

CONSUMER BEHAVIOR WITH RESPECT TO
CHOICE OF PRIMARY HEALTH CARE FACILITY:
A Look at a Selected Sample of Users of
the Children's Hospital Emergency Room
and of the Martha Eliot Family Health Center

by

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B.S., Cornell University
(1969)

Submitted in Partial Fulfillment
of the Requirements for
the Degree of Master of
City Planning
at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

June, 1971

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May 14, 1971

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It has been argued by many people involved in the health care field that the existing facilities delivering primary health care to low income people in urban areas are inadequate. The number of private physicians available to this population is said to be inadequate. And the care provided in the hospital based clinics and emergency rooms to which this population then turns is criticized for its inaccessibility, impersonality, narrowness of scope, and fragmentation.

Partially in response to the perceived inadequacy of the existing facilities delivering medical care to low income urban populations, several recent attempts have been made to establish Neighborhood Health Centers in these areas. It is hoped that these centers will replace the fragmented, narrow, and impersonal system of care which is criticized, with a more comprehensive, coordinated and continuous system. It has been assumed in most of these efforts that when people are given a choice between the hospital-based care as criticized, and the new centers, they will chose the latter.

Studies which test this assumption have been, however, too few in number and inconclusive in their results. This study attempts to add to the existing knowledge in this area by examining the records and other data on those children living in the catchment area of the Martha Eliot Family Health Center (MEHC) who utilized the Children's Hospital Emergency Room (CHER) or the MEHC's Pediatric Clinic during the four week period from January 12, 1971 through February 8, 1971. Data was gathered to attempt to determine the relative numbers of children using each center, how these children utilized the two centers, and what types of factors led to differences in choice.

Findings show that during the four week period studied almost four times as many children utilized the MEHC as the CHER. The major determinant of choice appeared to be that of whether the MEHC was open or not although racial factors, residence factors, and certain unmeasured biases appeared to exert some influence. Medical considerations appeared to have little effect on choice except for well-child care and certain surgical conditions. Data for a slightly longer time period showed that of these children 46% made most use of the MEHC though they were registered also at the CHER and used it in a subordinate way, 29% used only the MEHC and were not registered at the CHER, 15% used both centers equally, and 7% used only the CHER and were not registered at the MEHC.

From these findings it was concluded that, at least for this population, the assumption that people will chose a Neighborhood Health Center over a hospital-based facility was confirmed. Suggestions were made, based upon the data, about how the magnitude of these findings could be increased.

Further research is suggested so that the validity of this assumption is established for a more representative sampling of areas and so that the nature of the decision making process is clarified.

Thesis Supervisor: Langley Keyes
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ACKNOWLEDGEMENTS

This study could not have been undertaken nor completed without the cooperation and encouragement of several individuals and institutions. At the Children's Hospital special thanks are owed especially to Mr. Robert Embry, Mr. Goldberg, Mr. Hussey, Barbara Stein, and all the people in the Medical Record Department and at the Emergency Registration Desk who were so helpful and patient in aiding me to utilize the records of the hospital. At the Martha Eliot Family Health Center appreciation of a similar kind is owed to Dr. Rosenberg, Mrs. McClemmons, Catherine Stuckey, Jo Andfield, Barbara Fons, and the entire record room staff and others at the center who were so helpful. I would also like to thank Dr. Rosenberg for his interest and encouragement and I would hope that this study will be of use to him and the center.

Additional thanks are owed to Dr. William Wiese, of the Harvard Center for Community Health and Medical Care, who aided in the difficult and tedious task of coding diagnoses; Prof. Marc Field, of the Boston University Sociology Department, Prof. Herbert Gans, Prof. Martin Rein, and Prof. Bernard Frieden of the M.I.T. Department of Urban Studies and Planning, Kathleen Crampton, of the Peter Bent Brigham Department of Community Medicine, Dr. Wechsler, of the Medical Foundation, and all the other people whose comments aided me in clarifying the ideas and design of this study; and Prof. Jacob Feldman, of the Harvard School of Public Health, whose thoughtful comments and suggestions relating to the data in the study were invaluable. Appreciation is also felt for my friends who helped in the tedious process of checking the key-punched data.

During the course of this study, I was supported to a large extent by a research assistantship from the Harvard-MIT Program for Health Sciences and Technology. This aid has been greatly appreciated, and special thanks are given to Prof. Irving London as Director of that program for his generous assistance.

Finally, deep thanks are due my advisor, Prof. Langley Keyes, and my committee-member, Prof. Ronald Walter, for the time spent with me and for the encouragements and suggestions offered. Without them this thesis would have been much more difficult to complete.

To all these people, and many more, much appreciation is felt although I, of course, take full responsibility for the content of this study.

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INTRODUCTIONThe Argument Against Hospital-Based Care
and for Neighborhood Health Centers

Running through a good deal of the medical literature is the argument that the traditional means of delivering health care to low income people are inadequate and ill-conceived. Usually this statement is followed by a call for a new form of health delivery system for urban poverty areas--the Neighborhood Health Center (NHC) -- to deliver this care in a more adequate manner. The forms that this argument takes are numerous. Approaches vary, as does the evidence given in support of the argument. The following represents an attempt to summarize this argument using some of the more widely cited, and perhaps more coherent, articles.

It is said that while traditionally the American medical practice has been centered around the solo general practitioner, this is changing as urbanization has resulted in the conglomeration of medical technology around hospital complexes. Physicians now tend to specialize and the solo private practitioner is disappearing.¹ While this trend toward hospital based practices and increased specialization occurs throughout the city, some evidence is cited showing that this trend has been

accentuated in low income areas. Gerald Rosenthal cites a study done by Joseph Dorsey showing that while in 1940, 65.4% of all physicians in Boston and Brookline had their offices located in the community, in 1961, 60% of the physicians had their offices located in hospitals. Dorsey further found that in Boston in 1961, there were 104.7 general practitioners serving 100,000 people in the highest income class neighborhoods, but only half this number, or 52.3 general practitioners serving the same number of people in the lowest income class neighborhoods. For intermediary practitioners (internists and pediatricians), the number in the high income class areas rose from 117.8/100,000 in 1940 to 159.4/100,000 in 1961, while for the lowest income class areas the number shrunk from 1.4/100,000 to 1.3/100,000.² In Washington, D.C., in 1970 the affluent Northwest area with 47% of the population had 88% of the physicians while the less affluent Southeast area with 25% of the population had only 4% of the physicians.³ A Chicago survey done in 1966 found that there were 1.26 physicians/1000 population in non-poverty areas but only 0.62 physicians/1,000 population in poverty areas.⁴

Thus it is argued that at least in terms of the traditional method of receiving medical care, there is a diminishing supply of physicians in low income areas even while demand for care is increasing as the population grows,

as economic improvement occurs for some, and as medicaid and medicare have removed some of the financial barriers to health care beyond what limited care can be found from private physicians. It is argued that beyond what limited care can be found from private physicians the poor have tended to utilize the emergency rooms and out patient department of local hospitals for medical care.⁵ The volume of visits to the emergency rooms has risen steadily, out of proportion to the increase in hospital admissions, clinic visits or population growth and evidence suggests that much of this increase in non-urgent usage is by the indigent "core city" population using the hospital for general medical needs.⁶ E. Richard Weinerman and his associates found that low socio-economic status was positively associated with a high rate of usage of the emergency room, and a low rate of having a private physician.⁷ Jerry Solon and Ruth Riggs' study of two emergency rooms--one in a suburb and one in an urban center found that while 1% of the clientele in the suburbs were black and 0.5% had incomes of less than \$3,000, the comparable figures for the inner city were 40% and 25%. And while 85% of the suburban emergency room population named a private physician as the central source of medical care, only 59% of the inner city emergency rooms population named a private physician while about 20% named the out patient department and 4% the emergency room.⁸

It appears that while most people still receive care from private physicians, for a significant segment of the emergency room population, the hospital clinic serves in the role of private physician. At the Grace-New Haven Community Hospital, Dr. Brown found that 43% of the population chose the hospital as their primary physician.⁹ Joel Alpert and his associates study of users of the Children's Hospital Emergency Room in Boston found that 24% had a stable MD relationship, 18.5% had an unstable MD relationship, 20.3% had an stable hospital relationship, and 36.7% had an unstable hospital relationship.¹⁰ It is significant that 67% of the persons studied did not have an established relationship with a private physician. Further, he found that those who had an unstable relationship with the hospital (and concomitantly had no family MD) were more likely to be disadvantaged.¹¹

Most experts in the field and many community people seem to feel that the care given in these places is inadequate. As Sussman states:

Clinics are criticized for their impersonality **in the treatment** of patients, the **fragmentation of care into specialties**, **losing sight of the "whole" patient**, lack of staff interest and poor doctor-patient rapport compounded by value differences between indigent patients and middle class practitioners. Clinic users are thought to suffer loss of dignity in the intake screening process, to be made uncomfortable by long waits on hard seats and to become confused by poor planning of the physical layout of the services.¹²

Taking a slightly different perspective, Dr. Breslow comes to the same conclusion:

The fact is that health care of the poor has been generally unsatisfactory--because the physicians and their associates are too few in number, and also because they usually work in dilapidated facilities which are isolated geographically, and often at hours extremely inconvenient for those to be served. Furthermore, the social attitudes of the health professionals reflect too frequently the notion still prevalent among medical teachers and administrators that the poor who obtain their care in public, especially teaching institutions are "clinical material". The latter expression, and the tone in which it is usually uttered, betrays an attitude toward people which is destructive of that mutual respect which is necessary for good medical care. The long wait in uncomfortable surroundings, after a difficult trip, to receive care which is too brief, from a hurried doctor who is frustrated with the knowledge that he can only make a fragmentary contribution and whose attitudes says "clinical material"--these aspects of care of those most in need have left deep scars.¹³

The criticism of the hospital based care in the clinics and the emergency rooms seems to fall into 2 major categories.

First, it is seen as inaccessible, both physically and psychologically. James Weiss and his associates have found that visits to a physician decrease as distance from the physician increase.¹⁴ Laura Bruton found that while distance had little effect on hospitalization patterns for non-poor groups, it was a relevant variable for poor groups.¹⁵ And while in urban areas distance to the hospital

might be short, the necessity of using public transportation in many cases makes the distance an important barrier to utilization of the hospital services.¹⁶ Clinics further are usually open only from 9-5 on weekdays so that they are seen as inaccessible for the working person who must lose pay--and possibly his job, given the marginal employment status of many poor people--to obtain care. (This is an important factor in the increase in emergency room usage). The long waits and often uncomfortable and confusing surroundings may themselves act to deter the utilization of the clinics.¹⁷ Further, the hospital location of the clinics themselves can act as a barrier to the poor who see them as part of the larger bureaucracy and system from which they are alienated.

Besides being inaccessible, the care given in the clinics and emergency rooms is seen as being inadequate. First it is not continuous. The patient may have to go to one place for preventive care and another for curative care.¹⁸ Or even if he goes to the same place, he may see a different type of specialist for each complaint, or a different physician at each visit as the house staff rotates or finishes their residency. Communication between physicians about patients is many times rare. Second, it is seen as impersonal and episodic. The patient is seen for the

complaint made and other conditions he may have are ignored and unrecognized as the physician is unfamiliar with the patient and is too rushed to provide more complete care. Hospitals are not oriented toward providing comprehensive family centered care and usually do not have the ancilliary personnel to follow through on any larger condition or problem identified. The very operation of the clinic or the emergency room which sees only the individual not the family--and does this only for the complaint--acts to make difficult any less episodic care or any preventive or educational efforts. Further the clinics made little effort to identify people unreached by their center and see only those who come.

In response to what is seen as a lack of availability of medical care and inadequacy of the existing care, the concept of a NHC has been advocated by many. The concept is by no means clear but out of the different definitions put forth some central ideas seem to emerge. The NHC should provide high quality care at low cost. This seems to mean that it should:¹⁹

1. be family-centered, i.e. treat the entire family through a single practitioner or team approach.
2. provide continuous care, i.e. should involve the same physician or team for one family for at least a year using a record system and referrals made where necessary, with appropriate follow-up information.

3. provide accessible care, i.e. it should be located where people live and should be open hours convenient to them rather than just the staff. This also seems to include the notion of at least some community involvement and identity with the center. Concomitant to this is the idea that it should serve a defined geographical population and should be easily entered by the population without confusion.
4. provide comprehensive care, i.e. including preventive, diagnostic, treatment, rehabilitative, educational, and followup services. This is usually taken to include the use of ancilliary personnel such as nurses, social workers, psychologists, nutritionists, lawyers, etc. so that health care not just medical care is provided. Frequent conferences among members of the team responsible for a family are also advocated. Provision should be made for referral of more complex problems and appropriate follow-up should take place.
5. have a community orientation. This is the most ambiguous of the points. At the least it means that the NHC should have some form of outreach to identify problems and bring people into the system. It usually also means some form of community involvement, varying from participation to control. The differences in the models reflect the differences in perspective between those with a service orientation and those with a more social impact orientation who are attempting to use health care as a vehicle out of the poverty cycle by increasing power and economic control through employment and job training, and political control, thus breaking down old attitudes, and substituting new ones.

