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PREDICTIVE FACTORS IN DEVELOPING AN EDUCATIONAL PROGRAM FOR ENROLLMENT IN A HEALTH MAINTENANCE ORGANIZATION

by

Edward James Roccella

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Education)
in The University of Michigan
1977

Doctoral Committee:

Associate Professor Lawrence S. Berlin, Co-Chairman
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CHAPTER I

THE PROBLEM

A. INTRODUCTION AND THEORETICAL FRAMEWORK

This nation's health care delivery system continues to expand as technology helps medical interventions to be more successful in more areas and health care is offered to many more Americans. The increased use of the health care system has strained its capacity, increased its cost and there is evidence that this system is not as effective or efficient as it could be.[1] An alternative method for delivering health services, the Health Maintenance Organization (HMO),[2] is being advocated as an innovation that is more effective and efficient than the traditional system.[3] Consumer understanding and acceptance of this alternative delivery system has been slower than anticipated, and slow adoption of this innovation has prompted health administrators to employ the techniques of advertising, marketing and mass media to overcome the problem of slow enrollment or lack of enrollment into HMOs. But for the most part, the approaches which have been used to help consumers understand and adopt this innovation have not been successful.

Robertson[4] reviews several studies on the use of

advertising techniques which have attempted to change health behavior. He claims they have been marginally successful at best, and many have shown an abysmal failure in changing health behaviors. He concludes his review by stating, "It is doubtful that marketers know any more about changing behavior than do behavioral scientists and educators."

This nation has virtually no experience in educating consumers to understand the traditional health care delivery system or developing educational programs which encourage adoption of alternative health delivery systems such as the HMO. The closest experiences are found in the insurance industry. Consumers have learned to understand the concept of health insurance as financial protection against costly medical illness, but this concept is different than understanding how to use the health delivery system.

The lack of experience in educating consumers about the traditional health care system or even the newer HMOs is not without a rationale. In a bygone era, the nation's medical societies made successful efforts to protect the public from charlatanism and quackery. They encouraged legislation which licensed the practice of medicine and prohibited the advertising or selling of health services.[5] This process had a two-edged effect. Quackery and charlatanism of an earlier era were reduced, but through the years the public understood less and less about the

increasingly complex practice of medicine and the organization and delivery of health services.

The social movements of the 1960's created a demand for more knowledge about the health delivery system. In part this demand was the result of increasing mistrust with the medical profession. In 1966, Harris[6] surveyed the nation and discovered 73 percent of the public had given medicine a "high degree of confidence" rating, while in 1973 this figure dropped to 57 percent and in 1976 43 percent expressed a "high degree of confidence." The number of malpractice suits continues to rise and the basis for many of these suits is that patients have the right to be informed of the medical procedures which are to be performed on them. In response to the increased demand for more knowledge about the health delivery system, the 1972 Board of Trustees of the American Hospital Association developed a "Patients Bill of Rights" and adopted this statement as policy for its 7,000 member hospitals.[7] This policy contains 12 principles ranging from a right to considerate and respectful care, a right to informed consent before treatment, and a right to know the hospital's rules and regulations. In Minnesota, this Patient Bill of Rights has become law.[8] Several health education programs appeared which tried to educate consumers about the health care system,[9] but these programs have done little to increase the public's

understanding. For the most part these few health education programs used mass media to provide information for consumers with the notion that information was synonymous with education. Little attempt was made to determine what the consumer already knew about the health care system and the consumers' previous experience with the system was discounted. This approach was derived from children's learning theory. The pedagogical approach continues to be unsuccessful with adults, and consumers continue to inappropriately use the health care system.

Knowles[10] points out that, from the earliest years, the study of learning was taken over by experimental psychologists who required rigid control variables. Laboratories and classrooms were and still are, more easily controlled environments than the adult world, and as a result, most scientific theories of learning have been derived from the study of learning by animals and children. These learning theories have been "adjusted" to fit adults, and when they have failed, the adult was to blame. "You can't teach an old dog new tricks." But the psychological, motivational, experiential and learning experiences of adults are different than children or young people. It should be recognized that these forces cause the learning process for adults to be different.

The Lewinian[11] concept of life space when applied to a child's life space is small. As such, the child's life space cannot be extensively used in their educational process. But the adult life space is much larger. Whipple[12] accurately claims the adult has lived longer, has faced more and different experiences than children or young people, and their perception of a particular event is likely to be different. Adults comprehend a new idea or experience by assimilating it with the mass of ideas or experiences already in mind. This is an example where adults use different learning techniques than young people. But if these previous experiences are not considered or no attempt is made to analyze and use them in the adult learning process, then the potential for adult learning is diminished.[13]

Adult learning and behavior are based on life experiences, and these previous experiences could serve as a resource. In adult education methodology there is a shift away from primary reliance on transmittal techniques to reliance on experiential techniques that make use of or build on the experience of learners. Probably the most potent tool of adult education is analysis of experience.[14]

Can this adult education theory be used to demonstrate that previous experiences and knowledge about the traditional health care system can form the nucleus for educational programs aimed at enrolling individuals into the

HMO, an alternative health delivery system? Can these previous experiences be correlated with a willingness to join the HMO and can these correlations be used to predict enrollement in such a program? This study is an effort to apply adult learning theory, that is, an analysis of the consumers' previous experiences with the traditional health care system, in an attempt to forecast enrollment in a proposed HMO, and also to develop a plan of education which would be used to encourage consumers to join the program.

B. NEED FOR THE STUDY

HMOs appear to be a method which can reduce spiraling costs of health care. It seems likely that HMO programs will continue to grow at a steady rate. But forecasting enrollment and developing an educational program which would appeal to prospective members continues to be a difficult task for developing programs. People do not enroll in HMOs in a consistent manner throughout the United States. For example, in San Francisco and Los Angeles, 35 percent of eligible Federal employees chose HMO programs while in New York and Washington, D. C., only five percent of eligible Federal employees chose such programs.[15] Using these examples, it is difficult to determine how many people would join a new HMO program. Further, those programs interested in enrolling new members have little way of knowing which

educational messages to use to appeal to their prospective clients. For example, should the HMO educational messages used to enroll new members stress the fact that the HMO provides regular family care, simply because a California HMO used this educational appeal? If the group to be enrolled already has family doctors then this message would be of little value. Should the developing HMO stress the potential cost savings an HMO offers because a New York HMO successfully used this approach? For those whose health care costs are of little consequence this message has virtually no impact. Should the educational program stress the increased use of preventive medicine benefits to a group that does not believe in or care about prevention? How can a program successfully develop a plan of education and predict who will enroll in an HMO if little is known about the population to be served or if their beliefs, experiences and expectations regarding the health care system are unknown?

A systematic method is needed which could identify those factors that could be correlated with enrolling in an HMO. These correlated factors of enrollment or predictor variables could be used as the basis for an educational plan which would appeal to prospective HMO clients.

Many HMOs have failed to make an accurate prediction of the number of individuals who would join the program. This problem is particularly critical in the early stages

of program development. Underenrollment, that is too few people join the HMO program at a given point in time, can cause havoc with the HMO's fiscal stability and some HMOs have suffered severe financial losses because of their inability to enroll an adequate number of new members.

This problem is more clearly understood if one considers the HMO a business. As such, the HMO would generate fixed types of expenses such as salaries, supplies and overhead as it delivers its services. The income which is needed to pay HMO expenses is derived from premiums which members pay to belong to the HMO. The HMO premiums are fixed and prepaid and services are guaranteed regardless of how ill the patient becomes. Unlike the traditional fee for service programs an HMO cannot generate more income by performing more laboratory tests or keeping patients in a hospital an extra day. An HMO program projects a certain number of members will join the program at a given time and proceeds to hire staff and pay expenses to meet the needs of their anticipated members. If fewer members join the plan than predicted, fewer premium dollars are collected to meet HMO expenses, thus the HMO will operate at a deficit.

Several studies describe the magnitude of the difference between predicted enrollment and actual enrollment of consumers into HMOs. Heyssel[16] reports the experience of the Columbia Medical Plan, an HMO affiliated with Johns

Hopkins University. The Columbia Plan started delivering prepaid health services in October, 1969. Table 1 describes

TABLE 1

COLUMBIA MEDICAL PLAN BUDGET PROJECTION AND ACTUAL RESULTS, 1969-72

Year	Average Enrollment		Annual Gain (or Loss)*		Cumulative Gain (of Loss)*	
	budget	actual	budget $	actual $	budget $	actual $
1969-70+	5,000	2,775	(193)	(166)	(193)	(166)
1970-71	8,000	6,739	(313)	(347)	(506)	(513)
1971-72	18,000	12,830	(27)	(545)	(535)**	(1,068)

*000's omitted
**figures in parentheses are losses
+15 months
Source: Heyssel: New England Journal of Medicine, 295:1225-1231 Nov, 25, 1976.

the predicted enrollment (budgeted enrollment) and actual enrollment of the Columbia Plan. It can be seen that the enrollment prediction error resulted in a cumulative budget loss of over $500,000 during the first three years of operation.

Similarly, the Harvard Community Health Plan, an HMO affiliated with Harvard University, which opened its doors to consumers and provided prepaid health care services in October, 1969, predicted 10,000 members would join the HMO

program on opening day. The actual enrollment on opening day was 88 members.[17] This underenrollment experience resulted in a three million dollar operating loss for that program. The Genessee Valley Group Health Association, a community-sponsored HMO, also predicted 10,000 individuals would initially enroll in their program, but could only enroll 881 individuals on opening day.[18] The Eastman Kodak Company, which employs 45,000 individuals was confident that about 20 percent of its employees would join one of the three new HMO plans in Rochester, New York. Only 0.5 percent did switch to the new program.[19]

C. PURPOSE OF THE STUDY

The purpose of this study is to forecast enrollment in a proposed HMO for The University of Michigan employees and members of the United Auto Workers of America residing in Washtenaw County, Michigan. The study will also develop an educational plan to be used to appeal to these two populations. These two groups represent one-third of the county's labor force. It will seek to provide answers to the following research questions:

1) What previous consumer health experiences correlate with proposed enrollment in a proposed HMO?

2) Can these significant correlations be used to develop an educational program for prospective HMO members?

3) Can these significant correlations be used to predict the number of individuals who would enroll in a proposed HMO?

D. PLAN

A re-analysis of data of a telephone survey directed by the author to determine the feasibility of marketing an HMO in Washtenaw County, Michigan, will be conducted. The re-analysis will concentrate on answering the three research questions.

E. LIMITATIONS

There is one major limitation which concerns the respondents to the survey. The respondents to the questionnaires were employees of The University of Michigan or members of the United Auto Workers Union. It is conceivable that the decision of where to purchase health care services may be made by another family member.

F. SIGNIFICANCE

It was noted earlier that previous approaches to enrolling individuals into HMOs produced inconsistent results. This study will provide a method which could be used to reasonably predict those who would choose an HMO program. The study will use Adult Learning theory as a basis to develop a plan of education to enroll potential clients. This process could help HMOs more accurately determine the

resources needed to serve their enrollees. Data from the survey will come from two different populations, therefore the present study will not be population specific.

G. OVERVIEW

This study seeks to provide a basis to forecast enrollment in a proposed Health Maintenance Organization. It also identifies certain variables, which are previous experiences with the traditional health care system that correlate with enrollment in a Health Maintenance Organization. The study develops a plan of education to enroll prospective members and uses the predictor variables as key educational messages in the educational plan. This chapter examined the theoretical framework for the study, the need for the study, and discussed briefly the plan for its execution. It also includes the study's limitations and significance.

Chapter II "Review of Literature" focuses upon the literature relevant to the study. It begins by examining factors affecting the health care crises in general and examines more closely the effects of technology on the health care system, delivery of health care and methods to control health care costs. The literature on enrollment rates in an HMO is examined as well as literature on adoption rates of an innovation.

Chapter III "The Design of the Study" discusses

methodology used in conducting the study. It includes population selection and procedures; questionnaire design and development; data collection procedures; data analysis; and research questions.

Chapter IV, "Presentation and Analysis of Data" examines the data in detail. Two of the research questions are examined in this chapter, the third research question is addressed in Chapter V.

Chapter V, "The Educational Plan" deals with the third research question. It is divided into five sections: goals; objectives; planning assumptions; methodology and evaluation.

Chapter VI, "Summary, Conclusions and Implication for Policy," presents a summary of the study and discusses implications for Policy.

REFERENCES

[1]See Chapter II, pages 20 and 26.

[2]A Health Maintenance Organization means a legal entity which provides basic and supplemental health services to its members in the manner prescribed, is organized and operated in the manner prescribed and meets the requirements of Public Law 93-222, The Health Maintenance Organization Act of 1973. An HMO is basically an arrangement between four elements:

(a) Organized health care delivery system which includes health manpower and facilities capable of providing or at least arranging for all the health services a population might require.

(b) An enrolled population consisting of individual persons and groups who contract with the delivery system for provision of a range of health services which the system assumes responsibility to make available.

(c) A financial plan which incorporates underwriting the cost of the agreed upon set of services on a prenegotiated and prepaid per person per family basis.

(d) A managing organization which assures legal, physical, public and professional accountibility.

All four elements must be present for an HMO to exist.

[3]See Chapter II, page 33.

[4]Robertson, L. Whose Behavior in What Health Marketplace? Consumer Behavior in the Health Marketplace, A symposium Proceedings, 1976. Nebraska Center for Health Education, University of Nebraska, Lincoln, Nebraska.

[5]For example, the American Medical Association's Principle of Medical Ethics provide: Contract practice is not per se unethical. However, certain features or conditions if present make a contract unethical, among which (is)

. . . (w)hen there is a solicitation of patients directly, G III, Art. VI, S3, 140 AMA Journal 619 (1949). State laws also prohibit advertising. For example Missouri law provides that the state may refuse to license individuals guilty of unprofessional conduct. Unprofessional conduct is defined, among other things as: Soliciting patronage in person or by agents or representatives, or by any means or manner or under the name of another person or condern. Mo. Stat 334.100 (9) (1965).

[6]Harris, L. Public Trusts in Physicians, American Medical News, March 21, 1977.

[7]The Patients Bill of Rights, A Policy Statement. The Board of Trustees, the American Hospital Association, Chicago, Illinois, November, 1972.

[8]See the Minnesota Laws of 1973, Chapter 688. "It is declared to be the public policy of this state that the interests of patients be protected by a patient's bill of rights. . .

[9]For example see newsletter published by the Consumer Commission on the Accreditation of Health Services, New York, titled Health Perspectives, also Levin, L. Self Care Lay Initiatives in Health, Prodist, New York, 1974.

[10]Knowles, M. The Adult Learner: A Neglected Species, Gulf Publishing Company, Houston, 1973.

[11]Lewin, K. Field Theory and Experimential Social Psychology, American Journal of Sociology 44:868-896, 1939.

[12]Whipple, J. Especially for Adults, Center for the Study of Liberal Education for Adults, Chicago, 1957.

[13]McClusky, H. Adult Learning and Instruction, ERIC Clearinghouse on Adult Education, Syracuse, 1970, McKeachie, W. Psychological Characteristics of Adults and Instructional Methods in Adult Education, Center for the Study of Liberal Education for Adults, Chicago, 1962, Houle, C.O., The Inquiring Mind, University of Wisconsin Press, Madison, Wisconsin, 1961, Kidd, J., How Adults Learn. Associated Press, New York, 1959, Tough, A., The Adult Learning Projects, Institute for Studies in Education, Toronto, 1971.

[14]Knowles, op. cit., p. 60.

[15]Federal Employees Health Benefits Program, Health Benefit Report, Fiscal Year Ending June 30, 1962, Washington, D.C., U.S. Civil Service Commission, 1962.

[16]Heyssel, R., The Johns Hopkins Experience in Columbia, Maryland, New England Journal of Medicine 295:1225-1231 November 25, 1976.

[17]Harvard Community Health Plan: An Assessment at the Five Year Mark, Report of the Harvard Community Health Plan, Boston, Mass., March 1975.

[18]Drug Research Reports p. 3, December 10, 1975, Washington, D.C.

[19]Hicks, N. Rochester Residents Get Three New Health Services, New York Times, August 19, 1973.

CHAPTER II

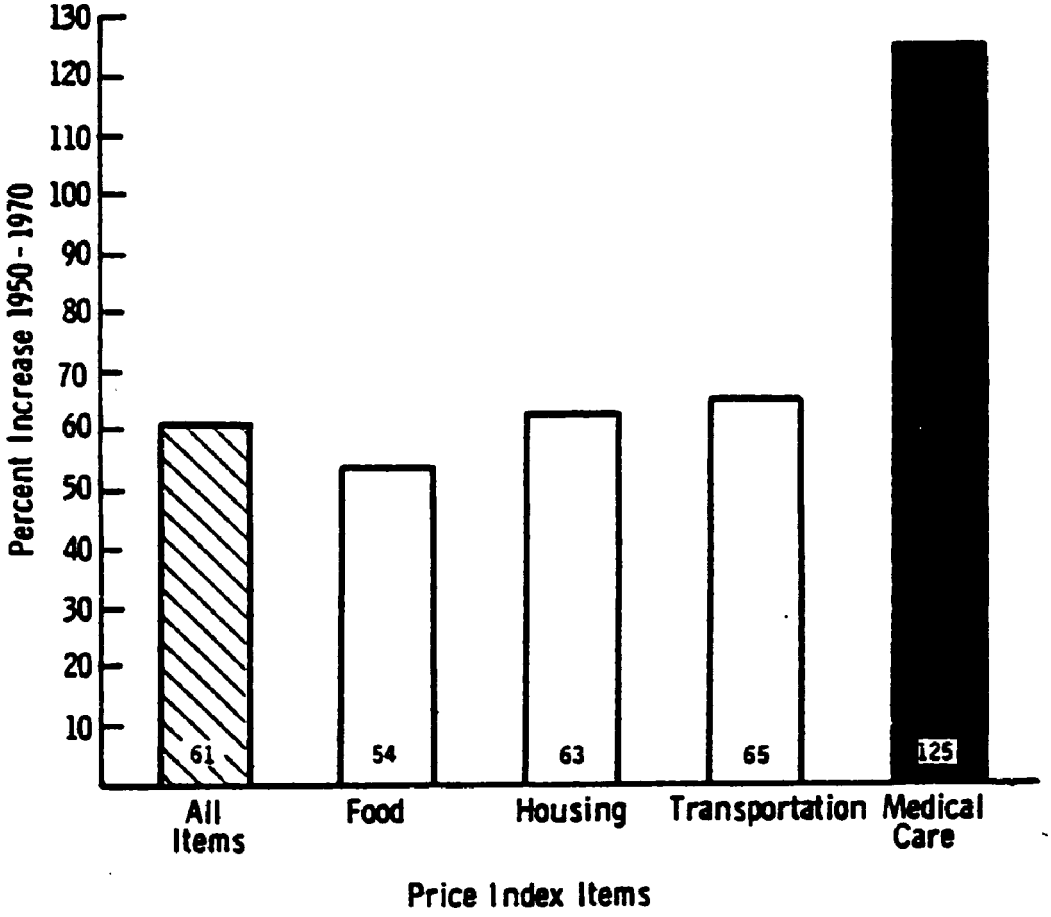
REVIEW OF LITERATURE

A. FACTORS AFFECTING THE HEALTH CARE CRISIS

Within the last few years this country's health industry has more than tripled in size, and in 1976 accounted for expenditures of 139.3 billion dollars, representing 8.6 percent of the Gross National Product.[1] This dollar figure was approximately five times the amount spent in 1960 and ten times the amount spent in 1950.[2] The spiralling costs of medical care services and hospitalization have increased astronomically[3] and have been the concern of Congress and the nation's leaders who now struggle with the massive job of developing major health care reforms. The 93rd. Congress examined several bills dealing with national schemes of financing health insurance, but without a clear consensus as to which approach would be best for the nation, was unable to pass acceptable legislation. Pressure to control rising costs continues as health care is now priced out of reach of many Americans. Figure 1 indicates prices of medical services have risen faster than prices for other services in the consumer price index. Not only is medical care more expensive relative to other goods and services purchased

Figure 1

Percent Increase in Medical Care and Other Major Components in the Consumer Price Index (U.S.A., 1950-1970).



Source: U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1971 (Washington, D.C., 1971), No. 534, p. 339.

Adopted from: Medical Care Chartbook, The University of Michigan, School of Public Health, Department of Medical Care Organization, p. 118, Sixth Edition, 1976.

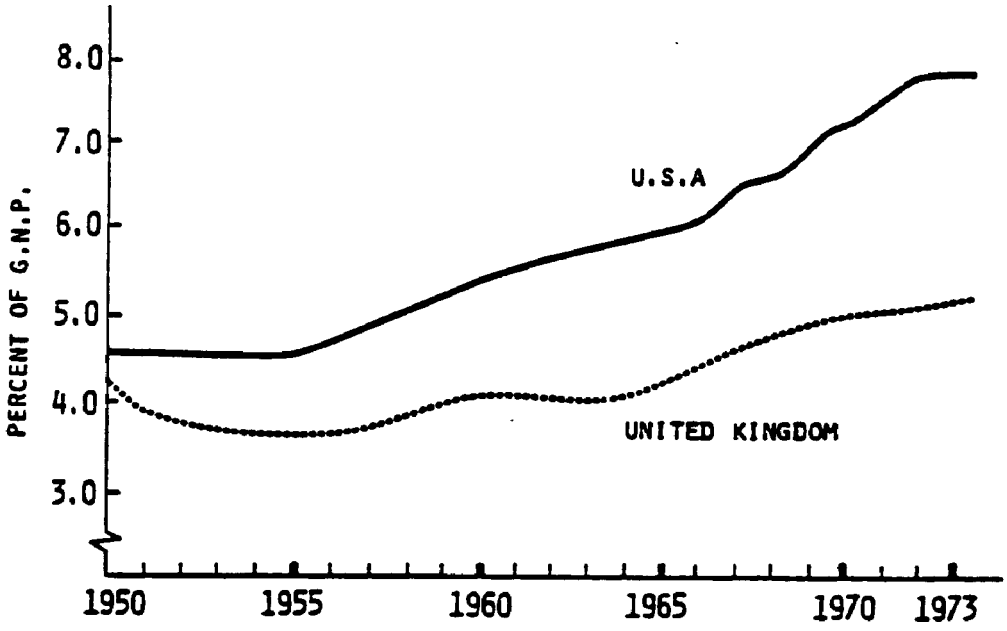
within the last few years, but as Figure 2 indicates, as a nation we are purchasing more of these services. For the most part, this growth has been brought about for two reasons: (1) The increasing use of technology in the medical care system, and (2) The increasing demand for services from a rapidly expanding clientele. Other factors[4] could be identified as separate forces, but will be considered within these two categories.

B. EFFECTS OF TECHNOLOGY ON THE HEALTH CARE SYSTEM

In 1910, the Flexner Report,[5] which outlined the deficiencies of medical education in the United States, was released and rocked the medical teaching centers to their roots. This report, sponsored by the Carnegie Commission, was used by the Commission and the American Medical Association to rid the nation of inferior medical training and focused medical attention to the study of the basic biological and chemical sciences. In the period immediately after World War I, to the delight of the biomedical researchers, society was impressed with the successes of organized research and development in furthering the war effort, and society approved rapidly increasing expenditures for the conduct of biomedical investigation.[6] The gains in technology and knowledge of the human condition resulting from this effort are monumental and the number of diseases

Figure 2

Expenditures for Health and Medical Care, as Percent of Gross National Product (U.S.A., United Kingdom, 1950-1973).



Sources: For Great Britain: Office of Health Economics. "The Cost of the National Health Service." O.H.E. Information Sheet, No. 11, February 1971.

Great Britain, Central Statistical Office. Annual Abstract of Statistics, No. 107, London, Her Majesty's Stationery Office, 1970, Table 296, p. 279.

Great Britain, Central Statistical Office. Annual Abstract of Statistics, No. 96, London, Her Majesty's Stationery Office, 1959, Table 274, p. 239.

For United States: Maxwell, R. Health Care: The Growing Dilemma. New York: McKinney and Company, Inc., 1974, Table 12, p. 68.

Worthington, N. L. "National Health Expenditures, 1929-1974." Social Security Bulletin, Vol. 38, No. 2, February 1975, p. 5

Adopted from: Medical Care Chartbook, The University of Michigan, School of Public Health, Department of Medical Care Organization, p. 109, Sixth Edition, 1976.

which medical intervention can control has been expanded.

It is difficult to determine whether the major contribution of a new discovery in medicine is its effect on the control of a specific disease, or its effect upon the understanding of the general body functions affected. For example, the discovery of insulin in the early 1920's has done much for the diabetic, but of even greater significance, the entire field of endocrinology was forced into the limelight and the increase in knowledge which followed has been of benefit to countless others persons with glandular disorders. The introduction of sulfanilamide in the mid-1930's not only provided a means of controlling the dread streptococcus bacteria, but provoked a search for other remedies of chemical nature. The investigations which followed began to explore the life cycles of bacteria and their metabolism. Other varieties of effective antibacterial chemicals were developed, and the renewed interest in the field of chemotherapy was apparently what prompted Fleming to take another look at the notes he had made on the effects of penicillium on his bacterial culture plates. Miracle drugs, wonder drugs, and marvelous combinations spilled out of the laboratories within the space of a few years.

Suddenly, the physician found himself almost in sight of control of the battle of man vs. bacteria. A new era developed in which most of the great bacterial killers were

subject to control. Blood poisoning, pneumonia, bacterial endocarditis, scarlet fever, rheumatic fever, and kidney infections--these and many other major diseases of the past are now considered generally curable or preventable as a result of the proper application of what is known.[7] The change in the ability of the surgeon to deal with diseased portions of the human body is as dramatic as that of any other field of medicine. Not long ago diseased body parts were merely detached, now they are exchanged and replaced. The introduction of electronic devices, scanning equipment, optical devices, and nuclear equipment has helped the physician to more ably make accurate diagnosis and successful medical treatment possible to a larger number of patients, especially for those with serious illnesses. These new marvels encouraged scientists to push on for more new discoveries.

