received

Finally, there is some evidence to suggest that the treatment received for cancer may be different for blacks and whites. Hankey and Myers (1987) observed that while no gross differences in treatment were noted in their study, there was a tendency for blacks to receive more radiation and chemotherapy, and less surgery, than whites. In a more detailed examination of this question, Mayer and McWhorter (1989) found that blacks, those of advanced age, those with unknown or advanced stage at diagnosis, and those with certain histologic types were more likely to go untreated for bladder cancer. However, their analysis indicated that black/white differences in treatment could not be explained fully by age, stage, sex, or histology. Whether these observed differences in treatment are related to black/white differences in the level of host vulnerability upon presentation (e.g., concomitant illness, nutritional compromise), or perhaps to differences in the level of expertise of physicians and the quality of health care organizations used, remains an issue. Certainly access to health care and the quality of health care for minorities, the poor, and the elderly continue to be a concern (Blendon, et al., 1989; Schlesinger, 1987; Whiteis and Salmon, 1987).

Discussion/Recommendations

Frequently the focus of discussions of applied sociology centers on the role of sociologists employed as researchers in non-traditional settings, the potential conflicts which may arise between the two roles, and the variation in educational preparation required (Freeman and Rossi, 1984). We suggest that the unique contribution of sociology derives not solely from participation as a researcher employed in a non-traditional setting, but from the grounded application of the sociological perspective. It can be argued that applied sociology in any setting should involve the use of a sociological perspective to understand and design solutions to problems, regardless of the sociologist's role in that setting (Straus, 1985). William Foote Whyte's (1948) analysis of the social structure and functioning of a restaurant clearly demonstrates this principal. It would appear that often applied medical sociology has tended to accept the medical model in research and intervention strategies rather than adhering to a sociological perspective. In the area of cancer, a significant amount of research has been directed toward the prevention of cancer. However, much of the work has been limited to screening programs, lifestyle and behavioral modification. While not disputing the value of these preventive measures, this paper suggests that current work fails to address the larger social pattern which contributes to cancer incidence and mortality and which is not addressed by a behaviorist approach to prevention.

From the preceding discussion it should be evident that the black/white differential in cancer survival is inextricably linked with the generally disadvantaged position of blacks in society. It is clear that blacks continue to occupy a subordinate position in the American system of social stratification. In 1986 the median family income for blacks was \$17,604, while the figure for whites was \$29,458. Evidence indicates that blacks have, over the course of history, been over-represented in low-paying jobs. Even the recent "turnaround" in the U.S. economy has damaged the position of black Americans. Since 1980 nearly 3,000 blue collar industrial jobs have disappeared and this has impacted most upon blacks. Simultaneously, cuts in the Federal budget have necessitated abandonment or reduction in domestic programs, further lessening chances for blacks to find employment in other fields. Unemployment continues to be approximately twice as high for blacks as whites (Jacob, 1986; Wilson, 1984). Educational and income disadvantage are equally easy to document. It also would appear that blacks continue to be relegated to occupational and environmental hazards with little attention paid to subsequent health status (Robinson, 1987).

The importance of these points is apparent. In a society in which occupational exposures and medical care are stratified, the disadvantaged will not fare well.

The exigencies of daily life make prevention and even help-seeking a relatively low priority. These, coupled with a cultural heritage of simply making do and surviving, are fertile ground for the development and maintenance of low response to disease signs and symptoms and high cancer mortality risk. Changes in the entire system of stratification are both ambitious and slow remedies. However, a number of more immediate remedies for modifying the structural mechanisms which appear to contribute to this cancer survival differential can be proposed in at least three areas.

Interventions in the Health Care Delivery System

One of the most obvious remedies immediately amenable to implementation is the inclusion of cancer detection procedures in facilities most often used by the poor and many blacks. Howard (1982) has investigated and found feasible the institution of an "in-reach," secondary prevention program in acute care settings. Further, as Baquet and Ringen note, "... there is no justification for sexually transmitted disease clinics not performing a Pap smear when performing a routine pelvic exam (1987:341)." A related area where modification appears feasible includes changing traditional examination practices to account for variations between blacks and whites in disease manifestation. A more difficult area to modify, but one no less amenable to immediate intervention, is the organization of health care delivery itself. Garrett, et al. (1987), for example, report that reducing the fragmentation of health services and increasing the possibility of the development of patient-physician relationships can be accomplished without incurring undue cost or staffing increases in a clinic serving low income patients. Improvements in the design of screening programs and the manner in which services, including patient follow-up of Pap test results, are equally feasible with research, planning, and motivation.

Legislative Interventions

Among the more motivating factors are legal and licensure requirements. It is conceivable that cancer could be made a reportable disease. Such an action might encourage routine cancer screening and lead to better patient follow-up, since a significant number of patients appearing in a cancer registry with advanced disease, less-than-optimum workup, or inadequate treatment appearing in a case abstract, could be viewed as indicative of the practice of poor medicine. Some precedent for this already exists at the state and federal level with respect to cancers associated with occupational exposure. Further, legislative actions in many states requiring employer insurance coverage of mammograms also

speaks to the issue of responsibility and equity in the allocation of non-acute care (Thompson, et al. 1989).

Federal legislative and budgetary decisions appear to have the potential to affect this survival differential in other areas as well. While some of the mechanisms by which nutritional deficiencies impact cancer survival are still under study, it appears clear that the provision of regular, nutritional meals to low income and indigent children could directly impact the continuation of this survival differential. Improving the nutritional and dietary content for disadvantaged Americans in general is likely to have some other positive effects as well. Further, it may be as feasible and economically beneficial to pay farmers to produce surplus for distribution to the disadvantaged as it is to pay farmers not to produce surplus.

Interventions in Occupational Practices

Perhaps the most difficult area in which to effect change is in the area of occupational exposure and employment patterns. While there has been some progress in this area, improvements are still needed in occupational exposure monitoring standards and protection of all workers. Similarly, while employment protection exists legally with respect to hiring practices, federal legislation covering post-hire activities is only now being proposed (1990 Civil Rights Amendment). The protections which will be afforded to temporary, contract, and migratory labor forces remain an issue. Further, legal protections do not consistently translate into compliance, and failure to comply with ethical and legislative employment guidelines is not confined to private industry. While some employment practices call for immediate legislative intervention and enforcement, it is suggested that improvements in the design of legislation, so that changes may be feasibly and effectively implemented by industry, and efforts to develop common goals would have a greater long-term impact (Jordan, 1990). Too often legislative proposals and changes in organizational practices are reactive in nature rather than studied, goal-oriented, and proactive.

Conclusion

It is regrettable that the risks of contracting cancer are differentially distributed within the population. More lamentable, however, is the fact that once the disease has appeared, the chances of surviving it also are differentially distributed. The disadvantaged position of blacks relative to whites in cancer survival will not be rectified with a simple "cancer awareness program," or a "Joint Health Venture" as proposed by Dr. Vincent DeVita, former Director of the National Cancer Institute in his 1985 editorial in *Public Health Reports*. What

will be required is a greater understanding of the mechanisms associated with the existing system of social stratification which contribute to this differential. It is not suggested that sociologists themselves have the means, expertise, or responsibility for designing the ideal intervention or redressing the disparities in survival. What is suggested is that sociologists are in a unique position to provide a framework for the design of more effective interventions.

At the individual level, the expertise of professionals such as health educators, anthropologists, or social workers may be required to adequately understand the unique value, attitude, and need structure of blacks as this relates to risk factors and cancer survival. It is clear, however, that intervention approaches must take these factors into account. At the organizational level, a simplistic approach to reducing black/white survival differences for most cancers would be to place the appropriate number of employees of the appropriate race in each job hazard category or level the nature and amount of health care provided. Given the nature of employment and the nature of the health care system at present, this is not a realistic or desirable approach. The alternative is to promote equity by increasing health care services and reducing hazard exposure for all groups. In any event, it does not appear that the cancer survival differential will be adequately addressed until the issues of equal access to safety and quality health care are addressed.

Current evidence demonstrates that behaviorist interventions alone are inadequate measures to reduce the cancer survival differential. At worst, attributing the differential to "cancer awareness" and "life style factors" is one more form of victim blaming and provides little in the way of direction for programmatic or social policy changes.

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Predicting the Organizational Response to Employee Tobacco Use: An Environmental Model

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ABSTRACT

The control of risk behaviors to reduce morbidity and mortality is a leading concern in public health, as is the protection of the public from hazardous exposure to tobacco smoke and fires caused by smoking. Measures to restrict tobacco use are increasingly popular in society and in the workplace as a result. This paper discusses cultural, economic, legal, and ethical factors in the external environment and the organization's institutional and technical environment to predict organizational responses to employee tobacco use.

Opportunities flourish to test this environmental model, as organizations ban tobacco use or institute policies such as discrimination in hiring, cessation programs, and differential health benefits. Organizational responses explained by this model are not limited to the control of tobacco use, but encompass a range of employee risk and wellness behaviors, offering further areas (such as drug abuse) in which this model may be tested.

Although over the last quarter century evidence has accumulated about the dangers of smoking, tobacco use remains the single most important preventable

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cause of morbidity and mortality, responsible for two-thirds of the health care costs among working ages 40–65 years (Rice, et al., 1986). Not only is the worksite a convenient locus for identification, education, and intervention efforts at preventing and reducing the numbers of adult smokers, but employers are aware of the substantial health and non-health costs of tobacco using employees, and are concerned about reducing these costs (Kristein, 1983).

Little is known about the effect of worksite smoking restrictions on overall consumption or prevalence (Gottlieb, et al., 1990); however, Mullooly, et al. (1990) and Gottlieb, et al. (1990) found reductions in workday consumption and less environmental tobacco smoke following restrictive policies. The response by organizational members and clients to worksite tobacco control is only recently being studied as well (Penner, 1989a).

The employer's response to environmental changes regarding tobacco use is used to apply Scott and Meyer's (1983; Meyer, et al., 1983; Scott, 1987:126) typology of technical and institutional organizational environments. It is assumed by the authors that environmental changes (such as new knowledge about the biological effects of smoking) are communicated to organizations, which respond by changing or initiating policies and programs. An organizational model of environmental factors is generated by the authors, based on this theoretical analysis.

The authors' hypothesis is that employee tobacco use policy is largely determined by the organization's response to four external environmental factors. These factors, depicted in Table 1, are legal, economic, cultural, and ethical. Legal factors are based on legislation, regulations and case law pertaining to tobacco use in the workplace. Economic factors include not only the costs of permitting tobacco use among employees, but also the costs of restriction and intervention. Ethical factors encompass the values held by society and the industry of which the organization is a part, while cultural factors are associated with prevailing attitudes regarding tobacco use. Variation in the employer's response also depends on the institutional and technical environments in which the organization is located.

The practical importance of an environmental model lies in its ability to predict specific organizational actions to control and discourage employee smoking. Testing and further refining the model's predictive accuracy would allow organizational researchers to pinpoint those worksite policies most likely to be adopted by specific organizations. Other employee risk behaviors for which organizational responses can be predicted using this model include, but are not limited to, drug and alcohol abuse. The model's utility extends to both organizational consultants and theorists interested in a wide range of organizational settings and employee behaviors the employer may wish to reduce, restrict or change.

Table 1
 Factors in the External Environment That Influence
 Organizational Response to Employee Tobacco Use

<i>LEGAL</i>	<i>ECONOMIC</i>
Federal, state and local laws and regulations pertaining to worksite tobacco use.	Direct and indirect costs of employee tobacco use vs. costs of regulation and intervention.
Collective bargaining and affirmative action requirements.	Industry's perception of the importance of tobacco related costs.
Case law and precedents when tobacco use restriction and intervention policies are challenged.	Technical aspects of the industry affecting safety, productivity and tolerance of tobacco use in the worksite.
	Characteristics of the labor supply vs. the industry's demand for non-tobacco users.
<i>ETHICAL</i>	<i>CULTURAL</i>
Industry's philosophy toward safety, comfort, and wellness of public and employees.	Societal awareness of the harmfulness of exposure to tobacco leading to decreasing tolerance of tobacco use.
Industry's philosophy toward coercive vs. non-coercive tobacco reduction interventions.	Societal attitudes about employee wellness and substance abuse in the workplace.
Distributive justice considerations in bearing the costs of tobacco use.	Industry's history and experiences with substance abuse policies analogous to tobacco restriction and cessation efforts.
Industry's perception of the "slippery slope" dilemma.	

Legal Factors

Legal factors play a significant environmental role by mandating and supporting worksite tobacco use restrictions. In 1976, *Shimp v. New Jersey Bell* became the first legal case to assure an employee's right to protection from involuntary exposure to tobacco smoke (Kristein, 1989), leading to restriction of

smoking in other workplaces. Ten years later, the U.S. Surgeon General urged new restrictions on smoking in public areas based on the dangers of passive smoke inhalation (U.S. Department of Health and Human Services, 1986). This report accelerated the passage of federal, state, and local prohibitions on tobacco consumption, from the 1987 ban of tobacco use by students, staff, and visitors in all the public schools in the state of Kansas, the first state in the nation to do so (Kansas, 1987), to 1989 federal legislation forbidding smoking during domestic air flights.

Case law and legal opinion over the last decade not only provide support for organizations that resist smoking, but also uphold decisions to discriminate against smokers in hiring and health insurance premiums. Among state of Kansas employees, State Attorney General Stephan ruled in 1987 that discrimination against tobacco users is allowed in health plan charges. The basis for Stephan's ruling was that the discount in insurance premiums for which nonsmokers were eligible was viewed as "an incentive for preventative health care . . . to discourage . . . smoking." Differences in health care costs for smokers vs. nonsmokers was held to be a valid distinction in imposing the nonsmokers discount (Penner, 1989a).

Another area of case law addresses the issue of workers classified as handicapped due to hypersensitivity to tobacco smoke. In *Vickers v. Veterans Administration*, an Administration employee filed a suit under the provisions of the Rehabilitation Act of 1973. In *Dep't. of Fair Employment and Housing v. City of Fresno Dep't. of Social Services*, two employees suffered from asthma and sarcoidosis (a chronic lung disease), respectively; both disorders were held to be physical handicaps, and the court ruled that the Department of Social Services must provide "reasonable accommodations" to meet their needs (Scholick, 1989:8).

On the other hand, case law has upheld unions and collective bargaining units when employers have unilaterally restricted smoking without negotiating with their workers. In the 1978 case of *Chemtronics, Inc.* the National Labor Relations Board held that the unilateral decision of the employer to prohibit smoking privileges in the plant area was a violation of labor law "without bargaining with the union representing such employees." The California Public Employee Relations Board ruled in 1988 that the Riverside Unified School District's prohibition of smoking by classified employees in any district facility violated the duty of the district to bargain, basing its conclusion on the finding that a unilateral change in an established practice can be found unlawful (Scholick, 1989:1).

Though not yet tested by case law, another legal question arises regarding whether tobacco use is held to be a voluntary action based on an individual's free choice, or whether tobacco is ruled to be so addictive that the employee is

virtually enslaved by this high-risk habit. If tried in court, coercive or discriminatory measures against employee tobacco users may be found to be "blaming the victim" for biological and societal circumstances beyond his or her control, and it is possible these restrictive measures will not be upheld (Leichter, 1986).

Economic Factors

The economic costs of tobacco use, whether direct, indirect, or intangible, are another significant environmental factor affecting organizations. Kristein (1989) estimates that in 1988 the typical smoking employee generated \$1,000 each year in excess costs. Direct costs include medical care expenses to treat illnesses and accidents directly related to tobacco use, as well as the costs of care for nonsmokers exposed to smoke (Rice, et al., 1986). Replacement and repair of items damaged by cigarette burns and the costs of cleaning and janitorial services are additional direct costs.

Indirect costs also are borne by employers of people who use tobacco. These costs include lost productivity, reduced output, absenteeism and foregone human resources due to morbidity, disability, and mortality resulting from tobacco consumption. Additional indirect costs result when family members of persons suffering the health consequences of tobacco exposure must lose time from work to provide care services (Rice, et al., 1986; Kristein, 1989).

Intangible costs are related to measures of the quality of life rather than money, and generally are excluded from economic calculations. The unpleasant effects of smoke on nonsmokers in the vicinity is one example of an intangible cost of tobacco use, as well as the psychosocial suffering by employees from the tobacco-related disease and death of a co-worker (Manning, et al., 1989; Kristein, 1989).

One intangible cost of employee tobacco use to an organization is the effect on image. For example, organizations promoting health care or wellness as a consumer good (such as health clinics or fitness centers) may find it difficult to convey a desirable image if they do not provide smoke-free surroundings to their customers. As the commitment to cut tobacco use become institutionalized across certain industries, organizations that remain permissive about tobacco use may find it more difficult to compete in the marketplace.