The argument summarized here is by no means agreed upon by all people within the health field. There is currently a lively debate going on within medical circles concerning the legitimacy of this position. What evidence exists is inconclusive, conflicting, and in many cases, poor. For many of the assertions there is little definitive evidence,

although such evidence may in time be gathered. At present, it is not really possible to make an objective determination as to the validity of the argument except to say that it has at least a certain amount of substantiation and credibility.

Efforts to Establish Neighborhood Health Centers

Regardless of the outcome of this debate, however, NHC's are being pursued through policies and have started operations in most cities in our country. None of the centers is without its problems and none conform to the model fully, but they are being built.

Health centers in neighborhoods have existed throughout this century. However, in most cases in the past these have been oriented primarily toward preventive, not personal, services.²⁰ These usually have existed as arms of the local health departments. It is only recently that most NHC's based on the model described here have been established.

A good part of the impetus for the NHC has come from the federal government. Perhaps the best known of these efforts has come from the OEO programs. When the OEO legislation was first enacted in 1965 there was not specific provision for NHCs. However, within the total number of projects funded, there were several NHCs, most notably the first one at Columbia Point in Dorchester, Mass. In 1966

through Senator Edward Kennedy's efforts, an amendment was added to the Economic Opportunity Act, Sect. 222(a)(4) establishing a Comprehensive Health Services Program as a national emphasis. The centers and the sponsorship of the centers have varied. The legislation itself, however, does contain some guidelines. Services are to be of high quality and at reasonable cost. The operational concepts include:

the provision of comprehensive, continuous, family oriented high quality care in a community-based setting, acceptable to consumers while offering them training and job opportunities with their participation in matters of policy.²¹

By late 1967 there were 33 OEO centers funded.²² In 4 1/2 years OEO has invested \$114,570,603 in 104 comprehensive health service grants.²³ Gerald Sparer and Joyce Johnson, evaluating the centers in 1970 found that 21/33 had basic primary physicians under one roof available to the community at least 40 hours/week; 22/33 centers had a higher quality score than the outpatient department average; 10/33 had physicians responsible for in-patient care and another 10/33 had formal relationships with backup hospitals; 28/33 centers had some effort to achieve continuity of care and 14/33 of these were highly successful within one year after they were opened. They also found that the costs per encounter

were within the range of other providers of care.²⁴

The Federal government has been responsible-- at least for the funding--for a number of other centers. The Public Health Service Program--Partnership for Health--Section 314(e) funds while non-categorical, have been used since 1967 largely for comprehensive health programs. In 1969 Donald Maddison found that there were 20 such centers sponsored on the OEO model-- 3 of these were funded jointly with OEO.²⁵

The Children's Bureau has been responsible for two programs which have at times been used to form the basis of a NHC, though by themselves they are not strictly speaking NHCs since they serve only certain people within an area. These are the Maternal and Infant Care (MIC) Programs and the Children and Youth (C&Y) Programs started in 1965. The first of these is addressed to the high incidence among the poor of perinatal mortality and mental retardation. The federal government pays up to 75% of the costs of programs for maternal and infant care for women who have conditions associated with pregnancy that increase the hazards of child bearing and are unlikely to receive care because of income. This program overcomes the artificial separation between prevention, treatment and aftercare but tends to accentuate the fragmentation of services in the community because it treats only certain

income levels, ages, and categories of people such as pregnant women. The second program of the Children's Bureau, the C&Y Program provides comprehensive services for children and youth living in low income areas. The programs are not family centered, under-emphasize, in general, community involvement, and are less flexible than the OEO programs. In the Fall of 1967 there were 52 MIC programs and 54 C&Y programs.²⁶ Of the C&Y programs, 47% used outreach, there were an average of 1.31 evenings or weekend days offered/week; 46% had a community advisory board; and the average number of eligibles in each population was 46,374.²⁷ As has been mentioned, some of these programs have been utilized to fund appropriate portions of comprehensive care programs aimed at all ages.²⁸

The Model Cities Program has also resulted in the establishment of a number of health centers. Though health centers are not specifically funded, this program states that among its concerns is the community's need for health. In Boston this has resulted in the beginnings of 3 Family Life Centers offering or planning to offer health services on a family basis. Other federal programs, such as the Migrant Health Program and the Appalachian Health Programs addressed to rural areas are not really relevant to the low income urban setting.

These programs represent the major federal efforts toward establishing NHC's. It appears at this time that in the future the federal government may play an even larger role in stimulating the development of NHC. The legislation recently filed by Sen. Edward Kennedy provides for a National Health Insurance with strong provisions to encourage NHCs by allowing capitation payments and grants to cover start-up costs. But this aid remains in the future.

The concept of a NHC has been promoted by state and local government and by private initiative also. Because there are 50 states it is hard to describe exactly what has happened but perhaps Massachusetts and, more specifically, Boston, might serve as a case in point. On the state level on April 14, 1970 Governor Sargent announced a combined public-private state wide plan to deliver health care largely through NHC's but with backup hospitals, nursing homes, and home care plans under the single management vehicle of Health Inc., a private, non-profit organization. This plan is seen as covering 300,000 people eventually through a number of NHCs to serve as the initial contact point with the system. The centers are to serve a defined population base and assume responsibility for meeting all the health needs with a single route of access available 24 hours/day.

Eventually the consumer is to have a voice and prepayment is to be used to finance the centers and the system.

The first center opened near Children's Hospital in Roxbury on February 1st this year. This early it is difficult to assess what will be provided but it appears that the center will offer continuous, comprehensive, coordinated care in the community though perhaps with a lesser amount of ancilliary services and consumer role.

On the local level in Boston, there has been much activity centering around NHC's. An October 11, 1970 article in the Boston Sunday Globe stated that there are currently 24 neighborhood health centers in operation with another 6 or so in the planning stages.²⁹ These centers differ vastly in their financial arrangements, physical appearance, consumer involvement, and care offered. Most do not offer large scale adult services and most have had a high turnover of physicians annually.³⁰ In general, the centers operate on weekdays with possibly one or two weekend days or evenings covered. Most serve a geographical area but they differ in their eligibility requirements and payment schemes. Most of the larger ones employ a number of ancilliary personnel. The city of Boston has funded several of these programs at least partially and the Department of Health and Hospitals operates a few of these as extensions of the Boston City

Hospital Out Patient Department. The private hospitals operate several more of these. Many of these NHC have been established by the pressure of local community groups. A few of these--for example, the Martha Eliot Family Health Center and the Dimock Street Health Center operated by Peter Bent Brigham Hospital, the Children's Hospital, the Boston Hospital for Women, and the Beth Israel Hospital respectively--are based on the MIC, C&Y grants with supplementary services provided largely through fee for service. Other centers are based on fee for service and piecemeal funding for start-up costs and certain items of service from various federal and local categorical grants, foundation grants, and money from the hospitals themselves. One center, the South End Health Clinic, while funded by the Department of Health and Hospitals, is community run. Aside from the centers sponsored by these groups and similar ones, there are a few assorted other centers but these are in general more limited in their operations.

It appears that in the future more of these centers will be created. The plan of the Boston Department of Health and Hospitals calls for each voluntary hospital to assume responsibility for providing care to a defined geographical area in Boston. This plan

is addressed to the need for coordination of efforts and the beginnings of efforts in areas currently in need but unserved. The response of the hospitals, however, has been unclear and it is not yet certain how effectual this plan will be.

Indirectly the federal programs of medicaid and medicare have acted as a large impetus to such planning. By enlarging the number of poor people covered by third party payments, a center can be planned with only partially optimistic hopes of self-support. The lag in federal payments, the fact that many poor--especially the adult poor--are not covered by such insurance, and the non-reimbursement for ancillary services, however, does make this mechanism slightly inadequate to the job.

Perhaps the situation in Boston is more developed than that of other cities because of the large medical complex in this area. However, the same sorts of activity are occurring in most parts of the country, though possibly with less intensity.

An Assumption Made in Most of These Efforts

There is the implicit assumption made in most of the arguments for establishing NHC's that when people are given the choice between the old hospital based health care, professionally perceived as inadequate, and the

newer health care of the NHC, people will opt for the latter. It would seem reasonable to ask, now that many NHC's have been in operation for a few years, whether this assumption has indeed been proven correct. Unfortunately, few studies have been done of this question though more are being carried out now.

Before most centers had been established, Leon Robertson and several colleagues set out to anticipate how well these centers might be accepted. Asking questions of two groups of people they were concurrently studying, they found that among a randomly selected low income group of families receiving comprehensive pediatric care, anticipated use of the hypothetical NHC was low; among a similarly composed randomly selected group of families receiving fragmented and uncoordinated care in emergency clinics, well baby clinics, etc. they found the anticipated acceptance higher, but still only 58% said they would expect to use the hypothetical center for illness care though more would use it for well care.³¹ They thus concluded that "only to the extent that neighborhood clinics provide personalized, comprehensive care, can we expect them to replace the present, uncoordinated, fragmented pattern of health care prevalent in their target population."³²

That study however was based on answers to hypothetical questions and it is quite possible that a person confronted with the situation would react quite differently than he would to the hypothetical situation. Two studies have addressed themselves to finding out what people actually do when confronted with the choice between their old source of care and the new source of a NHC. The findings, however, are mixed.

Seymour Bellin and H. Jack Geiger attempted to assess how well the Columbia Point Health Center had been accepted by residents in the area. Opened in 1965, the Columbia Point Health Center is located in an isolated housing project in Dorchester, Mass. (in Boston). Few health services existed in the area previous to the opening. Two years later, in 1967 they found that for 71% of their target area population (and for 97% of the children) the center was the regular source of care while 12% gave no regular source of care, 6% named a private physician and 11% named a hospital out patient department or emergency room. They found that the center had drawn its clientele equally from those who used each of the latter 3 sources of care previous to the opening.³³ Further, they stated that for the vast majority of people using the center, all care, save specialty care on referrals, was gotten from the center.³⁴ It would seem that this

center achieved a high acceptance and use by the community although even in this isolated area 29% of the respondents chose an alternative form of care.

Jerry Solon did a similar study in Pittsburg where in a newly constructed isolated housing project, a solo practitioner with an office nurse, public health nurse, social worker, and technical and clerical help were added in June, 1964.³⁵ He found that three years later, in 1967, 31% of the people in the housing project used this as their "central source" of care, 42% used it as their "volume source" of care, 59% used it to some degree, while 41% of the people never used it at all. Shifts from previous sources of care occurred equally among those previously using private practitioners and hospital based care. Thus, in three years, three-fifths of the residents had incorporated the source into their care but most continued to use alternative sources of care in addition to this source.³⁶

Both of these studies are based on populations that are geographically isolated from other sources of care and it would seem that their acceptance of the new clinic would have been heightened by this isolation. These findings by no means constitute a complete proof of the assumption that most people have made. For one center acceptance appears very high. For the other center,

acceptance appears lower though most of the people used the center somewhat. Still, for this population, other sources of care continued to be used and it is possible that fragmentation of care was not drastically curtailed by the establishment of the center.

Other studies have attempted to assess the acceptance of NHC's by taking a slightly different perspective.

Attempting to determine the utilization of the Martha Eliot Family Health Center in Jamaica Plain, Mass., Dr. Salber and her associates did a baseline survey of the neighborhood in the summer of 1967 around the time when the center was opening. They later attempted to assess how many of these people registered in the center. Because of the high mobility of the people, a ratio was used which included the originally enumerated cohort plus those families registering who had not been included in the cohort. By the end of the first year they found that somewhere between 40 and 60 per cent of the families had registered with acceptance higher among the Negro and Spanish speaking families, those families with young children, and those families on AFDC than for others.³⁷

Somewhat later, attempts were made by the same people to determine utilization of the center. Looking at those families who had registered at the center previous to the initiation of the study and who had remained in the area for the duration of the study, they found that 87% of the

children had received at least one service during the year with 70% having been seen by the pediatrician. Utilization of the center by the children was found to be high during the year with 7.2 mean visits per child being made by those children living in the housing project in which the center was located, and 6.8 visits made by those children living outside the housing project but in the catchment area. Once families were registered, socio-economic variables had little effect on utilization.³⁸ They thus concluded that:

the response of residents to the health center has been favorable and that the easy assessability, reaching-out philosophy and genuine concern of the staff has had its effect.³⁹

This pair of studies seems to indicate that when a NHC is established, it will be used by at least a fair number of its target population. It doesn't, however, say very much about alternative sources of care or how the health center is used.