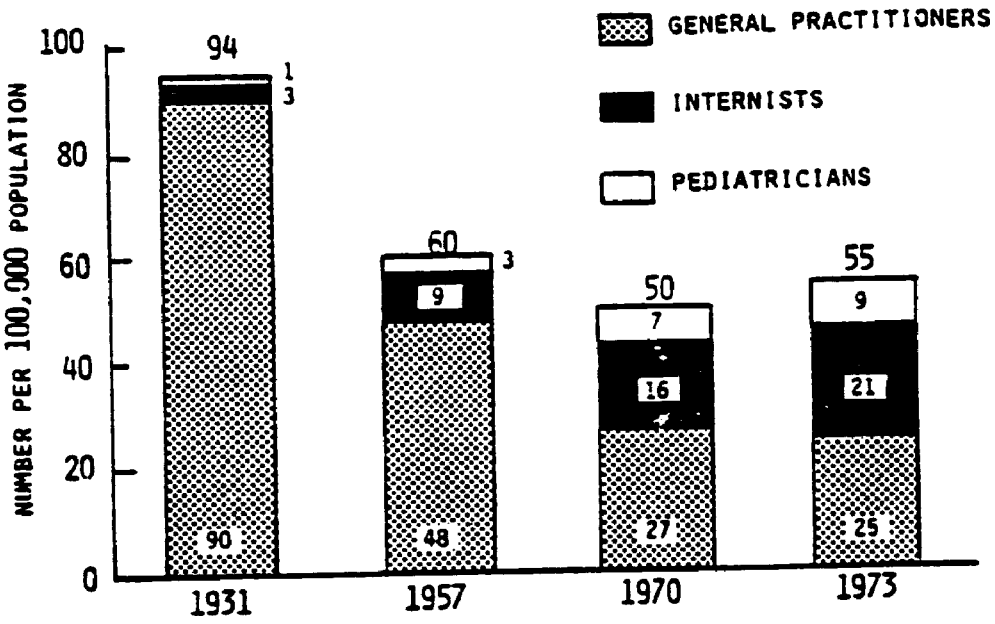
The effect, in the absence of counterbalancing forces, was to isolate medical education increasingly from the basic health care needs of the people and to concentrate it in medical centers which emphasized biomedical research and delivered mainly subspecialized medical care. Clinical faculties came to be composed mainly of scientifically trained specialists. Medical students were trained as scientists and were seldom exposed to the daily practice of medicine in the community or to physicians whose role was to deliver primary or general medical care,[8] that constitute the bulk

of medical practice. These students were no longer taught to treat common illnesses or the ills of families, but spent their time as scientists studying a specific disease or body organ. The result was a steady decline in the number of primary care physicians and a continuing rise in their average age since few students entered this now unfamiliar form of practice, whereas the absolute number and proportion of specialists increased (Figure 3). Further, Figure 4 indicates that the number of patient visits per year decreased as the age of physicians increased, further decreasing access to the primary care physician, a valuable health professional. Clearly, it has been shown that the supply of primary care manpower decreased while the number of specialty physicians whose services cost much more increased.

While technology has helped provide the knowledge and more costly hardware capable of treating a much wider variety of illness, each new medical intervention which uses this technology costs the patient or society more.[9] In addition, the public's contact with a physician, either an initial contact or follow-up, is more likely to be with a specialist who, because of his training, is now capable of charging greater fees to each patient. Technology also increased the cost of training specialty physicians, and this more expensive training was passed along to consumers of

Figure 3

Number of Primary Care Physicians* Per 100,000 Population and Distribution by Type of Practice (U.S.A., Selected Years, 1931 - 1973).



* Specialists who limit their practice to internal medicine and pediatrics and physicians who are in general practice or part-time specialties.

Sources: (1) For 1931 and 1957: Overpeck, M. D. "Physicians in Family Practice, 1931-1967." Public Health Reports, Vol. 85, June 1970, Table 2, p. 488.

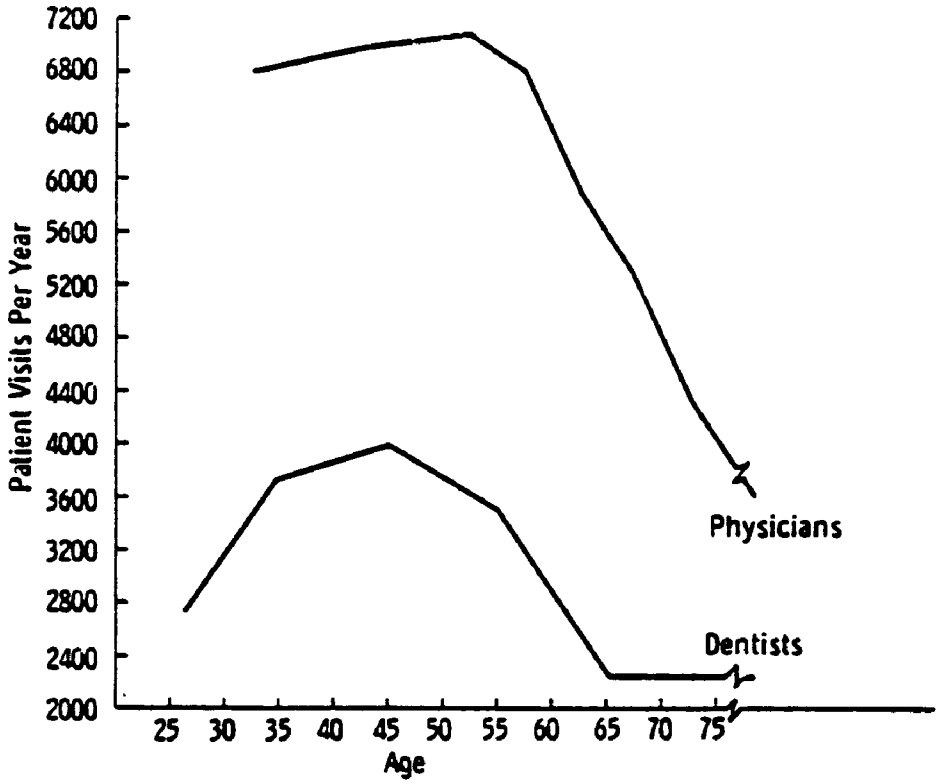
(2) For 1970: Haug, J. N., Roback, G. A. and Martin, S. C. Distribution of Physicians in the United States, 1970, American Medical Association, Chicago, 1971, Table 6, p. 54.

(3) For 1973: Roback, G. A. Distribution of Physicians in the U.S., 1973, American Medical Association, Chicago, 1974, Table 6, p. 76.

Adopted from: Medical Care Chartbook. The University of Michigan, School of Public Health, Department of Medical Care Organization, p. 159, Sixth Edition, 1976.

Figure 4

Average Number of Patient Visits Per Year for Physicians (1969) and Dentists (1967), by Age of Provider (U.S.A.).



Sources: (1) For Physicians: B. E. Balfe, J. H. Lorant, and C. Todd, The Profile of Medical Practice, (American Medical Association: Chicago, 1971), Table 22, p. 59.

(2) For Dentists: "1968 Survey of Dental Practice: VII. Number of Patients and Patient Visits," Journal of American Dental Association 79 (August 1969), Table 49, p. 27.

Adopted from: Medical Care Chartbook. The University of Michigan, School of Public Health Health Department of Medical Care Organization, p. 168, Sixth Edition, 1976.

medical care. In fact, medical education is the most expensive training in this country.[10]

C. THE HEALTH CARE DELIVERY SYSTEM

While technology provided new knowledge and equipment to treat man's ills, the nation's health care delivery system remained static and retained the organization that was only adequate for the health needs of an earlier era.

As technological advances helped shift the major health problems from relatively inexpensive acute diseases (such as infections), to more costly chronic diseases (such as heart disease and diabetes), and toward conditions requiring more extended medical attention, the health care system failed to develop a continuous form of care to replace that based on episodic treatment. The existing health care delivery system is a conglomerate of literally hundreds of thousands of more or less independent public and private providers of care. Among the public providers are the armed forces, Veterans Administration, the Public Health Service, and certain state and local health care facilities for the treatment of particular medical problems. The non-government portion of the system consists in the main of voluntary nonprofit hospitals, operating 36 percent of all hospital beds in the United States, proprietary for profit hospitals operating three percent of all beds, privately

organized laboratories and clinics, and 250,000 nonfederal physicians involved in direct patient care. Of the latter, approximately 75 percent are in office-based practice; the remainder includes interns, residents, and full-time medical staffs in hospitals.[11]

McClure[12] claims that while the medical care product increased in sophistication, the health delivery system did not. The medical care delivery system remains a predominantly solo physician practice or small group physician practice. For the most part, physicians in office-based practice function as entrepreneurs who sell services on a fee-for-service basis. In 1969, about 20 percent of active nonfederal physicians (excluding interns and residents) were members of group medical practices of three or more physicians, although two-thirds of these groups did not exceed the three to four-man category.[13] Fee-for-service solo medical practice or two-man partnerships therefore remain the predominant organizational form of private medical practice in this country. McClure[14] feels these units that deliver medical care are too small an enterprise, that its very size militates against efficiency, too specialized, and too fragmented to be economical or even to deliver the quality of medicine that physicians are capable of delivering. In many cases, the units reduce the physician's ability to provide the best care for the diversified needs of patients.

Phelan[15] describes the contemporary health care delivery system as unorganized:

> From one perspective the American way of delivering health care is uniquely un-American. As a nation, we proudly consider organizational ability and a capacity for innovative response to changing conditions as hallmarks of our national character. Yet our prevailing arrangements for delivering health care are substantially without effective organization; they have not improved in proportion to advances in medical science and technology; and they have proven inadequate to reasonably assure timely delivery of appropriate health care services to the people who need them. We have an impressive health care technology, and we have a population that desires it and, in fact, is demanding its benefits, but in between something is missing. Conspicuously absent are organized delivery arrangements which embody effective incentives to providers of care to match health care resources to health care needs.

His view is supported by the National Advisory Commission on Health Manpower.[16] In essence, then, the bulk of all medical services produced in this country are delivered to patients in small, inefficient units and financed on a fee-or-charge-per-service basis (either paid by the consumer directly, or through insurance premiums and/or taxes).

To the extent that the prevailing system is still predominantly composed of solo practitioners and small single specialty groups, the difficulties inherent in fee-for-service medicine are exacerbated. Because there is no coordination, each doctor consulted may not know what has already been done for the patient. Histories may have to be taken again; x-rays and laboratory tests may be repeated; different and perhaps conflicting treatments may be

administered. Moreover, because medical records are scattered, a physician may undertake a treatment with undesirable consequences merely because he was unaware of the patient's previous medical treatment. Consultation among physicians is more limited than if they work in larger groups, and a formal referral of the patient means not only a separate visit to perhaps a different part of the city, but also another fee. It is clear that our marvelous medical technology is being delivered by an antiquated health care delivery system.

D. THE INCREASED DEMAND FOR HEALTH CARE

Another factor contributing to rising health care costs is an increased demand for care. The demand for more medical services can be categorized into four areas. The first is a natural phenomenon of population increase. Between 1940 to 1970 the population increased 67 percent in the United States.[17] Thus, there are many more Americans requiring medical care services. But while the population increased during this time period, the number of active physicians per 100,000 population during this time, increased slightly.[18]

A second factor pointing to the increased demand for medical care services is that the medical care system is capable of providing more definitive care mainly because the

technology within the medical care system can do so much more. As mentioned earlier, diseases that were once untreatable are now easily cured.

A third factor is the awakening of the social conscience of this nation that health care is a right for all Americans regardless of their financial situation or their ability to pay for medical care. Lawyers have successfully argued that economic discrimination practiced by publicly funded institutions constitutes an invidious discrimination within the meaning of the Fourteenth Amendment's Equal Protection Clause.[19] For example, in one case, indigent patients argued that they could not be denied usage of a renal dialysis machine in a public hospital merely because they could not afford the extraordinary costs of the machine.[20] They contended that such a denial constituted a deprivation of life without due process of law and that the economic discrimination was invidious under the Equal Protection Clause. Further, the Department of Health, Education, and Welfare declares under the Hill-Burton Act any health institution that has been constructed, renovated, or has accepted Federal funds of any kind in the operation of its program, shall not deny health care to any citizen.[21] In his 1964 State of the Union Message, President Lyndon Johnson reaffirmed this conviction by stating that "fulfillment of our national purpose depends on promoting and assuring the

highest level of health attainable for every person."[22]

A fourth factor which created a greater demand for health care is the 1965 legislation of Medicare and Medicaid which enfranchised more elderly and poor Americans into the health care system. As a result of these important pieces of legislation, these two groups were now able to more easily enter the health care system without court battles and were accepted by the medical establishment. The above factors, which point to an increased demand for medical services from an increasingly inefficient health delivery system, resulted in a severe medical price increase.

E. CONTROLLING HEALTH CARE COSTS

1. Increasing the Manpower Supply

As the issue of runaway medical care costs continues to confront the nation, several attempts have been proposed by Congress to reduce health care expenditures while trying to expand services to an increasing population. The government has attempted to increase the supply of medical manpower by supporting training for primary care physicians. It is commonly believed that an increase in the number of physicians will drive down the price of physician services and therefore reduce total spending as if the market for physician services worked like the market for potatoes or beef. But studies by Fuchs[23] and Feldstein[24] have found convincing

statistical evidence that physicians have considerable discretionary power to control both the price that they charge and the amount of service they supply, and that more doctors are likely to mean more doctoring and higher fees. Enthoven[25] claims the medical care system can legitimately absorb every dollar society will give it. For example, "why provide $50.00 of tests to be 95 percent certain of a diagnosis if $250.00 of tests will provide 97 percent certainty. Or, if a patient's case looks hopeless, why not try an operation with a one-in-a-thousand chance of success if insurance is paying for it and a doctor naturally wants to do his best for the patient." And there is a strong bias on the part of consumers that more medical care is better than less. Merely providing more physicians for an already inefficient medical care delivery system will not reduce the price of medical care.

2. Regulation

Another attempt to control runaway medical care costs has been through regulation. In the early 1970's, the government instituted a wage-price freeze on the nation and extended this effort to the health care system. The natural experiment with direct controls in the health care industry was breaking down in April, 1974 when it was abandoned. Enthoven[26] explains why:

> If the government controls hospital costs per day, the hospital can reduce costs per day (and increase total costs) by keeping patients longer. If the government controls costs per hospital stay, the hospitals (with cooperation from their medical staffs) can reduce average costs per hospital stay (and increase total costs) by admitting more low cost cases such as tonsillectomies. And, in the long run, there is simply no way the government can effectively control the total cost of physician services by controlling fees, because there is no precise way of defining a physician's service or establishing the need for it. For example, the physician can tell his patients to come back and see him "next week" instead of "next month." It is hard to imagine a scheme for supervising 300,000 doctors in their offices that wouldn't cost a lot more than it would save.

Neither increasing the supply of medical manpower or regulating the medical care system has up to this point been totally effective.

3. Alternatives to Traditional Health Care Delivery Systems

A third attempt to reduce spiralling health care costs has been to look for alternatives to the traditional health care delivery system. A model alternative health care delivery system would have the following elements:

1. It should make the medical care delivery units larger. This would make it possible for physicians to share technology, machinery, computers and laboratory facilities.

2. It should eliminate a medical financing mechanism that can only be used when people become ill and correlates a physician's income to the amount and type of medical procedures conducted. Instead, it should provide financial incentives to keep people well and encourage early detection of disease.

3. It should eliminate fragmentation of the delivery system by bringing together a team of many medical disciplines to treat patients. This team should include less expensive personnel, such as the nurse practitioner, to take care of minor ills.

4. It should use a common medical record which would help avoid duplication of services.

5. It should bring these services together in one facility.

The health care delivery system that comes closest to meeting these objectives is the prepaid group practice of the Health Maintenance Organization (HMO)[27] type. HMOs are not a new concept, their origins go back to the 1920's consumer cooperative movement in the United States, but it also should be noted that in 1790 the Boston Dispensary, a Boston City Clinic, did have a form of organized, prepaid medical care services. Consumer cooperatives sponsored the earliest HMOs, but through the years, labor, industry, physician groups, hospitals and municipal governments have also successfully sponsored HMOs. Phelan[28] describes four characterists of Health Maintenance Organizations:

1. <u>The pattern of care</u>. The most significant characteristic of health maintenance organizations is the acceptance of responsibility for the organization and delivery of health care services for a defined population. This function is fundamentally different from the undertakings of health insurance companies or other types of insurance plans, which process and pay claims for the benefits specified in their contracts; the usual health care coverage offered by these insurance programs is solely a financial arrangement and a person must seek and find care on their own in a market which has a limited supply relative to a high demand.

2. Voluntary enrollment. Individuals and families who enroll in health maintenance organization plans do so voluntarily. Individuals who are offered a health insurance program through the fringe benefit program of their employer, are usually offered the option of joining a health maintenance organization in lieu of traditional health insurance such as Blue Cross-Blue Shield, but the main point is that they voluntarily enroll in health maintenance organizations and are not compelled to join.

3. Compensating physicians. Another significant feature of HMOs is the pooling of physician income from HMO premiums and distribution of this income according to a prearranged formula that does not relate income to specific services performed. This approach represents a sharp departure from the traditional and still dominant fee-for-service system. By altering the straight line relationship between service performed and income received, HMOs remove incentives to perform unneeded services and encourage the use of the most appropriate services. The natural consequence of this approach is emphasis upon preventive care and early detection of illness.

4. Comprehensive benefits. HMOs offer a series of comprehensive benefits which are important for a number of reasons. First, comprehensive benefits are what people need and increasingly expect. Second, comprehensive coverage removes and minimizes the financial barriers to the patient in seeking care and thereby promoting early consultation, early detection, and early treatment. Third, as the range of HMO benefits is broadened, the physician has greater freedom to prescribe the care for his patient that is medically appropriate.

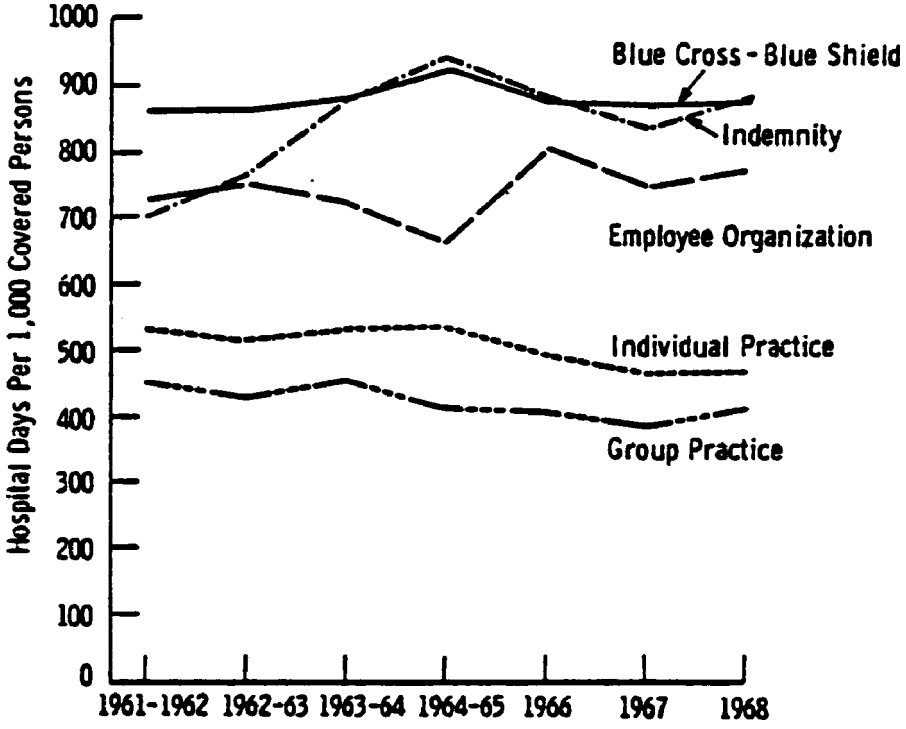
Many of the nation's health care leaders have known the startling fact that HMOs hospitalized patients less often than traditional fee-for-service programs. Perrott[29] describes the experience of seven years of hospital utilization by federal employees. His data indicate that federal employees enrolled in HMO plans are hospitalized half as

many days per 1,000 persons than those employees who choose the traditional health care programs (Figure 5). His findings are supported by other studies conducted by Barthel,[30] Gaus,[31] Henderson[32] Donabedian,[33] Klarman[34] and Roemer.[35] Most recently, Strumpf[36] describes the hospital utilization experience of nine HMOs compared to comparable Blue Cross traditional health insurance and reports that on the average, HMOs hospitalize patients one-half as often as Blue Cross patients. It can easily be seen that if hospitalizations which generate the largest portion of health care costs are reduced by half, a sizeable portion of the nation's health care bill would be reduced, or the savings could be applied to provide additional benefits such as visits to doctors, health education, and preventive services. In addition to fewer hospitalizations, HMOs have been shown to perform fewer surgical procedures than traditional Blue Cross/Blue Shield programs[37-38] and provide more preventive and ambulatory services.[39] The net result is a considerable savings, and insofar as quality can be judged, HMOs have a superior record.[40]

By the 1970's increasing medical care costs had become so alarming that Congress, with the blessing of a conservative administration, passed Public Law 93-222, the Health Maintenance Organization and Resources Act. This Act encouraged the development of HMOs throughout the nation.

Figure 5

Hospital Days Per 1,000 Covered Persons by Type of Insurance Plan, Federal Employees Health Benefits Program (U.S.A., 1961-1968).



Source: George S. Perrott, The Federal Employees Health Benefits Program, Enrollment and Utilization of Health Services 1961-1968 (Health Services and Mental Health Administration, U.S. Department of Health, Education and Welfare, 1971), Table 6, p. 26.

Adopted from: Medical Care Chartbook, The University of Michigan, School of Public Health Department of Medical Care Organization, p. 361, Sixth Edition, 1976.

Congress and the federal administration were persuaded by the records of existing HMOs to reduce hospitalization for illness, provide additional benefits and reduce the cost of delivering health care services. HMOs are currently being promoted as a strategy to modify the health care delivery system toward more economical patterns encouraging preventive and ambulatory care rather than costly hospital services.

The number of individuals enrolled in HMOs within the last few years is increasing. In 1970, 3.5 million persons were enrolled in HMOs, and in 1975, an estimated 6.5 million persons were enrolled in the 181 HMOs existing in the United States.[41]

HMOs are, however, not without drawbacks. Some consumers have complained that HMOs deliver impersonal assembly line medicine and they never see the same doctor for each visit. There have been reports from California of unscrupulous administrators who were negligent, incompetent, irresponsible, and committed fraud. After collecting HMO premiums they failed to provide all the care that was promised. The examples and cases are reviewed by D'Onofrio.[42] Further, there have been claims that HMOs do not provide the personal doctor patient relationship and there is too much emphasis on cost savings at the expense of patient care.[43] But the problems of assembly line medicine have been overcome in part, as some HMOs provide the same physician for all a

patient's regular health care needs. To be sure, the problems of impersonal care must be overcome as dissatisfied HMO customers can always leave the HMO program and return to the traditional system. The problems of unscrupulous administrators, while not specific to HMOs, have been overcome to a great extent as federal and state legislation are regulating HMO activities.

F. ENROLLMENT RATES AND CHARACTERISTICS OF HMO ENROLLEES

Acceptance of HMOs has been slow and the rate of adoption between and within groups has been highly erratic. The literature leaves planners and those who would design an educational program to enroll new members with confusing results on rates of acceptance for HMOs.

Nitschke[44] reports that in Wisconsin ten percent of the target population are enrolling in Comp-Care, a Wisconsin Blue Shield sponsored HMO. Henderson[45] claims in 1969 the Federal Employees Health Benefits Program experienced markedly different rates of enrollment into various plans. On the West Coast and Hawaii an average of more than 40 percent of federal employees participated in HMOs in contrast to six percent in Metropolitan areas of the Northeast and Midwest. Similarly disparate results have occurred in other groups. Table 2 shows the HMO enrollment experiences of General Motors employees reported by Burke. A wide range of

TABLE 2

PERCENT OF GENERAL MOTORS EMPLOYEES ENROLLED IN A HEALTH MAINTENANCE ORGANIZATION

City	Percent Enrolled
San Francisco	50
Cleveland	7
Portland	26
St. Louis	1
Detroit	2.4

Source: Burke Guidelines for HMO Marketing Inter Study, Minneapolis, Minnesota, 1973.

enrollment experience is evident. Moustafa reports that 21 percent of UCLA employees have enrolled in an HMO while Downey[47] claims 85 percent of Yale employees choose HMO. Beale[48] claims the enrollment rate at Longwood Center, a health center in Boston, Massachusetts, was 12.3 percent of the target population while Burke[49] reports the experience of enrollees of three separate employee groups in a Minneapolis HMO as 69 percent, 19.4 percent and 48 percent. Clearly the experience of actual enrollment in an HMO has been inconsistent, and has proven to be of marginal value to those who would forecast enrollment into a developing HMO. There appears to be so many other factors at

play that using another group's experience to predict enrollment into a new HMO would be hazardous.

A review of the literature of characteristics of individuals who chose an HMO may help to understand factors associated with enrollment and may be of some value in forecasting enrollment and developing an educational program. Unfortunately, the studies do not demonstrate consistent results and also appear confusing to HMO planners and educators.

Ashcraft[50] reports in Rochester, New York, those who chose an HMO plan were younger, have younger and larger families and lower effective income, had a higher level of health concern, but a lower reported rate of prior ambulatory utilization than those who do not choose HMO. Roughman[51] describes the results of joiners of three different HMOs in Rochester, New York. He confirms Ashcraft's statement that HMO joiners were younger than non-joiners but also points out there was a significant difference in mean age between the HMO groups. Roughman also concludes that income differences between HMO joiners and non-joiners were apparent but income differences were also evident between joiners of the three HMO groups. It is concluded that not only are differences between HMO and non HMO joiners noted, but there are striking differences between HMO joiners within the same community. Gaus[52] claims that

those who enrolled in the Columbia Plan had a larger family size, had heads of households who were older, had greater family median family income, were more likely to have received a college degree and had more health problems and had higher frequency of hospital and ambulatory care use than non HMO joiners. The Health Information Foundation[53] discovered that those New Yorkers who chose Health Insurance Plan (HIP), a New York City HMO, did so because it costs less than traditional health insurance and that "others in the shop" were joining. It seems that cost as well as social pressure may be predictor variables of enrollment.

Bashshur and Metzner[54] found that those people in a vulnerable position, that is those needing medical services while unable to pay, were more likely to choose an HMO plan.

Donabedian[55] claims consumer acceptance of an HMO is an expression of the absence of a prior patient-physician relationship or a breakdown in such a relationship. It seems that not having a regular doctor or a poor relationship is the most critical element in HMO selection. Moustafa[56] states there is no relationship between demographic characteristics and type of health insurance plan chosen, except that young single employees favored less expensive and limited coverage in health insurance plans while married employees especially those with children favored more comprehensive plans. He further claims that no definite

relationship was found between income levels of both HMO joiners and non-joiners, and in contrast to previous studies the cost of medical care had little bearing on their decision to join an HMO. Galiher[57] claims HMO joiners are likely to be older, have larger families and have achieved higher educational levels.

As it is easily seen almost every characteristic of a population that has been associated with enrollment has also been refuted. The one and only point that all investigators agree upon is that potential joiners of an HMO all need more information about the program.

Knowledge about the HMO appears to be strongly correlated to enrollment. The Medical and Hospital Advisory[58] Council to the California State Employees Retirement System, whose members were offered a variety of more than ten different health insurance plans, showed little evidence that subscribers were adequately aware of the characteristics and attributes of each plan. One of the main recommendations resulting from the study urged promotion of education which would include accurate and factural information of the capabilities and limitations of the plans-health plan education. The importance of education is further stressed by Metzer and Bashshur[59] who concluded that 31 percent of the auto workers they surveyed, who chose Blue Cross/Blue Shield health insurance rather than the

alternative HMO program, were not aware the HMO program was available to them. Towle[60] also referring to the experience of the Columbia Medical Plan suggested the important reason for marginal enrollment is a general lack of understanding of the plan and perhaps even a lack of knowledge of HMO presence by the consumer.