Another dimension in estimating the costs of tobacco use is temporal. Some costs of smoking (such as accidental fires caused by careless disposal of burning cigarettes) occur at the same time the consumption of tobacco takes place. Manning, et al. (1989) estimated the annual property loss from smoking-caused fires at \$340 million (1986 dollars). Other deleterious effects (such as lung cancer) generally occur only after years of tobacco exposure. To the extent that tobacco use results in premature death, foregone future medical care use

and pensions may somewhat offset the higher medical costs associated with smoking (Rice, et al., 1986; Manning, et al., 1989). In terms of preventable disease, premature death and other costs that reduce the Gross National Product, smoking is estimated to cost the U.S. society over \$60 billion annually; however, it is extremely difficult to estimate the costs for an individual employer (Kristein, 1989). Over half of these excess costs are indirect health costs that would be expected to be recoverable in a relatively short time were smoking restriction and cessation programs implemented (Kristein, 1983; Kristein, 1989). Organizational policies to reduce immediate costs of smoking (such as fire danger and damage) require short-term decisions in the organization, but employers must determine whether it is less costly to invest in smoking cessation programs today or pay for employee health problems tomorrow when making long-term decisions about the costs of tobacco use.

For employers concerned about rising health care costs, tobacco use apparently serves as a marker for chemical dependency and psychiatric care utilization. A study of state employee health maintenance organization (HMO) enrollees revealed dramatic differences between tobacco users and nonusers in terms of admissions per 1,000 for chemical dependency (10 vs. 2) and psychiatric disorders (6 vs. 1). In addition, users had far more hospital days per 1,000 for chemical dependency (185 vs. 36) and psychiatric disorders (56 vs. 13). Among relatively younger employees who select HMOs, virtually all of the elevated utilization for tobacco users was due to chemical dependency and psychiatric admissions (Penner, 1989b). These findings not only support other evidence of the higher health care costs of smokers, but provide implications for the identification and screening of employees who abuse drugs.

A study (Penner and Penner, 1990) on fee-for-service plans found tobacco users had significantly higher utilization rates for all types of hospital admissions per 1,000 (124 vs. 76), days per 1,000 (800 vs. 381), longer average length of stay (6.47 vs. 5.03 days), higher average outpatient payments (\$122 vs. \$75) and higher averaged insurance payments (\$1,145 vs. \$762). However, age and sex distributions differed between users and nonusers, and there were no controls for other risk behaviors. Manning, et al. (1989) controlled for these factors and found a significant difference in health care costs between never and ever smokers.

Another issue that affects organizational costs is the nature of the labor market. Catalano, et al. (1986) hypothesized that when the cost of substitution of labor is low for the organization, and the labor market is relatively "slack," workers with lower productivity are more likely to be replaced. In a "tight" labor market the employer's cost of substitution may exceed the value of the added productivity gained by replacement, so less productive and more costly employees are better tolerated by the organization. This hypothesis leads to

the assumption that the added costs of tobacco use among employees is better tolerated by organizations as long as the demand for labor is high. On the other hand, changes in the labor market may spur employers to rethink their policies regarding employees who use tobacco, based on productivity and other economic costs.

Ethical Factors

A 1987 survey found that most companies restrict workplace smoking to protect employee health or comply with government regulations (Gottlieb, et al., 1990) and reasons differ from those given a decade earlier, when safety and productivity were most frequently cited. Some organizations, convinced that smokers use too much sick leave and cause health insurance premiums to rise too high, only hire nonsmokers or penalize smokers via high premiums for health insurance (Crenshaw, 1990). Although some job applicants support this stand, other persons seeking employment have filed complaints about this type of discrimination (Toufexis, 1986). Preferential hiring of nonsmokers poses a threat to affirmative action policies, as sociodemographic studies indicate that tobacco use is more concentrated among minority groups, including blacks (Pierce, 1989; Fiore, 1989). Additional ethical questions arise regarding the organization's role in promoting community health versus the employer's self-interest in "dumping" smokers on other organizations by refusing to hire or insure this population.

Ethical issues related to the restriction of tobacco use in the external environment often revolve around questions of coerciveness, distributive justice and the "slippery slope" dilemma. The boundaries of public jurisdiction over private actions and the lengths to which a governing authority may go to restrict risk behaviors raise concerns about social action for the purpose of health promotion (Leichter, 1986). Non-coercive methods, such as health education, are one way to achieve the objective to individual and social good brought about by improved health. However, when disease prevention efforts result in hiring discrimination or health insurance surcharges, some degree of social coercion exists. Pellegrino (1985) poses the ethical question: under what conditions is organizational coercion a morally defensible alternative?

One defense for the use of coercive response interventions is based on the principle of distributive justice; a smoker engenders costs not only borne by that individual, but by the organization. Costs such as lost productivity, higher insurance premiums and disability payments are shared, not paid solely by the smoker. To some extent, engagement in risk behaviors infringes on the rights of individuals with healthier lifestyles who must help pay for the consequences. The distributive justice perspective lends support to organizational responses such as financial disincentives for smokers (Pellegrino, 1985).

The distributive justice argument becomes more difficult and complicated when other equity issues are brought to light. For example, demographic studies indicate that tobacco use is becoming concentrated among the poor and minority groups. Economic penalties that coercively deal with smoking thus fall most heavily on those persons least equipped to make informed decisions about healthy lifestyles, and least able to pay. Hence, the inequity between classes becomes compounded as the costs of tobacco use are redistributed to fall more heavily upon the perpetrators (McGinnis, 1985).

The "slippery slope" argument proceeds as follows: once organizations mandate a more healthy lifestyle in one aspect of behavior, there is no logical end to this trend (Leichter, 1986). Opponents of discriminatory and prohibitive practices against tobacco users frequently point out the large numbers of persons who are overweight, do not control their blood pressure or cholesterol levels, or who exhibit other risk behaviors. If these persons are not penalized for their lifestyles, is it fair to penalize smokers? Ultimately, an organization's intervention into its employees' personal lifestyles is limited by employee compliance and upon societal perceptions supporting the fairness of that intervention.

A key component of organizational leadership is the role of organizational values. These value decisions are influenced by ethical considerations discussed above, and the industry's response to these issues. For example, a growing number of public schools prohibited not only workplace smoking in many facilities but restrict smoking by anyone, including employees and visitors, within the organization (Kansas, 1987). Values about prevention of smoking among children and youth contributed to this trend.

Cultural Factors

As scientific knowledge of the harmful effects of tobacco increased over recent years, tobacco use in the United States declined substantially in popularity. Twenty-five years ago the U.S. Surgeon General Luther L. Terry first warned the nation about the dangers of smoking. The ensuing quarter century resulted in "dramatic progress" against this health risk, according to the recent U.S. Surgeon General C. Everett Koop, who asserts, "In the 1940s and 1950s, smoking was chic; now, increasingly, it is shunned" (U.S. Department of Health and Human Services, 1989: iii-iv).

A crucial blow to supporters of "smokers rights" is medical evidence that exposure to tobacco smoke causes lung cancer and other diseases in nonsmokers. This finding strengthened the movement to ban smoking in many public areas besides the workplace (U.S. Department of Health and Human Services, 1989). Nonsmokers are more assertive about their objections to tobacco smoke as a

health hazard and an unpleasant nuisance, and attitudes favorable to smoking in public areas continue to decline.

Changing attitudes and understanding about the negative effects of tobacco affect the numbers and demographic characteristics of smokers. For a number of years, smoking prevalence has declined in the United States, but certain subgroups of the population show increased prevalence. Among young women who do not go beyond a high school education, smoking increased from about 39 percent in 1974 to 44 percent in 1985 (Pierce, et al., 1989). Rates of smoking among blacks are now higher than whites. As of 1985, smoking prevalence for blacks is 35.4 percent vs. 29.4 percent for whites, while the quit ratio (proportion of ever smokers who are former smokers) for blacks is only 32.9 percent vs. 47.1 percent for whites (Fiore, et al., 1989:51). Cigarette smoking now reflects class divisions, being more concentrated among the working class and poor. The influence of class is reinforced by studies indicating that educational level (a marker for socioeconomic status) is an even better predictor of smoking than gender or race (Pierce, et al., 1989).

Cultural change reduced the acceptability of tobacco use, especially in public places, and led to organizational responses due to pressure from nonsmokers and customers for smoking prohibitions. At the same time, the attitudes about health promotion emphasizing personal responsibility for disease prevention became a part of American cultural values and endorsed organizational efforts to reduce smoking in the workplace.

In summary, the impact of a changing environment vis-à-vis tobacco use influences organizations based on cultural, economic, legal, and ethical factors. Organizations respond in different ways to these factors, leading to a variety of outcomes. For example, changing cultural attitudes about the harmful effects of exposure to smoke led to legal restriction of smoking in the workplace, based on ethical concerns for the rights of nonsmokers. Soaring economic costs of health care and health insurance coverage spur employers to screen out high-cost, high-risk employees, particularly if the labor substitution costs are low.

An Organizational Model

Although Figure 1 depicts many of the interrelated factors associated with employer responses to employee tobacco use, these environmental factors merely describe events and issues, but do not explain the development of policies or interventions. A testable model based on these environmental factors would be far more useful, providing explanation as well as description. Given the current attention on other areas of employee risk behavior such as drug abuse (Verespej, 1988), a model that could be generalized and applied to employee risk behaviors other than tobacco use would be even more beneficial to organizational research.

The organizational model proposed in this paper is based on a typology developed by Scott and Meyer (1983; Meyer, et al., 1983; Scott, 1987:126), who classified various types of organizations based on the relative strength or weakness of their institutional and technical sectors. The choice of Scott and Meyer's typology to analyze employee smoking policies was due to the scope of its explanatory power and its generalizability to other employee risk behaviors. The model's scope arises from its technical and institutional dimensions, while the continuous nature of the technical and institutional variables increases the model's generalizability.

Technical activities such as markets, resources, tasks, and competition have most frequently been conceptualized as the organization's environment. Institutional analysis takes elements overlooked by the technical perspective, such as culture, norms, and professional and regulatory policies into account as well (Scott, 1987). Scott and Meyer (1983; Meyer, et al., 1983; Scott, 1987) define the institutional sector as characterized by rules and requirements to which organizations must conform if they are to obtain support and legitimacy from the environment. By contrast, the technical sector concerns the exchange of goods or services in a market. Technical organizations are rewarded for effective and efficient productivity; institutional organizations are rewarded for meeting government or professional requirements.

Although Scott and Meyer present a dichotomous description of technical and institutional sectors, these dimensions are actually viewed as separate and continuous variables. An organization may be high or low on both the technical and institutional sectors, or high on one and low on the other. Scott and Meyer's treatment of technical and institutional variables as continuous rather than dichotomous allows the researcher to examine organizations which cannot be classified as purely technical or institutional. As a result, this environmental model is generalizable because it can be applied to a wide range of organizations that serve as employers. Employee risk behavior is assumed to be part of the organizational environment, and the organization's response is predicted to vary given its location in the technical and institutional sectors. Tobacco use is only one example of employee risk behavior that is relevant to employers; applications to drug abuse and other risk behaviors abound. Generalizability is particularly useful to organizational researchers as it enables them to analyze an entire range of health and wellness costs and responses either separately or in their entirety.

The authors believe that the four environmental factors (legal, economic, cultural, and ethical) affect the organization's response differently as the technical and institutional settings vary. For example, the lack of definitive institutional constraints on employee smoking in a highly technical setting result

in the increased dominance of economic and cultural factors. If law and regulation (predominant in institutional settings) do not prescribe specific actions, costs and preferences exert greater influence in guiding decisions at all levels in the organization. Americans have accepted public smoking restrictions, devalued smoking as a social act, and supported their own and others' attempts at tobacco cessation. These trends have certainly influenced the leadership of organizations toward smoking restrictions where the health of nonsmokers may be at risk. Cultural trends are not strong, however, concerning the need for employers to provide cessation programs (Gottlieb, et al., 1990).

When the technical sector is weak, legal and ethical factors predominate. Among highly institutional organizations, compliance with industry values and government regulation determines survival rather than profits. There are legal and ethical reasons to prohibit workplace smoking in public areas, based on health hazards associated with this risk behavior. Ethical and legal considerations also encourage (and in some cases mandate) the provision of voluntary cessation programs to help employees overcome a difficult addiction.

Although Scott and Meyer (1983) focused on the classification of organizations, this paper extends their typology to incorporate the four environmental factors proposed by the authors. The authors propose a model of external environmental factors that influence organizations located in each of the technical and institutional sectors. The relationship of these four factors is shown in Table 2.

Table 2
Environmental Model and Typology of External Factors Influencing
Selected Organizations within Technical and Institutional Sectors

		INSTITUTIONAL SECTOR	
		HIGH	LOW
T E C H N I C A L		LEGAL/ECONOMIC:	ECONOMIC/CULTURAL:
		Utilities	Factories
		Banks	Retail trade
		Hospitals	
		Transportation	
S E L C T O R		ETHICAL/LEGAL:	CULTURAL/ETHICAL:
		Schools	Restaurants
		Religious groups	Health clubs

The first combination of factors, depicted in the upper left quadrant, is characteristic of organizations that are both highly technical and highly institutional. One dominant factor is legal, the other is economic, as organizational policies and practices rest both upon following law and regulations and upon the need for productivity. One example of this type of organization is the hospital, which is affected by accreditation standards and other institutional pressures, and also provides health care services sold in the marketplace, in which technical equipment and expertise are essential for production and image (Scott and Meyer, 1983).

The opposite extreme is the organization that is low on both the technical and institutional scales, in which the dominant environmental factors are cultural and ethical, as shown in the bottom right quadrant of Table 2. Changing public attitudes that affect the environment are different and distinct from formal rules and regulations (Meyer and Rowan, 1983). Restaurants, with few formal regulations other than sanitation and food safety, as well as little emphasis on technology (Scott and Meyer, 1983), are highly attuned to cultural changes, such as the objection of nonsmokers to exposure to tobacco smoke while dining. Nonsmoking customers are so numerous and assertive that restaurants may prohibit smoking altogether, or restrict it to designated areas.

The high technical, low institutional organization is affected primarily by economic and cultural factors. Organizations such as factories engaged in general manufacturing are typical of this sector (Scott and Meyer, 1983), shown in the top right quadrant of Table 2. The competitive production of goods or services is important to these organizations, leading them to employ technology to enhance efficiency, but cultural factors that influence employee social behaviors are also significant. The low technical, high institutional organization such as the public school (Scott and Meyer, 1983), depicted in the bottom left quadrant, is predominantly influenced by legal and ethical factors.

Table 3 further amplifies this model in the context of the organization's expected response to employee tobacco use. High technical and institutional organizations strongly influenced by legal and economic factors would be expected to develop restrictive policies on tobacco use throughout all organizational settings, including administrative offices and lobbies, not just in certain worksites where costs of fire or lost productivity lead to smoking prohibitions. Such organizations are subject to industry and governmental mandates discouraging tobacco use. The economic costs of tobacco use are perceived by these organizations as significant and important to reduce. Moreover, tobacco use would be perceived as detrimental to the organization's image, as in the case of hospitals.

Cessation programs would be provided to further employee compliance with these rules, to cut costs associated with tobacco use, and as part of a collective

Table 3
 Environmental Model and Typology of External Factors Influencing
 Selected Organizational Policies within Technical and Institutional Sectors

		INSTITUTIONAL SECTOR	
		HIGH	LOW
H I G H T E C H N I C A L	LEGAL/ECONOMIC:	Restrictive policies in all organizational settings based on mandates and image.	ECONOMIC/CULTURAL: Restrictive policies in the work-site when safety, productivity or consumer attitude is of concern.
		Cessation programs mandated by law, industry guidelines or collective bargaining agreements.	Cessation programs motivated by cost concerns and employee interest.
		Discrimination against tobacco users as laws, unions, industry guidelines, and the labor market permit.	Discrimination against tobacco users when these policies reduce costs and the supply of labor exceeds organizational demand.
	<hr/>		
S E C T O R L O W	ETHICAL/LEGAL:	Restrictive policies primarily motivated by welfare concerns such as exposure of children, and influenced by legal implications.	CULTURAL/ETHICAL: Restrictive policies motivated by employee and consumer preferences, supported by welfare concerns.
		Cessation programs rooted in organizational history of paternalism.	Cessation programs provided due to employee interest.
		Discrimination against tobacco using employees limited to non-coercive approaches such as educational programs.	Discrimination against tobacco users based on attitudes and values and limited to non-coercive approaches.
	<hr/>		

bargaining agreement in exchange for worksite smoking prohibitions. Discrimination against tobacco users in hiring or health insurance surcharges would occur only as permitted by unions and industry guidelines. However, in cases in which smoking is clearly a risk factor for occupational disease (such as lung cancer among asbestos workers) or in which the labor market is "slack" (such as nursing assistants) the organization would have economic incentives to discriminate based on tobacco use.