Judith Williams studying 2 comparable populations, one eligible for **C&Y services** and one not eligible for those services because of geographical location found that emergency room usage by these groups was similar and not explainable by geographical differences, socio-economic differences, diagnostic differences, etc.

Further she found that those in the C&Y project did not use the emergency room at the expense of the project services.⁴⁰ She chose to interpret this finding as indicative of a heightened awareness of health care among these people but the fact remains from her findings that people, when given the choice between two types of care, used both.

It would seem that much work will be needed to answer this question of where people go when they are given a choice between the older type of care, whether the private practitioner or the hospital clinic, and the new source of care, the NHC. The purpose of the following study will be to shed some light on this question.

DESIGN OF STUDY

In order to assess where people go when they are given the choice between hospital-based care in the traditional sense, and a NHC, this study examines the usage, during a four week period, of an emergency room and a neighborhood health center by children residing in a defined geographical area eligible for both.

The area encompassed by this study includes the northern four and one half census tracts of Jamaica Plain in Boston, Mass.¹ This area contains a population of 17,000 people, largely poor.² The area is an older one in the city--most of the housing units are older, 2-3 family dwellings with some older single family dwellings. The population living within this area has been rapidly changing. Large numbers of Negroes and Spanish-Americans have been moving into the area, especially into certain parts of it so that the population not only varies, but varies unevenly throughout the area. The population of the Bromley-Heath Housing Project, located within the area, is almost entirely low income Negro, though there are now some Spanish-Americans moving in. Outside of the project, one area, near the Jamaica Way,

is run-down and now contains a large number of Negroes and Spanish-Americans residing within it. Another area, near the Veteran's Administration Hospital, was low income white, but is becoming populated by Negroes and especially Spanish-Americans. To the other side of the project the area is populated by many older whites. Towards the boundary of the area, near Spring Park, the population is almost entirely white.³

Unfortunately the 1960 census figures for the area are out of date because of the changes occurring in the area, and the 1970 figures are not yet available. Some description of the area is possible from the census of the area done in 1967 of all families with a woman of child-bearing age and/or children. Of the 2072 families in the area fitting the description above (with 5681 children), 61% were white, 30% Negro, and 7% Spanish-American. Slightly under half of these families, and over half of these children, resided in the census tract in which the housing project is located. Almost 30% of the families received some income from public assistance and welfare. Less than two-thirds of the families were complete with both mother and father present. Wide fluctuation was found within the area. Two census tracts were almost entirely white, while most Negroes lived in the census tracts which contained the housing project,

and most Spanish-Americans lived in yet another census tract. Only 8% of the families in one tract were on welfare, while half the families in another tract were on welfare. In one tract, 87% of the families were complete, while in another, only 36% of the families were complete.⁴

As was previously alluded to, it is felt that the area has changed since the census. Dr. Rosenberg, Director at the Martha Eliot Family Health Center, now estimates that around 20% of the population is Spanish-American.⁵ It also seems likely that the percentage of the population on welfare has increased as the welfare rolls have continued to climb within the city as a whole.

Following the census tract borders, the boundaries of this area are rough, and, to an extent, arbitrary. Actually, there is little to differentiate this area from the surrounding areas. The area described here is bordered on the East by Roxbury, on the West by the town of Brookline, on the South by southern Jamaica Plain, and on the North by ~~Mission-Hill~~—Parker Hill, and then the medical area where the Peter Bent Brigham Hospital, the Children's Hospital, the Boston Hospital for Women, and the Massachusetts Mental Health Center are located. Transportation to these areas and others in the city varies by area and by where in the area the person is located, but this area is definitely an integral part of the entire metropolitan area.

Children residing in this area are eligible for free comprehensive health services at the Martha Eliot Family Health Center (MEHC).⁶ They may also use the services of the Children's Hospital Emergency Room located nearby (see map of the area in Appendix). They may use other facilities within the metropolitan area but these are in general less accessible.

The MEHC is located in the Bromley-Heath Housing Project. Evolving from a well-child clinic, in 1957, under the responsibility of the Harvard School of Public Health, this center was expanded somewhat "as a demonstration unit where academic and practical public health knowledge could be pooled and new concepts evaluated...Weekly clinics were held...The Health team originally consisted of two or three full time public health nurses and a number of part-time physicians recruited by the Harvard School of Public Health."⁷ In 1961, and again in 1966, new services were added. Finally, in April, 1967 with a grant from the Children's Bureau to expand services, the project was taken over by the Boston Hospital for Women and the Children's Hospital Medical Center, with a consumer advisory board, as an MIC, C&Y project. Services were expanded and the catchment area set at the area previously described.

The Pediatric Program in the MEHC is delivered using Primary Care Teams each consisting of one pediatrician, two public health nurses, one neighborhood aide, and one social worker. Psychiatric and legal consultation is available to the team and liaison is maintained with the Mother's Clinic, the Adult Health and the Dental Clinic. Services consist of a full range of health education, rehabilitation, therapy, and preventive services given within the center and in the community.⁸ Each child in the family is assigned to the same team and family records are kept with social services and public health nursing services given to the entire family. The clinic, during the period of study, was open from 9AM to 5PM on Monday through Friday and from 10AM through 12AM on Saturday for emergencies--though hours have now been slightly expanded. Visits are by appointment though walk-ins and phone-ins for illness are almost always seen with perhaps some wait.⁹ Recently, in conjunction with two other centers in the area, a telephone emergency service was established for contact with a pediatrician when the center is closed. There is no charge for these services for any child living within the designated area. The Children's Hospital is used for referral when x-rays or more complicated procedures and services are deemed necessary.

The center also contains a Dental Unit aimed especially at children and a Mother's Clinic providing obstetrical and family planning services free of charge to women in the area. Starting in May, 1970, the center has operated an Adult Health Clinic on a fee-for-service basis. From one session per week, the number of sessions has increased to 5.

Though not corresponding perfectly to the model of a NHC especially because of the limited hours and the only recently added adult services, this center does seem to correspond in large part to the idea of a NHC.

The Children's Hospital is located nearby, though not within this area. While the Out-Patient Department of the hospital provides largely specialty care on referral, the Emergency Room (CHER) is open 24 hours a day and sees virtually all children who come in with a medical complaint. Waiting time varies but often reaches two hours or more with longer waits if x-rays or tests are called for.¹⁰ A charge of \$14 is made for each visit, which would seem important to those not covered by any medical insurance. Though a record is established the first time a patient comes in, it is unlikely that he will see the same physician at each visit as the house staff rotates. Waits are, as said, many times long and the physician and staff, though considerate, are rushed, so

that little treatment is given aside from that directed at the immediate complaint made.¹¹ In short, while the medical care given is narrowly defined, excellent, and while the staff is friendly, this source suffers from many of the complaints made by professionals about hospital-based care.

This area and pair of centers was chosen for two reasons. First, since both centers were relatively accessible it was hoped that the choices made would not reflect solely geography, but would also reflect a judgement about the type of care given. While geography could not totally be eliminated as a decision factor, it was minimized by this choice.¹² Second, since the Children's Hospital is noted for its high quality of care, though narrowly defined, it was hoped that this choice would test the assumption against the best, rather than the worst, of the hospital based facilities. And since the MEHC has linkages to the hospital, it was hoped that this center might provide a match for the CHER. Both had the high prestige associated with the hospital, at least as professionally viewed, but each offered a different type of care. Finally, it was felt that while neither of these centers corresponded perfectly to the models very few center perfectly fit the models and these centers corresponded closely enough so

that the assumptions of the model might be tested in a reality base which would make possible application of the results to other similar centers.

One would expect, given the assumptions described in the previous chapter, that almost all children from the area visiting either center during the period would visit the MEHC except when it was closed or a true emergency occurred. One might further expect that for children in this area usage of the MEHC would be greater than usage of the CHER over a period of time.

To test these assumptions, during the four week period from January 12, 1971 through February 8, 1971 data was collected on all children from this area visiting either center. Duplicate visits by the same child to the same center were eliminated. From billing forms, encounter forms, records, and other sources at the center, determination was made for each child of certain information such as age, diagnosis, address, time and day of visit. In addition, for each child identified at the CHER and for 1 in 4 children identified at the MEHC, other information was gotten concerning their socio-economic status, and previous history of usage of each center (See Appendix: Methodological Notes for more detailed description).

This data was then keypunched and analyzed by computer- at the M.I.T. Computer Processing Center so as to determine differences among people using each center, and to determine from past history certain aspects of how they were using the centers.

FINDINGSHow Do People Chose?

Given a choice between the Children's Hospital Emergency Room (CHER) and the Martha Eliot Family Health Center's Pediatric Clinic (MEHC), most children who visited either one visited the MEHC. During the four week period included in this study, 801 different children from the area visited the MEHC Pediatric Clinic, while 223 different children from the area visited the CHER. Thus, while a substantial number of children still visited CHER, almost four times that number visited the MEHC.

Almost all children visiting either place can be characterized as having gone for "non-emergency conditions" (See Appendix Table 5.1 for diagnoses). Since the CHER does not give well-child care, it is not surprising to find that while only slightly over one percent of all visits to the CHER were for well, preventive, or routine reasons, over 20% of all visits to the MEHC fell into this category. Aside from this difference, however, there were practically no differences in the diagnoses between the two centers. Most children coming into either center were diagnosed as having an

acute medical problem, with most of these cases at either center being for upper respiratory or ear infections. For the small number of remaining cases, there were certain differences in diagnoses. The CHER diagnosed a lesser percentage of psychologically-based problems and a greater percentage of surgical problems than did the MEHC. This was especially striking for fractures since the CHER diagnosed six fractures, while the MEHC only diagnosed one, despite the greater number of children seen there. Aside from these differences, though, there were few dissimilarities in the patterns of diagnoses between the centers (See Table 3.1). Thus, medically speaking, it appears that aside from well child care and certain surgical conditions, the centers are being used in the same manner, though one is used more than the other.

One might assume that for a child who had previously registered at both centers the choice would be somewhat different from that of a child previously registered at only one center. This would seem to be especially important for those children registered at the MEHC since registration there involves a health assessment and the establishment of a family record, while registration at the CHER only involves giving certain minimal information at the time of the visit. Seventy per cent of those children seen at the CHER in this sample were also registered at the MEHC,

while 62% of the MEHC sub-sample for which this data was collected were registered at the CHER (i.e. had previously visited some part of the Children's Hospital). When only those children registered at both centers are considered, roughly 3.5 times as many children visited the MEHC as for CHER--approximately the same distribution as was found for the entire sample studied.¹

Neither do the diagnoses differ among these groups to any significant degree. Those cross-registered² come in for the same complaints as those not cross-registered. The only difference appears to be that those identified at the MEHC and not cross-registered were more likely to receive well, preventive, or routine treatment than any of the other groups (See Table 3.1). This might indicate that these people were newly registered, perhaps younger, and new to the area and thus had had less of an opportunity to cross-register at the CHER.³

The MEHC, however, is only open certain hours. It is possible that, especially for those cross-registered at the MEHC, the CHER is perceived as an alternative when the MEHC is closed. Examining the figures, we find that about two-thirds of those children using the CHER do so when the MEHC is closed, with about half of these using it on weekends (Saturday and Sunday) and about half

using it during the week (See Table 3.2). However, those not cross-registered also tend to use the CHER when the MEHC is closed. (See Table 3.3).

Neither do the figures for the CHER sample by time of day differ very much from the figures for the entire CHER population during this time period. Although exactly comparable figures are unavailable, roughly comparable figures show similar distributions of persons in the CHER during the weekend, weekday, and weeknight periods as was found for the group of persons studied from the MEHC area. (See Table 3.4). Because the entire CHER population is composed of very different groups it is difficult to know what to make of these figures. Undoubtedly a portion of the CHER population is composed of people with private physicians who use the CHER during the weekend and weeknights when their physician is unavailable. Other groups may use the CHER when their clinic is closed. Still others, may only use the CHER and so may come at all hours. Whatever the reasons, those people in the CHER sample still tend to use the CHER during roughly the same time periods as the entire CHER population.

From this data it seems possible to conclude that for most of the people who used both centers in the past, the CHER is used as an alternative source of care when the

MEHC is closed. Additional credence is lent to this argument since the diagnoses at the CHER when the MEHC is open do not differ very much from those when the MEHC is closed (See Table 3.5). It also seems possible to conclude that most people cross-registered or not, from the area or not prefer using the CHER during the "non-business" hours (i.e. not 9-5 Monday through Friday). Whether this stems from the convenience of these hours, or the fact that most other sources of care are unavailable during these hours or both is impossible to say from this data.