Moustafa[61] claims those most likely to enroll in an HMO plan have a greater knowledge about the plan and had studied details about HMOs more so than non-members. Towle[62] cites the most important variable affecting HMO enrollment is a thorough understanding by the consumer of the plan. One of the most interesting studies on consumer knowledge regarding HMOs was done by Becherer.[63] After interviewing employers of various size organizations he concluded that almost one-half of those employers surveyed have never heard about the HMO concept. This seems remarkable in view of the fact that most employees obtain their health insurance through their employer.

It is not surprising that those who are more informed about the HMO are more likely to join the plan. People will after all support and join those things they perceive will benefit them in some way. If they do not understand the benefits of a program or if they are unaware of it, they obviously will not join or support it whether it is an HMO or any program. What is surprising is that while

education is mentioned as a panacea to the slow and inconsistent enrollment problem the specific type or method of education is never described. What type of education is needed and education about what? How does prior experience with the health care system relate to the educational program? Failure to answer these issues perhaps accounts in part for the poor educational programs and sub-optimal enrollment results.

It should also be mentioned that all previous studies of enrollment rates and HMO joiner characteristics were done ex post facto, that is on a retrospective basis. These are studies of characteristics of those who have already joined an HMO and the variables are attributed to the rest of the population. However, there may be a self selection mechanism at work. By virtue of their unique enrollment or advertising campaigns each HMO may be selecting out a special group. It is known that those who have joined constitute only a small portion of the eligible population. It is conceivable that if only the characteristics of these groups are considered the HMO may miss enrolling a much larger population.

The only study in the literature which uses a prospective method to examine patterns of HMO enrollment was reported by Bice.[64] Bice interviewed residents of four public housing projects in East Baltimore, Maryland, a population

of approximately 8,000. His data reveals that approximately 40 percent of this population joined an available HMO program. He demonstrates that illness history and previous medical services are linearly and positively associated with enrollment when the HMO options offers a significantly lower marginal out of pocket cost for its services. Unfortunately, his dependent variable (enrollment) is derived from examining enrollment records and simply notes whether or not a family ever enrolled in the HMO and does not record whether they remained. He did not ascertain if the surveyed population intended to enroll in the HMO. In addition, his study was conducted among a low income population and for this group the burdens of medical costs have a disproportionate impact on their personal finances. It is not surprising the poor would select a program that would cost them less.

There are no studies reported in the literature that predict HMO enrollment based on a prospective design or determines characteristics of an HMO which would appeal to potential enrollees or systematically develops an educational program based on consumer experiences with the health care system.

It should be noted, enrollment and marketing experiences are relatively new to the health care field. As mentioned in Chapter I advertising of health services has in

the past been prohibited. Therefore we must turn to the literature from the behavioral science field to understand more clearly how consumers choose or adopt an idea or service.

G. THE LITERATURE ON INNOVATION AND CHANGE

Most literature on acceptance rates of HMOs has focused on characteristics of enrollees. This has proven to be of little value in forecasting enrollment in an HMO and developing an educational plan used to enroll new members.

This approach is not unique to the HMO system. When the literature on marketing is observed it appears to follow the same pattern and to fall into the same trap. Feldman and Armstrong[65] identified the characteristics of buyers of a new product, the Mazda Rotary Engine. Their studies were unable to advance the sales of this product. The numerous consumer studies on the adoption of food products, consumer goods such as fashion, touch-telephone and the use of the new automotive diagnostic center have examined characteristics of users of these new goods and services and have all had marginal success in selling their products.[66] What is needed is a different approach in understanding consumers' acceptance of new products, goods and services.

Rogers and Shoemaker have designed a theoretical classification model which aims to describe adoption rates of

innovations. According to Rogers and Shoemaker:[67]

> An innovation is an idea, practice, or objective perceived as new by an individual. It matters little, as far as human behavior is concerned, whether or not the idea is objectively new as measured by the lapse of time since its first use or discovery. It is the perceived or subjective newness of the idea for the individual that determines his reaction to it. If the idea seems new to the individual, it is an innovation. New in an innovative idea need not be simply new knowledge. An innovation might be known by an individual for some time, that is, he is aware of the idea but he has not adopted or rejected it. The newness aspect of an innovation may be expressed in knowledge, attitude, or regarding a decision to use it.

If such is the case, perhaps the literature on adoption and acceptance rates of innovation may be applied to the HMO to understand more clearly why the HMO has been slowly adopted.

Rogers and Shoemaker[68] claim that some innovations diffused from the first introduction to widespread use in a few years while other innovations take a lifetime. They cite an example from the education system. One education innovation, Modern Math, reached one hundred percent adoption by public schools in five years, yet another innovation, Kindergarten, required fifty years. They asked the most salient question in explaining adoption rates; what characteristics of the innovation affect the rate of adoption?

Rogers and Shoemaker[69] note there are fewer research studies designed to prove this point than to answer other major research questions on adoption and diffusion. When the diffusion and adoption research literature are examined

closely, one is amazed at the large effort made to study the characteristics of adopters on a retrospective basis and how little effort has been devoted to analyzing how the properties of the innovation affect its rate of adoption. The HMO parallels this exactly. That is, there are many studies that describe the characteristics of HMO joiners and most of them are contradictory. There are few studies which examine characteristics of the HMO on adoption rates.

What is needed then is a classification scheme for describing the perceived attributes of an innovation in universal terms. Then the properties of the innovation are able to be classified as contributing to early or late adoption and the rate of adoption could be predicted. But unfortunately as Rogers and Shoemaker point out, this goal has not been reached and is the objective of current diffusion research on innovation attributes.[70]

Based on previous research five different attributes of innovation are described. Rogers and Shoemaker claim their classification scheme is more hypothetical in nature and have empirical claims to support them but they set the stage for a universal classification scheme for describing the perceived attributes of innovations. The five attributes of innovations according to Rogers and Shoemaker[71] are: (1) Relative Advantage, (2) Compatibility, (3) Complexity, (4) Trialability, (5) Observability.

1. Relative Advantage is the degree to which an innovation is perceived as being better than the idea it supercedes.

2. Compatibility is the degree to which an innovation is perceived as consistent with existing values, past experiences, and needs of the receiver.

3. Complexity is the degree to which an innovation is perceived as relatively difficult to understand and use.

4. Trialability is the degree to which an innovation may be experimented with on a limited basis.

5. Observability is the degree to which the results of an innovation are visible to others.

These five described attributes form a conceptual framework which helps explain adoption rates of innovations.

Rogers and Shoemaker support the first generalization "the relative advantage of a new idea as perceived by members of a social system is positively related to its rate of adoption" by reviewing 43 studies in this area.[72] Sixty-seven percent of the studies support this generalization and the remainder do not. If the relative advantage of the HMO is not perceived as being better than a traditional source of medical care than slow adoption is anticipated. In the past HMOs were not permitted to advertise or describe their advantages as better than the traditional health system, therefore they have not been able to successfully follow Rogers and Shoemaker's first generalization. It seems logical that people will not join something that they cannot perceive to be better or know that is better

than what they have.

Rogers and Shoemaker support the second generalization, "the compatibility of a new idea as perceived by members of the social system, is positively related to its rate of adoption," by reviewing 27 studies.[73] Sixty-seven percent of the studies support this generalization, the remainder do not. If, for example, an HMO introduces a greater use of paramedical personnel to a group that is more familiar with obtaining all their care needs from a physician, then a potential problem may occur. A mechanism must be used to overcome problems of incompatibility. In the case of paramedical personnel, they could be introduced as part of the doctor's team. In this manner the enrollee can still identify with the physician.

The third generalization described by Rogers and Shoemaker is "The complexity of an innovation as perceived by members of the social system, is negatively related to its rate of adoption." Rogers and Shoemaker support this statement by examining 16 studies[74] of which 56 percent agree and the remainder show no correlation. While the HMO may be new to the enrollee, it actually presents a less complicated system. All the enrollee need to do is go to one facility for all their medical care needs. The one source of care will direct the patient through the medical system. The task for the HMO is to convince the potential

enrollee to learn about the new system and have the enrollee understand that the new system is less complex than the traditional medical system. The easiest way to achieve this would be to have the potential enrollee try the system.

Rogers and Shoemaker claim "The trialability of an innovation as perceived by members of the social system, is positively related to adoption." Of the 13 studies[75] reviewed 69 percent support his generalization and 31 percent are not positively correlated. Traditionally this generalization would not help HMO enrollment rates as HMO contracts are not sold on a trial basis, rather they are available at one year renewable options. Perhaps the HMO should consider an initial three-month or six-month trial contract. In addition the HMO may consider just having an open ended contract, that is people can leave the HMO program at any time they wish. After all, no program wants dissatisfied customers.

The final attribute of an innovation described by Rogers and Shoemaker is supported by the generalization, "The observability of an innovation as perceived by members of a social system, is positively related to its rate of adoption." Of the nine studies[76] which were reviewed this generalization was supported by 78 percent of the studies and not supported by the remaining 21 percent. This generalization may be a little more difficult for the developing HMO to apply since the well being of patients and health

care advantages of the HMO would not be easily observed. Satisfied patients that can easily make appointments are observable. The HMO facility, that is its physical plant, is also observable and should present a favorable image.

Rogers has designed a reasonable conceptual framework to explain adoption rates. Its challenge lies in its testing in the HMO field. It should also be mentioned that the work of other related fields have been examined but all appear to be theoretically grounded to the work of Rogers and Shoemaker. The literature from the marketing field demonstrates that for the last ten years their theoretical framework is derived from Rogers and Shoemaker. The work of Havelock[77] on "the utilization and dissemination of education and information" has also tapped Rogers and Shoemaker's theories.

The present study will shift the focus from the conventional method of predicting enrollment and developing educational programs based on the characteristics of those who joined an HMO elsewhere to a behavioral science approach which surveys two populations to determine their willingness to join an HMO. The study also examines the special characteristics of the HMO that would appeal to potential enrollees. The previous experiences with the traditional health care system that are perceived as problems by the

potential enrollees are determined, and educational messages are developed which emphasizes how the HMO could help alleviate the identified problem.

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CHAPTER III

THE DESIGN OF THE STUDY

A. POPULATION SELECTION AND PROCEDURES

The present study is a re-analysis of data derived from an exploratory study conducted by The University of Michigan Medical School, Division of Primary Care/Community Medicine (PC/CM). The author of the present study was the Director of the exploratory study. The PC/CM Division was designated by the Director of the Medical Center to plan and develop a University-sponsored Health Maintenance Organization (HMO). The HMO would be used by the Medical Center as a clinical base to teach primary care clinical skills, to conduct research in the area of health care delivery, and would meet a portion of the Medical Center's responsibility of providing regular family care to the Washtenaw County community.

Two large groups, The University of Michigan (UM) employees and the United Auto Workers of America (UAW) were identified by the PC/CM staff as the population to be surveyed. These two groups represent one-third of the Washtenaw County, Michigan, labor force and would be the first of several groups to be offered any new HMO program sponsored by

the University. The specifications defining the universe for the study are: 1) all University of Michigan employees who participate in the University health benefit program and reside in Washtenaw County, Michigan, and 2) all members of the United Auto Workers of America residing in Washtenaw County, Michigan.

Mr. Donald Thiel, Manager of The University of Michigan Office of Staff Benefits, provided a list of all University employees who received the University health insurance fringe benefit program. The given list was rank ordered by social security number and contained 13,491 names. Mr. Melvin Glasser, Director of the United Auto Workers of America, Department of Social Security, identified 11,877 active UAW members residing in Washtenaw County, Michigan. The UAW Department of Social Security agreed to provide their computer capabilities to select a sample of UAW members residing in Washtenaw County, Michigan. Ms. Irene Hess, head of the Sampling Section of the Survey Research Center, the Institute for Survey Research at The University of Michigan, was consulted to estimate the sample size required from both populations. It was concluded that the sample size for both groups would be less than 5 percent of the total population. Therefore, the population size would be treated as though it were infinite.

The HMO enrollment rate experiences of employees at the

University of California at Los Angeles reported by Moustafa,[1] and the enrollment rate of the United Auto Workers of America in the Metro Health Plan, an HMO located in Westland, Michigan,[2] were used to determine estimates to be applied to the standard error formula.[3] An estimate was made that 20 percent of the UM employees and 10 percent of the UAW members would join the proposed HMO. A plus or minus 5 percent standard error at 95 percent level of confidence was desirable for the UM employees. The estimated enrollment rate for the UAW members was smaller than the UM group, and a more precise standard error was needed, therefore, a plus or minus 3 percent standard error at 95 percent level of confidence was desired for the Auto Worker group. It was calculated that 256 University employees and 400 UAW members would adequately represent both populations at the standard error and confidence level desired.

The "systematic selection method" procedure for selection of a random sample designed by Kish[4] was employed. The number 15 was selected from a table of random numbers and starting with the fifteenth name down from the top of the University list, every 50th name was manually selected. The lists were treated as if they were continuous, that is, when the bottom of the list was reached, the counting process continued on to the beginning of the original list. A total of 440 names were selected from the UM list.

A majority of the UAW members work and reside mostly in one city within the county. The proposed HMO would be offered to all UAW members residing in the county through their place of employment, and there was concern that UAW members who work in the peripheral sectors of the county would not be adequately represented in the survey. Therefore, it was necessary to stratify the list of UAW members by postal zip code for Washtenaw County, Michigan.[5] The UAW Department of Social Security was asked to develop a list of all active UAW members residing in Washtenaw County, Michigan. The list was arranged by all postal zip code numbers in Washtenaw County, Michigan, and started with zip code 48103 and ended with zip code 48197. Within each zip code group, names were rank ordered by social security number. Using a table of random numbers and the selection procedure described by Kish,[6] the 16th name from the top of the list, and every 23rd name thereafter was selected. Five hundred twenty-five names were selected using this procedure.

B. QUESTIONNAIRE DESIGN AND DEVELOPMENT

The exploratory study did not have formal hypotheses, but instead was geared toward hypotheses development and enrollment estimates. The exploratory study examined various characteristics and factors related to consumer choices and decisions about health care services. Research questions

for the exploratory study were developed based on a review of the literature dealing with decision-making and health care in a choice situation. In addition, the Harvard Community Health Plan, Boston, Massachusetts, the Comp-Care Program, a Blue Cross sponsored HMO in Milwaukee, Wisconsin, were visited by the Study Director and visits were made to the Martin E. Segal and Kappa Systems Health Care consulting firms in Washington, D.C. Problems of enrollment, consumer perceptions, and consumer expectations of HMOs were discussed with the administrators of the HMO programs and the consulting firms. These activities formed the basis of the research questions which the exploratory study attempted to address.

In the winter semester of 1973, the Biostatistics class at The University of Michigan School of Public Health was examining survey research methods. The class was interested in a "real" work problem, and Dr. Jack Kirscht, the faculty member for that class, invited the study director to describe the process of developing the exploratory study. The study director reviewed the literature with the class and shared the experiences of the site visits to the operational HMOs. Students became interested in the exploratory study and asked to participate in the study as a portion of the class practicum. The faculty member and the study director agreed to have the class serve as a committee to help

develop the questionnaire for the exploratory study. Under the direction of the faculty member and the study director, a survey instrument was developed as a portion of the teaching program. The questions were constructed in a manner that permitted the responses to be easily coded onto a Likert-type scale. (See Appendix N.)

The questionnaire consisted of 30 major questions, the preponderance of which had subsidiary probes. The questions were designed to encompass three main areas: (A) General knowledge about HMOs and willingness to join a centrally located, University sponsored HMO program. (B) Experience with previous sources of health care and satisfaction with that care and with the health delivery system in general. (C) Expectations, desires and beliefs about the health care system, its ability to be effective and prevent illness, and acceptance of allied health personnel to provide some medical care needs. The many issues and variables within these three areas were listed, and they eventually developed into a lengthy outline. The reduction of this long outline to a reasonable questionnaire entailed the usual difficult decisions.

C. DATA COLLECTION PROCEDURES

In late spring of 1973, the study director hired and trained seven interviewers to telephone survey the UM

population. Using the systematic selection technique described earlier, a subsample of 64 randomly chosen names from the UM list was used to pretest the survey questionnaire. Based on the pretest results, the survey instrument was slightly modified. A total of 376 UM employees constituted one of the survey's populations.

Addresses and telephone numbers of the University sample were not available from the Staff Benefits Office and were obtained through a manual search. The addresses and telephone numbers were found in a University Staff Directory and the Ann Arbor-Ypsilanti telephone directory. Those with no listing or home addresses in either of these directories were found by searching records at the Office of Staff Benefits of the University. A University operator was able to find additional telephone numbers and addresses. The Hospital Records Department, Academic Records Department, and Campus Records Department also helped in finding the remaining addresses and telephone numbers. Of the 376 employees, 261 (69.4%) responded to the survey. Of the 115 persons who were not available, 36 were no longer employed by the University; 48 lived outside of Washtenaw County and were beyond the proposed HMO service area; 10 were on vacation; 7 had no telephone; 7 refused, and 7 worked for the Institute of Science and Technology, a program which was no longer associated with the University.

In late spring of 1974, five of the original telephone interviewers were rehired to conduct the UAW survey. Two additional interviewers were hired and trained by the study director. Telephone numbers were not available from the union group and the PC/CM staff used a manual search to find telephone numbers from local telephone directories, from city directories, and directories published by the local Chamber of Commerce. In addition, the Michigan Bell Telephone Number Information Service was employed. The above methods produced telephone numbers for 350 people (67%). Of the 175 for which no telephone numbers were found, 73 had unlisted private telephone numbers and 102 had no telephone listing at all. An additional 48 could not be reached for the following reasons: 11 had phones disconnected and had no new listing; 7 moved out of the county; 17 no longer were UAW members; 4 people were listed with incorrect names; 2 were deceased; and 7 refused to be interviewed. By mid-summer of 1974, the staff had been able to complete only 258 UAW telephone interviews.

With the endorsement of Union officials, 219 letters were mailed to the unreached population. The letter explained that a survey to determine the health needs of auto workers was underway and that we would like to include the addressee's thoughts. The difficulty in making contact was explained and the addressee was asked to telephone the

interviewers on a weekend when the trained interviewers would wait for their call. Each letter included a quarter to defray the cost of the phone call and highlighted the importance placed on a response. Nineteen of these letters were returned as undeliverable. After one week, only ten people had responded. Eleven days after the first letter was sent, a post card was mailed to the remaining 190 UAW members reminding them that we were waiting to receive their call and that we would like to include their thoughts in the Auto Workers Survey. Three days later, still another post card was sent out. The post cards proved to be effective as an additional 41 individuals telephoned and were interviewed. Of the 219 individuals originally mailed the letters with the quarter, 51, or 23% responded to the interview. Of the 51, 16, or 31% had no telephone listing, 33, or 65% had unlisted telephone numbers, one had a listed number, and one had married and now had a new number under her new name. The total sample response rate was 59% (N=309).

The higher response rate from the UM group may partially be attributed to the fact that it was possible to obtain some UM employees' business telephone numbers and to interview them at work. This was not possible for the UAW group.

A validity check was conducted by the study director and one part-time research assistant for both the UM and UAW groups. The Current Population Survey (CPS) of the Bureau

of the Census reinterview 7.5% of all households as a method to insure quality on field operations.[7] Therefore, ten percent of all respondents were retelephoned to determine if the telephone calls by the interviewers were conducted, and to determine the validity of the response. The sample validity check revealed that all reported telephone interviews had actually occurred. The validity check could not detect any unusual discrepancies or interpretation of response. An internal validity check was partially constructed by asking several of the same questions in a different manner. This method was also unable to detect any unusual discrepancies in the respondent's answers. The high rate of validity for this questionnaire is attributed to a rigorous pretest measure and a use of the Likert scale to code responses; and, in addition, the interviewers who were hired were members of the Biostatistics class that had expressed a strong interest in the study and partially worked on the development of the questionnaire. Further, interviewers were observed during a portion of their interviews and each completed questionnaire was edited by the research assistant and study director.

All data for the interviews were placed on IBM cards. Two sets of cards for each population group were punched and verified.

D. DATA ANALYSIS

The Statistical Package for the Social Sciences (SPSS), was the computer program used to help sort the data. An item analysis describing the frequency and percentages for each question was generated. Dummy tables were constructed and cross-tabulations between the questions "Would you be willing to enroll in a proposed HMO if one were offered?" and all other questions were obtained. Contingency tables and 2x2 tables were constructed, and Chi square tests to determine significant correlations were calculated.

E. RESEARCH QUESTIONS

The research questions for the present study are derived from an application of adult education theory to the data generated from the exploratory study. Since adults comprehend a new idea or experience by assimilating it with the mass of ideas or experiences already in mind, it is important to recognize the previous experiences of an adult. The previous experiences with the health care system will be used as a resource for developing the educational program which will help enroll new members into the HMO. The research questions for the present study will examine:

1. What previous consumer health experiences correlate with proposed enrollment into a proposed HMO?
2. Can these significant correlations be used to develop an educational program for prospective HMO members?

3. Can these significant correlations be used to predict the number of individuals who would enroll in a proposed HMO?

REFERENCES

[1]Moustafa, A. Determinants of Choice and Change of Health Insurance Plan, Medical Care 9:1, 32-41, Jan.-Feb., 1971.

[2]Personnel Communication, Mr. James Walworth, Director, Alternative Health Care Programs, Blue Cross/Blue Shield of Michigan, March 10, 1974, Detroit, Michigan.

[3]The Calculations for sample size were made as follows:

$$\text{standard error} = \sqrt{\frac{\text{probability x(1-probability)}}{\text{sample size}}}$$

$$\text{for the UM group:} \quad .025 = \sqrt{\frac{.20 \times .80}{N}}$$

$$N = 256$$

$$\text{for the UAW group:} \quad .015 = \sqrt{\frac{.10 \times .90}{N}}$$

$$N = 400$$

[4]Kish, L. Remark 3.4.I Systematic Selection, p. 85 in Survey Sampling, John Wiley and Sons, New York, 1965.

[5]The stratified procedure was not required for The University of Michigan employees as the proposed HMO would be offered through the University, which is centrally located in Ann Arbor.

[6]Kish, op. cit., p. 85.

[7]U.S. Department of Commerce, Bureau of Census, Error Control Methods used in Current Populations Survey, Reinterview Programs, Technical Paper No. 6, p. 6, Washington, D.C., 1963.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

A. INTRODUCTION

The primary purpose of the present study is to (A) forecast enrollment of the United Auto Workers of America (UAW) and The University of Michigan (UM) employees residing in Washtenaw County, Michigan, in a proposed Health Maintenance Organization (HMO) program and (B) to develop an educational plan to recruit these groups into an HMO. The present study will analyze characteristics of the population and selected variables, such as the prospective member's previous experiences with the health care system, and will cross tabulate these characteristics and experiences to the populations willingness to enroll in an HMO. The characteristics and variables that are statistically associated with enrollment will be used to develop an educational plan to recruit new members into the HMO.

Two of the research questions will be addressed in this chapter. The third research question dealing with the educational plan will be dealt with in a subsequent chapter.

B. CHARACTERISTICS OF THE POPULATIONS

Several questions dealt with the characteristics of the populations and would be of interest to developers of the HMO program and to those who would lead the HMO enrollment efforts. Distinct differences between the groups are observed. Table 3 describes the distribution of age of both

TABLE 3

AGE DISTRIBUTION, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Age	UM Mean Age: 33.3		UAW Mean Age: 39.0	
	Number	Percent	Number	Percent
Less than 20	3	1.2	-	-
20's	94	36.0	66	21.4
30's	48	18.4	69	22.3
40's	63	24.1	66	21.4
50's	35	13.4	58	18.8
60's	18	6.9	39	12.6
70's	*	*	11	3.5
Total	261	100.0	309	100.0

*Mandatory retirement for UM employees is 70 years of age and this sub-set of the population was not considered a portion of the labor force.

groups and reveals that the UAW members have a fairly consistent age distribution. The UM employees have the largest

proportion of their population in the 20 year old category, the percent decreases significantly for the 30 year old category, rises for the 40 year old category and drops again for the 50 year old category in a bimodal fashion. The UM employees also exhibit a younger mean age than the UAW group.

TABLE 4

MARITAL STATUS: THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Marital Status	UM		UAW	
	Number	Percent	Number	Percent
Single	63	24.1	36	11.7
Married	178	68.2	247	79.9
Other	20	7.7	26	8.4
Total	261	99.9	309	100.0

The UAW members are not only a little older than the UM employees, but as indicated in Table 4, nearly 80 percent are married while slightly less than 70 percent of the UM employees are married.

Tables 5 and 6 describe the achieved formal educational levels of both populations and their spouses. It can be seen that 77 per cent of the UAW members have not received formal education beyond high school, while 60.5 percent of the UM employees have finished college and have had some

TABLE 5

DISTRIBUTION OF THE AMOUNT OF FORMAL EDUCATION, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Amount of Education	UM		UAW	
	Number	Percent	Number	Percent
Less than High School	18	6.9	111	35.9
High School	34	13.0	128	41.4
Some College	51	19.5	63	20.4
Finish College	47	18.0	6	1.9
Graduate Study	111	42.5	1	.3
Total	261	99.9	309	99.9

TABLE 6

DISTRIBUTION OF THE AMOUNT OF FORMAL EDUCATION OF SPOUSES, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Amount of Spouses' Education	UM		UAW	
	Number	Percent	Number	Percent
Less than High School	12	4.6	98	31.7
High School	29	11.1	117	37.9
Some College	33	12.6	31	10.0
Finish College	52	19.9	7	2.3
Graduate Study	53	20.3	1	.3
No Spouse	82	31.4	55	17.8
Total	261	99.9	309	100.0

graduate study. The higher educational level of the University is attributed to the fact one-third of the University employees are faculty members who would require additional years of formal education to fulfill the requirements for their positions, and an additional one-third of the UM employees are in managerial, professional or technical positions, professions which traditionally require formal education. In addition, the achieved formal educational level of the UM spouses is higher than that of the UAW spouses. The UAW spouses' educational level is slightly greater than that of the UAW members, while UM spouses' achieved level of education is considerably less than the UM employees. Table 4 also shows that 31.4 percent of the UM employees and 17.7 percent of the UAW members do not have spouses. It appears that eight percent of both groups who report in Table 4 their marital status as "other" are without spouses.

The number of children both groups have is of interest since HMO services are family-oriented and would include pediatric care. The two groups were asked, "How many children do you have?" The results are reported in Table 7. Over one half of the UM employees do not have children, while approximately one fourth of the UAW group are without children. The UM employees distribution of children is fairly even for one and two children, then drops off

TABLE 7

DISTRIBUTION OF THE NUMBER OF CHILDREN, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Number of Children	UM		UAW	
	Number	Percent	Number	Percent
0	139	53.2	86	27.8
1	38	14.5	56	18.1
2	39	14.9	85	27.5
3	26	10.0	44	14.2
4	14	5.4	19	6.1
5 plus	5	2.0	19	6.1
Total	261	100.0	309	99.8

gradually as the number of children increases. The distribution of UAW members' children sharply rises from one to two then declines as the number of children increase. The UAW members who are a little older and had more children at the time of the survey would require more pediatric services while the UM employees who are slightly younger and have fewer children would require pediatric services in the future. The mean age for respondents of both groups would indicate that it is highly likely that most children would still be living at home. In the event that children have left the home, for example to go to college, the HMO program

would offer an extended rider type policy, similar to a Blue Cross policy, which continues insurance coverage for children until the age of 25.