Organizations with low institutional and technical pressures, influenced predominantly by cultural and ethical factors, would be expected to respond quite differently to employee tobacco use. Restrictive policies would mainly arise from requests by nonsmoking employees and consumers, supported by ethical concerns about nonsmokers and cultural attitudes about the undesirability of tobacco smoke. Cessation programs would be provided as a "bottom-up" organizational response based on employee interest, not as a "top-down" regulatory mandate. Smoking policies would be non-coercive, such as allowing worksite smoking in designated areas and health education about the risks of tobacco.

Organizations high on the technical scale and low on the institutional scale would be dominated by economic and cultural factors. Restrictive tobacco use policies would be enforced in worksites where tobacco's effects on safety, productivity or consumer comfort would be of concern. Depending on the characteristics of the labor market, restrictions might be increased to discourage hiring or to penalize smokers, in order to reduce costs. In setting restrictions, the cultural norms of the organization would tend to prevail, for example, in a petroleum refinery where workers may not smoke in flammable chemical storage areas but are allowed to smoke in their own offices if they desire. Cessation programs would be implemented as a way to cut health costs and improve worker productivity, and to some extent to recruit and retain employees, not out of legal or ethical concerns. Discrimination against tobacco users would be driven by the economic costs of restrictive versus permissive interventions, and by the preferences of employees and customers.

Finally, organizations in the high institutional and low technical sector would be largely influenced by ethical and legal factors. These organizations would tend to be more altruistic and paternalistic, restricting tobacco use out of concern for employee welfare and as an expression of organizational values, such as teachers not permitted to smoke in public work areas as they are expected to set an example for their students. Cessation programs would be rooted in an organizational tradition of paternalism, included with other health education and self-improvement strategies. Discrimination against tobacco use would be non-coercive due to concerns about equity and fairness.

The model portrayed in Table 3 may be applied and tested to predict organizational responses to changing environmental influences regarding tobacco use. Although not every organization is expected to alter its responses based solely on institutional or technical sector characteristics, one could establish objective measures of selected responses and test how well the model predicts organizational responses. Competing and contradictory factors that complicate organizational responses could be explained.

For example, the commitment to a smoke-free worksite endorsed by the hospital industry is contradicted by the industry's tolerance of high rates of smoking among nurses. This contradictory behavior may be related to their location in the environmental model, so that although hospitals have incentives to reduce and even eliminate smoking across the entire organization, the shortage of professional nurses in the labor market (and their ability to form unions) limits the implementation of a comprehensive smoking ban. For the same reasons, hospitals would find it difficult to penalize employee smokers by charging them higher premiums for health insurance, due to collective bargaining (legal) and labor market (economic) constraints.

Economic, cultural, legal, and ethical factors could be identified and either quantitatively or qualitatively measured in terms of impact on the organization. In the above example, objective measures would include the shortage or surplus of nurses in the labor market, the existence and types of smoking policies the hospital chooses to enforce, and the presence of collective bargaining agreements.

As discussed earlier, this model is suitable for application to other employee risk behaviors and interventions, such as employee drug abuse. Organizational responses range from pre-employment, random or "for-cause" (suspected abuse) drug testing to employer-provided health insurance coverage for substance abuse and voluntary or mandatory employee assistance programs. High technical and institutional organizations must limit costs to remain competitive, and are also heavily regulated. These organizations (such as banks or utility companies) would be expected to act aggressively to discourage employee substance abuse through pre-employment and "for-cause" drug testing, but would not perform random drug testing except where allowed or required by law. Health insurance coverage for substance abuse would be limited to applicable governmental regulations or collective bargaining agreements (as this coverage is costly), but participation in employee assisted programs would be required for those suspected of abuse. As in the case of tobacco use, predictions can be made for organizations located in each of the four sectors of the model, and tested to determine whether the expected organizational response conforms to its actual policies about employee drug abuse.

Conclusion

The control of risk behaviors to reduce morbidity and mortality is a leading concern in public health, as is the protection of the public from hazardous exposure to tobacco smoke and fires caused by smoking. Disease prevention movements to restrict tobacco use are increasingly popular in society and in the workplace as a result. This paper discussed cultural, economic, legal, and ethical factors in the external environment and the organization's institutional and technical environment to predict organizational responses to employee tobacco use.

Opportunities to test this environmental model are abundant as organizations ban tobacco use altogether or institute a variety of other policies such as discrimination in hiring, differential health benefits for smokers and nonsmokers, cessation programs, and other employee incentives and disincentives. Organizational responses targeting employee risk behaviors are not limited to tobacco use, but extend to the abuse of alcohol and illicit drugs, and areas of wellness such as obesity, physical fitness, and blood pressure control. Models that explain and predict employer responses in the context of environmental influences contribute to organizational theory and research.

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Employee Health Benefits: Corporate Strategies for Cost Containment

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ABSTRACT

With health care costs increasing and a major portion of employee benefits attributable to health care, employers have turned their attention to a range of strategies for controlling costs. A typology of the employer role in employee health care is presented which suggests that cost containment strategies may bring increasing influence by the employer in the health care decisions of employees. Four roles for employers have been identified: (1) the Enabler, providing traditional health benefits, with increasing use of deductibles and copayments; (2) the Advocate, providing benefit and alternative delivery options (e.g., HMOs) with incentives for less costly choices; (3) the Mediator, providing programs which intervene in health care utilization decisions (e.g., second surgical opinions); and (4) the Provider, providing direct services at the workplace (e.g., screening and health promotion programs). Implications for employers, employees, and the health care system are raised.

Background

Employer payment for health insurance coverage is part of a trend underway since World War II toward fringe benefits. Historically, the provision of fringe benefits for employees was based on the premise that the employer had some social responsibility for the needs of workers outside the workplace, as well

as an obligation to adequately compensate them for services performed (Allen, 1969). With good paying jobs and economic prosperity, workers accepted non-wage benefits in lieu of higher salaries; unions bargained for these benefits; and employers viewed fringe benefits as a way of reducing wages while increasing productivity through the presumed effects of such benefits on workers. While the provision of specific benefits can vary, most employees today are given paid time off—vacations and holidays—and are covered by life and health insurance (U.S. Department of Labor, 1989).

The extent of health insurance coverage is seen in census data for 1987 which show that 71 percent of the insured population, 147 million persons, were covered by employee health care plans (Health Insurance Association of America, 1989). Despite an increase in the number of uninsured workers and a corresponding decrease in the number of persons with employment-related group health coverage since 1977 (Wilensky, et al., 1984), there is typically complete insurance for hospital care for most employees and their families. This evidence is confirmed by the Bureau of Labor Statistics annual national survey of firms with at least fifty employees in eight major industry categories; results indicate that 98 percent of employees with health care benefits were covered for hospital and medical expenses, x-ray and laboratory services, and mental health care (U.S. Department of Labor, 1989).

At the same time that health insurance has become a major fringe benefit, the costs of health care have risen dramatically. Total health care spending was more than \$500 billion in 1987, over 11 percent of GNP (Health Insurance Association of America, 1989). Employers are paying a larger proportion of employee benefits for health insurance coverage. A recent survey of over 1,600 employers indicated that average total medical costs per employee have risen from \$1,600 in 1984 to more than \$2,300 in 1988; 28 percent of the companies reported per employee costs of \$3,000 or more (Foster Higgins, 1988b). These costs comprise 9 percent of payroll, according to a U.S. Chamber of Commerce survey (Geisel, 1989).

Employer Responses

Coming to terms with these increasingly large expenditures, employers in business and industry have joined in organized attempts to contain health care costs and influence health policy and health services delivery. Since the early 1970s, the Health Task Force of the Business Roundtable has focused on issues related to health benefits coverage and design, and recommendations have been made for employers to control health care costs (The Business Roundtable, 1985). Meetings convened by the Center for Industry and Health Care of the Boston University Health Policy Institute and coalitions such as the New York

Business Group on Health, among others, have considered ways employers can help to improve the delivery of health care services while holding down costs. Private sector initiatives in health care have been the focus of several studies (cf. Friedland and Watt, 1983; Bergthold, 1988).

Coalitions of business and industry, formed to focus on health costs, benefits, and delivery issues (Goldbeck, 1984). Over 200 coalitions are estimated to be functioning (McLaughlin, et al., 1989) although only 125 responded to a recent coalition survey (Dunlop Group of Six, 1990). While most have undertaken cost management strategies, their structure and objectives may vary. McLaughlin, et al. (1989) propose two life-cycle models: a temporary employer-only coalition oriented to collective purchasing power, and a process-oriented broad-based coalition focused on education and working with other sectors (e.g., insurers, providers) to make the system more efficient.

It has been argued that business leaders participated in these various organizations with the "expressed purpose of restructuring the health delivery system" (Leyerle, 1984). Their motivation includes increasing health care costs, the importance of health care as a fringe benefit, increasing liability for health and illness of employees under Federal legislation, and the need to collect and maintain employee health care data for planning health care programs and policies.

Another way employers have promoted change in the health care system is by influencing state health policy. A 1983-84 study (Bergthold, 1986) found that government and business partnerships designed to control health care costs occurred more frequently in states with high business activity. Most often, there was a statewide commission for cost containment (although not necessarily rate-setting programs), as well as more HMO and PPO development. Within companies, changes in health policies and programs have been influenced most by the chief executive officer, according to more than one-fourth of those surveyed in a study of Fortune 500 companies (Herzlinger and Schwartz, 1985). Yet, findings from an earlier study of sixty-nine large corporations indicated less concern with health care benefits and costs (Sapolsky, et al., 1981), contradicting much of the literature and suggesting that widespread interest among top management may be more recent.

Today, it appears that much of the employers' concern about health care costs is being focused on cost containment strategies in the workplace; these activities include restructuring health benefits and establishing programs intended to control utilization of health services. This paper addresses the complex and varied strategies employers are using in their efforts to control health care expenditures and to structure employee incentives to bring about savings. A typology of the employer's role is proposed to describe the range of cost containment strate-

gies and the extent of employer involvement in the health and medical care of employees.

Typology of Employers' Involvement in Employees' Health Care

The typology consists of four roles: enabler, advocate, mediator, and provider. This perspective suggests a continuum of increasing employer concern with both the delivery of health services for employees and the health of those employees in ways that may exert increasing influence on employee health care decisions (Barr, 1987). The roles are not mutually exclusive, and any particular employer might be described by more than one role at the same or different times.

Table 1
Typology of Employer Involvement in Employee
Health Care through Cost Containment Strategies

EMPLOYER ROLE TYPE	EMPLOYEE HEALTH BENEFITS AND PROGRAMS	EMPLOYER CONTROL OVER UTILIZATION
ENABLER	<ul style="list-style-type: none"> • health insurance coverage for hospitalization and medical services • copayment and deductibles 	<ul style="list-style-type: none"> • traditionally, minimal • recently, indirect
ADVOCATE	<ul style="list-style-type: none"> • HMO options • PPO arrangements 	<ul style="list-style-type: none"> • advise on selection • select those providers expected to control costs and utilization
MEDIATOR	<ul style="list-style-type: none"> • managed care programs: second surgical opinion preadmission testing length of stay review case management discharge management 	<ul style="list-style-type: none"> • intervene to influence employee utilization decisions directly • influence provider utilization decisions indirectly
PROVIDER	<ul style="list-style-type: none"> • on-site health and medical services treatment (medication) diagnosis (screening, lab) prevention (health promotion/education) counseling (employee assistance program) 	<ul style="list-style-type: none"> • direct delivery of services at the workplace

In the ENABLER role, the employer makes available health benefits coverage for the employee, enabling workers to purchase health services and, thereby, enhancing access to care. The employer as ADVOCATE makes available alternative options for provider selection and the way health services are delivered and, at least implicitly, recommends these alternative sources of care or gives financial incentives to encourage choice of particular coverage options. As MEDIATOR, the employer makes available or requires specific managed care benefits and programs to intervene before or during utilization of services and potentially influence employee decision making. In the PROVIDER role, the employer makes available health services directly to the employee and is responsible for delivering care through medical and dental departments providing routine services and through special programs such as health screening.

ENABLER Role

The ENABLER is the traditional role of employers providing fringe benefits in the form of health insurance which enables the employee to pay for care. As noted above, the focus has been predominantly on hospital services, the most costly care. The underlying assumption for this employer role is that fringe benefits are a form of payment for work performed; there is an implicit exchange relationship between employer and employee. However, with increasing costs for health care coverage, this relationship is undergoing change.

The ENABLER role is being modified in at least two ways: more employers are promoting individualized selection of benefits by employees, and they are requiring increased cost-sharing by employees. The first mechanism is intended to reduce unnecessary premiums through flexible benefits and "cafeteria plans" which allow employees to choose the benefits package (health insurance for dependents, pension plan, etc.) most suitable to his or her own needs and family circumstances (Fox, 1984a; Ellis, 1986). In a recent national survey of 793 firms with 1,000 or more employees (Foster Higgins, 1988a), 22 percent offered a choice in benefit levels including exchange for other nontaxable benefits, up from 18 percent in 1987. Employers are instituting such plans both to contain costs and meet the diverse needs of their workforces.

The other change in the ENABLER role is an attempt to influence employee utilization of services through cost-sharing for health care expenditures in the form of increased employee deductibles, copayments, and contributions to premiums (DiPrite, 1977; Fox, 1984a; The Business Roundtable, 1985; The Business Roundtable, 1987). In 1988, 51 percent of employees paid no contribution to premium; this is a decrease from 1985 when 61 percent of workers had benefits fully paid by the employer (U.S. Department of Labor, 1989). Most major medical plans require cost-sharing, and increasingly employees with basic

hospital coverage also must pay a deductible and coinsurance (Jensen, et al., 1987). In a survey of over 1600 employers, two-thirds required coinsurance for hospital inpatient services, and a majority (60 percent) reported increasing the amount of the deductible in the past ten years (Foster Higgins, 1988b). The trend toward self-insurance in companies is likely to reinforce these shifts because more self-insured plans require employee cost-sharing up front than do traditional insurers. The assumption is that employees use fewer and less costly services if faced with more out-of-pocket expenses (Herzlinger and Schwartz, 1985; Manning, et al., 1984).

These modifications in the ENABLER role are intended to hold down costs by tailoring benefits to employee perceived needs or by increasing employee payment for services. Yet, the coverage enables employees to select health benefits and services with relatively little direct influence from the employer, although the number and variety of options offered may enhance or restrict employee use of services. Further, it has been argued that in real dollar terms deductibles have not increased very much since 1981, and that limits on employees' out-of-pocket costs and increases in maximum benefits can help to minimize the effects of cost-sharing (Jensen, et al., 1987).

ADVOCATE Role

As the ADVOCATE for employees, the employer is in a position to negotiate health benefits coverage and to select and offer different health care delivery options. While federal legislation has thrust employers into this role, setting conditions under which the health maintenance organization (HMO) alternative must be offered, it is the employer who decides which ones to offer. To select health services alternatives, the employer must evaluate options including at least four types of HMO models (staff, group, independent practice association, and network), variations of the preferred provider (PPO) model, and numerous hybrid health care delivery and financing mechanisms with combinations of providers, covered services, and reimbursement schemes (Spies, et al., 1984).

Employer interest in the HMO movement has been evident since its beginning. A 1980 national survey of large corporate employers (Harris and Associates, 1982) found companies generally favorable to the HMO concept. Availability of the HMO option has expanded along with support for HMOs, both in attitudes among companies which offer HMOs and in the market penetration in these companies (Health Research Institute, 1986). Despite sustained growth nationally, companies vary in the extent of HMO coverage. According to industry surveys, 62 percent (Foster Higgins, 1989) to 70 percent (Hewitt Associates, 1989) of employers offer the HMO option. HMO enrollment is reported to be

19 percent of employees nationally (U.S. Department of Labor, 1989); 39 percent of eligible employees in smaller firms (less than 1,000) selected the HMO compared to 29 percent in larger firms (Foster Higgins, 1989).

A more recent option is the preferred provider organization (PPO), a strategy which includes financial incentives for the employee to choose specific providers recommended through the employer's health plan. Corporations may specify the components of the PPO plan to be offered, such as primary physicians as gatekeepers for specialists. Only 1 percent of employees nationally were covered by PPOs in 1986; by 1988, this figure had risen to 7 percent (U.S. Department of Labor, 1989). The percentage of employers offering a PPO has doubled from 15 percent in 1986 to 31 percent in 1989 (Foster Higgins, 1989).

This wide range of coverage options has given the health benefits manager new responsibilities vis-à-vis the employees (Fox, 1984b). As one manager remarked about the HMO offered by her company:

I used to make sure the benefits were paid; now, I have to make sure the services are provided and that the employee is satisfied. If they don't like something, they call me about it and expect me to take care of it. (Personal communication, 1985.)