The findings show, then, that most people chose the MEHC over the CHER; that, except for well-child care the certain surgical conditions, medical criteria appeared to have little affect on the choice; and that the largest factor involved in the choice between centers appears to be the time of day and day of week, that is, whether the MEHC was open or not. However, we have also found that most people tended to use both centers at some time in the past. Thus, even if the MEHC is the preferred alternative when it is open, it is possible that for a large segment of people the inconvenience of these hours has resulted in the CHER's being used as the primary source of care despite the attraction of the MEHC.

It is possible to evaluate the degree to which the children in these sample relied on the two centers by examining the past history of usage of the centers in the period from June 1, 1970 to the end of the study period.

Not all children in the sample had been registered before June 1, 1970 and so had not been exposed to the same length of usage. This is especially important since different proportions of each group fell into this category. While for those two groups registered at both centers, less than 25% had registered at either since June 1, 1970 around 50% of those only registered at one center had registered at the center since June 1, 1970 (See Tabel 3.6).⁴

Taking only those children who had registered at the centers previous to June 1, 1970, several conclusions seem in order (See Table 3.7). First, those children identified at one center seemed to have a greater allegiance to that center than those children identified at the other one did, even if they happened to have been cross-registered at the former center. Second, regardless of which center a child was identified at, those children registered at both centers made at least as much, and in most cases, greater usage of the MEHC than they did of the CHER or the Children's Hospital Outpatient Department (CHOPD). And third, those children registered only at one center made less use of medical care from these two facilities than those registered at both.

From these findings it seems possible to separate out several different types of users of the centers and to assess to relative sizes of these group. The following represents a typology of users:

TYPOLGY OF USERS OF THE CHER AND MEHC FROM
THE MEHC CATCHMENT AREA¹
(in order of decreasing size)

TYPE

I-MEHC BUT CROSSREG

This group represents about 46% of those children who visited either center during the period. Most of these children had been registered at the centers before June 1, 1970. Usage of the MEHC was extremely high for this group but some usage of the CHER and CHOPD existed though this was definitely subordinate to any usage of the MEHC.

II-MEHC ONLY

This group represents about 29% of those children who visited either center during the period. About half of these children were new users of the center, having registered since June 1, 1970. For the others, usage of the MEHC was high, though not as high as the previous group. These people never used any part of the Children's Hospital and appear to use the MEHC as their primary source of care.

III-CHER BUT CROSSREG

This group represents about 15% of those children who visited either center during the period. Most of these children had been registered before June 1, 1970. Though it might be hypothesized that this group tended to use the CHER when the MEHC was closed, it also seems that over the period usage was split between the CHER and CHOPD, and the MEHC. For this group then, the two centers seem to compete for the position of primary source of care.

IV-CHER ONLY

This group represents about 7% of those children who visited either center during the period. About half of these children are new users of the center, having registered since June 1, 1970. For the others, usage of the CHER was as high as for the previous group but total usage of both facilities was the lowest of all groups, indicating that if this was the primary source of care for these people they obtained less of it than any of the other groups. It is possible that especially for this group other sources of care beyond these two are of importance and that this group does not use one single source for most of their care though it does use the CHER to a large extent.

¹percentages do not add to 100% because of certain missing cases.

It would thus appear that when faced between the choice between the old hospital-based care, and the newer care of the MHC, most chose the latter though a majority of these still continued to use the former as an additional, subordinate form of care. A minority, still chose to use both sources of care equally. It could be hypothesized that with more convenient hours, this number might be reduced. Very few chose only to use the hospital based care and the low total usage of this group might suggest that they used additional sources of care beyond this one. Further the fact that many of these are new registrants might suggest that they are new to the area and would eventually register at the MEHC.

Who Were These Children?

It seems reasonable that certain socio-economic factors might influence the choice for a person, and, hence, that the groups previously described might in actuality consist of different types of people. Thus, socio-economic factors may act to establish a predisposition to chose certain types of care over others.

In many respects the children who visited either center were similar. However, there were certain differences between these groups.

Although any child from the area under age 21 was eligible, most children visiting either center were far younger than that. Over 40% of the children at each center were under 4.5 years of age, and about 75% of the children at each center were under 10.5 years of age. The mean ages of the children at each center were similar. At the CHER the mean age was 6.4 years while at the MEHC the mean was 6.7 years. When these figures are examined more closely, the only difference between the centers which seems significant is that the CHER tended to see proportionately fewer children under 0.5 years of age, and more children between 0.5 and 1.5 years than did the MEHC.

Both centers saw a substantial number of white, Negro and Spanish-American children, with each of them seeing more Negro children than children in either of the other two groups. The CHER, however, tended to see proportionately more white and less Negro children than the MEHC, while the proportion of Spanish-American children at each center was similar (See Table 3.8).

The vast majority of children at either center were covered by medicaid. And a similar percentage of children at each center had no insurance coverage at all that was known by the center (See Table 3.9).

Both centers saw children from inside and outside the Bromley-Heath Housing Project. However, the CHER saw a significantly smaller percentage of children from within the project and a larger percentage of children from ~~out~~ outside the project than did the MEHC (See Table 3.10). And when these differences are examined more closely by census tract except for the small S-4 census tract, proportionately more children from the CHER group tend to come from each census tract outside the housing project, and proportionately fewer in the group tend to come from the housing project, than is true for the MEHC group.

Both centers saw a high percentage of children from female headed households. Although around half of the children at each center were from female headed households, proportionately fewer of the children at the CHER tended to be from female headed households than was true for the MEHC (See Table 3.11).

The variables describing the sample are not, however independent. Most Negroes tend to live inside the housing project, tend to be covered by medicaid and tend to come from female-headed households. Most white and Spanish-Americans tend to live outside the housing project, roughly half have medicaid coverage while roughly one quarter have no insurance coverage, and most tend to come from male headed households. (See Appendix Tables 5.2, 5.3, 5.4)

Nonetheless, it seems important to consider all variables as certain differences among them do seem to emerge. Though both whites and Spanish-Americans tend to live outside the housing project, their behavior with respect to choice of center is not the same. And even when race-ethnicity is controlled, the MEHC still tends to see a high proportion of people from the housing project than does the CHER.

Thus, even though these variables are associated they do serve to increase the scope of the analysis since they are not perfectly correlated. Hence, they will each be considered though associations will be recognized when incongruities in the findings appear explainable by them.

Within each center, even larger differences existed between those cross-registered at the other center, and those not cross-registered, than between those identified at each center.

In the CHER sample, there was little difference in age between those cross-registered and those not cross-registered. However, in the MEHC sample, those not cross-registered tended to be about 1.5 years younger than those cross-registered.

Though for both centers the Negro children tended to be cross-registered more than any of the other two racial-ethnicity

groups, a greater percentage of the Negro children in the CHER sample were cross-registered than in the MEHC sample. Differences in this direction of an even greater magnitude existed for the Spanish-American children in the two groups: while almost 75% of the Spanish-American children in the CHER sample were cross-registered, only slightly over 40% of those in the MEHC sample were cross-registered. However, for whites these differences are reversed. A smaller proportion of the whites at the CHER were cross-registered than at the MEHC (See Table 3.12).

For each center, those children covered with medicaid were more likely to be cross-registered than those children covered by any other type of insurance, or with no insurance coverage at all.⁵ However, a greater proportion of those with medicaid in the CHER sample were cross-registered than those with medicaid in the MEHC sample. The group at each center least likely to be cross-registered were those with no insurance coverage at all known to the center. While this is not surprising for the MEHC sample, it is somewhat surprising for the CHER sample since it would seem that those with no insurance coverage at all would be attracted to the MEHC where care is given without charge to those children living in the area. Somewhat lessening the surprise is the other finding that those with no insurance in the CHER

sample were more likely to be cross-registered than those with no insurance coverage in the MEHC sample (See Table 3.13). However, this still leaves lacking any explanation of why those with no insurance coverage at all and in the CHER sample have not cross-registered to a greater extent than was found. Perhaps the fact that most of those not cross-registered with no insurance were whites might explain this tendency.

The overwhelming majority of children residing in the housing project were cross-registered, whether in the CHER sample or the MEHC sample. However, those living in the housing project in the CHER sample were even more likely to be cross-registered than those in the MEHC sample. Those children not residing in the housing project were less likely to be cross-registered than those in the MEHC sample. This is more likely to be the case for those identified at CHER than for those identified at MEHC (See Table 3.14). It is somewhat surprising that more of those in the MEHC sample not living in the housing project were not cross-registered since previous findings have shown that those not in the housing project tended to be attracted to the CHER. This surface conflict seems

explained however by the relationship between race-ethnicity and residence. As stated, most Negroes tend to live inside the housing project and most whites and Spanish-Americans tend to live outside it. While most whites in the MEHC sample tend to be cross-registered, a much smaller percentage of Spanish-Americans cross-registered. Thus the figure for the percentage of non-housing project children cross-registered largely represents the combination of the two dissimilar trends for whites and Spanish-Americans.

For each center sample, those children from female headed households were more likely to be cross-registered than those from male headed households. However, this difference is of greater magnitude for those in the CHER sample than for those in the MEHC sample (See Table 3.15). This could be explained by the relationship between head of household and race-ethnicity.

Use of the CHER when the MEHC is open or closed was not found to be associated with most of the other variables mentioned. Almost the same proportion of each race-ethnicity group use the CHER when the MEHC is open or closed though the Spanish-Americans do tend to use it slightly less when the MEHC is open than do the other groups. Slightly more

of those with Blue Cross and slightly less of those with no insurance tend to use the CHER when the MEHC is open than do the other insurance groups, but this is not a significant difference. And while slightly more of the male-headed household children use the CHER when the MEHC is open than do the female household children, this difference is also not significant (See Appendix Tables 5.5, 5.6, 5.7, 5.8).

From the preceding description, it seems possible to characterize each of the types of users previously identified. It would seem that the difference between the groups as described here would serve to establish a predisposition to chose a certain type of care:

DESCRIPTION OF TYPES OF USERS OF THE CHER AND THE MEHC

(in order of decreasing size)

<u>TYPE</u>	<u>DESCRIPTION</u>
I-MEHC BUT CROSSREG	This group is the oldest of the groups. It contains a higher percentage of Negroes than any of the other groups and also a higher percentage of housing project residence. The great bulk of its members are covered by medicaid, and the majority of its members tend to come from female headed households.
II-MEHC ONLY	This group is the youngest of the groups. It contains a higher percentage of Spanish-Americans than any of the other groups, and relatively few whites. The people in this group tend to live outside the housing project though a large number still live inside it. While the majority of its members are covered by medicaid, a substantial number have no insurance at all. The majority of these children are from male-headed households though a substantial minority are from female headed households.
III-CHER BUT CROSSREG	This group has a relatively high percentage of Negroes but also contains large groups of Spanish-Americans and whites. Its members tend to live almost equally inside and outside of the housing project. Most of the children in this group are covered by medicaid, and the majority come from female headed households.
IV-CHER ONLY	This group tends to include a larger number of whites than any of the other groups and also contains a higher percentage of non-housing project residents than any of the other groups. The majority of its members are covered by medicaid but a substantial number have no insurance at all. Most of its members are from male-headed households.

Though more children in each racial ethnicity group used the MEHC than the CHER, white children were less likely to make use of the MEHC than were Negro or Puerto-Rican children. This tendency holds even when it meant that a cost was incurred in the process and third party coverage is not available. This would seem to be the major effect introduced by the socio-economic factors mentioned. Others, such as place of residence, insurance status, and head of household would seem to be subordinate to this factor, though place of residence seems to exert some secondary influence.

Aside from this tendency, there seems to be little in the data to elucidate why some people chose to use the MEHC and the CHER equally. The group choosing to do this seems mixed and the best explanation would seem to be that these people find the hours at the MEHC too inconvenient, or that they do not really desire one primary source of care, or for some reason do not really like either center more than the other and so fluctuate.

The major finding though is that regardless of race, ethnicity, or any other factor, most people chose to use the MEHC as their primary source of care. Some people chose otherwise for the above stated reasons and undoubtedly certain others. But aside from this

minority of people, all others choosing used the MEHC overwhelmingly more than the CHER. Perhaps the categories are too large and certain differences exist within them which go unmeasured by the above analysis, but at least as has been measured here, the overwhelming majority of the people in the area using either of these centers used the MEHC.

These findings also serve as a reminder that people are not all that different- or not in the stereotyped categorical ways we think. People of different races, characteristics as measured etc. almost all chose the same thing. And those not choosing that alternative cut across all socio-economic classes though race made a certain difference.