Population mobility is an area of concern for a developing HMO program or for any developing program. Both groups were asked, "How long have you lived in Southeast Michigan?" and, "How much longer do you believe you will stay in the area?" The responses are summarized in Table 8 and 9. The UM employees are relatively new to the area.

TABLE 8

DISTRIBUTION OF THE NUMBER OF YEARS RESIDING IN SOUTHEAST, MICHIGAN, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS

Time in Area	UM		UAW	
	Number	Percent	Number	Percent
Less than 2 years	20	7.7	3	1.0
2 - 5 years	52	19.9	10	3.2
5 - 10 years	62	23.7	32	10.4
10 plus years	127	48.7	264	85.4
Total	261	100.0	309	100.0

Less than one-half (48.7 percent) of that group have resided in Southeast Michigan for ten years or more, while more than 85 percent of the UAW members report residency of ten or more years. In addition, 4.1 percent of the UAW members and

TABLE 9

LENGTH OF TIME THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN PLAN TO REMAIN IN SOUTHEAST MICHIGAN

Years	UM		UAW	
	Number	Percent	Number	Percent
Less than 1	19	7.3	6	1.9
1 - 2	38	14.6	4	1.3
Longer than 2	80	30.7	31	10.0
Indefinitely	119	45.5	243	78.6
Don't know	5	1.9	25	8.1
Total	261	100.0	309	99.9

27.6 percent of the UM employees have resided in Southeastern Michigan for less than four years, and there is a distinct difference between the amount of time both groups intend to stay in the area. Seventy-nine percent of the UAW members intend to reside in Southeastern Michigan indefinitely while slightly less than half (45.6 percent) of the UM employees intend to remain indefinitely in Southeastern Michigan. The available evidence indicates that the UAW members are a more stable population and plan to reside in Southeastern Michigan for more years than the UM employees. The UM employees are more mobile, are newer to the area,

and, as a whole, do not intend to remain in Southeastern Michigan as long as the Auto Workers.

C. ENROLLMENT FORECAST

In order to determine whether individuals would join a proposed HMO program, it would be helpful to know if they were familiar with the HMO concept. Both groups were asked, "Are you familiar with the idea of a prepaid group practice?", and the results are reported in Table 10. Almost 97 percent

TABLE 10

FAMILIARITY WITH THE HMO CONCEPT, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Familiar with the HMO Concept?	UM		UAW	
	Number	Percent	Number	Percent
Yes, never belonged to one	75	28.7	8	2.6
Yes, belonged to one	7	2.7	2	.6
No	179	68.6	299	96.8
Total	261	100.0	309	100.0

of the UAW members and 69 percent of the UM employees have never heard of the HMO concept. This does not seem surprising since advertising of the HMOs has been prohibited by law for many years and only since the passage of Public law

93-222, the 1973 HMO Act, has advertising of HMO programs been tolerated. The United Auto Workers of America have sponsored an HMO program in Detroit since 1960; however, the information regarding that HMO has not reached the Union members in Washtenaw County. That information is of little value to Washtenaw County Auto Workers since few would travel to Detroit for their health care. Almost one-third of the University employees are familiar with the HMO concept and it appears that this highly educated group has read more about the HMO concept or this mobile group may have encountered HMOs elsewhere throughout the nation. Less than three percent and one percent of the UM and the UAW groups respectively, have ever belonged to a HMO.

For those who indicated an unfamiliarity with the HMO, a statement was read which describes the HMO concept and their general range of benefits. Both groups were then asked, "Would you be willing to join a proposed HMO offered by the University?" Table 11 describes the results. Approximately one-half of both populations indicated they would join the proposed HMO program. This figure is not consistent with the enrollment experiences of HMOs throughout the nation and appears to be an unusually high response rate. Individuals who would join the HMO would need to meet criteria beyond stated intention of willingness to join the HMO. Fortunately, additional questions were asked which

TABLE 11

DISTRIBUTION OF THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN WHO WOULD JOIN A PROPOSED HMO

Would You Join?	UM		UAW	
	Number	Percent	Number	Percent
Yes, definitely	46	17.8	67	21.7
Yes, probably	99	37.8	82	26.5
Don't know	52	20.1	75	24.3
No, probably	38	14.7	45	14.6
No, definitely	26	9.6	40	12.9
Total	261	100.0	309	100.0

could be selected as criteria to help refine the projected estimate. At the time of the survey, premiums for an HMO program for University employees would cost a few dollars more per month than their traditional Blue Cross-Blue Shield health insurance. This additional premium would have to be provided by the employees; therefore, the employees who would join the HMO must be willing to pay a little more than they are currently paying for their Blue Cross-Blue Shield insurance. Further, if enrollees are to join the HMO program and receive all of their health care through the HMO services, they would need to switch doctors, that is, from their regular source of care to the HMO program which would

provide all their needed medical care services.

The University group was asked, "Would you be willing to pay an additional amount, between $10.00 and $17.00 more than you are currently paying for health insurance for a University-sponsored HMO?" Eighty-five percent of those who answered "definitely yes" for joining the HMO program would be willing to pay an additional amount, nine percent of those who answered "definitely yes" would not be willing to pay an additional amount, and six percent were unsure; therefore, only 85 percent of those who answered "definitely yes" could be considered actually willing to join the HMO program. Of those University employees who answered "probably yes," 58 percent would pay more for the HMO program, 11 percent would not, and 31 percent were not sure. Therefore, an additional group was ruled out as not meeting another condition for joining the HMO program. This question was not asked of UAW members because the entire health benefit program is paid by the UAW employers.

The willingness to change from a regular family doctor to the HMO doctor was the second criterion which would need to be considered in projecting enrollment in an HMO. Both groups were asked, "Do you have a regular doctor?" The responses are reported in Table 12. Surprisingly, 51.3 percent of the University employees report not having a regular family doctor, while 16.8 percent of the UAW members report

TABLE 12

DISTRIBUTION OF THE NUMBER OF THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN WHO CLAIM A REGULAR DOCTOR

Have a Regular Doctor?	UM		UAW	
	Number	Percent	Number	Percent
Yes - non specialist	56	21.5	179	57.9
Yes - specialist, Internal Medicine	41	15.7	20	6.5
Yes - specialist Obstetrics and Gynecology	16	6.1	9	2.9
Yes - specialist, Other	14	5.4	49	15.9
No	134	51.3	52	16.8
Total	261	100.0	309	100.0

not having a regular family doctor. This phenomenon may be explained by the fact UM employees are newer to the area and have not established a relationship with a regular family doctor and that the clinics of University Hospital and St. Joseph's hospital in Ann Arbor provide a portion of the UM employees general medical care needs. Of those Auto Workers who indicated they would definitely join the program, 83 percent indicated that they had a regular source of care, and 17 percent indicated that they had no regular source of care. Of those Auto Workers with regular care, 42 percent indicated they would change from their current doctor to the

prepaid program, 21 percent would not, and 37 percent are not sure. Still another portion of the population failed to meet the criteria of enrollment. Of the Auto Workers who indicated that they would probably join the prepaid program, 87 percent have a regular doctor, and of this group, 37 percent said they would change doctors, 10 percent would not, and 41 percent were not sure. Again, additional numbers of Auto Workers who indicated that they would join the program were removed from the estimate as they had not met another criteria.

Of those University employees who indicated that they would definitely join the program and pay more, 61 percent had no regular doctor and 39 percent did have a regular doctor. Of this latter group, 73 percent stated that they would change doctors, 13 percent would not, and 13 percent were not sure. Of the University employees who indicated they would probably join the HMO and pay more, 56 percent had no regular doctor and 44 percent had a regular doctor. Of this latter group, 68 percent would change doctors, 20 percent would not, and 12 percent were not sure.

A decision tree pictorially summarizing the above discussion is provided in Figures 6 and 7.

Most likely to enroll are those auto workers who would definitely join the program and either have no regular source of care or are willing to change doctors. This group

Figure 6.--Decision Tree Used to Predict Enrollment in a Health Maintenance Organization for The University of Michigan Employees Residing in Washtenaw County, Michigan
N = 361

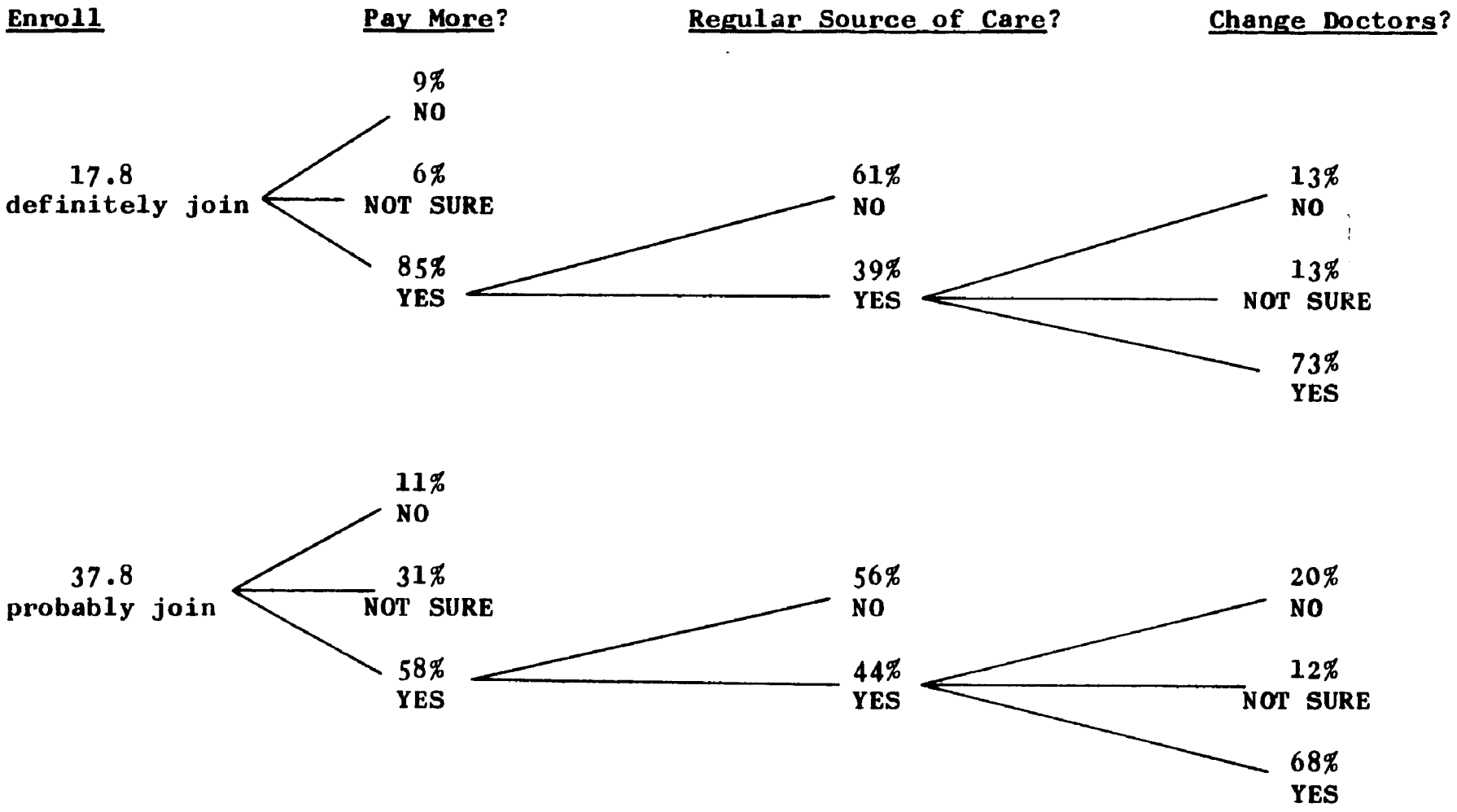
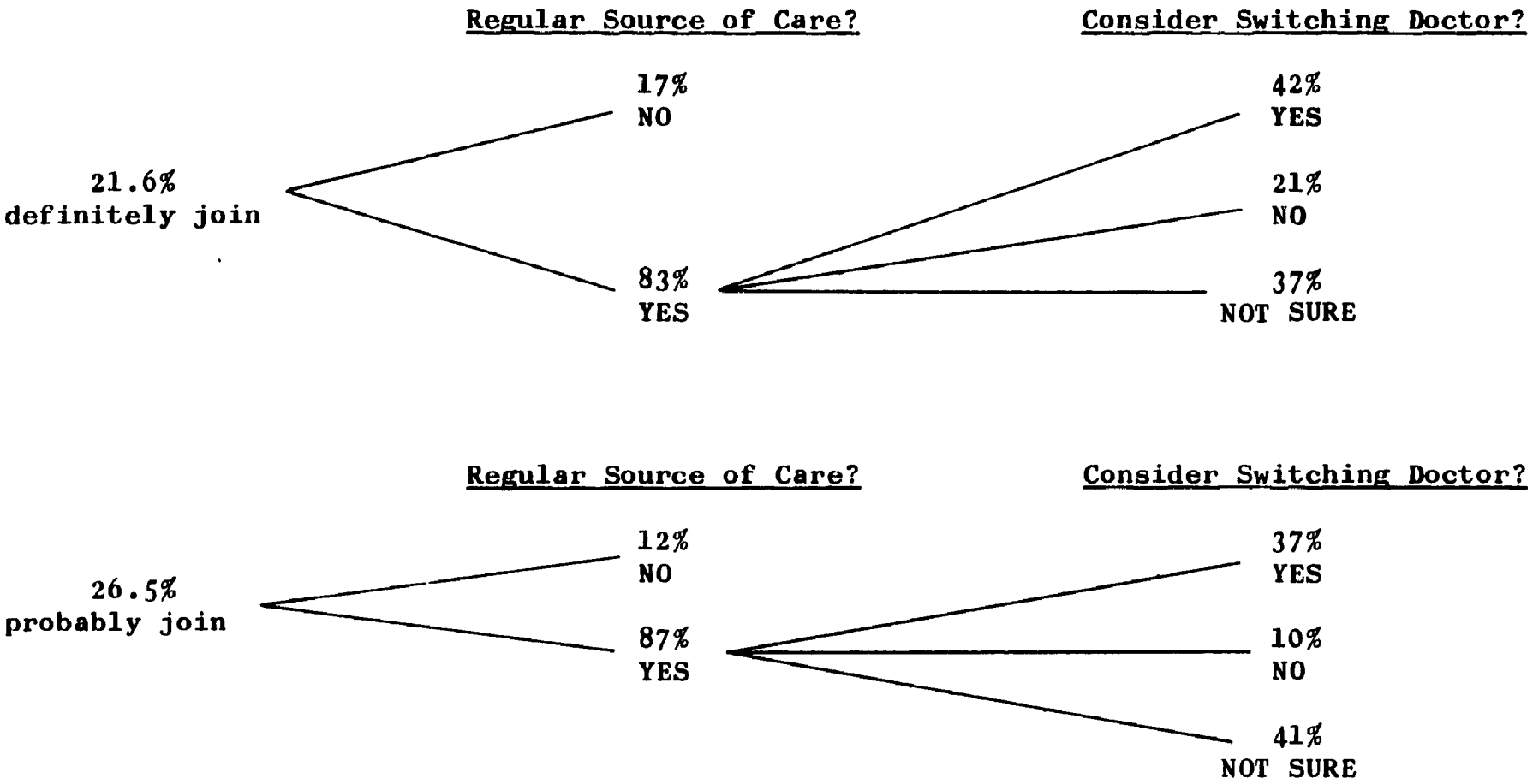


Figure 7.--Decision Tree Used to Predict Enrollment in a Health Maintenance Organization for Members of the United Auto Workers Residing in Washtenaw County, Michigan
N = 309



alone would produce 11.2 percent of the Auto Worker group. In addition, those Auto Workers who would probably join and have no regular source of care would switch doctors and would produce 11.7 percent of that population who would join a proposed HMO. In all, it seems quite conservative to predict 15 percent of this population would join a proposed University sponsored HMO if union and management choose to support the proposed program. Most likely to enroll are those University employees who would definitely join, pay more, and who either have no regular source of care or are willing to change doctors. This group would produce 13.5 percent of that population. In addition, of those University employees who would probably join, pay more, have no regular doctor, or would switch doctors, would produce an additional 19 percent. Again, it appears quite conservative to predict 21 percent of the University employees would join the proposed HMO.

D. CONFIDENCE LEVEL OF ESTIMATE

The two predictions provide an opportunity to calculate the standard error of a percent and apply these to the two estimates. The standard error of a percent for a 95 percent level of confidence is calculated as follows: $SE=2\sqrt{\frac{PQ^*}{N}}$.

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*P = the percent of the population that indicated they would join the HMO, Q = 1 minus P and N equals the number of individuals surveyed.

Using the observed data and other things being equal, that is the proposed HMO is supported by the union and management and the benefits, facilities and premium structures are acceptable to both groups, it appears likely that at the 95 percent confidence level, between 26 percent and 16 percent of the UM employees would join the proposed HMO, and between 19 percent and 11 percent of the UAW members would join the proposed HMO.

E. PREVIOUS CONSUMER HEALTH EXPERIENCES ASSOCIATED WITH ENROLLMENT IN THE PROPOSED HMO

Two types of questions were asked which focused on the interviewees previous experience with the health care system. These questions were asked to determine if these previous experiences were considered as barriers to medical care. The first type of barrier question dealt with difficulties respondents have experienced, for the most part, in obtaining medical care services. The question "Would you enroll in a HMO?" (the independent variable) was cross tabulated with all the barrier questions (the dependent variable). The Chi square test was applied to the cross tabulations. All statistical correlations of $p = .05$ or less were accepted. Nine barrier questions met this criteria for at least one of the populations.

An open ended question, "Would you please tell us the things, if any, that give you and your family the most

difficulty in getting medical care?," was asked of both groups. This question was designed to have the respondents recall significant difficulties in obtaining health care they required. Table 13 describes the frequency of the responses for this question and it can be seen that almost

TABLE 13

PERCENT OF RESPONDENTS RECALLING A DIFFICULTY IN OBTAINING MEDICAL CARE, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Difficulty Mentioned	UM N = 261 Percent	UAW N = 309 Percent
1. Availability: No facility or doctor to use.	19.5	13.8
2. Barriers to care: Time, waiting, distance to care.	18.8	15.1
3. Cost of medical care.	11.5	12.2
4. Patient relationship to service, poor personal treatment, impersonality.	5.4	5.8
5. Quality of care, continuity, comprehensiveness.	7.3	3.5
6. Insurance did not cover cost of care.	2.7	5.1
Total percent of population that mentioned a difficulty.	42.5	29.4

43 percent of the UM employees and 30 percent of the UAW members reported at least one difficulty in obtaining

medical care. The three most frequently mentioned difficulties in obtaining care for both groups were : 1) availability of medical care 2) time, e.g., waiting to see a doctor or distance to medical care and 3) cost of medical care. Tables 14 and 15 correlate this question to the enrollment

TABLE 14

ENROLLMENT STATUS AND DIFFICULTY IN OBTAINING MEDICAL CARE: THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll In an HMO?	No Difficulties Mentioned		Difficulties Mentioned		Total
	Number	Percent	Number	Percent	
Yes	72	48.0	72	64.9	144
Don't know	35	23.3	19	17.1	54
No	43	28.7	111	18.0	63
Total	150	100.0	111	100.0	261

$\chi^2 = 7.4$ d.f. = 2 p = .025

issue and for both groups a positive statistical association is observed. It is clear that those who have experienced difficulty in obtaining medical care services in the past are more likely to enroll in the proposed HMO.

It appears that either the respondents are discouraged with the difficulty they have encountered or they perceive that the HMO provides increased access to obtaining the

TABLE 15

ENROLLMENT STATUS AND DIFFICULTY IN OBTAINING MEDICAL CARE, MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll In an HMO?	No Difficulties Mentioned		Difficulties Mentioned		Total
	Number	Percent	Number	Percent	
Yes	88	40.4	60	66.0	148
Don't know	61	27.9	15	16.4	76
No	69	31.7	16	17.6	85
Total	218	100.0	91	100.0	309

$\chi^2 = 17.2$ d.f. = 2 p = .05

medical care they desire or both. It is interesting that the UM employees report greater difficulty in obtaining medical care than the UAW members. It would seem logical to assume the UAW members experience less difficulty as they are more likely to have a regular doctor. But Table 16 shows that merely having a regular doctor does not insure less difficulty in obtaining medical care. It seems likely that the UAW members who have lived in the area longer than the UM employees understand more clearly how to use the local health care system. In any event, both groups reported difficulty in obtaining medical services in sufficiently high numbers to be strongly correlated with enrolling in the HMO.

TABLE 16

DIFFICULTY IN OBTAINING MEDICAL CARE AND HAVING A REGULAR PHYSICIAN, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

UM

Have a Regular Doctor	Difficulty in Obtaining Medical Care? No Number	No Percent	Yes Number	Yes Percent	Total
Yes	75	50.0	54	49.0	129
No	75	50.0	57	51.0	132
Total	150	100.0	111	100.0	261

$\chi^2 = .04$ d.f. = 1 p = N.S.

UAW

Have a Regular Doctor	Difficulty in Obtaining Medical Care?* No Number	No Percent	Yes Number	Yes Percent	Total
Yes	177	81.6	78	87.0	255
No	40	18.4	12	13.0	52
Total	217	100.0	90	100.0	307

$\chi^2 = 1.04$ d.f. = 1 p = N.S.

* Excludes non-responders.

The second type of barrier question focuses on specific problems respondents and family members may have regarding the medical care system. These problems may not have necessarily caused difficulty in obtaining medical care. These

questions were recall type, that is a statement was read regarding a specific problem and the interviewee responded appropriately. Table 17 summarizes the frequency of the "problem questions."

Health insurance could pose a problem to obtaining care if the insurance did not pay for a particular service the respondent required. Both groups were asked if their health insurance did not cover a particular service they required. Tables 18 and 19 reveal the health insurance question was positively associated with enrollment for the UAW members but not for the UM employees. Further, almost 39 percent of the UAW members compared to 36 percent of the UM employees claimed that their health insurance failed to cover a required service. Such a high rate for the UAW members is surprising in view of the fact they have one of the most comprehensive health insurance programs in the nation.

Related to the notion of health insurance coverage is the cost of medical services. Rising health care costs could be seen as a problem in obtaining medical care services. This important issue was examined in two questions. Both groups were asked if medical care was too expensive and was medical care a strain on their budget. More than one-third of both groups felt that medical care is too expensive (Table 15). Table 20 indicates that slightly less than one-fourth and one-fifth of the UM employees and UAW members

TABLE 17

DISTRIBUTION OF SPECIFIC PROBLEMS ENCOUNTERED BY THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Specific Problem Encountered	UM		UAW	
	Number*	Percent of N	Number*	Percent of N
Health Insurance did not cover a particular service that was required.	210	36.2	262	38.5
Medical care was too expensive.	229	36.7	291	38.5
Medications were too expensive.	233	48.1	272	18.8
Had to visit too many different places to receive treatment.	235	19.1	287	16.0
Had to travel too far for medical care.	242	5.4	290	6.2
Couldn't make an appointment to see a doctor within a reasonable time.	249	42.2	295	31.2
You had to wait too long to see a doctor even though you had an appointment.	248	49.2	299	45.5
There was too much red tape in the process of getting medical care.	246	30.9	295	19.3
The doctor did not explain things clearly enough.	252	25.8	299	27.4

*Data excludes those who responded never "had an opportunity to experience this problem."

TABLE 18

ENROLLMENT STATUS AND HEALTH INSURANCE COVERING A SERVICE THAT WAS REQUIRED, MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll?	Health Insurance Covered All Services Required		Health Insurance Did Not Cover All Services Required		Total
	Number*	Percent	Number*	Percent	
Yes	72	45.6	60	60.0	132
Don't know	34	21.5	22	22.0	56
No	52	32.9	18	18.0	70
Total	158	100.0	100	100.0	258

$\chi^2 = 7.47$ d.f. = 2 p = .025

* Excludes those who responded "no opportunity to experience this problem."

respectively feel medical care is a strain on their budgets.

The UAW members and their families make more visits to physicians than UM employees and these office visits are not covered under most UAW health insurance contracts. It would seem that this would account for the reason why more UAW members feel the cost of medical care is too expensive and is a greater strain on their budgets.

The distribution of physician visits for both groups is described in Table 21. It can be seen that the UAW members go to the doctor more often than UM employees. But there

TABLE 19

ENROLLMENT STATUS AND HEALTH INSURANCE COVERING A SERVICE THAT WAS REQUIRED, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN*

Would You Enroll?	Health Insurance Covered All Services Required		Health Insurance Did Not Cover All Services Required		Total
	Number	Percent	Number	Percent	
Yes	70	51.1	48	63.2	118
Don't know	25	18.2	16	21.1	41
No	42	30.7	12	15.7	54
Total	137	100.0	76	100.0	213

$\chi^2 = 5.69$ d.f. = 2 p = N.S.

*Excludes those who responded "no opportunity to experience this problem."

TABLE 20

DISTRIBUTION: IS MEDICAL CARE A STRAIN ON YOUR BUDGET? THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

	UM		UAW	
	Number	Percent	Number	Percent
Yes	55	21.2	100	32.3
No	206	78.8	209	67.6
Total	261	100.0	309	99.9

TABLE 21

DISTRIBUTION OF THE NUMBER OF VISITS TO A PHYSICIAN IN ONE YEAR: THE UNIVERSITY OF MICHIGAN EMPLOYEES AND MEMBERS OF THE UNITED AUTO WORKERS AND THEIR FAMILIES

Number of Doctor Visits	UM						UAW					
	Employee		Spouse		Children		Member		Spouse		Children	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	109	41.8	65	35.9	30	26.8	94	30.3	74	29.6	38	21.3
1-2	75	28.7	58	32.0	42	37.5	78	25.2	70	28.0	50	28.1
3-5	48	18.4	31	17.1	19	17.0	65	21.0	51	20.4	45	25.3
6 or more	29	11.1	27	14.9	21	18.7	72	23.3	55	22.0	45	25.3
Total	261	100.0	181	99.9	112	100.0	309	100.0	250	100.0	178	100.0

is another fact to be considered. If the UM employees require physician services many more of them would need to turn to emergency rooms of the two teaching hospitals in the county as they are less likely to have a regular doctor. At the time of the survey Michigan Blue Cross and Blue Shield had a liberal interpretation of emergency services and some physicians visits to an emergency room were reimbursed through the employees health insurance program, even though the required services may not have been an actual life threatening event. The UM employees would therefore be paying less "out of pocket"for physician visits.