Presumably, offering a choice and incentives for choosing less costly options engenders an implicit trust that the employer has investigated the options and is offering those which can be expected to provide high quality care as well as less costly services (Fox, 1984a). Employers' legal liability for selection of providers is being established as case law accumulates (New York Business Group on Health, 1990a). The utilization reviews required in most HMO and PPO plans recognize that efficiency includes both quality and cost.

Increasingly, employers and consumers are being urged to "buy right," a strategy on the part of the purchaser of health care benefits which rewards efficient providers (McClure, 1985). This strategy assumes an informed, aware consumer who must be able to identify more efficient providers, has an incentive to choose them over others, and will evaluate the different options before deciding about the purchase and utilization of health services. The employer as ADVOCATE can provide the necessary information to influence employee selection of options. Some evidence exists which suggests that employees do not necessarily choose the benefits option with the greatest coverage and that they are willing to forego some benefits to save on premium expenses, even when the additional benefits were a good buy (Farley and Wilensky, 1982; Feldman, et al., 1989). These findings and the literature on enrollee choice of HMO models (cf. Barr, et al., 1983) point to the importance of assessing the value of different options for employees.

MEDIATOR Role

In the new role as MEDIATOR for health and medical care, employers are offering, or even requiring, a variety of benefits and programs to intervene in the delivery of services by attempting to directly influence employee utilization decisions (Fox, 1984a), especially about hospitalization. As the focus shifts from cost control to cost management, specific strategies include: second surgical opinion; preadmission certification and preadmission testing; individualized management of complex or chronic cases; hospital review for length of stay and, in some cases, appropriateness of procedures; alternative services such as ambulatory surgery for specified procedures and home health care, hospice care, and long-term care as substitutes for hospitalization. These strategies include reviews of both medical decisions and benefit incentives.

The most widespread of these programmatic strategies for managed care are second surgical opinions, hospital preadmission certification and testing, and ambulatory surgery. Reports indicate that from 50 percent to 98 percent of companies surveyed pay for second opinions, and the proportion making second surgical opinions mandatory in order to receive full benefits is increasing (Chollet, 1984; Taylor, 1985; Johnson and Higgins, 1986; Health Research Institute, 1986; The Business Roundtable, 1987; Hewitt Associates, 1989). The U.S. Department of Labor (1989) found that payment for second surgical opinions increased from 50 percent of employees in 1985 to 59 percent in 1988. Of the more than 1,600 U.S. firms in the Foster Higgins (1988b) survey, 73 percent covered second surgical opinion; 68 percent included precertification of elective admissions; and 49 percent included concurrent review of hospital services. Similarly, another industry survey of nearly 1,000 companies of varying sizes found that 67 percent required hospital precertification (Hewitt Associates, 1989). In the U.S. Department of Labor (1989) study, 43 percent of the employees were covered by plans which included an incentive for prehospitalization testing. Incentives for ambulatory surgery include higher payments for use of outpatient rather than inpatient facilities. Such incentives were reported by nearly two-thirds of the companies in 1985 compared to only 27 percent in 1983 (Health Research Institute, 1986). Later reports indicated that 55 percent of the companies surveyed offered a financial incentive for outpatient surgery (Hewitt Associates, 1989), 71 percent encouraged using ambulatory surgery facilities (Mercer-Meidinger, 1985), and 86 percent offered coverage for ambulatory surgical centers (Johnson and Higgins, 1986). These varying estimates reflect, in part, different size companies and samples.

Insurers are developing programs to help employers control costs (Anderson and Studnicki, 1985). Over three-fourths of Blue Cross and Blue Shield

plans offer "managed care" programs (Blue Cross and Blue Shield Association, 1986). A 1985 survey showed that the most frequent component of these programs is second surgical opinion, reported by 82 percent of the plans surveyed. Mandatory ambulatory surgery for certain procedures was reported by 62 percent of the plans, and preadmission testing was reported by half the plans. Over half (57 percent) included preadmission and/or concurrent length of stay assignment, and some included discharge planning and high claims case management, with components often tailored to specific employers. In each case, the managed care system is structured to intervene and potentially alter a course of care deemed inappropriate. For example, in the California preadmission review program, the

. . . cost-containment strategy relies on early intervention as an opportunity to evaluate more appropriate treatment alternatives before expenses are incurred. The second surgical opinion program screens certain elective surgical procedures to verify their medical necessity and to identify alternatives, when appropriate. (Health Care Management Systems, no date).

In some programs, the employee is free to make his or her own decision as long as the managed care procedures are followed, but others make approval a condition for full coverage and benefits. Penalties imposed on employees take the form of denial or reduction of benefit payments (either a flat fee or a percentage of costs). Alternatively, incentives, extended benefits, or bonuses may be offered for compliance with the elements of a managed care program. Some utilization incentives are financial; others are "red tape incentives" (McClure, 1985), such as requiring prior authorization for hospitalization and other reviews which may delay or discourage hospital admission.

With these programs, the employer has adopted an approach which requires a review mechanism before and, often, during a health care episode, thereby "mediating" between the employee and the provider of care—the physician or hospital. This strategy introduces a new dimension of employer/employee relations by placing the employer (or an agent of the employer) in the role of arbiter and advisor about specific medical care decisions. Awareness of the MEDIATOR role can be seen in American Telephone and Telegraph Company's program for preadmission review and mandatory second surgical opinion (Anonymus, 1986). The program seeks to build a "partnership" between employee and company to control medical expenses by managing health care costs, and a health services consumer advocate is available to act as an "intermediary" and help employees obtain and evaluate information.

PROVIDER Role

The most direct role for the employer in the health care of its employees is as the provider of services. Although this role is not a new one, it has been increasingly expanding to provide a broader range of services. R. J. Reynolds tobacco company built and operates a health plan for basic medical and dental care with hospital backup included in an HMO arrangement (Tudor, 1977). Nestle Enterprises, Inc. has recently opened a family medical clinic near its corporate headquarters to serve 7,300 employees, dependents, and retirees; intended to save on health costs for the company and improve access for employees, the clinic provides full primary care including x-rays, laboratory tests, and prescriptions (Schachner and Lenckus, 1990). Steelcase, Inc. has expanded its long-standing medical service to a "mini-hospital" center which treats 75 percent of employee health care needs (Soule, 1986). Other employers operate on-site medical departments to provide a range of services, with a few providing preventive dental care at work; company medical directors have expanded their efforts to address employee health care needs (Schofield and Egdahl, 1977; Friedland and Watt, 1983; Walsh, 1984; 1987).

Employee assistance programs (EAPs) provide counseling, primarily for alcoholism and drug abuse problems, to employees in two-thirds of Fortune 500 companies surveyed (Hollander and Lengermann, 1988) and nearly half (46 percent) of the companies in the Foster Higgins survey (1988b). One program includes preadmission testing provided at the worksite by Continental Illinois National Bank and Trust Company of Chicago for employees scheduled to enter area hospitals (Powills, 1985). Under the program, a technician comes to the bank several times a week to perform lab tests (e.g., throat cultures, EKGs, urinalysis, blood tests) following orders of the employees' physicians. Disability management programs provide on-site rehabilitation services following surgery or injury, as well as testing, tutoring, and rehabilitation counseling in the workplace (Anonymous, 1987). A growing number of companies provides prenatal care and education to avoid costly premature births. In addition to prenatal classes, First National Bank of Chicago provides weekly visits by an obstetrician/gynecologist to the worksite to perform prenatal exams and routine gynecological care (Swerdlin, 1989).

A more widespread effort by employers is the provision of preventive services through health promotion and wellness programs (Kiefhaber and Goldbeck, 1984). Such programs are intended to influence employees to change their lifestyles and adopt healthy behaviors (Conrad, 1987; Conrad and Walsh, 1989). Results of a national survey indicated that 65 percent of the over 1300 companies surveyed offered one or more wellness programs, such as health risk

assessment, stress management, hypertension screening, smoking cessation, exercise and weight-loss classes, and nutrition education (Fielding and Piserchia, 1989). A recent industry survey (Hewitt Associates, 1989) found that 80 percent of the companies sponsored at least one wellness program for their employees; most frequent were smoking cessation (63 percent), weight control (48 percent), cholesterol screening (45 percent), and stress management (44 percent). In the past five years, 1,500 employers representing 1,000,000 employees nationwide have joined Wellness Councils in 40 communities in 25 states to promote wellness at the worksite (Wellness Councils of America, 1990).

In the PROVIDER role, the employer determines not only what services will be offered but also how and by whom they will be delivered. On a continuum of involvement in employee health care decisions, this role has the potential for the most control by the employer (Green, 1988; Conrad and Walsh, 1989). It makes directly available services which are free or less expensive than in the community and structures incentives (including reduction of copayments, deductibles, or premiums) to encourage healthy behaviors and lifestyle changes (New York Business Group on Health, 1990b). As such, it may constitute a separate role of change agent (Warshaw, 1986).

Implications of the Role Typology

This review of strategies employers are using to control health care costs and the typology showing the roles of employers as they become increasingly involved in their employees' health and health care suggests several questions for consideration.

Which employers are likely to be in these different roles? Few studies report other than aggregate data about the respondents. Many surveys focus on larger firms and those likely to be more attuned to health care issues, so that results may overestimate the cost containment activity in business and industry (Jensen, et al., 1987). However, recent surveys of employee health benefits give some evidence about this question.

Foster Higgins & Co., a private benefits consulting firm, has conducted annual national surveys distributed through business coalitions to their membership. Although not randomly selected, the 1,500 to 2,000 responding organizations provide a description of firms most likely to be interested in cost containment and to be active in changing health benefits. Further, they include a broad representation of size (number of employees), type of industry, and region of the country. Relatively small employers with less than 500 employees accounted for well over one-third of the respondents, and 10 percent to 14 percent had 10,000 or more employees; the firms were predominantly in manufacturing (29% to 34%), with smaller proportions in technical/professional

services, financial services, health services, and other industries (Johnson and Higgins, 1986; Foster Higgins, 1988b).

The results for different categories of firms suggest some patterns of cost containment activity (Foster Higgins, 1988b). Both the ENABLER and MEDIATOR roles appeared to occur most often among companies in the south central region and in the transportation, financial, and energy industries. A larger proportion of firms in these categories required coinsurance, had increased the deductible, and included second surgical opinions. HMOs were offered by a larger proportion of firms in the Pacific region, where there has been greater availability of HMOs, and in the utilities, transportation, and communications industries, suggesting geographic location or characteristics of companies likely to be in the ADVOCATE role. Wellness, fitness, or health promotion programs, indicative of the PROVIDER role, were offered by a larger proportion of firms in the north central and Pacific regions and in the consumer products industry (Johnson Higgins, 1986). Because of the small number of firms in some of the industry categories, these data should be regarded as preliminary and suggestive of the need to examine these types of variables in future research. Although firms with the greatest number of employees were more likely to include some of the cost containment features, the only clear pattern by size is that companies with fewer than 500 employees were consistently least likely to do so.

The Bureau of Labor Statistics survey (U.S. Department of Labor, 1989) reported findings by employee category. Professional/administrative and technical/clerical workers were subject to more stringent incentives to control hospital use than production and service workers, although there was no difference in second surgical opinions, provided for 59 percent of all plan participants. The results suggest the possibility that companies with a predominantly production workforce may be found less often in the MEDIATOR role. These companies also may be more unionized, with the unions taking a MEDIATOR role in employee health issues.

The evidence suggests that some employers are becoming "corporate rationalizers," Robert Alford's (1975) term for those interest groups in society that emphasize a more rational, efficient, cost conscious, and coordinated health care system. Indeed, employers may be taking the lead, along with government, in efforts to control health care costs and regulate the delivery of services to maintain quality of health care. Yet, the variations in adopting cost containment strategies suggest different sources of motivation arising both within and outside the organization. For some companies, the corporate culture may support a more active role for employers, for example, in the provision of wellness and health promotion programs which can convey more immediate and direct concern for the welfare of employees. Other companies may react to external pressures on

employers as major purchasers of health benefits to join in helping to reduce national health care expenditures. The similarity of programs, for example, the adoption of mandatory HMO enrollment for new employees in the airlines industry (Rundle, 1984), suggests that corporate response to rising health care costs may reflect uncertainties and contingencies in a particular field (DiMaggio and Powell, 1983).

How do cost containment strategies affect employer/employee relationships? The cost containment strategies reviewed suggest that the employer's role in employees' health care varies from enabler of health benefits to provider of direct health services, with the potential for increasing control over employee health care decisions. These expanded roles for employers raise questions about how employers can ensure that employees understand the options and choices offered and have the opportunity to make their own decisions about the extent of employers' responsibility for employee health, and about potential adverse effects of cost containment strategies.

As part of the ADVOCATE and MEDIATOR roles, some employers have adopted a consumerist perspective aimed at helping their employees become more informed health care consumers and active decision-makers in their own health care. Companies such as the American Telephone and Telegraph Company, Weyerhaeuser, Owens-Corning Fiberglass Corporation, and Quaker Oats provide information for employees to consider when making health care decisions and selecting available choices (Alexandre and Barter, 1985). One study identified 230 companies with "prudent purchase" programs intended to educate employees about health care benefits and alternatives, promote consumer responsibility, and motivate efficient use of the health care system (Stone, et al., 1985).

Cost-consciousness is applicable to several decision points: the choice of benefits coverage or health plan, the choice of specific provider, and the decision to use specific services (Wyszewianski, et al., 1982). While employers are structuring these decisions for their employees, they also may be shaping the decision making through the information they make available to employees. A recent study (Hibbard and Weeks, 1987) found that, contrary to expectations, exposing consumers to the costs of health insurance and services did not result in greater cost-consciousness by shopping for lower-cost services and more efficient health plans among most respondents.

An important issue is the extent to which structural incentives for cost containment, be it lower copayment for using preferred providers, or full benefits coverage for having a second surgical opinion, are directive or coercive (Stein, 1986). A positive perspective on this employer activity might suggest that business and industry, in their new roles vis-à-vis employees and health care, are

acting not only to lower their costs for health services; they also are promoting effective change in the way health care decisions are made and medical care is delivered. Perhaps because employees themselves are concerned about health care expenditures and confused over the proliferation of various service options, they may be more responsive to these employer initiatives. Surveys of 17,000 employees in 17 large corporations (EBPR Research Reports, 1985) found that 80 percent of the employees were willing to take a number of different actions to save money for themselves and their employers. These included preadmission testing, outpatient surgery, and obtaining second surgical opinions, all elements of the MEDIATOR role for employers. These programs may help individuals make sense of a potentially confusing health care system by providing information, perhaps where none was available. Programs such as second surgical opinions may function to "legitimize doubt" and help consumers make more informed decisions about surgery.

A more critical view concerns the employer's role as PROVIDER and suggests that the corporate sector may be adopting a "social control" stance through health promotion efforts (Kotarba, 1983; Becker, 1986; Conrad, 1987; Conrad and Walsh, 1989). According to Green (1988:479-80), observers have expressed concern about the thin line between employers' helping workers change unhealthy behaviors and attempting to control workers' behavior off the job through Employee Assistance Programs (EAPs) and wellness programs. Not only are such programs intended to contain health care costs and improve worker performance; they also may signify that it is appropriate for employers to be involved in the lives of their employees outside the worksite and that employees bear the responsibility for their own health, thus obscuring the employer's responsibility for a healthy workplace. Conrad and Walsh (1989) have similarly argued that these employer-sponsored programs signal a new corporate health ethic; while it has the potential for enhancing employee health, this ethic also extends the role of the corporation into the lives of employees outside the workplace and expands employer control over the structure of work.

A *New York Times* article (Kleinfeld, 1986) entitled, "When the Boss Becomes Your Doctor," argued that companies "have instituted health care programs that intrude on the traditional ways in which Americans tend to their illnesses." Critics, the author suggests, contend that rather than simply eliminating unnecessary procedures and lengthy hospital stays, these programs cut into some services that should be provided. Companies can exert their influence on employee health care decisions by refusing to pay for what are deemed "unwarranted" services, by incentives for alternative services, and by selecting HMO, PPO, or other plan coverage to offer employees. Little evidence is available to test these notions. However, case law is accumulating on the issue of the

extent of employers' liability for controlling employees' health care "choices" (New York Business Group on Health, 1990a). Employers in the future may be faced with liability for adverse effects of cost containment strategies which delay, deny, or modify treatment.

Increasingly, employers are expressing concern with the quality of care their employees receive. This emphasis can be seen in both the selection of alternative delivery systems in the ADVOCATE role and the managed care strategies which are part of the MEDIATOR role. In determining which HMOs and PPOs to offer, employers are looking at utilization data and practice patterns for providers and comparing them to others to determine cost savings as well as to examine quality of care. Similarly, managed care programs review the decisions of hospitals and physicians to hospitalize patients, to perform surgery on an inpatient or ambulatory basis or not at all, and to carry out certain tests.