TABLE 3.1

DIAGNOSES MADE OF CHILDREN SAMPLED AT THE MEHC
OR THE CHER FROM THE MEHC CATCHMENT AREA
BY CROSS REGISTRATION STATUS
(in percentages)

<u>CROSSREG</u>	<u>CHER</u>			<u>MEHC</u> ¹		
	<u>YES</u>	<u>NO</u>	<u>TOTAL</u>	<u>YES</u>	<u>NO</u>	<u>TOTAL</u>
<u>DIAGNOSIS</u>						
<u>WELL, PREVENT.,</u> <u>ROUTINE</u>	1	2	1	17	29	22
<u>ACUTE MEDICAL</u>	77	69	75	65	56	62
<u>SURGICAL</u>	19	18	18	9	7	8
<u>PSYCHOLOGICAL</u>	--	2	1	3	3	3
<u>CHRONIC, OR RECL</u> <u>CURRENT MED, OTHER</u>	3	10	5	6	6	6
<u>TOTAL</u>	<u>100</u>	<u>101</u>	<u>100</u>	<u>100</u>	<u>101</u>	<u>101</u>
	(146)	(61)	(207)	(121)	(73)	(194)

Missing are 16 cases for the CHER, and 6 cases for the MEHC

Chi square is not significant at the .05 level between centers or between groups within a center.

¹Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.2

PERCENTAGES OF CHILDREN SAMPLED AT THE
CHER FROM THE MEHC CATCHMENT AREA
WHEN THE MEHC OPEN, AND WHEN CLOSED

<u>MEHC OPEN</u>		34
<u>MEHC CLOSED</u>		67
<u>WEEK NIGHT</u>	34	
<u>WEEK END</u>	33	
		<u>101</u>
<u>TOTAL</u>	(209)	

missing - 14 cases

TABLE 3.3

CROSS REGISTRATION STATUS OF CHILDREN
SAMPLED AT THE CHER FROM THE MEHC CATCHMENT
AREA WHEN THE MEHC OPEN, AND WHEN CLOSED
(in percentages)

	<u>MEHC OPEN</u>	<u>MEHC CLOSED</u>	<u>TOTAL</u>
<u>CROSS REG</u>			
<u>YES</u>	35	65	101 (148)
<u>NO</u>	30	71	101 (61)

Missing - 14 cases

Chi square is not significant at the .05 level

TABLE 3.4

TIME OF VISITS TO THE CHER FOR
THE ENTIRE CHER POPULATION DURING
THE STUDY PERIOD¹
(in percentages)

<u>MON-FRI</u> (<u>7-3 shift</u>) ²	28
<u>MON-FRI</u> (<u>11-7, 3-11 shift</u>) ³	33
<u>SAT</u> and <u>SUN</u> ⁴	39
	<hr/>
	101
TOTAL	(6794)

¹ This includes an estimate made for Friday January 15 based on activity during the week and on other Fridays. Data for this day was missing.

² This percentage represents a slight underestimate of children coming between 9-5 or when the MEHC was open since more children come between 3-5 in the afternoon than between 7-9 in the morning. In addition, it ignores those children coming between 10-12 on Saturday morning, when the MEHC is open.

³ For similar reasons to the above this represents a slight overestimate of those coming during the week when the MEHC was closed.

⁴ Except for the period on Saturday morning when the MEHC is open, but which is included here, this represents a correct accounting of those coming during weekend hours when the MEHC is closed.

TABLE 3.5

DIAGNOSES MADE OF CHILDREN SAMPLED AT
THE CHER FROM THE MEHC CATCHMENT AREA
ACCORDING TO WHETHER THE MEHC OPEN, OR CLOSED
(in percentages)

<u>DIAGNOSIS</u>	<u>MEHC OPEN</u>	<u>MEHC CLOSED</u>
<u>WELL, PREVENT.,</u> <u>ROUTINE</u>	--	2
<u>ACUTE MEDICAL</u>	74	77
<u>SURGICAL</u>	20	18
<u>PSYCHOLOGICAL</u>	--	--
<u>CHRONIC OR REC-</u> <u>CURRENT MEDICAL,</u> <u>OTHER</u>	6	5
	<u>100</u>	<u>102</u>
<u>TOTAL</u>	(70)	(134)

Missing - 19 cases

Chi square is not significant at the .05 level.

TABLE 3.6

PERCENTAGE OF THOSE SAMPLED AT THE CHER OR
THE MEHC FROM THE MECH CATCHMENT AREA
WHO REGISTERED AFTER JUNE 1, 1970
BY CROSS REGISTRATION STATUS

	<u>CHER</u>		<u>MEHC</u> ¹		
	<u>CROSS REG</u>	<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>
<u>REG CHER AFTER</u> <u>JUNE 1, 1970</u>		24	52	19	--
Total (n)		(144)	(60)	(84)	(74)
<hr/>					
<u>REG MEHC AFTER</u> <u>JUNE 1, 1970</u>		5	--	8	47
Total (n)		(156)	(66)	(122)	(75)

¹Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.7

USAGE OF THE CHILDREN'S HOSPITAL
AND THE MEHC SINCE JUNE 1, 1970
BY THOSE IN THE SAMPLE POPULATIONS
REGISTERED BEFORE THEN, BY CROSS-
REGISTRATION STATUS

<u>CROSS REG</u> <u>VISITS MADE TO THE</u>	<u>CHER</u>		<u>MEHC</u> ¹	
	<u>YES</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>
<u>CHER</u>				
MEAN	2.7	2.7	0.7	--
MEDIAN	2.2	2.0	0.0	--
<u>CHILDREN'S OUT-</u> <u>PATIENT DEPT (CHOPD)</u>				
MEAN	0.6	0.6	0.4	--
MEDIAN	0.0	0.0	0.0	--
<u>MEHC</u>				
MEAN	3.3	--	5.1	4.0
MEDIAN	2.4	--	4.0	3.1

<u>MEDIAN VISITS MADE</u> <u>TO THE MEHC MINUS</u> <u>MEDIAN VISITS MADE</u> <u>(CHER AND CHOPD).</u>	+ 0.2	-2.0	+ 4.0	+ 3.1

¹Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.8

RACE-ETHNICITY OF CHILDREN SAMPLED AT THE MEHC
OR THE CHER FROM THE MEHC CATCHMENT AREA
 (in percentages)

<u>RACE-ETHNICITY</u>	<u>CHER</u>	<u>MEHC</u> ¹
<u>WHITE</u>	32	22
<u>NEGRO</u>	45	54
<u>SPANISH-AMERICAN</u>	23	25
<u>TOTAL</u>	<u>100</u> (209)	<u>100</u> (195)

Missing are 14 cases for the CHER, and 5 cases for the MEHC.

Chi square just misses significance at the .05 level.

¹Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.9

INSURANCE COVERAGE OF CHILDREN SAMPLED AT THE MEHC
OR THE CHER FROM THE MEHC CATCHMENT AREA
 (in percentages)

<u>INSURANCE COVERAGE</u>	<u>CHER</u>	<u>MEHC</u> ¹
<u>WELFARE, MEDICAID</u>	70	69
<u>BLUE-CROSS/BLUE-SHIELD, OR MASTER MEDICAL</u>	11	8
<u>OTHER</u>	1	5
<u>NONE</u>	18	18
	<hr style="width: 50%; margin: auto;"/> 100	<hr style="width: 50%; margin: auto;"/> 100
<u>TOTAL</u>	(223)	(189)

Missing are 11 cases for the MEHC.

Chi square is not significant at the .05 level.

¹Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.10

RESIDENCE INSIDE OR OUTSIDE OF HOUSING PROJECT
OF CHILDREN SAMPLED AT THE MEHC OR THE CHER
FROM THE MEHC CATCHMENT AREA
(in percentages)

<u>RESIDENCE</u>	<u>CHER</u>	<u>MEHC</u>
<u>HOUSING PROJECT</u>	41	58
<u>NON-HOUSING PROJECT</u>	58	42
	<hr style="width: 50px; margin: 0 auto;"/>	<hr style="width: 50px; margin: 0 auto;"/>
<u>TOTAL</u>	99 (223)	100 (799)

Missing are 2 cases for the MEHC.

Chi square is significant at the .0001 level.

TABLE 3.11

SEX OF HEAD OF HOUSEHOLD OF CHILDREN SAMPLED AT
THE CHER OR THE MEHC FROM THE MEHC CATCHMENT AREA
 (in percentages)

<u>HEAD OF HOUSEHOLD</u>	<u>CHER</u>	<u>MEHC</u> ¹
<u>MALE</u>	54	49
<u>FEMALE</u>	46	52
<u>TOTAL</u>	<u>100</u>	<u>101</u>
	(214)	(198)

Missing are 9 cases for the CHER, and 2 cases for the MEHC.

Chi square is not significant at the .05 level.

¹ Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.12

RACE-ETHNICITY OF CHILDREN SAMPLED AT THE
MEHC OR THE CHER FROM THE MEHC CATCHMENT
AREA, BY CROSS-REGISTRATION STATUS
(in percentages)

<u>CROSS-REG</u>	<u>CHER</u>			<u>MEHC</u> ¹		
	<u>YES</u>	<u>NO</u>	<u>TOTAL</u>	<u>YES</u>	<u>NO</u>	<u>TOTAL</u>
<u>RACE-ETHNICITY</u>						
<u>WHITE</u>	55	46	101 (66)	62	38	100 (42)
<u>NEGRO</u>	88	12	100 (94)	70	30	100 (104)
<u>SPANISH- AMERICAN</u>	74	27	100 (49)	42	58	100 (48)

Missing are 14 cases for the CHER, and 6 cases for the MEHC.

Chi square is significant for groups within each center beyond the .005 level.

¹ Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.13

INSURANCE COVERAGE OF CHILDREN SAMPLED AT THE MEHC
OR THE CHER FROM THE MEHC CATCHMENT AREA, BY
CROSS-REGISTRATION STATUS

(in percentages)

<u>CROSS-REG.</u>	<u>CHER</u>		<u>TOTAL</u>	<u>MEHC¹</u>		
	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>	<u>TOTAL</u>
<u>INSURANCE COVERAGE</u>						
<u>WELFARE, MEDICAID</u>	75	25	100 (155)	67	33	100 (129)
<u>BLUE CROSS/BLUE SHIELD OR MASTER MEDICAL</u>	64	36	100 (25)	60	40	100 (15)
<u>OTHER</u>	100	--	100 (3)	60	40	100 (10)
<u>NONE</u>	53	48	101 (40)	38	61	99 (34)

Missing are 16 cases for the MEHC.

Chi square between groups within each center is significant beyond the .05 level.

¹ Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.14

RESIDENCE INSIDE OR OUTSIDE THE HOUSING
PROJECT OF CHILDREN SAMPLED AT THE
CHER OR THE MEHC FROM THE MEHC CATCHMENT
AREA, BY CROSS-REGISTRATION STATUS

(in percentages)

<u>CROSS-REG</u>	<u>CHER</u>		<u>TOTAL</u>	<u>MEHC</u> ¹		
	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>	<u>TOTAL</u>
<u>RESIDENCE</u>						
<u>HOUSING PROJECT</u>	89	11	100 (94)	73	27	100 (117)
<u>NON-HOUSING PROJECT</u>	56	44	100 (129)	47	53	100 (81)

Missing are 3 cases for the MEHC.

Chi square was significant within centers beyond the .001 level.

¹ Figures for the MEHC represent a 25% sample of all cases.

TABLE 3.15

SEX OF HEAD OF HOUSEHOLD OF CHILDREN SAMPLED AT THE
CHER OR THE MEHC FROM THE MEHC CATCHMENT AREA,
BY CROSS-REGISTRATION STATUS

<u>CROSS-REG</u>	<u>CHER</u>		<u>TOTAL</u>	<u>MEHC</u> ¹		<u>TOTAL</u>
	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>	
<u>HEAD OF HOUSEHOLD</u>						
<u>MALE</u>	65	36	101 (107)	56	44	100 (96)
<u>FEMALE</u>	80	20	100 (96)	67	32	99 (101)

Missing are 20 cases for the CHER, and 3 cases for the MEHC

Chi square is not significant at the .05 level within centers.

¹ Figures for the MEHC represent a 25% sample of all cases.

DISCUSSIONThe Findings

This study represented an attempt to assess the validity of the assumption made by many people that when a NHC is established, people will chose this type of care over the care of the older hospital-based setting. Results of the study showed that at least for children within this geographical area the assumption was valid. The MEHC was chosen by four times as many children as the CHER despite the fact that most children had medicaid coverage and could have utilized the services of the CHER free of charge. Further, most of those children chosing the CHER did so when the MEHC was closed. Though for well-child care and certain surgical care medical considerations appeared to assume some importance in the decision, for most children it appeared that the fact that the MEHC was open or closed was the crucial determining factor **in the decision.**

Examination of the use of the two centers by these children over time, that is, since June 1, 1970, further confirms this conclusion. Approximately 75% of the

children chose to use the MEHC much more than the CHER during this period while about 15% used each equally and about 7% used only the CHER.

Since around half of the people using only one center were new registrants at that center, it can be hypothesized that the overwhelming tendency is to use the MEHC with the CHER usually used somewhat, but in a greatly subordinate role.