One could argue that UM employees earn more income than UAW members and thus would not feel as strained in paying medical bills. Unfortunately income data for both groups is unavailable. Occupational data for UM employees and UAW spouses is available and can be used with other information about the populations to conclude there may be no large difference in income. Table 22 shows that almost 30 percent of the UM employees are faculty members. Table 23 shows the distribution of nonfaculty positions. One half of faculty members (13 percent of the total population) are associate or full professors, the higher paid employees of the University. The remainder of the faculty members are junior rank and would of course receive less salary. It can be seen that 45 percent of the UM group are in the managerial,

TABLE 22

DISTRIBUTION OF FACULTY POSITIONS, THE UNIVERSITY OF MICHIGAN FACULTY RESIDING IN WASHTENAW COUNTY, MICHIGAN

Faculty Position	Number*	Percent
Teaching or Research Assistant	17	21.8
Instructor or Lecturer	5	6.4
Research Associate	11	14.1
Assistant Professor or Equivalent Research Position	10	12.8
Associate or Full Professor	35	44.9
Total	78	100.0

*Excludes staff positions.

administrative, professional and technical category, the higher income professions of this group. The remainder are service, labor, or operative type workers--the lower income occupations. Occupational data for UAW members is not available. Table 24 shows 56 percent of the spouses of UM employees and 56 percent of the spouses of UAW members, an equal distribution, are employed. It is also known that UAW members are a little older than UM employees and their additional years of work experience would give them additional salary increases and the UM population is younger and would have less disposable income. The auto workers are one of the highest paid union groups in the nation. Beginning

TABLE 23

DISTRIBUTION OF STAFF POSITIONS, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN

Staff Position	Number*	Percent
Service	18	9.8
Laborer	4	2.2
Operative or Kindred Worker	4	2.2
Craftsman or Foreman	14	7.6
Clerical or Secretarial; Paraprofessional or Sales	61	33.0
Manager, Official, Administrative Position	30	16.3
Professional, Technical or Kindred	53	28.9
Total	184	100.0

*Excludes faculty positions.

TABLE 24

EMPLOYMENT STATUS, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND THE UNITED AUTO WORKERS SPOUSES

		UM*		UAW*	
Spouse	Employment Status	Number	Percent	Number	Percent
	Housewife	61	33.7	109	43.8
	Employed	102	56.3	140	56.2
	Student	18	10.0	-	-
	Total	181	100.0	249	100.0

*Excludes those with no spouse.

salaries for UAW members are probably higher than UM employees who do comparable labor type work and in addition the UAW members have a cost of living clause built into their contracts. The UM employees do not.

The available evidence would lead one to believe there may not be a substantial difference in mean income even though the UM employees have a greater achieved educational level.

It is not surprising that the UAW members feel the strain of the cost of medical care more than UM employees since UAW members have larger families and use physician services to a greater extent and probably pay more "out of pocket" for visits to physicians than UM employees. What is ironic is that UAW members have a more expensive and better health insurance program than UM employees and have greater access to regular medical care, because they are more likely to have a regular doctor. But UAW members feel the financial strain of medical bills more than UM employees simply because their health insurance program fails to pay for visits to a doctor's office! As Blue Cross and Blue Shield, in their efforts to contain medical care costs, cut back on paying for all emergency room visits to only those cases that require life threatening or emergency care, more UM employees will have to pay for physicians visits. Clearly the HMO would appeal to UAW members and UM employees who

would enjoy the benefits of not paying for each office visit. Tables 25 and 26 show an extremely strong association between

TABLE 25

ENROLLMENT STATUS AND THE COSTS OF MEDICAL SERVICES AS A PROBLEM IN RECEIVING MEDICAL CARE, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?	Has the Cost of Medical Care Been a Barrier to Obtaining Needed Services?*				
	Never		Yes		
	Number	Percent	Number	Percent	Total
Yes	73	63.0	53	79.0	126
No	43	37.0	14	21.0	57
Total	116	100.0	67	100.0	183

$\chi^2 = 5.51$ d.f. = 1 $p = < .025$

*Excludes those who responded no opportunity to experience this problem.

the cost of medical care and willingness to enroll in the HMO, that is, the more medical care costs were encountered as a problem in obtaining services, the more likely the respondents would join the HMO.

As the medical care system becomes more specialized and complex, consumers must turn to many different places to obtain their medical care services. The UAW members report that the more problems they had in obtaining medical care (such as they had to travel to too many places) the more

TABLE 26

ENROLLMENT STATUS AND THE COST OF MEDICAL SERVICES AS A PROBLEM IN RECEIVING MEDICAL CARE, MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?	Has the Cost of Medical Care Been a Barrier to Obtaining Needed Services?*				
	Never		Yes		
	Number	Percent	Number	Percent	Total
Yes	63	51.0	77	87.5	140
No	61	49.0	11	12.5	72
Total	124	100.0	88	100.0	212

$\chi^2 = 30.93$ d.f. = 1 $P < .001$

*Excludes those who responded no opportunity to answer this problem.

likely they would enroll into the HMO. No such relationship was reported for the UM employees. The correlations for both groups are shown in Tables 27 and 28. This seems remarkable in view that 88 percent of the UAW members have a regular family doctor. However, the UAW regular doctor is more likely to be a non specialist or general practioner. This health professional would refer patients to other doctors in the community and elsewhere for diagnostic assistance and specialty care thus causing the auto worker to travel to too many places. The UM employees would either have no regular source of care in which case they must turn to the medical clinics at the two teaching hospitals in the

TABLE 27

ENROLLMENT STATUS AND HAVING TO GO TO TOO MANY PLACES TO RECEIVE MEDICAL CARE, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?	Too Many Places*				
	Never		Yes		
	Number	Percent	Number	Percent	Total
Yes	104	55.3	27	60.0	131
Don't know	41	21.8	9	20.0	50
No	43	22.8	9	20.0	52
Total	188	99.9	45	100.0	233

$\chi^2 = .21$ d.f. = 2 p = N.S.

* Excludes those who responded no opportunity to experience this problem.

TABLE 28

ENROLLMENT STATUS AND HAVING TO GO TO TOO MANY PLACES TO RECEIVE MEDICAL CARE, THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?	Too Many Places*				
	Never		Yes		
	Number	Percent	Number	Percent	Total
Yes	109	45.1	32	69.6	139
Don't know	60	25.3	8	17.4	68
No	70	29.6	6	13.0	76
Total	237	100.0	46	100.0	283

$\chi^2 = 9.99$ d.f. = 2 p = .01

*Excludes those who responded no opportunity to experience this problem.

county or they would use a private internal medicine specialist or other specialist for their medical care with greater frequency then the UAW member. UM employees' care would be more likely to come from one facility, that is the hospital clinics, or be delivered by an internist who would not need to refer patients elsewhere for diagnostic assistance as often as a generalist. It appears that the notion of obtaining all services in one facility appeals to UAW members and UM employees may already be getting a large source of care in this manner.

Having trouble in making appointments to see a doctor could be a serious problem encountered in getting medical care. Tables 29 and 30 reveal that more than 40 percent of the UM employees and 30 percent of the UAW members report some difficulty in making an appointment to see a doctor. While it would be expected that UM employees would have more difficulty in making appointments since one-half do not have a regular doctor, it is surprising that such a large number of UAW members report such difficulty especially since 83 percent claim a regular doctor. However, since UAW members use physician services approximately 30 percent more than UM employees they would need to make more appointments to see a doctor. The two groups report a statistical relationship between having trouble making appointments and enrolling in the HMO.

TABLE 29

ENROLLMENT STATUS AND DIFFICULTY IN MAKING AN APPOINTMENT TO SEE A DOCTOR, THE UNIVERSITY OF MICHIGAN EMPLOYEES

Would you Enroll in an HMO	Had Difficulty Making an Appointment to See a Doctor?*				
	Never		Yes		
	Number	Percent	Number	Percent	Total
Yes	68	47.9	69	65.7	137
Don't know	34	23.9	15	14.3	49
No	40	28.2	21	20.0	61
Total	142	100.0	105	100.0	247

$\chi^2 = 7.92$ d.f. = 2 p = .02

*Excludes those who responded no opportunity to experience this problem.

TABLE 30

ENROLLMENT STATUS AND DIFFICULTY IN MAKING AN APPOINTMENT TO SEE A DOCTOR, MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO	Had Difficulty Making an Appointment to See a Doctor?*				
	Never		Yes		
	Number	Percent	Number	Percent	Total
Yes	93	46.0	51	56.7	144
Don't know	64	31.7	15	16.7	79
No	45	22.3	24	26.6	69
Total	202	100.0	90	100.0	292

$\chi^2 = 7.1$ d.f. = 2 p = .05

*Excludes those who responded no opportunity to experience this problem.

Both groups were asked did they feel waiting too long to see a doctor even though they had an appointment was considered a barrier to medical care. Approximately one-half of both groups report no such inconvenience. However, as Tables 31 and 32 show the question has a strong relationship

TABLE 31

ENROLLMENT STATUS AND LONG WAITING TIME TO SEE A DOCTOR, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO	Had to Wait too Long to See a Doctor?*						
	Never		Occasionally		Often		
	Number	Percent	Number	Percent	Number	Percent	Total
Yes	71	56.8	41	55.4	17	45.9	129
Don't know	26	20.8	12	16.2	9	24.3	47
No	28	22.4	21	28.4	11	29.8	60
Total	125	100.0	74	100.0	37	100.0	236

$\chi^2 = 2.47$ d.f. = 4 p = N.S.

*Excludes those who responded no opportunity to experience this problem.

to enrolling in the HMO for the UAW members, but interestingly enough reveals no relationship to enrolling in the HMO for the UM employees. Several explanations are possible. It may be that UAW members who are likely to have a regular family doctor do not consider a long waiting time

TABLE 32

ENROLLMENT STATUS AND LONG WAITING TIME TO SEE A DOCTOR, MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO	Had to Wait too Long to See a Doctor?* Never Number	Never Percent	Occasionally Number	Occasionally Percent	Often Number	Often Percent	Total
Yes	70	43.5	30	39.5	45	76.3	145
Don't know	45	27.9	18	23.7	8	13.5	71
No	46	28.6	28	36.8	6	10.2	80
Total	161	100.0	76	100.0	59	100.0	296

$\chi^2 = 24.45$ d.f. = 4 $p = < .005$

*Excludes those who responded no opportunity to experience this problem.

inappropriate. On the other hand, UM employees are not as likely to have established an ongoing relationship with a regular doctor. They may simply accept the longer waiting time from a less familiar source of medical care such as the emergency room or a hospital clinic. There may be a discrepancy between actual waiting time and perceived waiting time to see a physician and this is an area for further investigation.

For those without a regular doctor the HMO could be quite appealing as it would provide a regular source of medical care. The question, "Do you have a regular doctor,"

was correlated with the enrollment question for the UM employees and for the UAW members. It was positively associated with enrollment for the UM employees but not for the UAW members and the results are reported in Tables 33 and 34.

TABLE 33

ENROLLMENT STATUS AND HAVING A REGULAR DOCTOR, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO*	Have a Regular Doctor? Yes		No		
	Number	Percent	Number	Percent	Total
Yes	64	63.4	79	76.0	143
No	37	36.6	25	24.0	62
Total	101	100.0	104	100.0	204

$\chi^2 = 3.87$ d.f. = 1 p = .05

*Excludes respondents who answered, "Don't Know."

It appears that the younger UM employees, who are newer to the area, see the HMO as providing a much needed regular family doctor while the UAW members, for the most part, already have a regular source of medical care.

Another question aimed at eliciting problems encountered while obtaining medical care was whether the respondents felt the doctor did not explain things clearly enough. Tables 35 and 36 reveal 27 percent of the UAW members and

TABLE 34

ENROLLMENT STATUS AND HAVING A REGULAR DOCTOR, MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?*	Have a Regular Doctor? Yes Number	Yes Percent	No Number	No Percent	Total
Yes	126	64.6	22	59.0	148
No	69	35.4	15	41.0	84
Total	195	100.0	37	100.0	232

$\chi^2 = .34$ d.f. = 1 p = N.S.

*Excludes respondents who answered, "Don't Know."

TABLE 35

ENROLLMENT STATUS AND CLARITY OF DOCTORS' EXPLANATION: MEMBERS OF THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?	Doctors' Explanations are Unclear: Clear Explanations Number	Clear Explanations Percent	Unclear Explanations Number	Unclear Explanations Percent	Total
Yes	95	44.0	51	63.0	146
Don't know	58	27.0	19	23.0	77
No	61	29.0	11	14.0	72
Total	214	100.0	81	100.0	295

$\chi^2 = 9.82$ d.f. = 2 p = < .01

TABLE 36

ENROLLMENT STATUS AND CLARITY OF THE DOCTORS EXPLANATIONS, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY MICHIGAN

Would You Enroll in an HMO?	Clarity of Doctors Explanations*				
	Clear Explanations		Unclear Explanations		
	Number	Percent	Number	Percent	Total
Yes	95	51.0	45	69.0	140
Don't know	43	23.0	8	12.0	51
No	48	26.0	12	19.0	60
Total	186	100.0	65	100.0	251

$\chi^2 = 6.61$ d.f. = 2 p = .05

*Excludes respondents who answered, "Don't Know."

25.8 percent of UM employees responded the doctor did not explain things clearly enough. This question was positively correlated to enrollment for both groups. The issue of physicians not explaining things clearly enough has strong implications for the practice of Adult Education and could serve as the basis for further investigation. There have been several studies which document the value of Adult Education in the practice of medicine. For example, Egbert[1] demonstrates that patients who are about to undergo intra-abdominal surgery would require 50 percent fewer narcotics for the relief of pain and were discharged 2.7 days earlier

from the hospital if they were involved in a patient education program regarding the nature of their surgical procedure. Avery[2] demonstrates that asthmatic patients who completed a patient education program regarding the nature of their disease had fewer visits to an emergency room for urgent care. He calculates that for every dollar spent in delivering educational services six dollars of medical care costs were saved. Levine and Britten[3] document when hemophilia patients undergo a patient education program they will reduce hospitalization costs by 89 percent and also report a 74 percent reduction in absenteeism from work or school and 45 percent decrease in total health care costs.

No other "problem" question listed in Table 17 correlated to the enrollment issue. However, some trend data is worth noting. Forty-three percent of the UM employees, about two and one-half times the number of UAW members, report that medications were too expensive. The UAW members have a drug benefit in their current health insurance program and it costs the UAW members about one dollar for each prescription they have filled. The UM employees must pay the full cost of their prescriptions. Although neither group would enroll in the HMO because prescription drugs were too expensive, a drug benefit would be expected from one group and would certainly appeal to the other.

F. OTHER FACTORS ASSOCIATED WITH ENROLLMENT

One feature about the HMO is that it provides a regular source of medical care to their enrollees. For those who would prefer a regular doctor this feature should be appealing. The question "would you prefer a regular doctor" was correlated with the enrollment question and the data is presented in Tables 37 and 38. Of those UM employees who

TABLE 37

ENROLLMENT STATUS AND PREFERENCE FOR A REGULAR PHYSICIAN, THE UNIVERSITY OF MICHIGAN EMPLOYEES RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?	Prefer Regular Doctor?*				
	Yes		No		
	Number	Percent	Number	Percent	Total
Yes	50	86.0	20	57.0	70
No	8	14.0	15	43.0	23
Total	58	100.0	35	100.0	93

$\chi^2 = 9.86$ d.f. = 1 $p = < .005$

*Excludes those who have a regular doctor.

prefer a regular doctor 86 percent would enroll in the HMO and 14 percent would not; of those UM employees who claim not to prefer a regular doctor 57 percent would enroll and 42 percent would not. For the UM employees the preference for a regular doctor is strongly associated with enrollment ($p = .005$) while no statistical association can be detected

TABLE 38

ENROLLMENT STATUS AND PREFERENCE FOR A REGULAR PHYSICIAN, THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Would You Enroll in an HMO?	Prefer a Regular Doctor?*				
	Yes		No		
	Number	Percent	Number	Percent	Total
Yes	15	65.0	5	42.0	20
No	8	35.0	7	58.0	15
Total	23	100.0	12	100.0	35

$\chi^2 = 1.55$ d.f. = 1 p = N.S.

*Excludes those who have a regular doctor.

for the UAW members. The UAW members have resided in the county for a longer period of time and have had a greater opportunity to find a regular doctor. Those who wanted one have probably gotten one. Regardless of enrollment status there appears to be a portion of the population that does not prefer a regular doctor.

SUMMARY

Nine previous experiences with the health care system have been correlated to enrollment in a proposed HMO. They are listed in Table 39. Four of the previous experiences,

TABLE 39

LISTING OF PREVIOUS EXPERIENCES WHICH ARE ASSOCIATED WITH ENROLLMENT IN A PROPOSED HMO, THE UNIVERSITY OF MICHIGAN EMPLOYEES AND THE UNITED AUTO WORKERS RESIDING IN WASHTENAW COUNTY, MICHIGAN

Previous Experience	UM	UAW
Difficulty in getting medical care - in general	S*	S
Health Insurance coverage inadequate	N.S.**	S
Cost of medical services as a problem in receiving care	S	S
Had to go to too many places for needed care	N.S.	S
Had difficulty in making an appointment to see a doctor	S	S
Had to wait too long to see a doctor even though had an appointment	N.S.	S
Having a regular doctor	S	N.S.
The doctor doesn't explain things clearly enough	S	S
Preference for a regular doctor	S	N.S.

*S = Significant. Chi square equal to or less than $p = .05$.

**N.S. = Not significant. Chi square greater than $p = .05$.

difficulty in getting medical care in general, and specifically the cost of medical care services, the difficulty in making an appointment to see a doctor and clarity of doctors' explanations are positively associated with enrollment for both groups. Five other previous experiences are positively associated with enrollment for one of the groups.

Problems with inadequate health insurance coverage, having to go to too many places for medical care services and long waiting time to see a doctor are positively associated with enrollment in an HMO for the UAW members but not for the UM employees. Having a regular doctor and preference for a regular doctor are positively associated with enrollment for the UM employees but not for the UAW members. It appears that the UM employees who use less medical care do not feel the burdens of medical care costs as much as the UAW members. In addition, because UM employees are more likely to have a specialist as a regular source of care or would use the clinics of the two county teaching hospitals for their care they do not feel going to too many places to receive medical care is a problem. Using the emergency room and clinics of the two teaching hospitals provides the UM employees an opportunity to use their Blue Cross/ Blue Shield health insurance program to pay for their medical care. Perhaps this too explains in part why the UM employees do not feel medical care costs are as

much of a burden to them.

These factors will be the basis of the key educational messages in the educational plan to be developed in Chapter V. For example one group which expressed a desire to have a regular family doctor will be told HMO enrollees will have an opportunity to select a regular physician from among HMO physicians. For the other group the message will stress that HMO's will reduce their health care bill.

REFERENCES

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[2]Avery, C. H. et. al. Reducing Emergency Visits of Asthmatics: An Experiment in Health Education. Testimony, Presidents Committee on Health Education. Pittsburg, Pennsylvania, January 11, 1972.

[3]Levine P. and Britten, A. Supervised Patient Management of Hemophilia, Annuals of Internal Medicine, 78:195-201, 1973.

CHAPTER V

THE EDUCATION PLAN

A. INTRODUCTION

This educational plan is divided into five sections: goals; objectives; planning assumptions; methodology and evaluation. This chapter is designed to address educational problems encountered while offering a new Health Maintenance Organization (HMO) service to The University of Michigan employees and members of the United Auto Workers of America (UAW). The educational plan uses previous unsatisfactory experiences with the health care system that correlate with expressed enrollment in a proposed HMO. These previous experiences are used to accentuate the characteristics of the HMO that would overcome the identified experiences.

B. GOAL

The goal of this educational plan is to enroll an adequate number of UM employees and UAW members in a proposed HMO at a sufficient rate in order to have the HMO meet its financial commitment. From Chapter IV it was determined that 15 percent of the UAW members and 21 percent of the UM employees are predicted to join the proposed HMO. The

plan's educators would project this enrollment figure over some time interval. This enrollment rate would be used by the plan's administrators and fiscal officers to project income for the HMO. The plan's educators will need to work closely with the fiscal officers in order to have them gage the amount of income needed to keep the HMO solvent at any given point. It should be remembered that at no time should income be projected beyond the maximum enrollment predictions.

C. THE OBJECTIVES

The objective is to develop an educational plan based on previous experiences with the health care system that would appeal to clients who would be enrolled in a proposed HMO.

D. PLANNING ASSUMPTIONS

This educational plan is developed on the following assumptions:

1. Previous experiences with the health care system can be correlated to willingness to enroll in an HMO. These previous experiences can be used to accentuate characteristics of the HMO which would overcome problems potential enrollees have encountered in the past.

2. Previous health care experiences can affect the desire for future health care.

3. Difficulty in obtaining medical care is a problem that UM employees and UAW members wish to avoid.

4. The cost of current medical care services is a problem in obtaining medical care for UM employees and UAW members.

5. Difficulty in making an appointment to see a doctor is considered a problem in obtaining medical services for UM employees and UAW members.

6. The clarity of doctors' explanations is important to both UM employees and UAW members.

7. Health insurance coverage while more extensive for UAW members than UM employees is inadequate as it does not include coverage for physician's visits. This creates a financial burden for some UAW members. While this is not as serious a problem for UM employees, it will become a problem in the near future as health insurance programs will restrict the use of emergency service benefits to actual life threatening emergencies.

8. Having to visit too many places to receive medical care is a problem for UAW members and they would prefer to obtain all their medical care needs in one facility. UM employees probably obtain much of their medical care from one central facility and would expect to continue this practice.

9. Long waiting time to see a doctor is unacceptable to UAW members that have a regular source of care but is tolerated by UM employees who use hospital clinics and emergency rooms as a regular doctor.

10. The UM employees would prefer to have a regular doctor. The UAW members who already have regular sources of care would expect any new health system to provide a regular doctor.

11. Both groups perceive having a regular doctor, while desirable, does not insure that needed care will be provided at the proper time. Therefore, an HMO must be able to respond to patient's needs.

12. The learning process of both groups are considerably different. The UM members will more likely learn about the new HMO by reading materials, brochures or news articles in UM publications, predominently visual experience, and through orientation programs as new employees to the University. The UAW members on the other hand are more likely to learn of the HMO by word

12. Continued.
of mouth, through fellow workers who have already joined and will likely be willing to join if the shop steward or union leaders join or endorse the program, a predominantly auditory or group response experience.

13. News media used to educate UAW members should contain more pictorial content.

14. Pediatric services would appeal more to UAW members at the present time but will appeal to the UM group in the future.

15. The HMO should prepare special literature for new employees of the UM such as welcome brochures and comparable literature.

E. METHODS

1. University of Michigan Employees

The HMO administrators will need to secure the support of the executive officers of the University regarding the HMO concept, and alternative to the traditional Blue Cross/ Blue Shield program. A presentation by HMO representatives will be made to the executive officers. They will be told the advantages of the HMO but in particular, it will be stressed that the HMO could offer additional benefits for their employees for the same insurance premiums as they are now paying for their current health insurance program. In addition, over the past few years, HMO premiums have not risen as fast as traditional health insurance premiums therefore, in the near future, the executive officers may be able to offer a less costly but equally effective health insurance program. Regardless of financial costs, the HMO

offers the UM employees an opportunity to have a regular family doctor, something they do not have.

The executive officers will be asked to direct the Staff Benefit Office (SBO) personnel to offer the HMO option to all University employees. HMO representatives will visit SBO personnel and instruct them about the general nature and benefits of the HMO. Comparisons with the traditional Blue Cross/Blue Shield program will be made. SBO personnel are most likely to be the division which will orient new University employees to the University's staff benefits. In this regard the SBO personnel are considered change agents. Using a seminar format, HMO representatives will provide an orientation for SBO personnel with particular emphasis focusing on those special characteristics that the HMO can offer to overcome the significant problems identified in Chapter IV that were correlated to enrollment. For example, the educational messages for the change agents to learn will be all HMO enrollees will select a regular physician from among HMO physicians.

In a workshop format, SBO personnel will be shown the ease in making an appointment to see an HMO physician. They will be shown it will not be difficult to obtain needed services from an HMO program. A telephone speaker hook-up will be available to demonstrate the ease of appointment making. SBO personnel will also learn that same day care is

available for the acutely ill as the HMO provides walk-in service. A 30-second trigger film will be used to teach this concept. The cost of HMO services would be explained. In particular, the Staff Benefit Office personnel should clearly understand that enrolling in an HMO also means the cost of medical care to members will not exceed the regular HMO premiums. HMO joiners should expect no additional cost beyond HMO premiums. The change agents should then understand that HMOs would create a more rational manner to budget for medical care services and that serious illness will not cause a financial hardship. A slidetape presentation of the advantages of the HMO will be shown to the Staff Benefit Office personnel and they will be encouraged to use this with newly hired University employees. Staff Benefits Office personnel will be encouraged to join the HMO but no hard sell or undue pressure will be exerted to have them join. The SBO personnel will also tour the HMO facilities and meet the staff of doctors and nurses. A clear explanation of the program will be presented by the physicians and nurses. During the HMO tour, the change agents will have an opportunity to visit the HMO patient education library. It will be pointed out that HMO members will be provided an "educational prescription," when appropriate, after seeing their doctor. They will take this educational prescription to the HMO patient education library and learn about their

personal disorder. The SBO personnel will be encouraged to describe the advantages of the HMO to all new employees during the orientation. In addition, an HMO representative will also attend several orientation programs for new employees to help SBO personnel make accurate presentations. Brochures and printed matter will be available in a kit form and distributed by SBO personnel to the newly hired employees. There will be a special emphasis in the brochures which will point out that the HMO will help UM employees overcome problems in obtaining medical care by providing a regular family doctor and will insure that HMO enrollees will not have difficulty in making appointments to see their doctor. Further, the brochure will explain visits to an HMO physician are part of the HMO benefit and will not cost the enrollee anything more than the HMO premium.

Brochures of the one panel "payroll stuffer" type will be inserted in all paycheck envelopes and bank payroll receipts of University of Michigan employees. The payroll stuffers will describe the characteristics of the HMO that appeal to UM employees.

Announcements in news articles will be released through the University Public Information Office and will be put on the local news wire service. It will also be printed in all University publications. The news releases will all stress the characteristics of the HMO that will overcome the

problems described by UM employees in obtaining health care services.

The UM radio station and a local Ypsilanti radio station will be given a news release which will announce the opening of the Health Maintenance Organization. A sample radio announcement will be found on pages 135 and 136. This radio spot announcement will use the messages from the present study. The references will refer to the appropriate tables in Chapter II.

HMO representatives will arrange to speak to the UM faculty at regular faculty meetings and will address the various faculty senate and other governing faculty bodies. The special characteristics of the HMO which overcome health problems that correlate to enrollment will be stressed in these presentations.

2. Members of the United Auto Workers

The HMO representatives will meet with the management of the auto industry to describe the benefits and aspects of the HMO that will appeal to the UAW members. Their support must be secured prior to the enrollment campaign. Union leadership which traditionally has supported health maintenance organizations will be approached by HMO representatives and their support will be obtained. Shop stewards and union leaders will be identified as the change agents

for the labor group. The HMO representative will work with this group as well as the personnel of the major auto industries in Washtenaw County to understand the general nature of the Health Maintenance Organization and the advantages of the HMO.

The HMO representatives will attend the regular meetings of the shop stewards and labor leaders which are held at the union halls. Presentations will be made regarding the general characteristics of the HMO that address the problems of obtaining medical care that correlate to enrollment as described in Chapter IV will be stressed. For example, UAW change agents will be told that the proposed HMO will not present the enrollees any problems in obtaining medical care. Their HMO program will cover all their needed health care needs and they will not have to pay for services each time they become ill. The cost of the HMO services will cover all of their health care needs including visits to the physician. Additional educational messages will indicate that the HMO program provides all the needed medical care services under one roof and it essentially offers "one stop shopping." The HMO program will work to eliminate long waiting times by establishing an appointment system but enrollees are requested to keep and be on time for appointments.