These cost containment strategies may affect not only employees' decisions about the use of services but also patients' attitudes toward providers. The traditional patient-physician relationship has been eroding as a result of a number of factors (Haug and Lavin, 1983). By intervening in utilization decisions, employers may be contributing to this trend, especially if the reviews cast doubt on providers' recommendations, possibly weakening patient trust. By educating employees to be "prudent purchasers," the employer may be encouraging them to be more aggressive in questioning providers and more assertive toward the health care system. As benefits choices proliferate, employees may become more dependent on employers to sort through these options, make recommendations, and hear complaints about the way health services are delivered.

The expanding roles for employers outlined in the typology are dynamic and evolving. In the next several years, legislation and court decisions may make clearer how much latitude employers will have regarding their employees' health and health care. At the same time, the ways that employers are taking these roles may in turn exert changes on the health care environment.

Policy Issues

As these trends in employer initiated and sponsored health care continue, it will be important to assess the extent to which employers adopt cost containment and cost management strategies and to observe the patterns in employers' efforts as they respond to pressures to alter the structure of health benefits. The analysis of variations in the employer's role in employee health care highlights several key policy issues confronting employers:

- *How employers decide about employee health benefits*—the extent to which compensation decisions incorporate employee choice or become mechanisms for controlling employees; whether employers should be free to decide about the

availability and extent of benefits coverage for costly procedures (e.g., heart transplants) and catastrophic illnesses (e.g., cancer and AIDS); the patterns of growth and acceptance of cost containment strategies among employers;

- *External pressures on employers for cost containment*—the relationship between employers and insurers, including pressures to institute or change programs intended to control health care expenditures; the effects of federal and state mandated benefits (e.g., alcoholism and mental health), as well as employee selection and choice, on employer efforts to control costs; the ability of self-insured employers to offer benefits and control costs under exemptions of the ERISA laws which stipulate requirements for health plans; and

- *Employer responsibility to assess the effectiveness of cost control strategies*—whether cost containment programs are having the intended effects (e.g., second opinion programs reduce surgery without compromising health status); instituting evaluation research studies to assess the outcomes of managed care programs; and determining other effects of health care cost containment strategies on the company (e.g., reduce absenteeism, improve morale).

As employers become more involved in employee health care, an important focus for future study will be the shifting control structure in health care. The roles of employers and employees (including unions), as well as providers, insurers, and government should be examined to determine how their varying perspectives and incentives can be balanced to provide high quality care while controlling costs.

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Evaluation of a Commodity Supplemental Food Program among the Aged Poor in Detroit*

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ABSTRACT

This article reports on the evaluation of a demonstration program in which elderly residents of the Detroit area were provided foods through the Commodity Supplemental Food Program. Organized in a short period of time, the evaluation of this demonstration program had to take into account the realities of program needs, and lack of funding for the evaluation. Elderly participants in the Focus:Hope Food for Seniors

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Program were interviewed after a year of receiving surplus foods. Little change was found in social-psychological and health variables, but the results do suggest that providing the food eased ongoing economic hardship.

Introduction

This study evaluated a Commodity Supplemental Food Program (CSFP) among the aged poor in Detroit. The program uses commodity foods supplied by the Federal Government to provide nutritional supplementation to those who otherwise could not afford adequate diets. As such, this type of ameliorative program (Kallen, Miller and Daniels, 1968, 1989) does not solve the underlying structural causes of the problem; however, it does reduce some of the human misery associated with dysfunctional social conditions, and consequently adds to the social good.

The process of the evaluation effort, as well as the results, are important because both the methods and the findings reflect experience in organizing an evaluation of an important social experiment in a very short time frame. While there is an extensive literature on evaluation of social intervention programs, (cf. for example Struening and Guttentag, 1975; Burstein, Freeman and Rossi, 1985), there is limited information regarding organization of a practical evaluation in response to an immediate need. Thus, experience with this process is presented.

The project had its beginnings in an almost casual conversation between two of the authors (D.J.K. and A.D.) and staff of Focus:Hope. Focus:Hope is a major civil rights, food distribution, and job training program in the Detroit, Michigan area. The organization traditionally has taken a strong community role in advocacy for the poor and disenfranchised. As part of its commitment, it conducts a job training program aimed primarily at preparing young men and women from impoverished areas of Detroit for specialized industrial jobs which have strongly competitive wage levels. It also has developed extensive preschool programs which emphasize both the cognitive and intellectual development of the young child and promote a return to school or work for the parents. Prior to the initiation of the Food for Seniors Program, Focus:Hope was already one of the largest distributors in the country of supplemental foods to women and children. It was this program and its ongoing success which prompted them to expand to another needy population, the elderly in the local community.

The authors knew Focus:Hope from earlier contacts regarding the effects of childhood malnutrition and the need to ensure that children in America had adequate food for growth and development (Focus:Hope, 1982). During a conversation about childhood malnutrition, Focus:Hope staff members mentioned that they were about to begin a demonstration program in which commodity

food supplements would be distributed to the elderly poor in the Detroit area. Sponsored by the U.S. Department of Agriculture, the commodities are commercially produced by private contractors for the USDA label through competitive bids. Prior to this demonstration, only pregnant women and young children were eligible to receive food from the Commodity Supplemental Food Program (CSFP). In 1982, the Department of Agriculture funded three small pilot programs which would distribute similar commodities to the aged poor. Focus:Hope would operate one of these three programs.

The authors agreed with Focus:Hope that the program had great social importance, in addition to meeting the humane needs of Detroit's elderly, and indicated willingness to help evaluate the pilot program. Although the investigators were experienced in research design, and knowledgeable about the effects of malnutrition in childhood, their experience with the aged was limited. However, the social importance of the program suggested that time would be well spent in determining how much impact the program had on the elderly it served.

The design of the evaluation reflected the realities of the research situation. There was no money and no time. The Department of Agriculture did not provide funds to evaluate the program. While Focus:Hope did not have dollars initially, they did provide an enormous amount of support for the evaluation in terms of staff time, keypunching, and other service. C.R. directed the fieldwork. Following the preparation of the data tape, we received limited funds for data analysis both from Focus:Hope and from a Basic Science Research Grant from the College of Human Medicine at Michigan State University.

The plans for the demonstration were well underway at the time the investigators agreed to help with the evaluation, and the program had to begin whether or not the project was ready to gather research information. The initial research design had to be formulated quickly. A traditional "before" and "after" assessment seemed most appropriate. It was felt that obtaining information from the people the program would serve before they received any food, and again a year after they started in the program, would be important. However, the distribution of food to the aged poor could not wait for the researchers to do a literature search and prepare a sophisticated research instrument. There were about three weeks from the time the decision was made to proceed with the evaluation to the time data collection had to begin.

The lack of funding and the low literacy level of the elderly population to be served meant that the study would have to rely on volunteer interviewers, rather than on paid professional interviewers or on a paper and pencil questionnaire. This reliance on volunteers, in turn, meant that the interview itself had to be easy to follow, self-explanatory, and have a good deal of face validity. Interviewers needed to be able to obtain the data easily, and without tiring the

elderly respondents. At the same time, it was necessary to obtain data in several content areas which could be affected by an increase in the quality and quantity of food which the elderly person had available.

The Food for Seniors Program

For local use, Focus:Hope named its CSFP elderly pilot program "Food for Seniors." There are two major aspects to the program: the receipt and use of food by the elderly poor, and the process through which it is distributed. Potential recipients are nominated by community agencies in the areas in which they live. These agencies also provide an extensive network of volunteers who assist the elderly in taking part in the program. In order to be eligible for the program, the elderly recipient has to meet a means test for participation.

The commodities package is designed to help the senior meet basic nutritional needs, supplementing rather than replacing the person's diet. In 1982, when it began, the Food for Seniors Program provided \$25.00 worth of food "at a federal cost of \$9.55 in commodities, plus 15% of that amount for local administration . . . satisfying 100% of protein needs and other key vitamin and mineral requirements . . . Included in the supplements are evaporated milk, instant milk, canned meat, vegetables, fruits and fruit juices, egg mix, farina, peanut butter, dry beans, instant potatoes and cheese" (Focus:Hope, 1983, p. 1). The commodity distribution centers also provide educational videos on nutrition and cooking, as well as interesting recipes for the commodity products. The participant has a choice of having a package of foods delivered by a program volunteer to his or her home each month, or going to a distribution center to select items in much the same way as one would at a supermarket. Elderly participants who are unable to go to a center themselves may have someone else pick up the food for them. They may also receive a ride to the center from a volunteer. Thus, the process of food distribution can have its own benefits through the interaction and social support provided by the volunteer program and through making trips to the commodity distribution center. Many of the seniors in the program have very limited mobility outside of their home due to the infirmities of age, lack of transportation, or fear of their neighborhood.

In the first year of the program, 1,600 elderly poor were served. Within six months of the start of the program, there was a waiting list of 8,600 additional eligible persons.

The Interview Protocol

The research strategy used was straightforward. The goal was to obtain relevant information as quickly as possible in a form in which volunteer interviewers

would be effective. Very little pilot testing was possible due to the restrictive time frame. However, about twenty pilot interviews were conducted with volunteer respondents. The initial data collection booklet was revised and a finished version was printed by the Focus:Hope staff using their own printing facilities. A high quality booklet containing over 200 closed-ended questions was produced in record time. A series of research questions based partly on prior experience, partly on knowledge of the program, and partly on the availability of scales used in other studies was developed. The interview concentrated on the following areas:

A. Demographic data: The evaluation form included relevant demographic data, such as age, race, sex, and living situation. Much of these demographic data came from a basic data form which Focus:Hope uses for its own records, while additional demographic data were coded from the eligibility certification form.

B. Physical health and mobility: An energy model from third world studies of malnutrition in children was adopted: give them food, and increase their energy to do things (Kallen, 1971, 1972). Hence, respondents were asked about physical movement through the community, participation in clubs and organizations, and other activities which might be affected by an increase in available energy.

Furthermore, this is an aged population, many of whom are expected to have health problems. Poor health is exacerbated by poverty and poor nutrition. Chronic illness and other health problems might have an impact on activities of daily living. The existence of crippling arthritis, for example, might limit mobility even if the recipient had increased energy resulting from an improvement in diet. Therefore, questions were included about the recipient's physical health and any chronic illness. In addition, respondents were asked about any mobility problems, vision, or hearing deficits.

C. Mental health: A number of studies have indicated that both poverty and age are associated with poorer mental health. The Midtown Manhattan Study (Srole, Langner, Michael, Opler and Rennie, 1962) provided the clearest evidence of this. In the original study, interviews were rated by psychiatrists to determine the respondents' level of mental health. In the twenty-year follow-up, a multiple choice scale which correlated highly with the psychiatrists' ratings was developed, (Srole, 1975). This multiple choice scale was included to measure mental health among this aged population.

D. Ties with the community: The mere fact of participation in the program, and contact with volunteers, should impact on the elderly person's ties to the community, and should reduce the sense of isolation which many elderly feel. The Srole (1956) anomie scale was used to measure the extent to which they

felt tied to the society in which they live. Questions on social networks and on life satisfaction were also included.

E. Patterns of food consumption: The commodity distribution program could reasonably be expected to make a difference in what the participants ate. Hence, a series of questions about dietary patterns and preferences were included.

F. Economics: By definition, this is an economically deprived population. It was felt, therefore, that it was important to ask about the adequacy of income, and about patterns of spending.

G. Other areas: Finally several questions were asked based on speculation and the interests of the investigators. For example, in other studies questions about physical attractiveness were useful in explaining certain types of behavior (Kallen and Doughty, 1984). This self-perception of attractiveness had been studied in college students, but not in an adult population, so questions about it were included in the interview. At the same time, knowing whether or not the respondent felt he/she was underweight, about the right weight, or overweight, and whether this self-perception changed with participation in the program, was important in its own right.

The Research Process

Volunteer interviewers were recruited from a variety of community organizations, with the majority coming from local church groups. These were primarily the same organizations which were recommending participants to the program. The interviewers were trained by two of the authors (C.R. and A.D.) with the help of Focus:Hope staff. They shared many of the socio-demographic characteristics of the elderly served by the program, including a lack of formal education, and a low literacy level. Hence, training had to be relatively brief and very thorough. After a review of the survey instrument and the coding system, much of the training involved simulated interviews which enabled interviewers to role play the actual data gathering situation they would face. The trainers portrayed some typical "problem" situations and then the interviewers practiced on each other. Since they were volunteers and in rather short supply, few could be turned away. However, each interviewer's survey form was coded for interviewer I.D. An analysis was conducted to assure that no systematic bias was occurring during the interview or its recording in the survey booklet. Interviewers found to have a particular problem were retrained on a one to one basis during the fieldwork. The interviewers seemed to experience a sense of satisfaction and involvement from working with others in their community on an endeavor they saw as important.

Participants were contacted by volunteers and asked if they would be willing to take part in the study. It was made clear to the participants that their

receiving food was not dependent on their participating in the evaluation, and no respondent was forced to delay beginning the program in order to be interviewed. Respondents were interviewed twice: once just before beginning the program, and once a year later. While it would have been desirable to have a control group who would be interviewed on the same time schedule as the participants, this was not possible. Not only were the resources not available for such a control group, but more importantly, a control group would have been drawn from the very group of seniors who would be added to the program as it expanded to serve additional people in need. It would have been unethical to deny participation in the program to a qualified hungry senior for the sake of research purity.

Findings

A. Demographic data: A total of 303 elderly residents of the Detroit Area who received commodities through Focus:Hope Food For Seniors Program participated in both interviews. The sample size was determined by the short time frame and the limited availability of interviewers, rather than a general unwillingness to complete the interview. An actual response rate was difficult to assess because the enrollment list was constantly expanding. Interviews were discontinued when approximately 350 pre-interviews were completed. This sample size was considered sufficient to represent the enrolled population.

The largest proportion of participants are black females; they are 45 percent of the total sample. The next largest group are white females; they represent 29 percent of the respondents. Nine percent are black males, and 11 percent are white males. The remainder are other ethnic groups. Twenty-two percent of the respondents are between 60 and 64 years old, with an additional 28 percent between 65 and 69. Nearly one in five are between 70 and 74 years of age, and an additional 18 percent are between 75 and 79 years old. Twelve percent of the participants in the program were 80 or older. The respondents had a mean age of 71 years, with the youngest being 60 and the oldest 95.

Many of the respondents are poorly educated. About one-eighth have some college education, and another eighth have a high school diploma. Just under a quarter have some high school but did not graduate, about a quarter completed eighth grade, and just over a quarter of the sample never went beyond the sixth grade. Three-fifths live alone. Less than one in five lives with a spouse, and the other fifth lives with someone else.

B. Health and physical mobility: Initial examination of the measures of physical mobility and other health variables did not demonstrate much change in the overall patterns. Thus, for example, the participants in the program did not show greater movement through the community or an increase in health. However,

neither did they show the deterioration which would normally be expected in a population of this age and socioeconomic status.

C. Mental Health: The Computerized Mental Health Scale was scored so that the population had the same distribution in categories of wellness and illness as that reported by Srole (1975) for the Midtown Manhattan restudy. An examination of the changes from the initial to the follow-up survey showed a similar pattern of change as that found by Srole. Some of the elderly involved in the program became more functional in mental health terms, some remained the same, and others became less functional. Given the age and poverty level of the group studied, it is important to note that the increasing deterioration which is so often associated with age and poverty was not found.

D. Ties with the community: Initial analysis of these data does not reveal any patterns of change. The expansion of community ties which were expected were not found; however these data have not been extensively analyzed. It is clear that the deterioration in patterns of association which characterize some elderly as they remain in the community were not found in this group of participants.

E. Patterns of food consumption: There is some evidence that the program changed the way in which the seniors involved viewed food, and their ability to obtain a diet which is satisfying and satisfactory.

Table 1 shows both the before and after answers to the question, "If you had more money to spend on food, what would you buy?" Most participants would buy more fresh fruits and vegetables, and the desire for this is not affected by participation in the program. In other words, this desire did not change after a year in the program. This is not surprising since fresh produce is not included in the food package. After participation in the program for a year, there are decreases in the desire for more meat, for more bread, cereal and grain products, for more milk products, and for more staples. Grain and cereal products are included in the supplemental food package. While only a minority of the participants wanted more snack foods and more convenience foods, desire for them did increase after a year in the program, probably because more basic food needs were met. Many of the foods included in the commodity package require more than casual preparation, and few of them would serve as snack items.

The food list was classified into "good foods" and "bad foods." "Good foods" include meat, fruit and vegetables, and grain products. "Bad foods" include snack and convenience foods. After a year in the program, the desire to buy more "good foods" if more money were available had gone down from 4.4 to 4.0 items, which is a statistically significant decrease ($t=3.52$, $p<.001$). However, the desire to buy more "bad foods" had increased from .39 to .50 items, which is also statistically significant ($t=2.30$, $p<.05$). It suggests to us that participation in the commodity distribution program has decreased participants' need to be

concerned about the basic foods for survival, and increased their desire to take part in mainstream American eating.