As would be expected, not all children chose the same center though the overwhelming majority did chose to visit and use the MEHC more than the CHER. Among those not choosing this alternative were included individuals cutting across each characteristic studied. However, it did appear that certain characteristics were overly represented in those making this choice. Those two most important appear to be that of race-ethnicity and residence inside or outside the housing project. Whites were much more likely to choose the CHER over the MEHC than were Negroes and Spanish-Americans. And regardless of race, those outside the housing project were more likely to chose the CHER than those inside the housing project though it appeared that race was a larger factor in the choice than was place of residence.

Five possible explanations for these findings seem foremost. First, whites may have a different attitude toward desirable health care than do other ethnic groups. Second, the whites may have had private physicians and their use of the CHER was subordinate to the physician in much the same way as the CHER was subordinate to the MEHC for most people. The low usage of those using only the CHER supports this argument. Third, since the MEHC is located in the largely black housing project and the non-professional staff is largely non-white, racial prejudice may have acted as a barrier for the whites in their choice of center. Fourth, the housing project itself may have acted as a barrier to those outside it from obtaining care there either because of fear of personal danger, or because the MEHC was perceived as being directed solely at the residents of the project in which it was located. Conversations with staff members of the MEHC gave some substantiation to both of these explanations.¹ And fifth, most whites lived in the census tracts furthest away geographically from the MEHC but near the transit lines going to the CHER. Thus, geographical accessibility may have been involved in the choice.

From the data gathered in this study, it is impossible to determine which of these factors, or possibly additional factors, loomed largest in the choice made by these individuals.

Still, this group is a minority, and a mixed minority at that. As said, the people choosing this alternative cut across all racial and residence lines. Perhaps it is unwise, or even anti-democratic, to expect all people to make the same choice when confronted with two alternatives.

Based on the 1967 census of the area previously discussed another comparison is possible--between those making the choice and between those not choosing at all. It appears that among those choosing either center were included a disproportionate number of those groups usually considered to be less well off economically. Those included in both samples were more likely to have been covered by medicaid, more likely to have been from female headed households even with race-ethnicity held constant, and more likely to be Negro than would have been expected from the 1967 census distribution of families in the area.² Undoubtedly part of this difference can be explained by differences in family size among the different categories, and by changes that have occurred since the census was made. Still, it would appear that those choosing these two forms of care contained a disproportionate number of the poor. Since this is the group to whom the centers are theoretically

geared since their available care is considered to be less adequate than that of others, this is not surprising.

Shortcomings of the Study

It would have been desirable to have been able to make a statement at the conclusion of this study concerning what factors led to the decision to choose and use heavily a certain center. It does seem to follow from the findings that for most cases medical criteria do not have much of an effect on choice. Further, it does seem that the time of day had the largest effect on the choice though both race and residence location had some effect. However, it does not seem possible to draw any firm conclusions concerning the mechanism which resulted in the choice. Thus, it is impossible to say whether the differences in the choices by these children resulted from the racial factors, the locational factors, the time factors and/or some broader attitudinal component.

Part of the problem is derived from the nature of the area itself. Residence coincided in large part with race-ethnicity so that any independent determination of the effects of these two factors was made difficult. Another part of the problem was caused by limitations

of time and finances which made impossible any interviewing which might have gotten at the more intangible factors such as attitudes. Interviewing was also omitted for practical reasons. It was decided that at the MEHC, where an active community board exists, there just wasn't time to go through the valid and valuable procedure of gaining approval. Still another part of the problem is that the design of this study ruled out any attempt to get at the longitudinal component of choice. Thus, it is not known where these children received their care prior to the expansion of the MEHC and how the shift occurred.

An argument might be made along the behaviorist assumptions that attitudes or causal links aren't as important as a wide variety of people each choosing. According to this argument, the fact that so many more people of varying types chose one center over another is argument enough by itself for the assumption being tested without any viewing for viewing attitudes. Still, in order for these findings to be fully useful to those in other areas, it would be helpful to know what exactly did make the center so popular--e.g. whether it was its delivery style, its location, its perceived community orientation etc.

Another shortcoming of the study is that its design made impossible any determination of the totality of a person's usage of medical care facilities. It is possible that besides these two facilities, others were used by these same people and that therefore the MEHC did not "measure up" as favorably as was found in the study. Certain evidence does argue against this possibility. An informal study by Dr. Frederick Berrien of use of the Boston City Hospital Emergency Room (BCH) and the CHER by MEHC area children during a week in October, 1970 found that most using either of these two facilities used the CHER and few used the BCH.³ Conversations with staff personnel at the MEHC confirm this finding and suggest that when an alternative form of medical care is used by anyone other than a teenager, it is likely to be the CHER.⁴ In addition, the large number of visits made to the CHER and the MEHC since June 1, 1970 by children included in this study seems to make it unlikely that any other source of care is used to a large degree. However, especially for those registered only at the CHER, -who used less medical care than the other groups- -the lack of this information seems to make difficult certain conclusions.

Related to this problem is the fact that this study says nothing of the use of medical care by children not choosing to visit either center during the period. Undoubtedly many of these children used these centers much as those included in the study did. However, two sorts of problems derive from this shortcoming. First, it is likely that the sample of children using the centers during the 4 week period contained a disproportionate number of "high utilizers". Although multiple visits by the same child during the period were eliminated, it is still likely that even making a first visit during the period would have been chosen more often by those predisposed toward using medical care. Thus, the average number of visits made since June and even the characteristics of the sample at each center might not be representative of the population of each center. A study is currently being conducted by the MEHC staff which hopefully will clarify who these high users are and how they differ from the general run of patients at the center.

The second problem derived from the lack of data about those not choosing either center is that it is impossible to judge what percent of the eligible population never use either center, and whether they instead use private physicians, another source of care,

or whether they receive no care at all. While it might be hypothesized that many in the area use the types of care derived from examination of those using one or both centers during a four week period and use the types in the same proportionate way, little is known about the size of the group not using care in this manner, though the earlier studies of the MEHC seem to suggest this group is a minority.⁵

In addition to the above-mentioned problems, the data also does not serve to answer several other related questions. First, it says nothing about the choice of health facilities made by adults. It is possible that the criteria used by adults to determine where they go for medical care differ greatly from those they use to determine care for their children. Second, it does little to determine if choice may vary according to season. It is possible that in the summer, when the weather is more favorable, children are on vacation, ailments are different etc., people may choose quite differently. Third, to the dispute raging over which type of care is of higher quality this study adds little save the important finding that one type of care is more preferable to consumers than another for whatever reason.

Implications

When a study is made which examines only one case, or one center, it is always a valid question to ask how far the findings from such a study might be generalized to other centers. Certain logical limitations seem obvious such as the urban setting, the region of the country, the relative poverty of this area, etc. Aside from obvious limitations such as these, however, it is difficult to judge the applicability of these findings to other centers. Later, it will be suggested that studies such as this one be replicated for other, and different, centers.

Still, it is possible to describe the elements involved in this study, so that their applicability might be more accurately judged. The choice of these two centers rather than another was made because both of them seemed to provide high quality care for children within the settings in which they functioned. The CHER suffers from the faults attributed to hospital based care, but the hospital itself is highly regarded and it was hoped that the use of this type of hospital would serve, if anything, to bias the results away from validating the assumption by testing it on the best, rather, than worst of the traditional hospital-based settings. The MEHC was analogously chosen because it shared affiliations with the hospital and other highly reputed hospitals and

therefore might serve as a match for the CHER since both had what would be professionally regarded as high prestige, but each offered a different type of care. Another reason why these two centers were chosen was that neither one was geographically very inaccessible to people in the area, and it was hoped that this choice might result in findings were choice of type of care rather than simply geography influenced decisions. Geography was not totally absent as a factor involved in the choice, especially, one might assume, for people in the housing project, but at least the choice of area did not result in an isolation such as exists in Columbia Point.

It would seem, then, from the previous discussion, that at least for children, the results of this study might prove applicable to many urban neighborhoods where a NHC of reasonable quality and location was being contemplated and where it was known that most people in the area were currently receiving care in a hospital based setting, if at all. Still, there exists a strong need for further studies before it can be fully comprehended how a NHC gains or doesn't gain acceptance by the people in an area.

The findings discussed here also contain certain implications for the respective centers. At the CHER, those included in the study represented only about 3% of all visits made to that center during the study period

and were not intended to be a random sample of users of the CHER. These figures might prove interesting, however, should a comparison be desired with other groups of users. Also interesting is the implication of this study that through the establishment of many NHCs in the area of the hospital, the patient load on the CHER might be reduced. From conversations with administrators and staff at the CHER it appears that they are concerned with their high patient load since it lessens their ability to fulfill their primary responsibility--that of emergency care.⁶ This study would seem to suggest that contrary to some of their predictions, most people having access to a NHC will make only limited use of a hospital based facility.

For the MEHC these findings represent something of a "pat on the back". At least as measured here, acceptance of the MEHC appears high in comparison with the hospital based care of the CHER. These findings do suggest, however, certain areas where continued and perhaps, for some, new efforts might result in an even more improved consumer utilization and a higher quality of care.

From the findings, it would appear that if the MEHC could be kept open for slightly longer hours even more people would chose it over the CHER. Recently the hours

of the MEHC's Pediatric Clinic were lengthened to 8:30 AM from 9 AM as opening time and 6 PM from 5 PM as closing time. This lengthening should serve to decrease the usage of the CHER by residents in the MEHC area, since most using it during the week when the MEHC is closed do so during the evening hours. A further extension during the week, and especially the extension of the weekend hours would probably serve to even further increase the choice of the MEHC. Financial and security problems and decisions are of course involved in this decision but from the findings it would appear that this decision would do much to minimize the choice of the CHER over the MEHC. Another area where continued effort might result in an increased choice of the MEHC over the CHER would seem to be the outreach effort already being undertaken. If residents in the area, especially white residents living outside the housing project, can be made to know and feel that the center is for them as much as for anyone else, then perhaps they will be less hesitant to use it though for this to work their hesitancy to use the center would have to be explainable by such a lack of knowledge or such a feeling.

Examination of the records of MEHC registrants at the CHER and conversations with physicians there revealed that often the fact that a patient at the CHER was

registered at the MEHC was unknown.⁷ While this fact might be noted on either patient's card, on the outside of the chart, on the inside of the chart, or whether the physician himself asked, often none of these occurred. Further, even when this fact was noted, it did not always follow that a report of the visit was sent to the MEHC or a referral to the MEHC was made for follow-up care appropriate to that center. Given the volume of visits made to the CHER daily and the number of NHCs represented among the population of the CHER this coordination might be difficult to establish. Still, it would appear that some sort of coordination mechanism should be worked out between different NHCs whose patient's use the CHER and the CHER itself if the continuity of care which is a goal of the NHCs is to be achieved. In addition, awareness among the medical staff of such situations might serve to informally improve the existing situation.

A final problem which seems to follow from the findings is that for both centers usage by teenagers seems much lower than would be expected by their representation in the population.⁸ Though undoubtedly some of this is caused by the lower rate of illness among children of this age, some of it might be caused by a reluctance of these young adults to use what they perceive as "facilities for children". This has been recognized by the MEHC and is

being worked on by staff there in such ways as by inclusion of some of the oldest in this group in the adult clinic etc. However, this lack of usage by teenagers does suggest an area where further efforts are necessary.

Areas for Further Study

As has been previously stated, the results of this study seem to support the continuance of the present policy of establishing NHC's, at least from the perspective of their expected acceptance by the community. However, this study by no means represents the complete proof of the assumption that if a NHC is established in a low income area, it will be accepted by residents in that area. Several different types of studies are still necessary:

1. Replication of this study or one similar to it in different types of situations is necessary so that it can be judged to what extent it is true that people will chose a NHC over a hospital-based setting. These studies should look at adults as well as children, NHCs not located in housing projects as well as those located in housing projects, areas where the population is different from that studied here, different areas of the country, different times of the year etc. In addition, it would be useful if these studies determined the entire pattern of care for their sample population.

2. Either as part of the above studies, or as separate studies, it would seem useful to attempt to clarify the nature of this choice, i.e. what factors lead to acceptance or rejection of a NHC. Perhaps looking at attitudes of the population toward care and toward the centers, and at the characteristics of the centers attaining different degrees of acceptance would serve to clarify the decision process. This would need approval by involved community groups but seem a useful approach. In addition, more longitudinal surveys of changes in choice of health care usage as a NHC is opened and operates would probably serve to increase this understanding.
3. In order to judge acceptance of the NHC more completely it would seem that studies should be carried out to determine what percentage of the eligible population is attracted to the NHC and how their previous source of care as well as other factors similar to the ones discussed above, influences their choice.
4. It would seem that studies of adolescents usage of medical care facilities are much needed and currently largely neglected. The adolescents in this area did not chose either form of care to any large extent and it would seem useful to know whether they had alternative forms of care, or whether they received no care at all.