A slide-tape series will be loaned for the union/

management personnel directors so they may present salient features about the HMO to their employees. An open house of the HMO building and a tour of the HMO facility will be given to all the shop stewards and auto workers management personnel. Union and management leadership will be shown the examining areas and other areas of the facility they may wish to see. The medical and nursing staff will be available to speak to both groups.

Brochures which are pictorially oriented will be available to the members of the United Auto Workers and will be enclosed with the regular union news letters and pay check envelopes or bank deposit receipts. Announcements of the HMO will appear in union news letters and union literature and will have a general description of the HMO and in particular, will stress those characteristics of the HMO that will overcome the problems the UAW members described in Chapter IV. The change agents who have been identified for the union group will also be encouraged to join the HMO program but no undue pressure or hard sell will be made to have them enroll. The HMO will purchase spot radio announcement time from radio stations located in Ypsilanti, Michigan and the rural areas of the county. The radio announcements will be endorsed by union leadership and will be geared toward those special characteristics that would help union members overcome the health problems that they have encountered in

the past that correlate to enrollment.

F. EVALUATION

The ultimate criterion of evaluating the educational campaign is to determine the number of people who join the HMO. This is considered an outcome measure and a direct measurement can be taken, that is a count of the actual enrollment in the HMO.

Another important evaluation is process evaluation. This is an evaluation of the entire process used in the educational campaign. It is more difficult to determine as direct measurements are not as easily obtained. However, subjective measurements are available and they do help to some degree evaluate the educational process. Nonetheless, subjective evaluation should be conducted so that future educational programs can be more effective. The process evaluation will consist of having the HMO representative determine whether the change agent groups are capable of adequately representing the HMO program. They will need to attend presentations made by the change agents. In addition, all materials used in the educational campaign will be pretested and re-evaluated. The reliability level of the brochures and newsletters will be measured and the radio announcements will also be subjectively evaluated.

Finally, a Program Evaluation Review Technique (PERT)

(Figures 8 and 9) will be performed for the educational campaigns of both populations in order to determine whether the tasks that need to be performed during the educational plan are being conducted on time. The PERT chart will also help the educational planners conceptualize the format and sequence for the educational plan.

SAMPLE RADIO SPOT #1
(60 Seconds)

Does the high cost of medical care stop you or your family from seeing your doctor as often as you might want to?[1] Is it preventing you from getting to those health problems before they become serious illnesses?[2] Do you wait for crises and emergencies to seek medical help?[3] Do you prefer to have a regular family physician?[4] Have you had difficulty in making an appointment to see your doctor or did you have to go to too many places to receive the care you needed?[5] Are you new to the area and don't have a regular doctor?[6]

If your answer to any of these questions is "yes" you share in the plight of thousands of Americans throughout the U.S. People who are concerned with the high costs of their health care.[7] And the quality of its system of delivery.[8]

But our hands are not tied: New systems of health care are popping up all over the country. New ideas.

In Boston--A community health plan has been started. A

One Stop Family Health Center known as the Harvard Community Health Plan.[9] Facilities are always available to members at a fixed, pre-arranged monthly fee. With no extra medical costs.[10]

And California has a prepaid program also. They call it the Kaiser Foundation program. And it helps reduce overall medical costs.[11]

But are these sophisticated health-care programs only workable in large metropolitan areas? Or can they be used in smaller communities as well? Communities such as ours?

The Federal government is beginning to realize that new health ideas CAN be applied to overcome these problems. And they're supporting innovative programs such as an HMO, a Health Maintenance Organization, which promises to give all health benefits for a fixed, monthly fee.[12] With stress on preventing illness before it happens. If you want more information about HMOs call _____.

SAMPLE RADIO SPOT #2
(30 Seconds)

A lot of people are concerned about the cost and quality of health care:[13]

And some people are doing something about it.

Like HMO--Health Maintenance Organization. A new concept in health care.[14]

You pay a monthly fee and get medical benefits in return.[15]

All medical benefits.[16] Visits to the doctor.[17] House Calls. X-Rays. Hospitalization. Health Education.[18] Even regular checkups. And, HMOs will help you get the care you need.[19] In fact, HMO members get any service that is related to their health care.[20] And they only pay the monthly fee.[21]

So that they know exactly how much staying healthy is costing them.

And the program works!

It's working in San Francisco.

It's working in Boston.

And it can work here in Washtenaw County.

Call _____ and ask about HMO.

You might take back some of the things you said about health care.

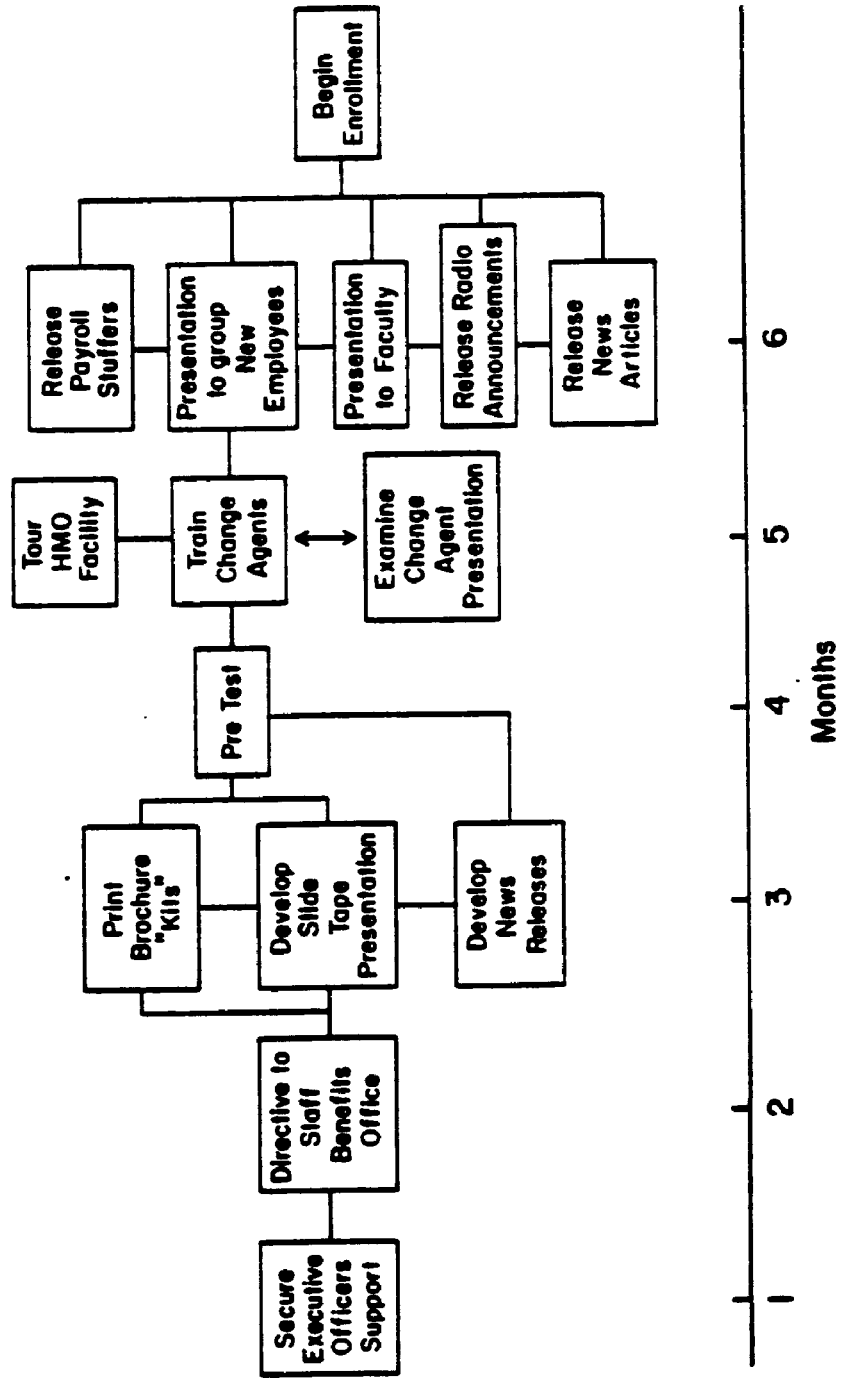


Figure 8
Educational Plan PERT Chart
The University of Michigan Employees

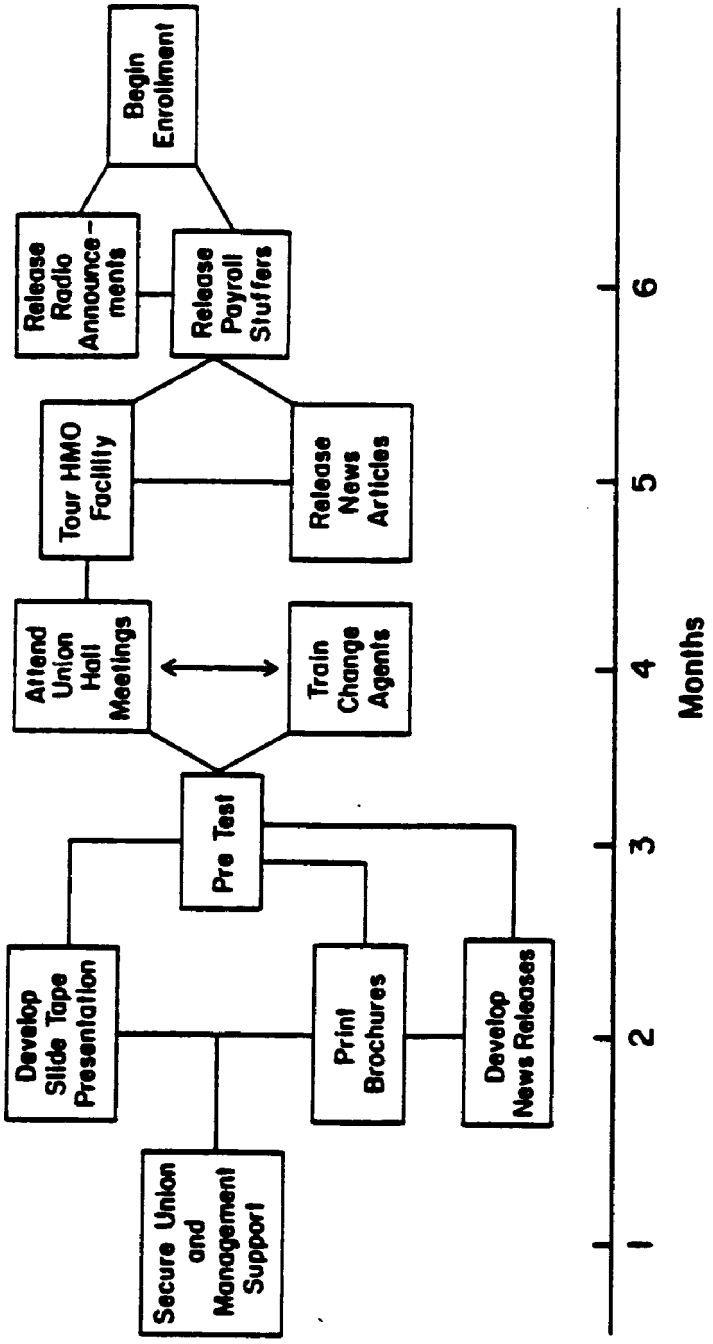


Figure 9
Educational Plan PERT Chart
Members of the United Auto Workers

REFERENCES

[1]See Tables 20, 25, 26, Chapter IV.

[2]See Tables 13, 14, Chapter IV.

[3]See Tables 16, 29, 30, Chapter IV

[4]See Tables 37, 38, Chapter IV.

[5]See Tables 27, 28, 29, 30, Chapter IV.

[6]See Tables 8, 9, 12, 33, 34, 37, 38, Chapter IV.

[7]See Tables 18, 19, 20, 25, 26, Chapter IV.

[8]See Tables 27, 28, 35, 36, Chapter IV.

[9]See Tables 27, 28, Chapter IV.

[10]See Tables 20, 25, 26, Chapter IV.

[11]See Tables 20, 25, 26, Chapter IV.

[12]See Tables 14, 15, 18, 19, 20, 25, 26, Chapter IV.

[13]See Tables 20, 25, 26, 27, 28, Chapter IV.

[14]See Table 10, Chapter IV.

[15]See Table 10, Chapter IV.

[16]See Tables 10, 18, 19, Chapter IV.

[17]See Tables 13, 14, 15, 16, 18, 19, 21, 22, 29, 30, 33, 34, 37, 38, Chapter IV.

[18]See Tables 35, 36, Chapter IV.

[19]See Tables 18, 19, Chapter IV.

[20]See Tables 18, 19, Chapter IV.

[21]See Tables 20, 25, 26, Chapter IV.

[22]See Tables 20, 25, 26, Chapter IV.

CHAPTER VI

SUMMARY, CONCLUSIONS AND IMPLICATIONS FOR POLICY

A. SUMMARY

The present study is a reanalysis of data collected by the author to determine the feasibility of developing a Health Maintenance Organization (HMO) in Washtenaw County, Michigan. The data of the present study was examined in a different manner and the present study was undertaken to: (1) develop a systematic method to forecast enrollment in a proposed HMO and (2) to develop a plan of education, based on adult learning theory, which would appeal to prospective HMO members. Data for the original study was gathered by means of a telephone interview of two randomly selected populations which represented The University of Michigan employees and members of the United Auto Workers, residing in Washtenaw County, Michigan.

Initially a review of the literature was conducted to determine if studies similar to the present study had been carried out. The results of the search were negative. Since no similar studies existed, three research questions were posed in lieu of hypotheses which set the direction and aim

of the study. These research questions are: (1) what previous consumer health experiences correlate with proposed enrollment into a proposed HMO? (2) can these significant correlations be used to develop an educational program for prospective HMO members? (3) can these significant correlations be used to predict the number of individuals who would enroll in a proposed HMO? Data analysis concentrated on the three research questions. A comprehensive search of the literature was undertaken to examine the health care crisis and events that led up to the crisis. The review of the literature pointed out that the health care crisis will continue because the demand for health care will increase from a rapidly expanding clientele and the traditional health care delivery system is less efficient than it could be as it lacks incentives to reduce health care costs. Proposed solutions to the health care crisis were thoroughly examined and it appears that all solutions which are realistic in resolving the health care crisis point to the development of HMOs. The problems of HMO development as it specifically relates to consumer enrollment was carefully analyzed and the problems all point to lack of consumer education about the nature and value of HMO plans. The literature points to the need for consumers to be educated about HMOs, however, the type and kind of education is never specified.

A review of the literature which describes the

characteristics of HMO joiners was examined to determine if educational programs could be developed which could recruit members into an HMO. The literature proved to be contradictory and confusing. In addition, there may be a strong possibility that current HMO educational programs are selecting out a certain type of individual and the characteristics of HMO joiners in one setting may not be generalized to other settings.

Adult learning theory claims adults learn by analyzing new concepts in view of previous experiences. This is the theoretical framework underlining the educational campaign program for this study. The data which documented the surveyed populations' previous experiences with the health care system was carefully analyzed and factors that created difficulty in obtaining health care were selected and correlated with willingness to enroll in a proposed HMO. These correlated factors have become the basis for the educational messages to recruit individuals for the HMO. These educational messages emphasize the characteristics of the HMO that overcome the stated problems which an HMO can alleviate.

B. LIMITATIONS

A discussion of the limitations of the study is in order prior to presenting the conclusions. The decision to enroll in an HMO or to use any health services is a rather

complicated one and is probably not made by one family member. The results of this study are based on information elicited from the respondents of a telephone interview, but it is conceivable that other members of the family are involved in determining where a family obtains their health care services. In addition, the perceptions of the problems that were encountered in the traditional health care system are those of the respondent. It is also conceivable that the respondent's spouses perceive different health care problems and thus the educational messages and enrollment prediction would be somewhat different. It is for this reason that the enrollment prediction is a conservative one. Nonetheless, the study sets the tone for a more rational way of predicting enrollment in an HMO and further provides for a reasonable approach for developing a plan of education to enroll prospective members. This approach is justified because even though decisions to enroll into an HMO may be a family rather than an individual decision, problems that were encountered with the previous health care system are those that would indeed be applicable to the entire family. For example, if the cost of medical care was mentioned as a problem in obtaining health care services, no doubt this problem permeates the entire family and is not applicable to only one family member.

C. CONCLUSIONS

HMOs appear to be a method of helping to solve this nation's health care crisis but an educational effort is needed if potential enrollees are to join this innovative approach to health care delivery. This study demonstrates how an educational program can be developed and also points to the magnitude of the education required by discovering 97 percent of the UAW workers and 69 percent of UM employees are not familiar with the HMO concept.

Although both groups were not familiar with the HMO concept, after hearing a description of the characteristics of the HMO 15 percent of the UAW members and 21 percent of the UM employees would join such a program. It seems likely that a portion of both groups are dissatisfied with their present arrangements for obtaining medical care and would try this new health care delivery program.

Nine previous consumer health experiences were perceived as barriers in obtaining medical care services and were positively correlated to enrolling into a proposed HMO (Table 39). It seems the HMO is perceived as overcoming these special problems. These nine previous experiences can be used to emphasize the characteristics of the HMO which would appeal to prospective enrollees. Five of the nine characteristics are the same for both groups, four are not. It is apparent that the appeal to be used to enroll individuals in an HMO cannot be the same for all groups.

Forty-two and five-tenths percent of UM employees and 29.4 percent of UAW members mentioned at least one difficulty encountered in obtaining medical care services. Difficulty in obtaining medical care services in general is significantly related to enrollment in an HMO for both groups. It seems likely a portion of both populations perceive the HMO to offer less resistance to obtaining medical care and/or a portion of both populations are so discouraged with their present arrangements for obtaining medical care that they would be willing to try this new health care delivery program.

Merely having a regular doctor does not guarantee that difficulties in obtaining medical care services will be diminished. This recognition is demonstrated by both groups; 70 percent of UM employees who have a regular doctor would switch to the HMO while 40 percent of the UAW members with a regular physician would switch from their regular source of care to the HMO. The UAW figure is smaller probably because UAW members have resided in southeastern Michigan a good deal longer than the UM employees and through the years UAW members have developed a stronger relationship with their regular physician. It follows they would feel a stronger allegiance to that source of medical care.

The cost of medical care is a problem for approximately 40 percent of both groups. The more both groups perceive

the cost of medical care is a problem in attaining needed medical services the more likely they would be to enroll in the HMO. The educational program should point out the HMO could save enrollees more "out of pocket costs" than the traditional health care system.

The difficulty in making an appointment to see a doctor is a problem for 42 percent of UM employees and 31 percent of UAW members. This barrier correlated to enrollment in the HMO for both groups; that is the more difficult it was to make an appointment to see a doctor, the more likely they would enroll in the HMO. An HMO educational recruitment program should inform potential enrollees that appointments can be easily made and the HMO will provide "walk in" services for patients who need urgent or emergency care.

Approximately 25 percent of both groups felt their doctors did not explain things clearly enough. For both groups the more they felt their doctors did not explain things clearly enough, the more likely they would enroll in the HMO. A patient education program which HMOs would be required to offer as a portion of their benefits would have wide appeal to potential enrollees. An HMO which would be offered to both populations would be advised to inform potential clients about the extensive patient education program available to them.

Inadequate health insurance coverage is perceived as a

problem for approximately 38 percent of both groups; however, it is positively correlated to HMO enrollment for UAW members but not for UM employees. This seems remarkable since UAW members have a more extensive health insurance program than UM employees. However, UAW members have a larger family size and make one-third more visits to physicians than UM employees. Further, UM employees do not have a regular family doctor as often as UAW members; therefore, UM employees are more likely to turn to the emergency room as a regular source of medical care. Some emergency room visits may be paid by the University of Michigan Blue Cross/ Blue Shield health insurance coverage. These facts may explain why UM employees may not feel the effects of higher cost of medical care as much as UAW members. This argument is further strengthened by the fact that 21.2 percent of the UM employees feel that medical care is a strain on their budget while 32.3 percent of the UAW members feel that medical care is a strain on their budget. In addition, indirect evidence appears to show no appreciable difference in income for both groups although more information would be helpful to demonstrate this point. The UAW members would be especially attracted to the HMO benefit which provides visits to physicians at no additional costs beyond their premiums. The UM employees would more likely respond to the HMO benefit of providing a regular family physician.

Approximately one-fifth of both groups indicated they had to visit too many places to receive medical treatment and this was considered a problem in obtaining medical care services. The UM employees are more likely to have an internal medicine specialist as a regular physician or use the emergency room as their primary source of medical care. The UAW members are more likely to have a regular physician who is a general practitioner in their community. The general practitioner would not have the same diagnostic acumen as the internist or the team of physicians that staff the emergency room. Therefore, UAW members would be more likely sent to other medical facilities for complicated diagnostic and laboratory consultations. This seems to be a reasonable explanation why UAW members who feel that going to too many places to receive care is perceived as a barrier, and they would be more likely to join the HMO. The UM employees feel that fragmented care is a problem with the same frequency as the UAW members. However, much of their care is obtained at the emergency room and hospital clinics. For this group perception of fragmented care may mean going from one clinic to another but within the same building or medical center. Perhaps this is not as serious a problem for UM employees and this is why this question, for UM employees, does not correlate to enrollment in an HMO. For the UAW members the HMO benefit of offering all medical

services in one facility should be quite appealing. For UM employees who are probably more accustomed to obtaining care in one facility this message would probably have less of an appeal for joining an HMO but would be considered a requirement since it is something they probably have.

Waiting too long to see a doctor even though you have an appointment was positively correlated to enrolling in an HMO for UAW members but was not for UM employees. It seems that the UAW members who have resided in the area a greater length of time, and are more likely to have a regular physician, expect their regular physician not to keep them waiting long periods of time. UM employees on the other hand cannot expect the same personal treatment in obtaining care from a clinic or an emergency room, therefore, they are probably more tolerant of long waits from this non-personal delivery site. It would behoove the HMO to stress that most patients do not wait inordinately long periods of time to see a doctor or nurse and that appointment schedules are adhered to.

The educational level for both groups is clearly distinct and the same methods cannot be used for both populations. The educational level of UM employees is substantially higher and the educational messages would probably be learned by using visual devices such as printed matter, media and news articles. The UAW members would tend to be

less inclined to use written matter to understand new information and more inclined to use auditory or word of mouth to learn about the HMO program.

There are two characteristics of both populations that are worth noting. The UAW members are more likely to be married and have larger family sizes than UM employees. For the UAW population, pediatric care services are more meaningful at the time of the survey but in the future pediatric services should be of greater interest for the UM employees.

Another characteristic of both populations which is of interest for an educational program is length of residency in southeast Michigan. Eighty-five and four-tenths percent of UAW members have lived in the area for greater than ten years while 48.7 percent of UM employees have lived in the area that long. In addition, almost 30 percent of UM employees compared to slightly more than four percent of UAW members are relatively new to the area. This data points the way for a larger educational effort during the new employee orientation period for UM employees but would be of lesser concern for UAW members.

D. IMPLICATIONS FOR POLICY

1. Alternative Delivery System

Health maintenance organizations are a reasonable alternative method to deliver health care services. The

nation will continue to provide more health services for many more Americans but at the same time it will struggle to reduce health care costs. HMOs will be seen as a program which could meet both of these goals. This natural experiment will help the nation's health care leaders determine the role and impact that alternative health delivery systems have on the health care of the nation.

a. Effects of Competition on Health Care Delivery

HMO programs introduce a choice of health care programs to the nation. For the most part the nation is now only able to choose one health care system, the fee-for-service practice. HMO programs provide an opportunity to demonstrate the effects a competitive health system has on the cost of health care and the quality of life for Americans. For those who remain in the traditional system, the HMO still offers them an opportunity to change to an alternative method of obtaining medical care at a later date, something they do not now have.

b. Reducing the Two Class Medical Care System

The HMO provides an opportunity to reduce this nation's system of two class medicine, clinic medicine that accepts medicare and medicaid fees from the poor and elderly and private office practice for those who can pay the private physician's fees. All HMO enrollees are issued the same

identification cards regardless of whether their employers or the Department of Social Services are paying the HMO premiums for the HMO enrollees. All HMO members use the same medical staff and facilities. There would be no apparent reason to provide special services for one class of people and not another.

2. Educational Policy

HMO programs provide an opportunity to demonstrate the effects of education on the health care delivery system and the health of the nation. In addition, educational concepts and principles could be used to help HMOs overcome some of their enrollment problems.

a. Effects of Advertising on Health Care Delivery

HMOs will be greeted with open arms by some sectors of the nation and HMO membership will grow slowly but steadily; however, many more Americans will not receive the benefits which HMOs provide simply because they have never heard about the program or failed to understand its value to their personal health situation. This problem must be overcome if HMOs are to remain financially viable; therefore, it is imperative that HMOs advertise their programs if consumers are to understand what the HMO proposes to do. The HMO programs will challenge the notion that advertisement of medical services is unethical.

b. Effects of Education on Enrollment

A significant problem facing the HMO program is what to teach or tell potential enrollees about the program that will interest them sufficiently enough to have them join. HMO educational campaigns should be using specific educational messages for specific target populations. These educational messages should be based on characteristics of the HMO that will help potential enrollees overcome particular problems they have experienced in the past while trying to obtain medical care services from the traditional health care delivery system. Merely advertising all the features of an HMO to an unsuspecting population will continue to produce sub-optimal enrollment results.

Developing HMO programs should survey their target populations and determine the concerns which potential enrollees have about the health care delivery system. HMOs should make a special effort to understand more clearly the barriers potential enrollees have encountered while obtaining health care from the traditional delivery system. The HMO educational enrollment program should stress those factors of the HMO that could help overcome the consumers concern with the health care system. The HMO should also help consumers understand how they can overcome barriers to obtaining medical care.

The same surveys which are used to determine consumer concern and barriers to medical care could also be used to forecast enrollment in an HMO. These consumer surveys will provide a rational way of determining who would probably join the proposed HMO program. But merely asking the question of whether eligible consumers would join an HMO will not produce a reliable response because at the time of answering the question no commitment by the potential enrollee would be made. Additional criteria beyond willingness to join an HMO must be determined in order to calculate a realistic enrollment projection.

c. Consumer Health Education

HMOs should be supported as health policy because HMOs would strengthen the nation's consumer health education programs. HMO programs have every incentive to keep patients well and have every incentive to provide consumer health education programs which encourage early recognition of disease and promote preventive medicine measures. Unlike the fee-for-service system, HMO programs remain in a financially stable condition if their members stay healthy or avoid unnecessary utilization of services. HMO plans would also provide patient education programs which clearly explain the nature of the patient's illness and what patients can do to take better care of themselves. Patients

who are unhappy with the physician's explanations could return for additional counseling and thus make more office visits; or if patients are too dissatisfied they will leave the HMO program, an undesirable alternative for the HMO. It seems likely that a population that is more educated about health matters would take better care of themselves, become more independent from the medical care system, use less medical services and, insofar as it can be measured, become a healthier population.