Table 1
If you had more money to spend on food, what would you buy? At Time 1 and at Time 2, in Percent

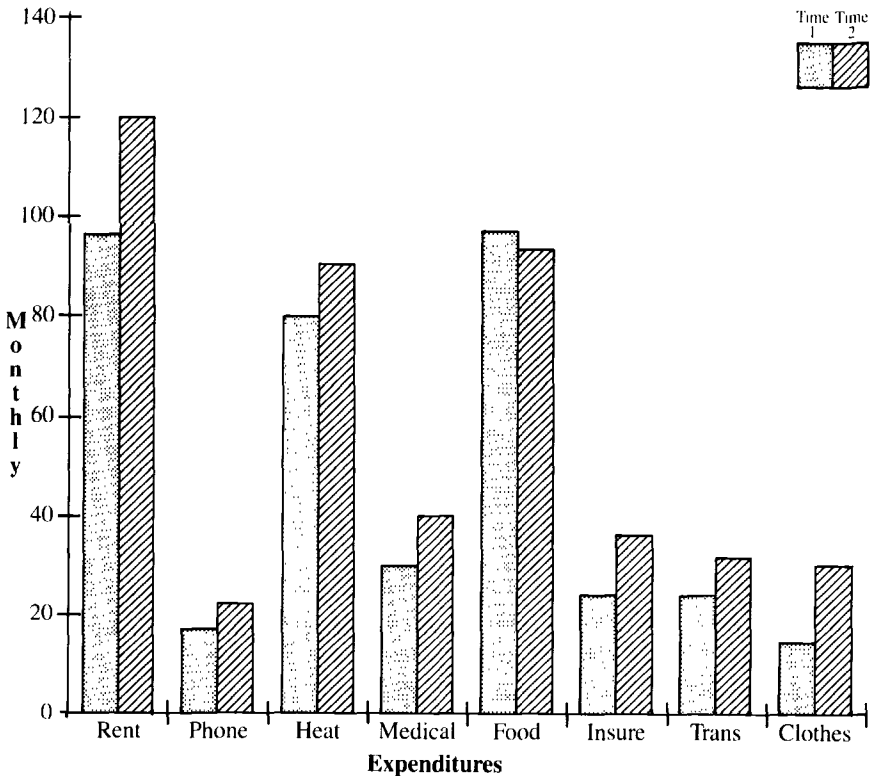
Food Items	Percent Yes	
	Time 1	Time 2
More and better cuts of meat	85.3	78.4
More fresh fruit	91.6	90.2
More fresh vegetables	89.4	87.4
More bread, cereal and grain products	53.0	46.6
More milk products	71.1	55.1
More staples (flour, cornmeal, coffee, tea, sugar)	63.5	56.1
More snack foods	17.5	23.2
More ready to eat, convenience foods	23.5	29.1
Mean: good foods at Time 1	4.40	
Mean: good foods at Time 2	4.00	t=3.52, p<.001
Mean: bad foods at Time 1	.39	
Mean: bad foods at Time 2	.50	t=-2.30, p<.05

F. Economics: Participation in the program also seems to have had a minor, but real, effect on the predictability of food expenditures. Respondents were asked if they usually have a set amount they spend on food each week or each month, or if it varies from week to week or month to month. Just over 20 percent reported both times that they had a set amount, while just over 40 percent reported at both times that it varies. About 12 percent of the respondents moved from a set to a variable amount, but nearly twice as many, 24 percent, moved from a variable to a set amount. Overall, 34 percent of the sample reported a set amount at time one, and 45 percent reported a set amount at time two, suggesting an increase in the predictability of food expenditure.

A similar change was found in the participants' report of whether or not they are able to get enough food with the dollars they have now. The choices were "yes, usually"; "yes, unless there is an emergency"; and "no, not usually." Fifteen percent of the respondents reported at both times that they "usually" had

enough money for food, or they did if there were “no emergency,” while 31 percent were consistent in saying, “no”, they usually did not have enough dollars for food. Sixteen percent reported a decrease in their ability to get enough food, moving from “yes, usually,” to “yes unless there is an emergency,” or from “if no emergency” to a clear “no.” However, 38 percent reported an increase in their ability to get enough food with the dollars they now have. While it is a sad commentary that over a third of the sample are unable to get enough food each month with the money they have, participation in the program did result in a net gain in nearly two-fifths of the participants’ ability to purchase enough food.

Finally, the participants were asked how much they spend each month on the necessities of life: rent, phone, heat, medical care, food, insurance, transportation and clothes. Figure 1 shows these expenditures at entry into the program, and a year later. In every category except food expenditures, the dollar outlay rose considerably. Thus, rent increased from about \$95 to about \$120 a month, a major increase for the poverty stricken. Heat, medical expenses, insurance, and clothes also showed major increases in cost. The cost of food went down slightly.



In a time of inflation, when costs were rising rapidly, the availability of the commodities appears to have made a difference in the ability of participants to survive economically.

It is well known that in times of economic stress the food budget is apt to suffer, since it has the apparent flexibility to absorb some of the increases in fixed expenses such as rent, utilities, medical care and so on. For many of the seniors, participation in the commodity distribution program may have meant the difference between going hungry and getting enough to eat.

Conclusions

This paper has reported on the evaluation of a Commodity Supplemental Food Program in which basic foods were supplied to a group of elderly poor people in the Detroit area. Many of the measures showed no change; a result both of the short enrollment time in the program and the age of the people studied. To some extent, no change is a positive finding. It suggests that a group expected to deteriorate is holding its own.

The commodities distributed retailed for about \$25 per person per month at the time of the study. Our findings do suggest that this pittance in food made a major difference in how well an economically marginal group can eat, and reflects their ability to make it through a time period when other expenses are rising rapidly due to inflation. The commodity distribution program appears to have made a real difference in the lives of real people.

While the study results have shown a net gain for the participants, they also have shown that many of them still live without enough money to eat throughout the month, prey to the vicissitudes of an uncertain economy. Without the Food for Seniors Program, many would have faced stark deprivation.

There is some evidence that the study itself had its own social usefulness. It provided documentation of the plight of the elderly poor in Detroit. The participant profile, designed jointly by the researchers and Focus:Hope staff, has been used in preliminary reports on the project to document the need of the seniors receiving the commodities. (Focus:Hope, 1983.) This progress report on the first year also documents the extent of volunteer involvement in the evaluation study, and reports on other aspects of the conduct of the study. This information was presented in Washington, D.C. to aid in the expansion of funding of the Food for Seniors Program.

Some problems with the study included the short time available to put it together and the use of volunteers to gather data. A better funded study, with a larger sample which followed the participants for a longer period of time, might have provided clearer findings, particularly in the social-psychological area. It is also clear that the decision to continue, and expand, the program was made

long before evaluation data were available. But a multi-million dollar study is not needed to show that the elderly poor will benefit when they are provided with an adequate diet, or that the economically marginal will survive better (if not well) when they are provided with basic food. Being poor and hungry is not good for people of any age; it is particularly bad for the very old and the very young. The commodity distribution program, as administered by Focus:Hope, does help prevent hunger; this, in the long run, is all the evaluation needed.

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Assessment of Health Needs in Rural America: A Comparison of Amish and Non-Amish Families

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ABSTRACT

This study examines a state-sponsored initiative to identify the primary health needs in rural areas so that the appropriateness of existing programs and services could be determined, and the development of new ones could be planned. Data were collected through a survey of 200 families, 50 of whom were Amish. Relatively few differences existed between Amish and non-Amish families on health status and use of biomedical services; however, Amish families reported more behavioral risk factors and used more alternative therapies. Benefits from this assessment and planning process were increased public awareness about county health problems, and increased cooperation between the formal biomedical care system and the Amish community.

Introduction

This study examines the results of a midwestern state's efforts to improve the general health status of its rural population through the state public health department and local public health agencies. In 1987–88, a health care needs assessment and planning process which focused on its rural population was initiated by the state public health department. The recognition that the United

States has not kept pace with other industrialized countries in the world on selected health status indicators such as infant mortality and life expectancy and that rural areas in the United States have a characteristic lower level of health services use than their urban counterparts (Hassinger, 1982) precipitated this process.

Assuming that improved public health services would lead to improved health status, the specified objectives of this process were to (1) formulate community health diagnoses that would serve as a basis for public health interventions, (2) determine the appropriateness of existing public health programs and services in resolving identified health needs, and (3) provide the basis for the development of new public health programs and services for unmet health needs.

Due to its uniqueness in the state as well as in the United States, only one of the counties studied will be discussed in this article. This particular county is heavily populated by the Amish who constitute 25 percent of the population in the county. They are not openly accessible to outsiders (the "English"), and are not widely understood. This Amish community practices separatism and shuns modern technology such as electricity, running water, and transportation by automobile.

Research Questions

To address the objectives of the state public health initiative, specific questions were examined:

- What is the self-reported health status of this rural population and what health behaviors are commonly practiced?
- What is the level of use of formal biomedical providers (physicians) in the rural population and for what conditions were these services used?
- Does the rural population also use other alternative health therapies and to what extent?
- Do Amish families differ from non-Amish families on self-reported health status, health behaviors, use of traditional biomedical providers, and the use of alternative health therapies?

Literature

Public Health and Health Status

The relationship between public health services and health status has not been fully examined. Dubos (1959) and McKinlay and McKinlay (1977) suggest that the dramatic improvement made in the reduction of modern mortality in the

United States resulted from factors such as improved living conditions, better nutrition, better sanitation, and safer water—all of which are defined as public health rather than curative health interventions. Furthermore, the United States spends significantly *more* on total health expenditures than other industrialized countries in the world (11.2 percent of Gross Domestic Product), with the bulk of expenditures going into curative health services rather than public health (Schieber and Poullier, 1989). In fact, the United States spends significantly *less* on public health services than other industrialized countries (only 41.4 percent of the total health expenditures).

A frequent criticism of the medical sociology literature is that it examines *only* those services provided by the formal biomedical care system. Literally hundreds of studies have examined the relationship between health status and use of formal biomedical care services such as physicians, hospitals, and their related services (Maurana et al., 1981), but previous findings have been inconsistent and demonstrate little correlation between health status and formal biomedical care (McKinlay and McKinlay, 1977). Freidson (1960) and Gottlieb (1976) both suggested that an informal or "lay" system of referral and treatment exists separate from the formal biomedical care system. Families or social support networks not only may encourage an individual's decision to use services, but also may discourage use (Pratt, 1976). In other words, some social support networks may advise an individual to see a physician while others discourage a physician visit and encourage use of alternative therapy such as a chiropractor visit. Shupe and Hadden (1988) reported that despite the overwhelming predominance and establishment of the formal biomedical care system, a parallel network of alternative health therapies continues to thrive in American society. These alternative health therapies range from the common practices of chiropractic and herbalism to the more exotic practices of iridology and psychic healing.

Limited examination of alternative therapies has been explored in the literature. Kotarba (1975) found extensive use of acupuncture along with biomedical treatment by people with chronic painful conditions. Kronenfeld and Wasner (1982) found that arthritic patients used various alternatives such as jewelry, topical lotions, and vitamins along with biomedical treatment for relief of symptoms associated with their conditions. Levin and Schiller (1987) and Harrell (1988) have observed that the charismatic movement is spreading belief in and use of spiritual healing into the mainstream of Roman Catholicism and various mainline Protestant denominations. McGuire (1988) found alternative health therapies prospering among a sample of New Jersey suburbanites. As yet, the literature has not examined fully the level and pattern of use of these various alternative health therapies nor their relationship to health status.

The Amish Community

Hostetler (1980) reported that the Amish view good health status as an important part of their overall well-being. They are health conscious and seek treatment from biomedical doctors and clinics in their communities. However, the use of these traditional services is limited by two factors—the cost of these services and the access to the doctors and clinics. First, the Amish, whose predominant occupation is farming, have limited outside income providing little hard currency to pay for biomedical care. The Amish also do not believe in commercial insurance. In cases of individual need, the “community” helps by raising money to pay for large medical expenses. Second, access to biomedical health services is limited by the Amish mode of transportation. Getting to and from the doctor’s office by horse and carriage, during regular hours, in all kinds of weather, may be difficult for the Amish family.

It has been reported that the Amish rely heavily on each other to take care of basic needs and use many alternative methods for healing that are available in their community. Folk healers practicing herbalism, reflexology, and iridology, as well as midwives, are considered to be legitimate providers of treatment by the Amish.

While the Amish seek formal biomedical care, Hostetler (1980) reported that they do not emphasize preventive health care, which can lead to serious problems. For example, a pregnant woman may seek biomedical prenatal care and hospital birth for her first child, but subsequent children will be born at home with little or no prenatal care given. Childhood immunizations provide another example. Amish children frequently are educated in Amish schools which do not have immunization requirements for admission. Amish parents may lack the information and/or understanding about the need for immunizations. As a result, Amish children, and subsequently Amish adults, will not be immunized against childhood diseases. This results in a situation in which the Amish community is then at risk for an epidemic of a preventable childhood disease such as measles, mumps, or whooping cough.

Methods

Data for this study were collected as part of an assessment of the health needs of a rural country in a midwestern state. The needs assessment was part of a 1987–88 statewide initiative conducted by the state public health department. The purpose of the assessment was to provide essential information about the health care needs of the rural population in that state and to identify and prioritize

the most important health care problems to be addressed. One component of the study was a survey designed to provide data on a representative sample of all families in the county. The family was determined to be the unit of analysis since present health services literature demonstrates that an individual's health status and health behavior are strongly influenced by the health behavior of the family in total. The selected respondent was the adult family member (19 years of age or older) having the most information concerning the health of all family members.

A unique problem existed in drawing the sample of 200 families. Amish families, who do not have telephones and are not openly accessible to outsiders (the "English"), represented 25 percent of the population in the county. Therefore, 25 percent of the sample (50 families) were drawn from the Amish church districts. Working through the county nurse and some of the local Amish church bishops, researchers were able to gain limited access to Amish families to conduct face-to-face interviews. The non-Amish portion of the sample (150 families), selected randomly from the local telephone book, were then surveyed via telephone.

Methodological concern exists since only the non-Amish portion (75%) of the sample was drawn at random. However, considering that this was an applied study, researchers agreed that results could be presented with recognition of the following possible bias:

First, most Amish respondent families were younger families in the child-bearing years. However, not all of them were—some Amish parents were middle aged (40+ years) since Amish women frequently continue having children through menopause. This would tend to skew the sociodemographics such as age, marital status, etc. As a result, researchers felt that bias would be introduced primarily in the health status measures, but could be interpreted in light of the sociodemographics of the respondents. Further, considering that this county had the highest fertility rate in the state, the lowest rate of prenatal care in the first trimester of pregnancy, and the lowest percentage of hospital births, researchers felt that the health status measures would be interesting to examine in spite of the lack of randomization of the Amish subsample.

Researchers felt that the bias which was introduced into the results by the lack of randomization for the Amish subsample was preferable to the entire omission of Amish families from the study. Overall response rate was 78 percent with 194 families surveyed—51 of which were Amish and 143 non-Amish.

Description of Respondents. The 194 families surveyed in the Household Survey represented a total of 676 individuals—49.5 percent male and 50.5

percent female. However, the selected adult respondent for each family (i.e., the adult who knew most about the health of the family) was female 72 percent of the time. Total family size ranged from 1 to 13 persons with an average size of 3.5 persons. Children represented 40 percent of the total number of family members. Adults ranged in age from 19 to 99 years of age with 24 percent of family members in the 19–25 year age category.

Seventy-five percent of adults were married with 47 percent of working aged adults employed full-time, 12 percent part-time, and 40 percent not employed. Of those adults who were employed at least part-time, 25 percent received a salary, 54 percent hourly wage and 19 percent self-employed.

Out of 406 adult family members, 133, or 33 percent, had an eighth-grade education or less which reflects the heavy Amish population in the county. Thirty percent were high school graduates and only 23 percent had more than a high school education.

Total family income ranged from less than \$10,000 to over \$50,000 with the most frequently reported income (31%) ranging from \$25,000 to \$34,999. Nine percent of families reported incomes of less than \$10,000 and 6 percent of families reported incomes of \$50,000 or more.

Length of residency for the families ranged from one year to 84 years with an average of 28 years. Thirty percent of families lived on farms, 30 percent lived in small towns, 5 percent lived in a city, and 35 percent lived in the countryside but not on a farm.

Operational Definitions. Health status was operationally defined by asking the respondent for a self-report of his or her own health and the health of the family. Health behaviors were measured by asking if the respondent or any family member smoked cigarettes, exercised regularly, or ate foods with salt or animal fat. Asking if the respondent had used any of a list of alternative therapies such as massage therapy, folk medicine, or acupuncture measured the use of health therapies. Use of formal biomedical and alternative providers was operationally defined by asking the respondent where and to whom they usually went when they needed health care and if they or a family member had seen a physician in the past twelve months (see Tables 1–4).