5. Finally, recognizing that consumer acceptance of the NHC is not the only criterion which will be used to evaluate the desirability of continuing these centers, several studies seem in order to highlight the costs of this type of care in comparison, for example, to the hospital based care; to evaluate the effectiveness of these centers in promoting a higher degree of health among the population than had been achieved by the other sources of care etc. Only then can a final evaluation of the NHC's be made.

APPENDIX

TABLE 5.1

	<u>CHER</u>	<u>MEHC</u>
<u>DIAGNOSES MADE OF CHILDREN SAMPLED AT THE CHER OR THE MEHC FROM THE MEHC CATCHMENT AREA, ACCORDING TO CENTER WHERE THEY WERE IDENTIFIED^a</u> (in numbers)		
<u>DIAGNOSIS</u>		
<u>WELL, ROUTINE, AND PREVENTIVE, INCLUDING ROUTINE MANAGEMENT OF CHRONIC CONDITIONS</u>	3	192
Well	2	161
Allergy Shot	--	10
Exposed to hepatitis	--	6
Suture removal	--	4
Heart murmur	--	3
Physical exam	--	3
Nephrosis	--	2
Healed Lesion	--	1
Bandage Change	--	1
Other	1	1
<u>ACUTE MEDICAL ILLNESSES</u>	152	471
Upper respiratory infection ¹	77	287
Otitis	37	72
Gastroenteritis ²	8	7
Viral syndrome	7	5
Flu, or question of	2	44
Cold	2	--
Hives ³	5	3
Bronchitis	--	4
Impetigo	1	4
Gonorrhea	1	3
Conjunctivitis	--	3
Chest pain	--	3
Dysuria	--	3
Scarlet Fever	--	2
Pneumonia	1	4
Mumps	--	2
Contact Dermatitis	--	2
Sinusitis	--	2
Herpes Simplex	--	2
Chickenpox	--	2
Vincent's Angina	--	2

TABLE 5.1, cont.

	<u>CHER</u>	<u>MEHC</u>
Diarrhea	1	1
Rubella Syndrome	--	2
Thrush	1	1
Infected acne	--	1
Myopia	--	1
Cramps	--	1
Laryngitis	--	1
Insect Bites	--	1
Infectious hepatitis	1	1
Cervical adenitis	--	1
Muscle pain	--	1
? of dizziness	--	1
Flea bites infected	--	1
Abdominal pain	1	1
Trachitis	1	--
Headache	1	--
Herpetic stomacitis	1	--
Herpanguia	1	--
Colic epistatis	1	--
R/OUTI	1	--
Pinworm	1	--
<u>SURGICAL--LACERATIONS</u>	8	11
<u>SURGICAL--FRACTURES AND SPRAINS</u>	9	11
Fractures	6	1
Sprains	3	10
<u>SURGICAL--OTHER ACCIDENTS OR TRAUMA</u>	16	25
Bruise	2	5
Foreign Body	2	4
? of Ingestion	4	--
Abrasion	2	3
Contusion	1	2
Hematoma	1	2
Smashed finger	--	1
Puncture wound	--	1
Sore Thumb	--	1
Pulled muscle	--	1
Step on nail	--	1
Lacerated toenail	--	1
Head trauma	--	1
Crush injury	--	1
Blurred vision	1	--
Burn	1	--
Bump	1	--
Injury	1	--
Superficial scratches	--	1

TABLE 5.1, cont.

	<u>CHER</u>	<u>MEHC</u>
<u>SURGICAL-OTHER</u>	5	14
Abcess	--	2
Ples planus	--	2
Infected foot	--	1
Torticollis	--	1
Hernia	--	1
Mass on knee	--	1
Vascular tumor	--	1
Lesion	--	1
Scoliosis	--	1
Carbuncle	--	1
Foot pain	--	1
Nosebleed	1	1
Congenital disloc. hip	1	--
Loose body in knee	1	--
Cast ulceration	1	--
Abd. pain (post op. vomiting)	1	--
<u>PSYCHOLOGICAL</u>	1	8
Behavior problem	1	1
School problem	--	2
Adjustment reaction	--	1
Glue sniffer	--	1
Psychophysiologic react.	--	1
Hypochondria	--	1
Separation anxiety	--	1
<u>CHRONIC OR RECURRENT MEDICAL, OTHER</u>	10	40
Anemia	--	5
Eczema	--	3
Retardation	--	3
Hearing Loss	--	3
Asthma	2	3
Athlete's foot	--	2
Dental carries	--	2
Obesity	--	2
Seborrhea	1	2
Dismenorrhea	--	2
Diaper rash	2	--
Child abuse	--	1
Unilateral breast development	--	1
Cerebral Palsy	--	1

TABLE 5.1, cont.

	<u>CHER</u>	<u>MEHC</u>
speech problem	--	1
deafness	--	1
petit mal	--	1
tinea corpis	--	1
pregnancy	--	1
dermatitis	--	1
pimple	--	1
alopia aerata	--	1
no pathology	--	1
dry scalp	--	1
gingivitis	1	--
entropia	1	--
plaster wart	1	--
tyrassis rosea	1	--
fallicular		
hypertension	1	--
<u>TOTAL</u>	<u>204</u>	<u>772</u>

Missing are 19 cases for the CHER and 29 cases for the MEHC.

^a Within categories certain differences seem to result from different diagnostic terminology used--e.g. the CHER seems not to diagnose flu as flu but rather as something else, etc. Therefore, care should be used when interpreting the differences within categories.

¹ Upper respiratory infections include also those ailments diagnosed as tonsillitis, pharyngitis, sore throat and strep though these later diagnoses represented only a small number of cases in this category.

² Gastroenteritis includes both gastritis and enteritis.

³ Hives include also those ailments diagnosed as rash, drug eruption, and itching.

⁴ Both bronchopneumonia and pneumonia are included in this category.

TABLE 5.2

RACE-ETHNICITY OF CHILDREN SAMPLED AT THE CHER
OR THE MEHC FROM THE CATCHMENT AREA BY RESIDENCE
IN THE HOUSING PROJECT OR NOT ACCORDING TO
CENTER WHERE IDENTIFIED

(in percentages)

<u>RESIDENCE IN</u> <u>HOUSING PROJECT</u>	<u>CHER</u>			<u>MEHC</u> ¹		
	<u>YES</u>	<u>NO</u>	<u>TOTAL</u>	<u>YES</u>	<u>NO</u>	<u>TOTAL</u>
<u>RACE-ETHNICITY</u>						
<u>WHITE</u>	6	94	100 (66)	19	81	100 (42)
<u>NEGRO</u>	87	13	100 (94)	94	6	100 (105)
<u>SPANISH-</u> <u>AMERICAN</u>	8	92	100 (49)	19	81	100 (48)

Missing are 4 cases for the CHER, and 5 cases for the MEHC.

Chi square is significant within centers beyond the .001 level.

¹ Figures for the MEHC represents a 25% sample of all cases.

TABLE 5.3

RACE-ETHNICITY OF CHILDREN SAMPLED AT THE CHER OR THE
MEHC FROM THE MEHC CATCHMENT AREA BY
INSURANCE COVERAGE, ACCORDING TO CENTER WHERE IDENTIFIED

(in percentages)

<u>INSURANCE</u>	<u>MEDI- CAID</u>	<u>CHER</u>			<u>TOTAL</u>	<u>MEHC¹</u>				<u>TOTAL</u>
		<u>BC-BS</u>	<u>OTHER</u>	<u>NONE</u>		<u>MEDI- CAID</u>	<u>BC-BS</u>	<u>OTHER</u>	<u>NONE</u>	
<u>RACE-ETHNICITY</u>										
<u>WHITE</u>	52	18	2	29	101 (66)	49	20	7	24	101 (41)
<u>NEGRO</u>	84	5	1	10	100 (94)	78	3	7	11	99 (98)
<u>SPANISH- AMERICAN</u>	65	10	2	22	99 (49)	64	9	-	28	101 (47)

88

There are 14 missing cases for the CHER, and 14 missing cases for the MEHC.

Chi square is significant within each center beyond the .01 level.

¹ Figures for the MEHC represents a 25% sample of all cases.

TABLE 5.4

RACE-ETHNICITY OF CHILDREN SAMPLED AT THE CHER OR THE
MEHC FROM THE MECH CATCHMENT AREA BY SEX OF HEAD OF
HOUSEHOLD, ACCORDING TO CENTER WHERE IDENTIFIED

(in percentages)

<u>HEAD OF</u> <u>HOUSEHOLD</u>	<u>CHER</u>			<u>MEHC</u> ¹		
	<u>MALE</u>	<u>FEMALE</u>	<u>TOTAL</u>	<u>MALE</u>	<u>FEMALE</u>	<u>TOTAL</u>
<u>RACE-ETHNICITY</u>						
<u>WHITE</u>	70	30	100 (66)	74	26	100 (42)
<u>NEGRO</u>	34	66	100 (92)	29	71	100 (105)
<u>SPANISH-</u> <u>AMERICAN</u>	71	29	100 (49)	69	31	100 (48)

Missing are 16 cases for the CHER and 5 cases for the MEHC.

Chi square is significant within each center beyond the .001 level.

¹ Figures for the MEHC represents a 25% sample of all cases.

TABLE 5.5

RACE-ETHNICITY OF CHILDREN SAMPLED AT THE
CHER FROM THE MEHC CATCHMENT AREA ACCORDING
TO WHETHER THE MEHC WAS OPEN OR CLOSED

(in percentages)

<u>RACE-ETHNICITY</u>	<u>MEHC OPEN</u>	<u>MEHC CLOSED</u>
<u>WHITE</u>	33	30
<u>NEGRO</u>	51	44
<u>SPANISH-</u> <u>AMERICAN</u>	16	26
	<hr style="width: 50px; margin: 0 auto;"/>	<hr style="width: 50px; margin: 0 auto;"/>
<u>TOTAL</u>	100	100
	(67)	(131)

Missing are 25 cases.

Chi square is not significant at the .05 level.

TABLE 5.6

INSURANCE COVERAGE OF CHILDREN SAMPLED AT THE
CHER FROM THE MEHC CATCHMENT AREA ACCORDING TO
WHETHER THE MEHC WAS OPEN OR CLOSED
(in percentages)

<u>INSURANCE COVERAGE</u>	<u>MEHC OPEN</u>	<u>MEHC CLOSED</u>
<u>MEDICAID</u>	71	70
<u>BC-BS, OR</u> <u>MASTER MEDICAL</u>	14	9
<u>OTHER</u>	--	2
<u>NONE</u>	14	19
<u>TOTAL</u>	<u>99</u> (70)	<u>100</u> (139)

Missing are 14 cases.

Chi square is not significant at the .05 level.

92
TABLE 5.7

HEAD OF HOUSEHOLD OF CHILDREN SAMPLED AT THE
CHER FROM THE MEHC CATCHMENT AREA ACCORDING
TO WHETHER THE MEHC WAS OPEN OR CLOSED

(in percentages)

<u>HEAD OF HOUSEHOLD</u>	<u>MEHC OPEN</u>	<u>MEHC CLOSED</u>
<u>MALE</u>	55	51
<u>FEMALE</u>	45	49
	<hr style="width: 50%; margin: 0 auto;"/>	<hr style="width: 50%; margin: 0 auto;"/>
<u>TOTAL</u>	100 (67)	100 (136)

Missing are 20 cases.

Chi square is not significant at the .05 level.

TABLE 5.8

RESIDENCE INSIDE OR OUTSIDE THE HOUSING PROJECT
OF CHILDREN SAMPLED AT THE CHER FROM THE MEHC
CATCHMENT AREA, ACCORDING TO WHETHER
THE MEHC WAS OPEN OR CLOSED

(in percentages)

	<u>MEHC OPEN</u>	<u>MEHC CLOSED</u>
<u>HOUSING PROJECT</u>	43	44
<u>NON-HOUSING PROJECT</u>	57	56
	100	100
<u>TOTAL</u>	(70)	(139)

Missing are 14 cases.

Chi square is not significant at the .05 level.

METHODOLOGICAL NOTES

The procedure used to collect the data was as follows:

CHER Data

The sample of people included in this group was identified by examining each billing card filled out in the CHER during the four week period from 1/12/71 through 2/8/71 and if the address on the card corresponded to one of the addresses listed as included in the MEHC catchment area, the person was included in the sample. Virtually all people who enter the CHER are billed either directly, or indirectly through third party, so that all persons visiting the center were examined in the search. This procedure did have the error of reliance on possibly outdated addresses, but was the only way possible of establishing residence in the MEHC catchment area by these people. Other information was gotten from this form. The person's visit was then identified on the day sheet for the CHER and still other information was gotten. Some day sheet entries were unfindable given normal limits of time and the information was obtained from other sources such as the records. The person's record was then called for and additional information was obtained-- a minimum of two calls were made for a record--for many, up to four calls for the record were made before it was judged unobtainable.