3. Social Policy

As social policy, the HMO can be considered a mechanism to improve the community's health. The HMO enrollees could be viewed as a "Community" population and as such would have all the characteristics and dynamics of a community. The HMO also creates a social institution whereby providers of health care and consumers come together to formulate institutional policies which can create institutional change in the health care system. In the long run this could improve the quality of care, increase consumer satisfaction and reduce the cost of some health care that is attributed to political factors.

a. Political Implications

The HMO could be viewed as a large social collective and heard as a loud voice on community health issues, which

in the past, consumers have had little opportunity to do anything about, or consumer actions have come too late or later than should have been necessary. For example, if an HMO enrolls workers from a chemical factory and a number of chemical workers start visiting the HMO with medical complaints of headaches, dizzy spells or other symptoms, the HMO would be in a better position to collect this information and evaluate the results than individual physicians who are in private office practices and are dispersed throughout the community. It seems likely the HMO staff could take action to inform the chemical factory more quickly than the community physicians who might be unaware that other physicians are seeing the same problems. In addition, if the chemical factory is slow to respond to correct the problem, the HMO group as a social collective and large voting bloc would be able to confront authorities and obtain the action they need to overcome the community health problem. This action will require the HMO to be interested in occupational health matters and be concerned with the health care and safety of workers in the communities where they reside. Within the concept of broadening its interest beyond immediate patient care the HMO would be interested in school health education and child safety programs as the lack of both programs or inadequate programs in these areas could result in increased utilization of HMO services.

b. Access to Medical Care

As social policy HMO programs should continue to be supported as they provide a central source for obtaining medical care. Access to medical care and fragmented care continue to be problems for consumers and consumers are finding it increasingly difficult to make their way through the complex medical care system. HMOs could help overcome these obstacles by providing most services in one facility. In addition, the HMO programs would help patients obtain the care they need by making appointments with the necessary services and not have patients run from one medical specialist to another looking for the needed medical care.

In addition, the HMO will provide special services for portions of their populations which require it. For example, children with learning disabilities or handicapped children will be able to obtain the special medical services they need. If necessary the families of these special children will be provided counseling and advice in dealing with the problems which arise from a child's special condition.

Older people will be provided with a wide range of medical services and social problems which result in medical conditions will be addressed. For example, the older patient who is lonely and develops depression will be treated for depression and the appropriate social work services will also be used to respond to the many non-medical services

frequently required by these special populations.

c. Controlling Health Care Costs

It should be noted that as social policy HMOs should be available in order for the public to be able to predict and control personal health care costs. In a bygone era, when medicine had little to offer, the fee-for-service programs were adequate and within the financial reach of consumers. But technology and other factors have created a more expensive medical care product that can easily exhaust a consumer's health insurance benefits and rapidly deplete a family's finances. HMOs can help control these runaway costs.

d. Coordination of Community Health Resources

The HMO as a social collective has an interest in other community health agency programs that effect HMO members. For example, if the local Heart Association conducts a program which emphasizes the early warning signs of a heart attack, the HMO should be informed so that it can tell its members through the HMO newsletter or other communication devices, that an educational effort is underway. The HMO should then be prepared to answer questions HMO members may have about Heart Disease and should be ready to provide the services that a more informed membership would require.

As a "Community" group, the HMO program would co-ordinate

its efforts with other agencies, such as schools and voluntary health agencies, that are interested in the health of students and their clients and who may also be HMO members.

The many programs of Public Health Departments would also be co-ordinated with the services of the HMO. For example, Public Health nurses would be contacted and informed of patients who have contracted acute Communicable diseases. Agencies that provide homemaker services will be contacted and asked to provide care for HMO enrollees that require these services. Community mental health agencies will be asked to provide crisis intervention for HMO enrollees as well as other Community mental health services.

The co-ordination of these activities might help to avoid duplication of community health services.

E. Summary of Theories Used in the Study

Several theoretical models were employed in this study and are summarized here. No attempt will be made to prioritize their value as they all contributed to the conceptual basis for this study.

The Lewinian concept of life space was introduced early in this work and set the stage for the use of adult learning theory as developed and described by Whipple, Mc Clusky, McKeachie, Houle, Kidd, Tough and Knowles. Adult learning theory claims that adults learn by integrating new

experiences and ideas with past knowledge and experience. The essence of this theory is captured by Knowles in the concept of Andragogy, that is, a shift away from the primary reliance on transmittal techniques to primary reliance on experiential techniques, techniques that make use of or build on the experience of learners. This theory sets the framework for exploring the UM employees and UAW members previous experiences with the health care system.

The literature on innovation and change is examined and contributed to understanding the factors of slow enrollment in HMOs. Roger's and Shoemaker's theories on adoption and diffusion of an innovation are used to point to how the HMO as an innovation can be adopted more rapidly. Havelock's diffusion of innovation theories are employed in the education plan to be used to enroll new members in the HMO.

Two models of Community Organizations are represented in this study. The first is the planned changed model developed by Lippitt.[1] The development of the HMO is a deliberate effort to improve the health care system. Change agents, assumption and sequence of change have been identified in the educational plan.

The second is derived from Ross.[2] This model is implicit in the description of the HMO's effect on social policy. The HMO as a social institution will affect other institutions

and agencies within its area and should improve the holistic approach to health care.

REFERENCES

[1]Lippitt, Ronald, The Dynamics of Planned Change. Harcourt, Brace and World, Inc., New York, 1958.

[2]Ross, Murray. Community Organization. Harper and Row, New York, 1967.

APPENDICES

APPENDIX A

LETTER FROM MR. DONALD THIEL, MANAGER, OFFICE OF STAFF BENEFITS

OFFICE OF STAFF BENEFITS
Central Office
2038 Administrative Services Building 313 763-1217
Medical Center Office
A7030 University Hospital 313 764-6584
Ann Arbor, Michigan 48104

THE UNIVERSITY OF MICHIGAN

March 15, 1973

Edward Roccella
Consumer Relations
Community Medicine Department
U/M Medical School

Dear Ed:

Attached is a copy of our Blue Cross-Blue Shield remittence for December 1, 1972 to January 1, 1973. Please return it when your project is completed.

Also enclosed in a "decoder" sheet which will allow you to determine the nature of coverage carried.

For example "571" is single person regular comprehensive (not '65' or deductible) coverage.

Use only status code 1 - 11 or 7 - 51 people. The others are terminations, contract changes, etc.

If you have any questions, let me know.

Sincerely yours,

Donald L. Thiel
Manager

md

List has 15310 entries. From sampling names, estimate that 88.1% are different names, giving a total list of 13491 different names on the list

APPENDIX B

LETTER TO MR. MELVIN GLASSER, DIRECTOR

UNITED AUTO WORKERS, FEBRUARY 8, 1974

February 8, 1974

Mr. Melvin Glasser, Director
United Auto Workers
Social Security Department
8000 East Jefferson Avenue
Detroit, Michigan 48214

Dear Mr. Glasser:

It was good to meet with you again and have the opportunity to discuss the progress of the developing health maintenance organization at The University of Michigan.

Within the next few weeks I will meet with Mr. Stellato, Assistant Director of Region 1B, and brief him about University Health Plan. Shortly thereafter, we will request from your office the necessary information to start the market survey of United Auto Workers in Washtenaw County.

We appreciate your interest in our developing prepaid program and we look forward to providing quality medical care for the auto workers of Washtenaw County.

Very truly yours,

Edward J. Roccella
Program Manager
Primary Care/Community Medicine

EJR/cjm

APPENDIX C

LETTER TO MR. BARD YOUNG, DIRECTOR REGION 1E UNITED AUTO WORKERS, FEBRUARY 20, 1974

February 20, 1974

Mr. Bard Young, Director
Region 1E
United Auto Workers
9650 South Telegraph
Taylor, Michigan 48180

Dear Bard:

It was good talking to you again recently by telephone and to bring you up to date on the plans to conduct a market survey of the United Auto Workers in Washtenaw County. As soon as we are ready to conduct our survey I will telephone your office. I look forward to seeing you again in the near future.

Very truly yours,

Edward J. Roccella
Program Manager
Primary Care/Community Medicine

EJR/es

cc: Mr. Melvin Glasser
Robert R. Carpenter, M.D.

APPENDIX D

LETTER TO MR. MELVIN GLASSER, DIRECTOR UNITED AUTO WORKERS, MARCH 14, 1974

March 14, 1974

Mr. Melvin A. Glasser, Director
Social Security Department
United Auto Workers
8000 East Jefferson Avenue
Detroit, Michigan 48214

Dear Mr. Glasser:

Thank you for your letter of February 18, 1974. We are ready to begin the market survey of the United Auto Workers in Washtenaw County. We have utilized the list of residencies of UAW employees by zip code which you have sent to Dr. Carpenter in February 1973 to calculate the necessary sample size for our study. We anticipate the need to have the names, addresses, and telephone numbers of 520 UAW members in Washtenaw County. We would like to have this list developed in the following manner:

1) Starting with zip code 48103 and ending with zip code 48197 develop a master list of all UAW employees. This list may be developed either alphabetically or numerically ranked by social security number, or any method which is convenient for your staff. We assume the list will be about 12,000 names.

2) Starting with the 16th name on the list please tell us the name, home address and telephone number of every 23rd United Auto Worker from this master list. We assume that this method will yield a sample size of 520 United Auto Workers. It is this group of 520 auto workers that we intend to interview.

If your staff has any questions, by all means have them call me. We look forward to receiving your list.

Very truly yours,

Edward J. Roccella
Program Manager
Primary Care/Community Medicine

EJR/es
enclosure

cc: Robert R. Carpenter, M.D.

Zip Code	Total UAW Employees in Zip Code Area	Sample Size From Area
48103	799	35
48104	673	29
48105-6-7-8-15	314	14
48118	610	27
48130	241	11
48158	335	15
48160	798	35
48176	458	20
48189	299	13
48191	288	14
48197	7013	305
	11877	518

APPENDIX E

LETTER FROM MR. DAVE BRINDLE, RESEARCH ASSOCIATE, UNITED AUTO WORKERS, MAY 2, 1974

CABLE. "UAW DETROIT"

Solidarity House
8000 EAST JEFFERSON AVE.
DETROIT, MICHIGAN 48214
PHONE (313) 926-5000

UAW INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA-UAW

LEONARD WOODCOCK, PRESIDENT EMIL MAZEY, SECRETARY-TREASURER

VICE-PRESIDENTS
PAT GREATHOUSE • KEN BANNON • NELSON JACK EDWARDS • DOUGLAS A. FRASER • OLGA M. MADAR • DENNIS McDERMOTT • IRVING BLUESTONE

May 2, 1974

Mr. Edward J. Roccella
Program Manager
Primary Care/Community Medicine
University of Michigan
Medical Center
Ann Arbor, Michigan 48104

Dear Mr. Roccella:

Attached is the sample of UAW members by ZIP Codes, living in Washtenaw County.

This run has produced a total of 526 names.

Unfortunately, we are not able to provide telephone numbers, as this information is not available.

We hope this list proves useful to you in the market survey phase of your HMO development.

Sincerely yours,

Dave Brindle
Research Associate
Social Security Department, UAW

DRB/kms
opeiu42
cc: Mel Glasser

PRINTED IN USA

APPENDIX F

LETTER TO MR. BARD YOUNG, DIRECTOR REGION 1E, UNITED AUTO WORKERS, APRIL 29, 1974

April 29, 1974

Mr. Bard Young, Director
Region 1-E
United Auto Workers
9650 S. Telegraph Road
Taylor, Michigan 48180

Dear Mr. Young:

Dr. Carpenter and I enjoyed the opportunity to meet with you and your staff to discuss the progress of the developing health maintenance organization at The University of Michigan Medical Center. We are pleased with the encouragement your staff offered us to conduct our market survey, which will permit a better understanding of the health care needs of UAW workers in Washtenaw County. Your suggestions about our questionnaire are helpful and will provide a more meaningful and thorough response.

We look forward to a breakfast meeting with the Presidents of the local UAW unions for the purpose of discussing the market survey and University Health Plan.

Thank you for the time and the efforts United Auto Workers are taking to help us develop our prepaid program.

Sincerely,

Edward J. Roccella
Program Manager
Primary Care/Community Medicine

EJR/es

cc: Robert R. Carpenter, M.D.
Mr. Melvin L. Glasser

APPENDIX G

LETTER TO MR. BARD YOUNG, DIRECTOR REGION 1E

UNITED AUTO WORKERS, MAY 24, 1974

May 24, 1974

Mr. Bard Young
Director
Region 1-E
United Auto Workers
9650 South Telegraph
Taylor, Michigan 48180

Dear Mr. Young:

Dr. Carpenter and I enjoyed the opportunity at your recent breakfast meeting to discuss the developing prepaid program at the University of Michigan and the need for a market survey to determine the health needs of the United Auto Workers.

We plan to start the market survey shortly after UAW members return home from their convention in Los Angeles which should be sometime by mid-June. I'll drop you a brief note and keep you posted. Thanks again for your continued support.

Sincerely,

Edward J. Roccella
Program Manager
Primary Care/Community Medicine

cc: Robert R. Carpenter, M.D.
Mr. Melvin Glasser

EJR/rb

APPENDIX H

LETTER TO MR. DAVE BRINDLE, RESEARCH ASSOCIATE, UNITED AUTO WORKERS, MAY 8, 1974

May 8, 1974

Mr. Dave Brindle
Research Associate
United Auto Workers
8000 East Jefferson Avenue
Detroit, Michigan 48214

Dear Mr. Brindle:

Thank you for providing a sample listing of UAW members living in Washtenaw County by zip codes. Your efforts will help us to determine how we can best serve the health care needs of UAW members in Washtenaw County.

Very truly yours,

Edward J. Roccella
Program Manager
Primary Care/Community Medicine

EJR/es

cc: Robert R. Carpenter, M.D.
Mr. Melvin L. Glasser

APPENDIX I

NEWS RELEASE FROM THE UNITED AUTO WORKERS

PUBLIC RELATIONS DEPARTMENT

SOLIDARITY, JULY 1974, REGION 1E EDITION

TAYLOR, Mich.---Region 1E Director Bard Young announced at a breakfast meeting with local union leaders that the University of Michigan Medical Center is studying the health problems of UAW families.

The university group is going to conduct an in-depth survey of 400 UAW members in Washtenaw county. Purpose of the probe is to take a hard look at the medical experiences, needs and attitudes of UAW families in order to fashion the kind of health care programs and facilities that will best serve our people and the communities they live in. A spokesman for the U. of M. Medical Center said the questions would be designed to reveal the strengths and weaknesses of the various plans and programs presently in use ---Blue Cross-Blue Shield, Metro Health Plan, small industrial clinic, private doctor-patient relationship, and various group programs negotiated on behalf of UAW members with industrial insurance carriers such as John Hancock and Metropolitan.

Interviewers will contact our members by phone, using a random sampling method. Members will be asked how often they see doctors, how much hospitalization they have needed, how satisfied or dissatisfied they have been and why, and similar questions revealing what changes may be desired in current health care and delivery systems.

Young asked the local union leaders to publicize the survey as widely as possible, so that all Region 1E families in Washtenaw county will know that the telephone poll is fully authorized and being conducted with the complete cooperation and approval of the UAW.

XXX

PM:blh/opeiu42/5-17-74

APPENDIX J

LETTER TO MR. BARD YOUNG, DIRECTOR REGION 1E, UNITED AUTO WORKERS, NOVEMBER 7, 1974

THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
ANN ARBOR, MICHIGAN 48104

OFFICE OF THE DEAN

November 7, 1974

Mr. Bard Young
Director Region 1-E
United Auto Workers
9650 S. Telegraph
Taylor, MI 48180

Dear Mr. Young:

We have completed the survey of the United Autoworkers of Washtenaw County in which we were seeking answers on how best to design our Health Maintenance program for UAW members and others. We are currently analyzing the data.

We greatly appreciate your help and the help of your staff in completeing this task and we are indebted to your service. We look forward to working with you as we plan our program to take care of the needs of the Auto Workers. Let us know how we can help you, but in the meantime my very best wishes.

Very truly yours,

Edward J. Roccella
Program Manager
Primary Care/Community Medicine

EJR/kh

APPENDIX K

LETTER TO MR. MELVIN GLASSER, DIRECTOR OF THE UNITED AUTO WORKERS, NOVEMBER 8, 1974

November 8, 1974

Mr. Melvin Glasser
Director of Social Security
United Auto Workers
Solidarity House
8000 East Jefferson Ave.
Detroit, MI 48214

Dear Mr. Glasser:

The survey of the United Autoworkers of Washtenaw County to determine how to best develop the Health Maintenance program for UAW members and others is complete. Three hundred nine autoworkers successfully participated in our telephone interview and currently we are examining the results of the survey. It is our intention to compare the UAW data with those of the University of Michigan Employees Survey conducted in the summer of 1973. In this manner, we should be able to plan a reasingful program for our future patient population..

Mr. Bard Young's help was invaluable in getting the survey completed. Mr. Young and his staff were not only cooperative but also gave us suggestions on how to obtain maximum autoworker response to the survey.

I must report that we are having to delay offering our prepaid program since the present Michigan Health Maintenance Organization Law prohibits the University of Michigan from being an HMO. As you know, the law states that 1/3 of the governing body of the HMO must be derived from the consumers of the HMO. But the Regents of the University of Michigan are our governing body and would constitute the governing body of the University of Michigan HMO. This is unacceptable to the current HMO law. In the meantime, we are searching for another group or third party to be an HMO and our staff will be relegated to providers of care only - a disappointing alternative.

Very truly yours,

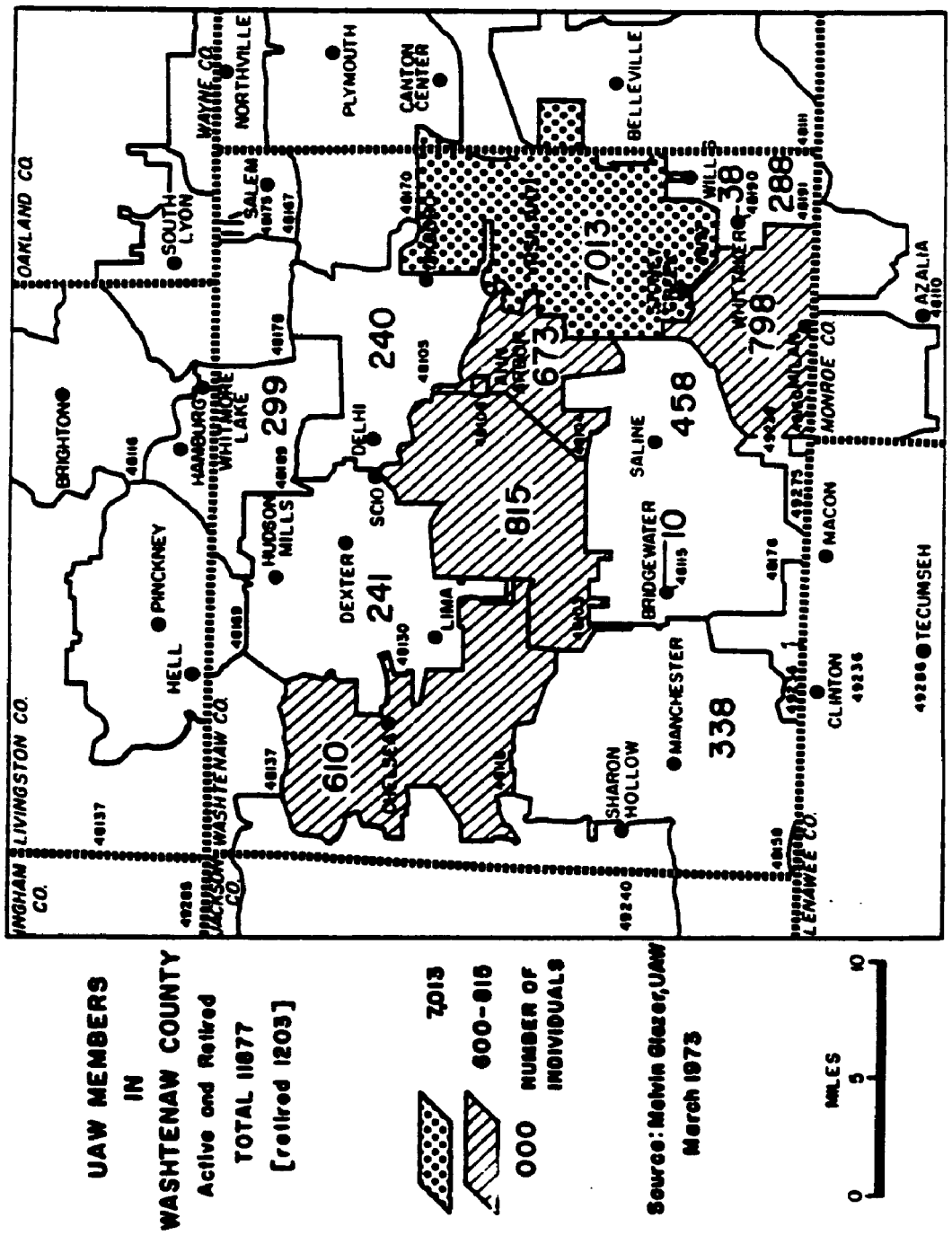
Edward J. Roccella
Program Manager
Primary Care/Community Medicine

EJR/kh

APPENDIX L

MAP OF UNITED AUTO WORKERS

RESIDENCE BY ZIP CODE


UAW MEMBERS
IN
WASHTENAW COUNTY
Active and Retired
TOTAL 11877
[retired 1203]
7013
600-815
000 NUMBER OF INDIVIDUALS
Source: Melvin Glazer, UAW
March 1973
MILES
0
5
10
OAKLAND CO.
LIVINGSTON CO.
WAYNE CO.
MONROE CO.
LENAWEE CO.
JACKSON CO.
WASHTENAW CO.
BRIGHTON
HAMBURG
PINCKNEY
HELL
SOUTH LYON
WHITMORE LAKE
SALEM
NORTHVILLE
PLYMOUTH
CANTON CENTER
BELLEVILLE
HUDSON MILLS
DEXTER
DELHI
SCIO
LIMA
SALINE
BRIDGEWATER
MANCHESTER
SHARON HOLLOW
CLINTON
MACON
TECUMSEH
AZALIA
WILLIS
WHITTAKER
610
241
240
299
815
673
7013
458
10
338
798
38
288
PRIMARY CARE/COMMUNITY MEDICINE UMMC

APPENDIX M

LETTER TO UNITED AUTO WORKERS

AUGUST 9, 1974

THE UNIVERSITY OF MICHIGAN
MEDICAL CENTER
ANN ARBOR, MICHIGAN 48104

OFFICE OF THE DIRECTOR

August 9, 1974

Dear UAW Member:

The University of Michigan Primary Care/Community Medicine Program is working to develop a new health care program for United Auto Workers, their families, and others of Washtenaw County. Our new health plan seeks to provide all the health services a family may need, including personal and family doctor care, drugs, hospital services and many additional services.

With the approval of the UAW Department of Social Security and with the endorsement of Mr. Bard Young, Director of Region 1-E, we are conducting a survey about health needs and problems auto workers have had in getting medical services. We need your help to determine how we can best serve UAW members and their families. Your name was randomly chosen to be interviewed by telephone from a list of all UAW members. However, we have not been able to contact you by telephone. So now we are asking you to call us at 764-5384 or 764-5414 on any one of the following days:

Saturday, August 17, 9:00 a.m.-5:00 p.m.
Monday, August 19, 5:00 p.m.-9:00 p.m.
Wednesday, August 21, 5:00 p.m.-9:00 p.m.
Saturday, August 24, 9:00 a.m.-5:00 p.m.

We have enclosed a quarter to pay for the phone call. Your telephone call to us will only take a few minutes and your answers will tell us what needs to be done to develop this new health care program. Of course, your answers will be confidential.

If you have questions about this survey, please call me at The Primary Care/Community Medicine Program 764-5384 or Mr. Paul Morris of the Region 1-E office at 291-2750.

Thank you for your help.

Very truly yours,

Edward J. Rocella
Program Manager

EJR/kh

APPENDIX N

SURVEY INSTRUMENT AND CODING MANUAL, UNIVERSITY OF MICHIGAN EMPLOYEES

MAY 1973

MEDICAL CARE INTERVIEW

Name of Respondent_____

U-M Address_____

U-M Phone_____

Interviewer_____

I # _____

Q # 30 _____

#_____

Date of Interview_____ Respondent is ( ) Female ( ) Male

Hello. My name is _____, and I am a graduate student at the School of Public Health, part of a group studying the health problems of U-M employee families and the ways in which they receive medical care. We are gathering information which we hope will help to improve the medical services available in Ann Arbor. Your name was randomly chosen to be interviewed from a list of all U-M employees. Your answers will be confidential and the questions will only take a few minutes.

First, I need to ask for some information about all of the family members living in your household.

1. Are you single, married, or what? Respondent is ( ) single
   ( ) married
   ( ) other

2. Are there any children?
   IF YES: Could you tell me their ages, beginning with the oldest-

   _____

3. What kind of work do you do?_____

4. (What kind of work does your husband/wife do?)_____

5. How much formal education have you had? (How about your husband/wife)?

	Respondent	Spouse
Less than high school diploma	( )	( )
High school diploma	( )	( )
Some college	( )	( )
Finished college	( )	( )
Graduate study	( )	( )

6. How long have you lived in the Ann Arbor/Washtenaw County area?

   _____

7. How much longer do you think you will live in this area? Would you say-

   ( ) less than a year
   ( ) a year or two
   ( ) longer than that
   ( ) indefinitely

8. And what is your age? _____

Now I would like to ask you to think about medical care for you (and your family) over the past year, that is, going back to April, 1972.

9.A. Did you yourself contact a doctor this last year because of illness or injury that you had? ( ) YES ( ) NO

   IF YES, About how many times _____

Page 2

9.B. How about your (husband/wife)? ( ) YES ( ) NO

IF YES, How many times _____

9.C. How about your children?

_____

10. Was it necessary for you (or your husband/wife/children) to stay at least one night in the hospital during the past year? ( ) YES ( ) NO

Who? _____

11. Have there been times in the last year or so when you felt ill or needed medical advice but did not know where to get treatment or advice?
( ) YES ( ) NO

12. Do you yourself have a regular doctor?
( ) YES a. Do you happen to know if your doctor is a specialist?
( ) YES ( ) NO IF YES, what kind? _____

b. How long have you been using this doctor's service?