Statistical Analysis. Given that the primary purpose of this study was to examine public health needs and to determine the adequacy of available services, analysis is of a descriptive nature. Frequencies for the health status, health behavior, and use of providers/therapies measures are presented. A comparison of Amish to non-Amish families on these variables also are reported to determine if the needs for the Amish and non-Amish are similar. Chi square is used as the test statistic for these comparisons with significance level set at $p = .05$ or less.

Results

General Health Status, Preventive Health Behaviors, and Evaluation of Available Health Services

In general, families surveyed were healthy but did not always practice healthy lifestyles (Table 1). Most respondents reported that they and their families had good to excellent health—nearly 80 percent reported good health or better. However, only 68 percent of families reported that none of their members smoked cigarettes and only 66 percent reported exercising for twenty minutes or more at least three times per week. Nearly half of the families (49%) reported eating beef, pork, or foods cooked in animal fat at least once a day, and over 50 percent reported eating salt frequently. All of these patterns have been identified as risk factors associated with the leading causes of death. Public health education programs can be developed to address their lifestyle patterns.

Table 1
Frequencies: Health Status, Preventive Health Behaviors
and Evaluation of Available Health Services

General Health Status:

Would you say that the health of your family in general is:

1. excellent	33%
2. good	47%
3. fair	13%
4. poor	7%

Would you say that your own health in general is:

1. excellent	33%
2. good	48%
3. fair	13%
4. poor	6%

Preventive Health Behaviors

Do you or anyone in your family currently smoke cigarettes?

1. yes	33%
2. no	67%

On the average, about how often do you exercise or are physically active for at least 20 minutes or more so that your pulse rate (heart rate) becomes rapid?

1. at least once a day	39%
2. less than once a day but at least 3 times/week	27%
3. 1–2 times/week	11%
4. less than 1 time/week	23%

On the average, about how often do you eat beef, pork or food cooked in animal fat?

1. every meal	3%
2. at least once a day, but not every meal	46%
3. less than once a day, but at least 3 times/week	35%
4. 1-2 times/week	11%
5. less than 1 time/week	5%

About how often do you eat salted foods or add salt to cooked foods?

1. frequently	52%
2. sometimes	25%
3. seldom	15%
4. never	8%

Evaluation of Available Health Services

In general, what is your opinion of the health care available to you in this county?

1. excellent	14%
2. good	54%
3. fair	26%
4. poor	6%

Families generally felt that the health care available in their county was good. However, nearly one-third of families (32%) evaluated available health care services as fair or poor. Why did this many families rate available services as fair or poor? Had they personally experienced substandard care? Do they perceive that all health services are only fair or poor, or is it only some services that are less than desirable? Is an evaluation of fair an acceptable level of quality for available health services? This finding warrants closer consideration by the Public Health Department and the community.

Amish/Non-Amish Comparison. The comparison between Amish and non-Amish families on health status, preventive health behaviors, and evaluation of available services is presented in Table 2. Both Amish and non-Amish families reported good health, but Amish families had significantly more dietary health risks than their non-Amish counterparts. Amish families ate beef, pork, and salt significantly more often than non-Amish families.

When comparing the opinions of Amish and non-Amish families on the evaluation of the available health care, Amish families tended to rate the available health care as good to superior (88%) while non-Amish families tended to rate it as fair to good (82%). Have Amish families had more satisfactory experiences with the health care system, or do non-Amish families have greater expectations of the health care system? Perhaps the definition of the health care system—that

Table 2
 Comparison of Amish to Non-Amish: Significant Preventive
 Health Behaviors and Evaluation of Available Health Services

	<i>Amish</i>	<i>Non-Amish</i>	<i>P Level*</i>
General Health Status:			
Would you say that the health of your family is:			
1. excellent	29%	34%	(p=.70)
2. good	51%	46%	
3. fair	16%	13%	
4. poor	4%	7%	
Would you say that your own health in general is:			
1. excellent	29%	34%	(p=.16)
2. good	55%	45%	
3. fair	16%	13%	
4. poor	0%	8%	
Preventive Health Behaviors:			
On the average, about how often do you eat beef or pork or food cooked in animal fat?			
1. every meal	2%	4%	(p=.00)
2. at least once a day, but not every meal	70%	35%	
3. less than once a day, but at least 3 times/week	21%	41%	
4. 1-2 times/week	7%	13%	
5. less than 1 time/week	0%	7%	
About how often do you eat salted foods or add salt to cooked foods?			
1. frequently	70%	42%	(p=.00)
2. sometimes	26%	25%	
3. seldom	4%	20%	
4. never	0%	13%	
Evaluation of available health services:			
In general, what is your opinion of the health care available in this county?			
1. excellent	17%	11%	(p=.04)
2. good	71%	52%	
3. fair	12%	30%	
4. poor	0%	7%	

*Level of significance set at $p = .05$ or less.

is, the types of providers and therapies that comprise the health care system—differs between Amish and non-Amish families.

Regular Source of Care and Use of Alternative Therapies

Table 3 indicates that over 90 percent of families reported that they had a particular person or place to go to when they were sick. Ninety-six percent reported that they typically went to a doctor, 39 percent went to a chiropractor, 31 percent to a pharmacist, 21 percent to family, 18 percent to a nurse, 15 percent to a physician's assistant and 14 percent to friends or neighbors. Families tended to seek regular care in doctors' offices (98%), hospital emergency rooms (47%), and to a lesser extent (23%) in their own homes. When families simply wanted advice on health matters, they usually went to the same sources of care.

Various forms of health services/therapies were used in the last year by respondents in addition to traditional biomedical care from a physician. Most often reported therapies were over-the-counter drugs (67%), vitamins/minerals/herbs (61%), exercise (45%), modified diets (42%), prayer (41%), and chiropractic manipulation (25%).

Nearly 90 percent of all families reported that at least one family member had seen a physician in the past year. Out of *all 676 family members*, 350 had seen a physician in the past year. Reasons for the visit ranged from a general checkup to various surgeries with approximately one-third of the conditions reported to be chronic or recurring. The most common health conditions which precipitated physician visits were general checkup, monitoring of conditions that predispose to heart disease (B/P, cholesterol), medical treatment for heart problems, medical treatment for cancer (chemotherapy, radiation), cold, influenza, sore throat, strep throat, etc., lung infection/inflammation (bronchitis, pneumonia), pregnancy, birth/delivery, and ear problems (aches, tubes, infection).

Amish/Non-Amish Comparison. Amish families reported different providers and sites as their regular sources of care than non-Amish families (Table 4). Most Amish families (94%) reported that they used physician services when ill, but 100 percent of non-Amish families reported the same. Amish families tended to use a wider variety of other professional and lay providers of care and support than non-Amish families. The Amish used chiropractors, folk healers, friends/neighbors, and family members significantly ($p = .05$) more often than non-Amish families. Non-Amish families reported using physician assistants and pharmacists more often than Amish families. It is interesting to note that there was no significant difference between Amish and non-Amish families on having seen a physician *in the last year*. This suggests that the use of a physician is pervasive throughout American culture, but that the choice of additional or alternative care differs across subgroups.

Table 3
Frequencies: Regular Source of Care and Use of Therapies

Is there a person or place in particular you and your family members usually go to when you are sick?

1. yes 91% 2. no 9%

Who do you and your family members usually go to when you are sick?***

doctor	96%	midwife	1%
chiropractor	39%	folk healer	6%
minister/faith healer	4%	pharmacist	31%
physician assistant	15%	friends/neighbors	14%
nurse	18%	family	21%

Where do you and your family members usually go to when you are sick?***

doctor's office	98%	church	5%
hospital emergency room	47%	your home	23%
convenience clinic	8%	another person's home	9%

Who do you and your family members go to when you want advice about health concerns?***

doctor	84%	folk healer	5%
chiropractor	18%	pharmacist	6%
minister/faith healer	8%	physician assistant	6%
nurse	24%	friends/neighbors	22%
midwife	1%	family members	39%

Have you or any member of your family used any of the following to treat an illness, injury, or other health condition in the past year?***

modified diet	42%	biofeedback	1%
vitamins/minerals/herbs	61%	yoga	1%
over-the-counter drugs	67%	meditation	5%
exercise	45%	prayer	41%
acupuncture	0%	hypnosis	1%
acupressure	2%	astrology	1%
reflexology	5%	spiritual healing	4%
iridology	1%	psychic healing	3%
music therapy	3%	chiropractic manipulation	25%
midwifery	2%	massage therapy	9%

Have you or any member of your family seen a medical doctor within the past 12 months concerning any illness, injury, or health concerns?

1. yes 89% 2. no 11%

***Percentage of respondents reporting use are shown. Respondents could select more than one provider or therapy; therefore, percentages sum to more than 100%.

Table 4
Comparison of Amish and Non-Amish: Regular
Source of Care and Use of Health Therapies

	<i>Amish</i>	<i>Non-Amish</i>	<i>P Level*</i>
Regular Source of Care:			
doctor	94%	100%	(p=.00)
chiropractor	52%	34%	(p=.02)
physician assistant	0%	20%	(p=.00)
midwife	2%	0%	(p=.08)
folk healer	20%	0%	(p=.00)
pharmacist	13%	37%	(p=.00)
friends/neighbors	35%	8%	(p=.00)
family	33%	16%	(p=.01)
Use of Health Therapy:			
modified diet	20%	50%	(p=.00)
vitamins/minerals/herbs	80%	54%	(p=.00)
exercise	30%	51%	(p=.01)
reflexology	16%	1%	(p=.00)
midwifery	6%	0%	(p=.00)
prayer	58%	34%	(p=.00)
psychic healing	10%	0%	(p=.00)
chiropractic manipulation	30%	21%	(p=.01)
Have you or any member of your family seen a medical doctor within the past 12 months concerning any illness, injury, or health concerns?			
1. yes	87%	92%	(p=.35)
2. no	13%	8%	

*Level of significance set at $p = .05$ or less.

Non-Amish families also reported using hospital emergency rooms as a site of care more often than Amish families, while the Amish used their home or another's home more often than the non-Amish. Amish families reported using vitamins/minerals/herbs, reflexology, midwifery, prayer, psychic healing, and chiropractic manipulation significantly more often than non-Amish families. In other words, non-Amish families tended to use providers and sites that are central to the formal biomedical care system, while Amish families are more likely to use those that are marginal to that system (Wolinsky, 1988) or are part of the "lay" treatment and referral system as described by Freidson (1960) and Gottlieb (1976) in addition to biomedical care.

Special Needs/Problems

In a study of this type, numerous anecdotal comments are recorded during data collection. Some are irrelevant to the purpose of the study while others, though not quantifiable, may be extremely important data for consideration. A *primary* concern expressed by a few individuals (both Amish and non-Amish respondents) focused on the relationship between the formal biomedical care system and the Amish who practice folk medicine or other alternative healing methods. It appears that this relationship is frequently strained and, at times, cooperation is non-existent. Concern was expressed over the use of midwives by the Amish in non-hospital births. In fact, this rural county had the highest birth rate in the state but the lowest rate of hospital births. A non-Amish respondent stated that "all births should occur in the hospital under the supervision of a licensed physician." Further, it was felt that the low percentage of pregnant women in the county receiving prenatal care in the first trimester was directly related to not only the number of Amish women who used midwives, but also to those who delayed care until late in the pregnancy because of the previous experience of having numerous children and the transportation difficulty in going to a physician's office.

On the other hand, an older Amish respondent expressed serious concern over the difficulty that arises when a baby born with a midwife in attendance experiences complications, or birth defects. It was reported that when a midwife delivers a "sick" baby, it is almost impossible to get a physician from the local medical community to accept that baby as a patient for admission into the local hospital. Physicians in two communities approximately fifty to eighty miles away agreed to accept these "sick" babies for admission into hospitals in those areas, but in these situations time is crucial.

Further, several Amish families reported that well babies born in the home with a midwife in attendance frequently were never evaluated by a biomedical provider (physician or nurse). Home visits typically were not made for non-hospital births; therefore, babies may be months or even years old before ever seeing a physician or nurse.

Several of the Amish reported that they traveled outside of the county and even the state for routine health care. One Amish woman who was interviewed said she traveled to Canada for a routine hernia operation. This placed a great stress on the family which had a lower income and consisted of her husband and eleven children aged 15 years to 18 months.

A *secondary* concern focused on the compliance of the Amish with public health standards. One Amish respondent reported that the Public Health Department was concerned about the water and food standards in the Amish

community. Numerous Amish schools were operated in the county, and in accordance with public health standards, water samples from the Amish schools must be checked on a periodic basis. Due to their mode of transportation and private funding, it becomes difficult for the Amish schools to have water samples checked on a frequent basis. It was felt that the community offered the Amish schools little assistance in helping them to comply. Also, food items prepared in private kitchens in Amish homes are sold along the roads during vacation time. While there had been no reported cases of food poisoning or related problems from these food items, there was concern that problems could develop. With the quantity of these food items being sold and without public health department approval, a dangerous situation could develop.

Conclusions

The purpose of the state initiative sponsored by the public health department was to identify the primary health needs in rural areas so that the appropriateness of existing programs and services could be determined and the development of new programs and services could be planned. Specific to this county was the comparison of Amish and non-Amish families.

A study of this type has both practical and theoretical relevance. Numerous practical benefits resulted—some of a more critical nature than others. The lack of cooperation between biomedical providers and the Amish community required immediate attention. The county health officer, county nurse, and a health needs assessment task force discussed these findings at length to try to develop mechanisms for better communication and coordination between the Amish community and biomedical providers. Two specific programs/services were developed. A prenatal clinic, operated by the public health department, was established to provide services to the Amish as well as others in need in the county. The county nurse had developed a positive relationship with many of the Amish church elders in the county and could serve as the liaison between the Amish and the physicians. Also, through the public health officer, a few of the local physicians agreed to work with Amish families who had “sick babies” in non-hospital births with midwives so that they would be able to receive care in the county. The success of either of these services is yet to be determined; however, their establishment is a milestone in and of itself.

Reported lifestyle in this rural farm community included many health risk factors associated with primary causes of death. Many families reported members who smoked or did not exercise. Amish families ingested animal fat and salt on a frequent basis. This information can be used for the better targeting of public education programs, but it must be recognized that these health risk

factors are so much a part of the context of rural life that behavioral change may be difficult to accomplish.

It was interesting to note that even in a small, rural, "gemeinschaft" community such as this county, many citizens were unfamiliar with community leaders, community issues, and members of the Amish subculture who were literally their neighbors. Many were unfamiliar with the public health department and its services. As a result of this study, increased awareness of public health and county health problems developed.

Theoretically, it is significant to find that many people with health problems and concerns do other things beside consult a physician—not to the exclusion of physicians, but in combination with their biomedical treatment. Most families (89%) reported having at least one family member who had seen a physician in the office in the past year; therefore, use of alternative therapies or providers augmented but did not replace physicians. However, use of self-treatment and other alternative therapies such as over-the-counter drugs, vitamins/minerals/herbs, exercise, modified diet, prayer, and chiropractic manipulation were practiced by significant numbers of people. This suggests that use of alternative therapies may help to explain previous findings in the literature which demonstrate the lower use of physician services in rural areas.

The Amish/non-Amish comparisons supported the work by Hostetler (1980) in that Amish families used physician services and that they also used many providers and therapies which are alternatives or marginal to formal biomedical care. It is interesting to speculate about why the Amish reported greater satisfaction with available health services than their non-Amish counterparts, especially considering their use of a more diverse set of providers, sites, and therapies. Are these findings a result of different perceptions of the composition of the health care system or different experiences with the health care system? Future research should explore this question.

A study of this type is sociological practice "in practice." It applies sociological theory and methodology to a real life situation to effect positive change—improved public health in rural areas. Several implications for sociological practice are evident in this study. First, applied sociology does not always lend itself to rigorous research methodology and frequently requires a less sophisticated level of analysis. The difficulty of gaining access to the Amish community required considerable thought, a measure of creativity, key contacts in the community, and additional data collection time. Research methodology may need to be modified, as in this case, and potential effects and biases resulting from these modifications must be examined. Further, analysis of the data must satisfy the needs of the funders of the research. In this study, frequencies and contingency table comparisons between Amish and non-Amish families on

selected health factors were required. Public health officials were interested only in identifying problems to better target programs and funding.

Applied sociologists must be careful to capture all data in studies of this nature. Quantitative results are important, but anecdotal comments also can provide valuable information and insights. As in this study, the results of the survey questionnaire were informative, but the occasional comments offered by respondents about the lack of cooperation between biomedical providers and the Amish community were extremely important information in determining the most critical public health problems.