_____

c. To what extent is your doctor available when needed-
( ) always ( ) usually ( ) seldom

d. Does your (husband/wife) go to the same doctor?
( ) YES ( ) NO IF NO, does he/she have a personal doctor?
( ) YES ( ) NO

e. Do you have a regular pediatrician who cares for your children? ( ) YES ( ) NO

( ) NO a. What would you do if you needed the services of a doctor, particularly on short notice? _____

_____

b. Would you prefer to have a regular doctor?
( ) YES ( ) NO ( ) DK

c. Does your (husband/wife) have a personal doctor?
( ) YES ( ) NO

d. Do you have a regular pediatrician who cares for the children? ( ) YES ( ) NO

13. Does your family have health insurance now? ( ) YES ( ) NO

IF YES (check all that apply)
( ) Blue Cross through U-M?
( ) Blue Shield through U-M?
( ) Major Medical through U-M?
( ) Other (please specify)

_____

14. Do you visit a doctor for a general health check up even though there is nothing particularly wrong with you? ( ) YES ( ) NO

IF YES, about how often? _____

Would you go more often if you had the opportunity? ( ) YES ( ) NO

15. Do you see a dentist for a check up when nothing is particularly wrong with your teeth? ( ) YES ( ) NO

IF YES, about how often? _____

16. In general to what extent do you think you yourself can prevent disease from happening--would you say:

( ) not at all
( ) a little
( ) a fair amount
( ) a lot

17. And how much would you say seeing a doctor regularly helps prevent disease?

( ) not at all
( ) a little
( ) a fair amount
( ) a lot

18. In general when you're not feeling well, do you have any reason for putting off seeing a doctor? What are these reasons?

_____

19. Would you please tell me the things, if any, that give you (and your family) the most difficulty in getting medical care?

_____

_____

_____

_____

I am particularly interested in some specific problems you may have regarding medical care in the Ann Arbor area. You may have already mentioned some of these but let me ask about them anyway.

20. Would you please tell me how often you have the following kinds of problems in the Ann Arbor area--never, occasionally, or often.

NOTE: If Respondent says "never" or "no problem" -- Ask: "Is that because you haven't had any opportunity to experience the problems?"

	NEVER	OCCAS.	OFTEN	NO OPPORTUNITY
a. Your health insurance did not cover a particular service you required.	( )	( )	( )	( )

Page 4

	NEVER	OCCAS.	OFTEN	NO OPPORTUNITY
b. Medical care was too expensive.	( )	( )	( )	( )
c. Medications were too expensive.	( )	( )	( )	( )
d. You had to visit too many different places to receive treatment.	( )	( )	( )	( )
e. You have to travel too far for medical care.	( )	( )	( )	( )
f. You couldn't make an appointment to see a doctor within a reasonable time.	( )	( )	( )	( )
g. You had to wait too long to see a doctor even though you had an appointment.	( )	( )	( )	( )
h. There was too much redtape in the process of getting care.	( )	( )	( )	( )
i. The doctor didn't explain things clearly enough.	( )	( )	( )	( )

21. In general, how satisfied are you with the medical care you (and your family) receive? Would you say-

( ) not at all
( ) a little
( ) a fair amount
( ) a lot

22. Do you find the present cost of medical care a strain on your budget?
( ) YES ( ) NO

23. Thinking about the medical care that you (and your family) now receive, would you say the cost is:

( ) too much
( ) about right
( ) a bargain

There has been discussion lately of training new kinds of health professionals who could help a doctor to see more patients by taking over some of his routine tasks.

24. Which, if any, of the following tasks do you think could be performed adequately for you by an assistant to the doctor who was specially trained to do them? (Interviewer--note any qualifications to answer) Check for YES--

( ) Giving injections
( ) Giving a routine physical examination
( ) Taking blood pressure
( ) Setting a broken bone
( ) Prescribing treatment for an infection

Page 5

You may have heard about a different way of providing medical care called a "prepaid group practice".

25. Do you happen to be familiar with the idea of "prepaid group practice"?

IF YES ( ) a. Could you tell me what you recall about it?

_____

_____

_____

b. Have you ever been enrolled in one yourself?
( ) YES ( ) NO

IF NO ( ) GO ON TO DESCRIPTION

By a "prepaid group practice" or "health maintenance organization", I mean a system where a family joins and agrees to pay a set amount each month to a group of doctors who work together. This group of doctors, in return, provides care for your medical and hospital needs--no matter how much care your family requires during that period--at no cost beyond the set amount already paid. A family would enroll in this system instead of Blue Cross/Blue Shield or other kinds of health insurance.

26. There is a plan to set up a prepaid group practice or health maintenance organization for University employees, their families, and other groups in the community. Have you heard anything about that?

( ) YES ( ) NO ( ) NOT SURE

This prepaid group practice would include preventive services, such as screening for disease and check ups, coverage for the whole family, services available around the clock, health education for members, and prescription drugs.

27. If a system like this is available in Ann Arbor, do you think you would be interested in enrolling? ( ) YES ( ) NO ( ) NOT SURE

IF YES, would you say definitely ( ) or probably ( )
IF NO, would you say definitely ( ) or probably ( )
Comments: _____

28. (If Respondent has a doctor) Would you be willing to change from your current doctor? ( ) YES ( ) NO

29. Assume for the moment that the prepaid group plan is an alternative to Blue Cross/Blue Shield and the University would pick up the same amount they now pay for Blue Cross/Blue Shield. It is estimated that the prepaid group practice would then cost nothing more for a single person, $7-$10 per month additional for a couple, and about $17 a month more for a family. Would you be willing to join the prepaid group practice and if necessary pay the additional amount? ( ) YES ( ) NO ( ) NOT SURE

30. And finally would you be interested in receiving more information about the prepaid group practice? ( ) YES ( ) NO

1973 Coding Manual

Col.		Variable
1-3	5 3 1	Study number = 531
4	1	Deck number = 1
5-7	_ _ _	Subject number
8	_	R's sex: 1 = Male 2 = Female
9	_	Marital Status: 1 = single 2 = married 3 = other 9 = missing data
10	9	Code 9
11	_	How many children? Code number
12-13	_ _	Age of youngest child? if 1/2 year, code up code 00 if no children 01 = 1-4 02 = 5-9 03 = 10-15 04 = 16 + 99 missing data
14	_	R's University position: 1 = faculty (code position in either Col. 15 or 16) 2 = staff
15	_	R's faculty position: 1 = teaching or research assistant 2 = instructor or lecturer 3 = research associate 4 = assistant professor (or equivalent research position) 5 = associate or full professor (or equivalent research position) 9 = NA 0 = R is staff
16	_	R's staff position: 1 = service worker 2 = laborer 3 = operative or kindred worker 4 = craftsman, foremen 5 = clerical or secretarial; paraprofessional; sales 6 = manager, official, administrative position 7 = professional, technical or kindred 9 = missing data 0 = R is faculty

Col.		Variable
17	___	Spouse's occupation: 1 = R's spouse works but does not work for U-M 2 = Spouse is on faculty (Col. 18, and 0 in 19) 3 = Spouse is on staff (Col. 19, and 0 in 18) 4 = Spouse is student 5 = Spouse does not work outside home 9 = NA 0 = No spouse and code 99 in 18, 19 (Code position in either Col. 18 or 19)
18	___	Spouse's faculty position (code as in Col. 15)
19	___	Spouse's staff or non U-M position (code as in Col. 16)
20	___	R's education: 1 = less than high school diploma 2 = high school diploma 3 = some college 4 = finished college 5 = graduate study 9 = missing data
21	___	Spouse's education: use same code as above 9 = missing data 0 = no spouse
22-23	___ ___	How long in area? if 1/2 year, code up 01 = 0-1 02 = 2-4 03 = 5-9 04 = 10 + 99 = missing data
24	___	How much longer in area? 1 = less than a year 2 = a year or two 3 = longer than a year or two 4 = indefinitely 9 = missing data; DK, can't say, etc.
25	___	R's age: code number of year 1 = less than 20 2 = 20's 3 = 30's 4 = 40's 5 = 50's 6 = 60's 7 = 70's 9 = missing data
26	9	Code 9

Page 3

Col.		Variable
27	___	R. contacted Dr. in past year (Q. 9a) 0 = no contact 1 = once or twice 2 = 3-5 times 3 = more than 5 times 9 = NA
28	___	Spouse contacted Dr. in past year (Q. 9b) code as in Col. 27 code "9" if not applicable
29	___	Contacted Dr. in past year for children? code as in Col. 27 code "9" if not applicable
30	___	Any nights in hospital for family? (Q. 10) 0 = no 1 = yes, R 2 = yes, spouse 3 = yes, child 4 = yes, more than one family member 9 = missing data
31	___	Any need for medical advice but did not know where to go? (Q. 11) 1 = yes 2 = no 9 = missing data
32	___	Do you have a regular Dr.? (R) (Q. 12 & 12a) 1 = yes, non-specialist 2 = yes, specialist in internal medicine 3 = yes, specialist in OB-GYN 4 = yes, specialist in something else 5 = no (code 0 in Col. 35 and 36) 9 = missing data
33	___	Regular Dr.? (Spouse) (Q. 12, yes, part d. or no, part c.) 1 = yes 2 = yes, same Dr. as R. 3 = no 9 = missing data 0 = no spouse
34	___	Regular pediatrician for children? (Q. 12, yes, part c. or no, part d.) 1 = yes 2 = no 9 = missing data 0 = no children
35	___	How long has R. used Dr.'s services? (Q. 12, yes, part b.) 0 = no regular Dr. 1 = a year or less 2 = 2-5 years 3 = more than 5 years 9 = missing data

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Col.		Variable
36	___	Is Dr. available when needed? (Q. 12, yes, part c.) 0 = no regular Dr. 1 = always 2 = usually 3 = seldom 9 = missing data
37	___	What would you do if you needed a Dr. on short notice? (Q. 12, no, part a.) 0 = inapplicable, R. has regular Dr. 1 = ask a friend 2 = clinic or emergency service 3 = yellow pages, etc. 4 = combined 1 & 2 5 = combined 1 & 3 6 = combined 2 & 3 7 = combined 1, 2 & 3 8 = DK 9 = missing data
38	___	Would you prefer to have a regular Dr.? (Q. 12, no, part b.) 0 = has a regular Dr. 1 = yes 2 = no 8 = DK 9 = missing data
39	___	Health insurance? (Q. 13) 1 = Blue Cross through U-M 2 = Blue Cross/Blue Shield through U-M 3 = Blue Cross/Major Medical through U-M 4 = Blue Cross/Blue Shield and Major Medical through U-M 5 = other 9 = missing data
40	___	Do you visit a Dr. for a checkup if nothing is wrong? How often? (Q. 14 & 14a.) 1 = every 6 months 2 = once a year 3 = about every 2 years 4 = less frequent than every 2 years 5 = no (code 0, Col. 42) 9 = missing data
41	___	Are checkups frequent enough? (Q. 14b.) 0 = never goes for checkups 1 = yes 2 = no 9 = missing data

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Col.		Variable
42	___	Do you see a dentist for a checkup? How often? (Q. 15 & 15a.) 1 = every 6 months 2 = once a year 3 = about every 2 years 4 = less frequent than every 2 years 5 = no 9 = missing data
43	___	Can prevent disease from happening? (Q. 16) 1 = not at all 2 = a little 3 = a fair amount 4 = a lot 9 = missing data
44	___	Does seeing a Dr. regularly help prevent disease? (Q. 17) 1 = not at all 2 = a little 3 = a fair amount 4 = a lot 9 = missing data
45	___	In general when you're not feeling well do you have any reason for putting off seeing a Dr.? 0 = inapplicable--R does not put off Dr. 1 = wait to see if illness goes away; illness usually minor 2 = scepticism about value of seeing a Dr. 3 = care not available or accessible 4 = cost, expense 5 = reluctance to bother Dr. unless really needed 6 = patient relationship to service (impersonality, rudeness, etc.) 7 = other 8 = no reason given 9 = missing data
46	9	Code 9
47	9	Code 9
48		Reasons for putting off seeing a Dr. (second reason mentioned) 0 = inapplicable or no second reason given use codes in Col. 45
49	___	Difficulty in getting medical care: (Q. 19) Did R. mention any difficulties? 0 = no difficulties mentioned and code 0 in 50-55 1 = R mentioned difficulties
50	___	Availability: no facility or Dr. to use/ R not in care system. 0 = availability not mentioned 1 = availability mentioned

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Col.		Variable
51	___	Barriers to care: time, waiting, distance 0 = barriers not mentioned 1 = barriers mentioned
52	___	Cost of care 0 = cost not mentioned 1 = cost mentioned
53	___	Patient relationships to service: poor personal treatment, impersonality, etc. 0 = not mentioned 1 = mentioned
54	___	Quality of care, continuity, comprehensiveness. 0 = not mentioned 1 = mentioned
55	___	Insurance covered cost 0 = not mentioned 1 = mentioned
56	9	Code 9
57	___	Problems in obtaining care (Q. 20) a. Health insurance coverage 0 = no opportunity 1 = never 2 = occasionally 3 = often 9 = missing data
		code as in Col. 57
58	___	b. Care too expensive
59	___	c. Medications too expensive
60	___	d. Too many different places
61	___	e. Travel
62	___	f. Appointment
63	___	g. Wait
64	___	h. Redtape
65	___	i. Dr. not explain
66	___	How satisfied with medical care? (Q. 21) 1 = not at all 2 = a little 3 = a fair amount 4 = a lot 9 = missing data
67	___	Cost a strain on budget? 1 = yes 2 = no 9 = missing data

Col.		Variable
68	___	Cost of care is -- 1 = too much 2 = about right 3 = a bargain 9 = missing data
		Tasks could be performed by assistant to Dr. (Q. 24)
69	___	a. Giving injections
70	___	b. Routine physical exam
71	___	c. Blood pressure
72	___	d. Setting broken bone
73	___	e. Prescribing treatment 1 = yes, unqualified 2 = yes, qualified 3 = no, qualified 4 = no, unqualified 9 = missing data
74	___	R's knowledge of health plan correct 1 = yes 2 = no
CARD TWO		
1-3	5 3 1	531 (study #)
4	___	Deck number = 2
5-7	___	Subject number
8	___	Familiarity with prepaid group practice (Q. 25) 1 = yes, but never belonged 2 = yes, and has belonged 3 = no and code 0 in 9-14 9 = missing data
		What R recalls about group practice
9	___	Set enrollment fee, prepayment 0 = not mentioned 1 = mentioned
10	___	Group of practitioners working together 0 = not mentioned 1 = mentioned
11	___	Care available at one facility 0 = not mentioned 1 = mentioned
12	___	All needed care available 0 = not mentioned 1 = mentioned

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Col.		Variable
13	___	No additional costs for any needed care 0 = not mentioned 1 = mentioned
14	___	Entire family covered 0 = not mentioned 1 = mentioned
15	___	Heard about U-M HMO (Q. 26) 1 = no 2 = yes 3 = not sure 9 = missing data
16	___	Interest in enrollment (Q. 27) 1 = definitely yes 2 = probably yes 3 = probably no 4 = definitely no 5 = DK 9 = missing data
17	___	Willingness to change Dr. (Q. 28) 0 = inapplicable - R. not interested or has no doctor 1 = yes 2 = no 9 = missing data
18	___	Willingness to pay added amount (Q. 29) 0 = inapplicable - R. not interested 1 = no, unqualified 2 = no, qualified 3 = DK 4 = yes, qualified 5 = yes, unqualified 9 = missing data
19	___	Interest in receiving information 0 = inapplicable - R. not interested 1 = yes 2 = no 9 = missing data

APPENDIX O

SURVEY INSTRUMENT, UNITED AUTO WORKERS

UNIVERSITY OF MICHI AN MEDICAL CENTER
PROGRAM IN PRIMARY CARE/COMMUNITY MEDICINE

June 1974

UNITED AUTO WORKERS MARKET SURVEY

Name of Respondent_____

Address_____

Phone_____

Interviewer_____

#4-6_____

#74_____

Date of Interview _____

#1-3 5 3 2

#4-6 ___ ___ ___

7 ___ Respondent

1 = male
2 = female

Hello, my name is _____,
and I am a staff member of the University of Michigan Medical Center. In conjunction with the United Auto Workers Department of Social Security and local _____ and with the endorsement of Mr. Bard Young, Director of Region 1-E of UAW, we are studying the health problems of UAW employee's families and the ways they receive medical care. We are gathering information which we hope will help to improve the medical services in Washtenaw County. Your name was randomly chosen to be interviewed from a list of all UAW employees. Your answers will be confidential and the questions will only take a few minutes.

First, I need to ask for some information about all of the family members living in your household.

8 ___ Are you single, married, or what? Respondent is -

1 = single
2 = married
3 = other

9 ___ Are there any children? Code number. 8 = 8 or more.

10 ___ IF YES: Could you tell me their ages, beginning with the oldest - Code age of youngest child; (if 1/2 year code up.)

0 = no children
1 = 1-4 years of age
2 = 5-9 years of age
3 = 10-15 years of age
4 = 16+
9 = missing

11 ___ What kind of work does you husband/wife do?

0 = no spouse
1 = housewife
2 = clerical; labor
3 = professional
4 = other

12 ___ Is he/she a member of United Auto Workers?

0 = no spouse
1 = yes
2 = no

Now I would like to ask you to think about medical care for you (and your family) over the past year, that is, going back to April 1973.

13 ___ Did you yourself contact a doctor this last year because of illness or injury that you had? About how many times -

0 = no contact
1 = once or twice
2 = 3-5 times
3 = more than 5 times

14 ___ How about your (husband/wife)? About how many times -

0 = no contact
1 = once or twice
2 = 3-5 times
3 = more than 5
4 = NA

15 ___ How about your children? About how many times -

0 = no contact
1 = once or twice
2 = 3-5 times
3 = more than 5 times
4 = NA

16 ___ Was it necessary for you (or your husband/wife/children) to stay at least one night in the hospital during the past year? Who?

0 = no
1 = yes - respondent
2 = yes - spouse
3 = yes - child
4 = yes - more than one family member

17 ___ Have there been times in the last year or so when you felt ill or needed medical advice but did not know where to get treatment or advice?

1 = yes
2 = no

18 ___ Do you yourself have a regular doctor? Do you happen to know if your doctor is a specialist?

1 = yes, nonspecialist and code 0 in col 29, 30
2 = yes, specialist in internal medicine and code 0 in col 29, 30
3 = yes, specialist in ob-gyn and code 0 in col 29, 30
4 = yes, specialist in something else and code 0 in col 29, 30
5 = yes, specialty unknown and code 0 in col 29, 30
6 = no, code 0 in col 26, 27

19 ___ How long have you been using this doctor's service?

0 = no regular doctor
1 = a year or less
2 = 2-5 years
3 = more than 5 years

20 ___ To what extent is your doctor available when needed?

0 = no regular doctor
1 = always
2 = usually
3 = seldom

21 ___ What would you do if you needed the services of a doctor, particularly on short notice?

0 = unapplicable has regular doctor
1 = ask a friend
2 = clinic or emergency room
3 = yellow pages, etc.
4 = combine 1 or 2 or 3
5 = doesn't know

22 ___ Would you prefer to have a regular doctor?

0 = has a regular doctor
1 = yes
2 = no
3 = doesn't know

23 ___ Does your (husband/wife) have a personal doctor?

0 = no spouse
1 = yes
2 = yes, same doctor as respondent
3 = no

24 ___ Do you have a regular pediatrician who cares for your children?

1 = yes
2 = no
3 = no children
4 = children too old

25 ___ Does your family have health insurance now? What kind?

1 = Blue Cross/Blue Shield and code 0 in col 34
2 = Metro Health Plan and code 0 in col 35, 36
3 = other - please specify_____
4 = no insurance
5 = don't know

26 ___ Are you satisfied with Metro? If no, what don't you like about it?

0 = has Blue Cross
1 = satisfied
2 = too expensive
3 = wait too long to see a doctor
4 = not enough coverage in benefits
5 = health center too far from home
6 = no personal care
7 = staff unfriendly
8 = too much red tape to collect
9 = other _____

27 ___ Are you satisfied with the care you get with Blue Cross? If no, what don't you like about it?

0 = has Metro
1 = satisfied (Pick 1st mentioned)
2 = too expensive
3 = wait too long to see a doctor
4 = not enough coverage in benefits
5 = nearest doctor too far away
6 = no personal care
7 = too much red tape to collect
8 = other _____

28 ___ If Blue Cross/Blue Shield: Are you familiar with Metro?

0 = has Metro
1 = yes, definitely
2 = yes, vaguely
3 = no

29 ___ Do you visit a doctor for a general checkup even though there is nothing particularly wrong with you? How often?

1 = every 6 months
2 = once a year (grade up)
3 = every two years
4 = less frequent than every two years
5 = no

30 ___ Do you see a dentist for a check-up when nothing is particularly wrong with your teeth?

1 = every 6 months
2 = once a year
3 = every 2 years
4 = less frequent than every 2 years
5 = no
6= False Teeth

31 ___ In general, to what extent do you think you yourself can prevent disease from happening -- would you say -

1 = not at all
2 = a little
3 = a fair amount
4 = a lot

32 ___ And how much would you say seeing a doctor regularly helps prevent disease?

1 = not at all
2 = a little
3 = a fair amount
4 = a lot

33 ___ In general, when you're not feeling well do you have any reason for putting off seeing a doctor? What are these reasons?

0 = inapplicable--Respondent does not put off seeing doctor
1 = wait to see if illness goes away; illness usually minor
2 = skepticism about value of seeing a doctor
3 = care not available or accessible
4 = cost, expense
5 = reluctance to bother doctor unless really needed
6 = patient relationship to service (impersonality, rudeness, etc.)
7 = other
8 = no reason given
9 = missing data

34 ___ Would you please tell me things, if any, that give you and your family the most difficulty in getting medical care?

0 = no difficulty mentioned and code 0 in col 35-40
1 = Respondent mentioned difficulty

35 ___ Availability: no facility or doctor to use

0 = availability not mentioned
1 = availability mentioned

36 ___ Barriers to care: time, waiting, distance

0 = barriers not mentioned
1 = barriers mentioned

37 ___ Cost of care

0 = cost not mentioned
1 = cost mentioned

38 ___ Patient relationship to service: poor personal treatment, impersonality, etc.

0 = not mentioned
1 = mentioned

39 ___ Quality of care, continuity, comprehensiveness

0 = not mentioned
1 = mentioned

40 ___ Insurance didn't cover cost

0 = not mentioned
1 = mentioned

I am particularly interested in some specific problems you may have regarding medical care. You may have already mentioned some of these but let me ask you about them anyway.

Would you please tell me how often you have the following kinds of problems--never, occasionally, or often.

NOTE: If respondent says "never" or "no problems"--ASK: "Is that because you have not had an opportunity to experience the problems?"

41 ___ Your health insurance did not cover a particular service you required

0 = no opportunity
1 = never
2 = occasionally
3 = often

42 ___ Medical care was too expensive

0 = no opportunity
1 = never
2 = occasionally
3 = often

43 ___ Medications were too expensive

0 = no opportunity
1 = never
2 = occasionally
3 = often

44 ___ You had to visit too many different places to receive treatment

0 = no opportunity
1 = never
2 = occasionally
3 = often

45 ___ You have to travel too far for medical care

0 = no opportunity (Respondent only)
1 = never
2 = occasionally
3 = often

46 ___ You couldn't make an appointment to see a doctor within a reasonable time

0 = no opportunity
1 = never
2 = occasionally
3 = often

47 ___ You had to wait too long to see a doctor even though you had an appointment

0 = no opportunity
1 = never
2 = occasionally
3 = often

48 ___ There was too much redtape in the process of getting care

0 = no opportunity
1 = never
2 = occasionally
3 = often

49 ___ The doctor didn't explain things clearly enough

0 = no opportunity
1 = never
2 = occasionally
3 = often

50 ___ In general, how satisfied are you with the medical care you (and your family) receive? Would you say -

1 = not at all
2 = a little
3 = a fair amount
4 = a lot

51 ___ Do you find the present cost of medical care a strain on your budget?

1 = yes
2 = no

52 ___ Thinking about the medical care that you (and your family) now receive, would you say the cost is:

1 = too much
2 = about right (Present situation)
3 = a bargain

There has been discussion lately of training new kinds of health professionals who could help a doctor to see more patients by taking over some of his routine tasks.

Which, if any, of the following tasks do you think could be performed adequately for you by an assistant to the doctor who was specifically trained to do them? (Interviewer--note any qualifications to answers.)

53	___	giving injections	1 = yes unqualified
54	___	giving routine physical examinations	2 = yes qualified
55	___	taking blood pressure	3 = no unqualified
56	___	setting a broken bone	4 = no qualified
57	___	prescribing treatment for an infection	

58 ___ Do you happen to be familiar with the idea of "prepaid group practice"? Have you ever enrolled in one yourself?

1 = yes, but never belonged
2 = yes, and has belonged
3 = no and code 0 in col 59-64 and read description

IF NO - GO ON TO DESCRIPTION

"By a prepaid group practice or health maintenance organization, I mean a system where a family joins and the auto companies agree to pay a set amount each month to a group of doctors who work together. This group of doctors, in return, provides care for your medical and hospital needs - no matter how much care your family requires, at no additional cost to you. A single person or family would enroll in this system instead of Blue Cross/Blue Shield or other kinds of health insurance."

Could you tell me what you recall about it?

59 ___ Set enrollment, fee prepayment

0 = not mentioned
1 = mentioned

60 ___ Group of practitioners working together.

0 = not mentioned
1 = mentioned

61 ___ Care available at one facility

0 = not mentioned
1 = mentioned

62 ___ All needed care available

0 = not mentioned
1 = mentioned

63 ___ No additional costs per needed care.

0 = not mentioned
1 = mentioned

64 ___ Entire family covered

0 = not mentioned
1 = mentioned

65 ___ The University of Michigan is developing a prepaid group practice or health maintenance organization for United Auto Workers, their families and other employees in the community. Have you heard anything about that?

1 = yes
2 = no
3 = not sure

This prepaid group practice would include preventive services, such as screening for disease and check-ups, coverage for the whole family, services available around the clock, health education for members, and prescription drugs.

66 ___ If a system like this is available in Washtenaw County with the Health Center in Ann Arbor, do you think you would be interested in enrolling?

1 = yes, definitely and code 0 in col 67
2 = yes, probably and code 0 in col 67
3 = no, definitely
4 = no, probably
5 = not sure

IF NO OR NOT SURE - ASK:

67 ___ If this prepaid system had specialty doctors in Ann Arbor and personal and family doctors located in Ypsilanti or some area close by to your home, would you be interested in enrolling?

0 = will join
1 = yes, definitely
2 = yes, probably
3 = no, definitely and code 4 in col 68
4 = no, probably and code 4 in col 68
5 = not sure

68 ___ (If R has a doctor) Would you be willing to change from your current doctor or clinic?

1 = yes
2 = no
3 = not sure
4 = NA

___ How long have you lived in Southeastern Michigan)
(If 1/2 year code up)

1 = 0-1 year
2 = 2-4 years
3 = 5-9 years
4 = 10+ years
9 = missing

70 ___ How much longer do you think you will live in this area? Would you say -

1 = less than a year
2 = a year or two
3 = longer than that
4 = indefinitely
5 = don't know, can't say, etc.

71 ___ How much formal education have you had? Respondent -

1 = less than high school diploma
2 = high school diploma
3 = some college
4 = finished college
5 = graduate study

72 ___ How about husband/wife?

1 = less than high school diploma
2 = high school diploma
3 = some college
4 = finished college
5 = graduate study
0 = no spouse - Respondent is single

73 ___ And what is your age:

1 = less than 20
2 = in 20's
3 = in 30's
4 = in 40's
5 = in 50's
6 = in 60's
7 = in 70's

74 ___ And finally, would you be interested in receiving more information about the prepaid group practice?

1 = yes 2 = no

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