Applied sociologists and funders of their studies must recognize that problem identification does not automatically translate into positive change. Amish families may eat too many animal fats and too much salt, but appropriate intervention would mean a change in their religious beliefs and social structure. Agriculture is the basis of this structure. Folk medicine is a central component of their culture; therefore, having all babies in a hospital and not using midwives would mean significant changes in their sociocultural system. Research results must be examined within the sociocultural context of the study. Some problems may be mutable while others are not.

In summary, sociological practice can play an extremely important role in examining health issues. This study provided information which served as a basis for improved public health services in an attempt to improve the health status of a particular population.

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Influencing Test Ordering In Primary Care Using Influential Physicians

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ABSTRACT

The purpose of this study was to evaluate the use of influential physicians to influence test ordering in a primary care setting. Structured order forms for three commonly ordered tests were developed in conjunction with the chief residents in internal medicine and family practice at Methodist Hospital of Indiana, a 1120 bed private teaching hospital. After data were collected for a nine month baseline period, the forms were introduced by the chief residents to the house staff in the Adult Ambulatory Care Center and the Family Practice Center. After two months, the study was discontinued. The data were analyzed using a multivariate analysis of variance with repeated measures and paired t-tests. Test ordering rates for complete blood counts were significantly reduced in both centers. Urinalysis rates were significantly reduced in the Family Practice Center. There was no significant effect of the intervention on ordering rates for the chemistry-23 test. The findings suggest that the use of influential physicians is an effective way to change physician behavior in primary care settings.

Introduction

Clinical laboratory procedures account for an estimated 20 percent of total health care expenditures in the U.S.A. (Grady, 1988). It has been estimated that from 20 to 60 percent of medical tests and procedures may be unnecessary (Angell, 1985). Inappropriate tests are operationally defined as those tests which are performed but serve no medical purpose, lack indications to be performed, or are contraindicated.

A number of different approaches have been tried to modify physician test-ordering behavior. These include: administrative actions, educational programs, and feedback. Mozes and others (1989) found that when a hospital administration required written justification for coagulation tests, orders declined 50 percent. Educational programs have reported mixed results. Cheney and Ramsdell's (1987) study found that checklists placed on the front of the chart did not affect rates of testing for hematocrit, cholesterol, and occult blood in the stool, but did significantly increase the rates for mammography, pap smears, breast, pelvic and rectal examinations. Martin and others (1980) conducted a study using financial incentives and chart review in small discussion groups. The incentives had little effect but chart reviews led to a significant reduction in laboratory testing. A more recent study found that a letter placed on the chart when excessive tests were ordered had little effect on test-ordering rates (Williams and Eisenberg, 1986).

Other studies have emphasized feedback to the physician ordering tests. A series of studies by McDonald and colleagues found that providing physicians with a computerized summary of recent diagnostic test results (Wilson, et al., 1982), a computerized display of previous test results (Tierney, et al., 1987), and a prediction of the probability that a test will be positive for the abnormality being tested (Tierney, et al., 1988), all resulted in reduced rates of test ordering for a number of commonly ordered tests. Additional studies (Marton, et al., 1985; Spiegel, et al., 1989; Dowling, et al., 1989) have found that feedback of comparative rates of test-ordering to individual physicians resulted in reduced ordering rates for specific tests.

Reported here are the results of a study of an intervention designed to decrease house staff ordering of three common tests: urinalysis, complete blood count and chemistry 23. The intervention was based on studies that indicate that physicians rely upon one another for information concerning new practices and procedures (Anderson, et al., 1987; Burt, 1987; Coleman, Katz, and Menzel, 1966; Stross and Harlan, 1975; Weinberg, et al., 1981). Moreover, previous studies have demonstrated that influential physicians can be identified and used to introduce innovative procedures into clinical practice (Anderson, et al., 1990; Stross and Bole, 1980; Stross, et al., 1983).

Checklists of acceptable reasons for ordering the three tests were developed in conjunction with the chief residents on two hospital services, namely, family practice and internal medicine. These checklists were tested with residents in a Family Practice Center and an Adult Ambulatory Care Center.

Methods

Setting

The study was performed in two outpatient clinics at Methodist Hospital of Indiana, a 1120 bed private teaching hospital in Indianapolis, Indiana. The Adult Ambulatory Care Center is staffed by twenty-four residents. The study focused on the general medicine clinics that are held two days a week and the preinterview clinic that is used to determine whether or not to accept a patient. Approximately 150 patients are seen in these two clinics each month. The specialty clinics were omitted from the study in order to ensure a patient population that was comparable to the patient population of the Family Practice Center.

The Family Practice Center is staffed by twenty-one residents who see from 600 to over 1,000 patients each month. Some of the urinalyses are performed in the center's laboratory. All other urinalyses, complete blood counts (CBC) and chemistry 23s (CHEM 23) are performed in the hospital laboratory.

Intervention

Initially, the research team identified three frequently ordered tests, namely, urinalysis, complete blood count and chemistry 23. These three routinely ordered tests, which account for over \$300,000 per month, frequently are ordered inappropriately (Kirk, 1985; Shapiro and Greenfield, 1987). Preliminary indications for ordering these tests were developed by reviewing the literature and consulting with the heads of the internal medicine and family practice residency programs.

The chief residents on internal medicine and family practice were identified as influential physicians among the house staff on these two services. Consequently, they were asked to assist the project staff in developing checklists of acceptable reasons for ordering each of the three tests. One of the checklists is shown in Figure 1. They also agreed to explain the study to the residents on the two services.

Structured Order Form

Dr. _____

Patient ID _____ Date _____

URINALYSIS ORDERED? YES [] NO []
 If YES, Please Provide Indication

Suspect UTI/Follow-up []
 Blood in Urine []
 Urinary Catheter >40hrs. []
 Pyelonephritis []
 Renal Failure []
 Diabetes Mellitus []
 Follow-up Chemotherapy/Radiation []
 Work-up hypertension []
 Uricacid, Calcium, Oxalate []
 Systemic Disease? w/Renal Involvement []
 Malabsorption, bowel surgery []

Other []
 (specify)

CBC ORDERED: YES [] NO []
 If YES, Please Provide Indication

Anemia or suspected hematologic disease []
 Abnormal Leukocyte Count []
 Platelet Abnormality []
 Purpura []
 Hypersplenism []
 Infection []
 Immunosuppressive therapy []
 Other []
 (specify)

CHEM-23 ORDERED ? YES [] NO []
 If YES, Please Provide Indication

Diabetes Mellitus []
 Occult Renal Disease []
 Hepatitis []
 Cancer []
 Liver/Gilbert's Disease []
 Anemia/Iron Deficiency []
 Hyperparathyroidism []
 Other []
 (specify)

Figure 1

Study Design

Prior to the implementation of the checklists, nine months of data (January-September 1989) on the number of patients seen and the number of study tests ordered were collected from the hospital laboratory system and from the laboratory in the Family Practice Center. The number of patients seen by each resident was obtained from the Centers' appointment books.

During October and November 1989, the checklists were attached to the chart each time a resident was scheduled to see a patient. Physicians were requested to indicate the reasons for ordering each of the study tests. Data for each resident were again obtained from the two laboratories and from the appointment books during the two month intervention period.

Statistical Analysis

The physician was the unit of analysis for this study. The primary outcome variable was the number of study tests ordered per patient. We calculated test-ordering rates for each resident during the baseline and intervention periods.

The response of physicians to the intervention may vary greatly because of differences in experience and background. Much of this variability is due to these differences that existed prior to the intervention. By separating this source of variability from treatment effects and experimental error, the sensitivity of the study can be increased.

In order to provide a control for differences between physicians, a repeated measures multivariate analysis of variance was performed on the data for each of the three tests. This design provides a control for individual differences between physicians which tend to be large relative to intervention effects. Also, we compared test ordering rates during the two time periods using paired t-tests with a two-tailed probability level of 0.05 accepted as significant.

Results

Tables 1-3 display the mean number of study tests ordered per 100 patients in the two centers during the baseline and intervention periods. They also provide the results of the multivariate analysis of variances with repeated measures. Internal medicine residents in the Adult Ambulatory Care Center saw 1,395 patients during the baseline period and 547 during the intervention period. In the Family Practice Center, residents saw 5,655 and 1,985 patients, respectively, during the two periods.

Table 1
 Mean Number of Urinalyses Ordered per 100 Patients by House Staff in
 the Adult Ambulatory Care Center and the Family Practice Center

Adult Ambulatory Care Center

Residents	Baseline Period	Intervention Period	Both Periods
2nd Year	12.33	15.44	13.89
3rd Year	11.63	7.00	9.32
2nd & 3rd Years	12.00	11.47	11.74

Family Practice Center

Residents	Baseline Period	Intervention Period	Both Periods
2nd Year	12.38	8.63	10.50
3rd Year	9.43	6.43	7.93
2nd & 3rd Years	11.00	7.60	9.30

Multivariate Analysis of Variance

Sources of Variation	df	Mean Square	F Ratio	Significance
<i>Between Subjects</i>				
Center	1	90.40	2.92	0.098
Residents	1	202.76	6.55	0.016
Center X Residents	1	15.95	0.52	0.479
Within Cells	28	30.93		
<i>Within Subjects</i>				
Period	1	67.75	1.84	0.186
Center X Period	1	27.20	0.74	0.398
Residents X Period	1	48.42	1.31	0.262
Center X Residents X Period	1	71.45	0.94	0.175
Within Cells	28	36.90		

Table 2
 Mean Number of Complete Blood Counts Ordered per 100 Patients by House Staff in the Adult Ambulatory Care Center and the Family Practice Center

Adult Ambulatory Care Center			
Residents	Baseline Period	Intervention Period	Both Periods
2nd Year	36.78	11.22	24.00
3rd Year	42.25	11.50	26.88
2nd & 3rd Years	39.35	11.35	25.35

Family Practice Center			
Residents	Baseline Period	Intervention Period	Both Periods
2nd Year	12.25	3.25	7.75
3rd Year	10.86	2.43	6.64
2nd & 3rd Years	11.60	2.87	7.24

Multivariate Analysis of Variance				
Sources of Variation	df	Mean Square	F Ratio	Significance
<i>Between Subjects</i>				
Center	1	5281.87	18.47	0.000
Residents	1	12.40	0.04	0.837
Center X Residents	1	62.93	0.22	0.643
Within Cells	28	285.95		
<i>Within Subjects</i>				
Period	1	5393.91	66.13	0.000
Center X Period	1	1499.52	18.39	0.000
Residents X Period	1	21.20	0.26	0.614
Center X Residents X Period	1	32.98	0.40	0.530
Within Cells	28	81.56		

Table 3
 Mean Number of Chemistry-23 Tests Ordered per 100 Patients by House Staff
 in the Adult Ambulatory Care Center and the Family Practice Center

Adult Ambulatory Care Center

Residents	Baseline Period	Intervention Period	Both Periods
2nd year	31.89	37.00	34.45
3rd Year	36.00	30.00	33.00
2nd & 3rd Years	33.82	33.71	33.76

Family Practice Center

Residents	Baseline Period	Intervention Period	Both Periods
2nd Year	4.38	4.88	4.63
3rd Year	6.57	7.86	7.21
2nd & 3rd Years	5.40	6.27	5.83

Multivariate Analysis of Variance

Sources of Variation	df	Mean Square	F Ratio	Significance
<i>Between Subjects</i>				
Center	1	12270.35	43.31	0.000
Residents	1	5.20	0.02	0.893
Center X Residents	1	64.57	0.23	0.637
Within Cells	28	283.29		
<i>Within Subjects</i>				
Period	1	0.80	0.01	0.929
Center X Period	1	7.10	0.07	0.791
Residents X Period	1	105.77	1.07	0.310
Center X Residents X Periods	1	140.42	1.42	0.244
Within Cells	28	99.01		

For two of the tests, CBCs and Chemistry 23s, ordering rates were significantly ($p < 0.000$) higher in the Adult Ambulatory Care Center which is staffed by internal medicine residents. Overall, 25.35 percent of the patients had CBCs and 33.76 percent had Chemistry 23s ordered. Comparable rates in the Family Practice Center were 7.24 and 5.83 percent, respectively. For about 1 out of 10 patients in both centers, urinalyses were ordered during the two periods.

The higher rates of tests ordered by the internal medicine residents is largely a function of their training. These house officers are exposed to a wide variety of medical conditions and are expected to develop their diagnostic skills to a much greater extent than residents in other programs.

While the overall rate of urinalyses were about the same in both centers, second year residents ordered significantly ($p < 0.016$) more tests than third year residents. These differences are probably a function of experience. Interns and residents experience a great deal of uncertainty when they first begin to see patients in the centers. As a result, they are inclined to order more tests than the more experienced house officers.

Test ordering rates for chemistry 23s remained fairly constant in both clinics during the intervention period. Use of the checklists appears to have had no significant effect on the ordering of this test battery. However, the rate of CBCs declined significantly in both centers ($p < 0.0000$); from 39.35 to 11.35 per 100 patients during the two month intervention period in the Adult Ambulatory Care Center and from 11.60 to 2.87 per 100 patients in the Family Practice Center. There was a significantly larger decrease in the number of tests ordered by internal medicine residents than by family practice residents. The center X period interaction was significant ($p < 0.000$).

Also, the number of urinalyses ordered by family practice residents decreased significantly during the intervention period ($t = 2.94, p < 0.011$). The number of tests ordered per 100 patients went from 11.00 to 7.60.

Discussion

The purpose of this study was to evaluate the use of influential physicians to influence test-ordering in primary care settings. Structured order forms were developed in conjunction with and introduced into two hospital outpatient centers by the chief residents of internal medicine and family practice. The results of a two month trial indicated that test-ordering rates for complete blood counts were significantly reduced on both centers while the urinalysis rate was significantly reduced on the Family Practice Center. Based on these results, we conclude that the identification and use of influential physicians is an effective means of altering practice behavior.

The reductions in the rate of CBC orders were not only significant but were large enough to be important in a practical sense as well. Given the volume of outpatients seen by the house staff in the two centers, cost savings from the reduction in CBCs ordered for the two month intervention period were approximately \$4,000.

A major advantage of the approach used in this study is the minimal effort required by the medical and hospital staff. The project required about four one-hour meetings with physicians to develop criteria and checklists for ordering the study tests. Clerical staff in the two centers attached the checklists to the patient's chart before each visit and collected them afterward. This approach could become an ongoing activity within the hospital at little cost and without requiring excessive time on the part of physicians and the hospital personnel.

At the same time a number of questions need to be addressed in future research. First, the lack of a control group in this study raises questions about the conclusions. Without an appropriate control group, it is difficult to be certain that the changes that occurred in test-ordering rates were caused by the intervention and not by some other factor. For example, it might be argued that general learning occurs during the course of residency programs. Consequently, changes in test ordering may be the result of this more general learning on the part of the house staff. However, examination of the test ordering rates during the previous twelve months did not indicate changes of the magnitude that occurred during the two month intervention period. Nevertheless, the use of a suitable control group in a future study would resolve this issue.

Second, using change in testing rates as an outcome measure fails to distinguish whether the intervention caused appropriate or inappropriate changes in test use. We believe that the former is more likely since the criteria for the tests represented a consensus of the literature, the faculty and the chief residents who teach the house staff about appropriate testing. Chart reviews of a sample of patients seen by residents during the intervention period might shed light on this question.

Third, the finding that the use of influential physicians to introduce checklists resulted in a significant reduction in the rate at which only two of the three tests were ordered, suggests that this approach may be effective with certain tests and not with others. This is an important area for future investigation.

Moreover, while it appears that the success of the intervention was due to the use of influential physicians, it may be that the checklists served as reminders as to the appropriate reasons for ordering tests. This fact alone may account for the change in physician behavior. This issue might be resolved in a future study by comparing the results from two groups that use checklists, only one of which is introduced by the chief resident.

Also, the chief residents were used to develop the acceptable reasons for ordering the tests and to introduce the checklists to the other residents in their programs. This raises an important issue as to the nature of the role relationships involved. While chief residents provide information and leadership, they also supervise the clinical work of the junior house staff. They both praise them for clinical work well done and censure them for poor work and mistakes. It is possible that the reduction in tests resulted from this authority relationship rather than from role modeling through a collegial relationship. This question might be answered by using influential colleagues among the residents to introduce checklists in a future study rather than using the chief residents.

Finally, no specific efforts were made to encourage residents to use the checklists after their initial introduction by the chief residents. Consequently, it is not known whether active promotion of the checklists during the intervention might have resulted in a further reduction in test ordering rates. This is one area for future investigation. Also, the next phase of the study will investigate whether feedback of comparative data on test ordering rates will further alter physicians' behavior and reduce unnecessary laboratory tests. The results of other studies (Dowling, et al., 1989; Marton, et al., 1985; Spiegel, et al., 1989; Tierney, et al., 1987, 1988; Wilson, et al., 1982) suggest that feedback can bring about large reductions in the rate at which some tests are ordered.

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