The person's name was then checked on the alphabetic listing of registrants at the MEHC, and if it was there, the MEHC record was called and called again if unobtainable. It was discovered after this procedure that the MEHC listing excluded certain newly registered or newly born individuals. It was too late to check another listing but it was decided that the amount of contact these people had had with the MEHC had been small, if at all, and therefore the bias to the results would be fairly small in the direction of underestimating the actual usage of the MEHC.

During this period the visits were sorted by record number and multiple visits were eliminated. Approximately 8% of all visits, or twenty visits, were eliminated in this manner, with the first visit by the child being kept in the sample. 223 cases remained in the sample. If a person in the sample had also gone to the MEHC during this period the overlap was ignored as the number involved was quite small. This concluded the gathering procedure for this data.

MEHC Data

The sample of people included in this group was identified by including all persons going to the Pediatric Clinic during the previously described period. This information, as well as certain other information was gotten

from the encounter forms made out for each visit. Other information was gotten from the alphabetic listing of all registrants, and, where the person wasn't listed, from the rollodex listing of each individual registered.

Visits were then sorted by record number and multiple visits by the same person during the period were eliminated with the first visit only included in the sample. Approximately 16%, or 168 visits, were duplicate visits, with most of these being second visits by the same child.

From this listing of 801 cases by record number, every fourth number (or 200 cases) on the list was included in the sample for which certain other information was obtained. Since records were kept by family, with each child in the family listed consecutively this sampling choice did serve to bias the sample away from including two children from the same family. The records were then called for these children and certain socio-economic and usage information was obtained. As before, multiple calls were made before the record was judged unobtainable.

The names of the children in this sub-sample were then checked against listings at the CHER and Children's Hospital and the record numbers were obtained for all those children who had ever used the Children's Hospital. These records were then called for and other information was gotten. A

second call was made if the record had been unobtainable the first time. A large number of records were still unobtainable, and a check with the record room revealed that these records were in storage, which meant that the child hadn't visited the hospital for at least 1-1.5 years. This information was noted and it was assumed that that child had not visited the hospital since June 1, 1970. This completed the collection of this data.

The above represents a detailed presentation of the methodological procedure used. This procedure resulted in the collection of data pertaining to a number of variables. Below is listed each variable for which data was obtained, the source of the data, and any complications or problems with the data:

DATE OF VISIT-- This was obtained from the billing form at the CHER, and the encounter form at the MEHC. For over 99% of the cases this information was obtainable.

DAY OF VISIT-- This was hand-coded by date. Anything after midnight was taken to have occurred on the day following that hour. For over 99% of the cases this information was obtainable.

TIME OF VISIT-- This information was only obtained for the CHER visits and was gotten from the day sheet, or if unavailable, from the records. This was then coded to the nearest hour on the basis of a 24 hour clock. This piece of data was obtainable to 92% of the CHER sample.

MEHC, Open or Closed-- This was hand coded for the CHER data using the hours that the MEHC was open as the criteria, i.e. Monday thru Friday, 9 a.m. - 5 p.m. and Saturday 10 a.m. to 12 p.m.. The nearest hour as coded on the 24 hour clock was used to judge. This meant that a person visiting the CHER at 5:15 P.M. during the week was taken as visiting when the MEHC was open etc. Given travelling time and the maximum amount of distortion as 29 minutes this was seen as accurate for the purposes. As before, for 92% of the sample this data was obtainable.

PLACE OF RESIDENCE-- The address of the person was gotten from the billing form for the CHER sample and from the encounter sheet or the alphabetical list for the MEHC sample. The address was then coded by census tract from the MEHC address list. The housing project census tract was broken down into housing project and non-housing project areas. This information was obtainable for over 99% of each sample.

DIAGNOSIS-- This was obtained from the day sheet or the record for the CHER sample, and from the encounter form for the MEHC. Coding of diagnoses was then done in conjunction with Dr. William Wiese. Where multiple diagnoses were listed, the first diagnosis given was the one coded. The different code used on the MEHC encounter forms was at times used to clarify an unclear diagnosis. While the code was in most cases accurate, there were certain borderline cases where a judgement was made as to the category of the illness (See Appendix Table 1 for diagnoses and categories). This information was obtainable for 93% of the CHER sample and 97% of the MEHC sample.

DATE OF BIRTH-- This piece of data was obtained in the same manner as the place of residence. This was later converted by computer into age. For about 99% of these cases, the information was complete.

Data itemized from here on were only collected for the 25% MEHC sample, but for all in the CHER sample.

Race-Ethnicity-- For the CHER sample, this information was gotten from the record of physician's notes. If unavailable, it was gotten from the MEHC record if a person was registered there. It could be supposed that those cases where this

information was unobtainable were biased toward the whites since it might be less likely to have been noted by the physicians and the people were less likely to have been registered at the MEHC. A person was included in the Spanish-American category if one or both parents were born in a Spanish-speaking country or that the person himself was. West Indians were considered in with the Negro group (this involved very few people), and Greeks (also a small number) were included in the white group. For the MEHC sample, this data was obtained much more easily since records contained a clear note of these groups. This information was obtained for 94% of the CHER sample and 99% of the MEHC sub-sample.

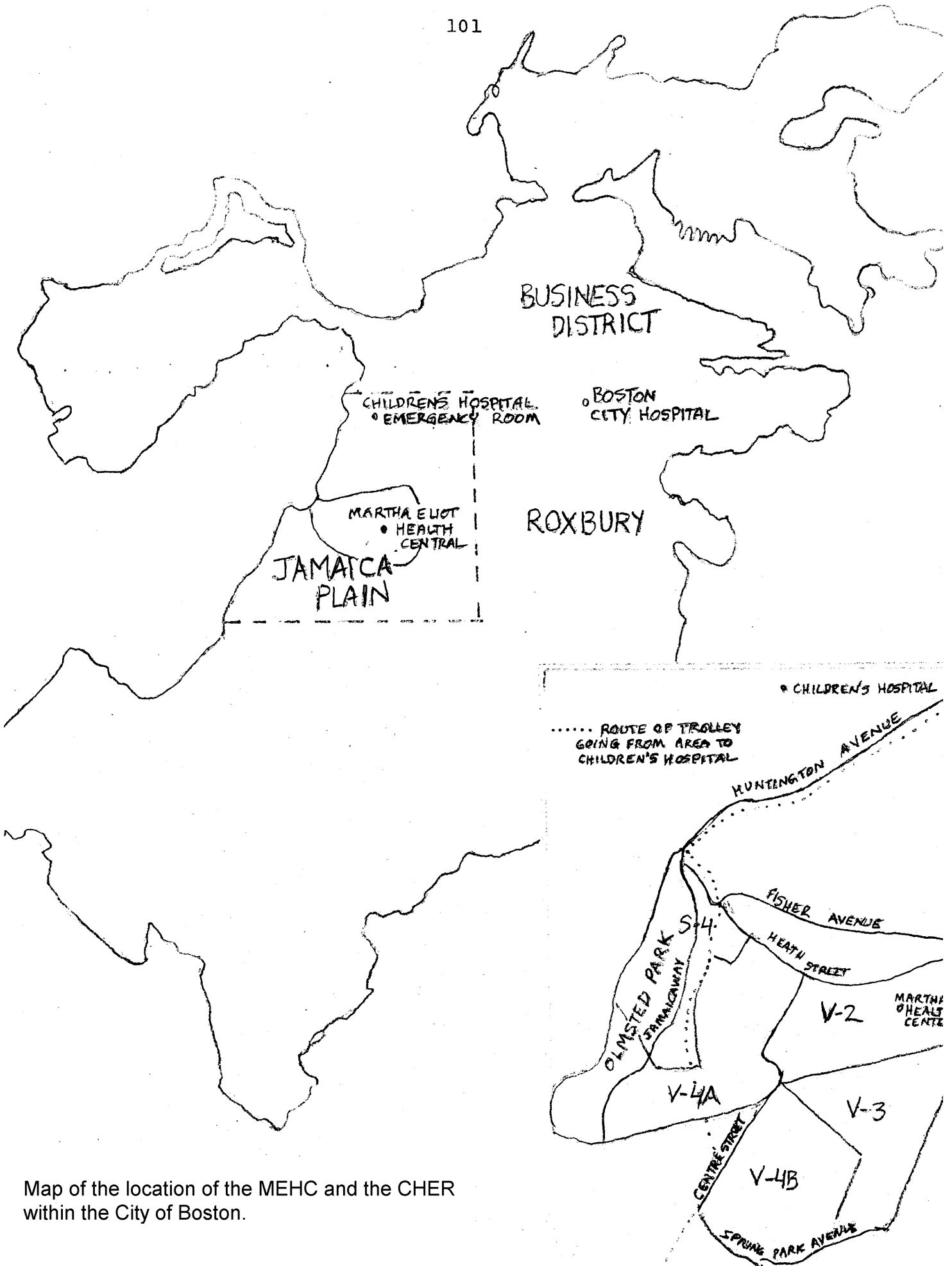
Insurance Status-- For the CHER this information was obtained from the billing forms. For the MEHC, it was obtained from the record. Several problems were encountered in this process. For both centers, information was likely to be outdated. In addition, for the MEHC this item had been omitted in many records. To compensate at least partially, all those on welfare were assumed to be covered by medicaid. For the CHER the tendency was to omit private coverage since the hospital did not bill any insurance carrier other than Blue Cross or Medicaid directly. This information was available for all in the CHER sample and over 98% in the MEHC sub-sample.

Head of Household-- For both centers, this information was obtained from the records. In all cases it referred to a mother, father, or surrogate such as stepfather. Other relatives in the household (e.g. grandparents) were omitted unless they were the sole people responsible for the child. Several problems were apparent for this piece of data. First, the CHER seemed to overly imply male-headed households even when the type of welfare coverage seemed to rule this out. This might be caused by the way the question was asked of the registrants--distinction might not have been made between a father, and a father living in the home. Second, it is also possible that because of fear of loss of welfare status, the MEHC overestimated the female-headed households. Third, for both centers, information was likely to be out of date. If a discrepancy was found, the latest recorded data was taken. Or, if it was unclear what was the case, the social service records were looked at, if available, to attempt to clarify the situation. This information was available for 96% in the CHER sample and over 99% in the MEHC sub-sample.

Past History of Usage of the Centers-- For both centers, information was gathered from the records about the date the

person registered at either or both centers, about the number of visits made to each since June 1, 1970, and about the number of visits made before this date. In addition, information was collected about the usage of these people of the Out-Patient Department of the hospital, and of the in-patient facilities. Though many times the records were unclear of exactly what was a visit, in aggregate, this data seems fairly accurate. When for the MEHC the family had registered previous to the birth of the child (registration is by family there) the date of birth of the child was taken as the registration date. Only for the usage of the CHER by MEHC registrants before June 1, 1970 did the completion rate for this data fall below 90%.

This data was then key-punched and analyzed by computer at the M.I.T. Computer Processing Center using the Statistical Package for the Social Sciences (SPSS). To further heighten understanding of the situation several staff people at each center were consulted with informally.



Map of the location of the MEHC and the CHER within the City of Boston.

for center

DATA SHEET

CENTER:

CHER

NAME

REG. NO.

DATE

TIME

ADDRESS

CENSUS TRACT

DATE OF BIRTH

INSURANCE STATUS

DIAGNOSIS

CODE SEVERITY

COMPLAINT

for 1 in 4 MEHC

OTHER CENTER

GET? Y N

ATTEND OTHER Y N

FIRST CENTER KNOWS Y N

Date Reg.

RACE

REG. NO.

RELIG.

Date Reg

HH OCCUP

PREVIOUS VISITS

since 6/70

pre 6/70

TOTAL

or for CHER

ER

OPD

IN-PAT when?

OTHER

~~SIZE OF FAMILY?~~

PLACE OF BIRTH?

ANYTHING ELSE?

CODING FORM

<u>COL.</u>	<u>VARIABLE</u>
1-5	CODENUMB my actual code number change A's to 02
7	CENTERID (center identified, 1. CHER 2. MEHC)
9-10	DATEVIS (date of visit) 12 to 08 (actual date) 88 = missing
11	DAYVIS (day of visit) 1 = sun 2 = mon 3 = tues 4 = wed 5 = thurs 6 = frid 7 = sat 0 = missing
12-13	TIMEVIS (time of visit) to nearest hour 00 = midnight (12AM) 23 = eleven PM 88 = missing 99 = not applicable (all MEHC)
14	^C MEOPCL (MEHC open or closed) <i>(on basis of Timevis)</i> 1 = open (9-5 Mon- Fri, 10-12 Sat) 2 = closed 0 = missing 9 = not applicable (all MEHC)
16	^{CEN} ATRACT (census Tract) 1 = V2H 2 = V2B 3 = V2n 4 = V3 5 = V4A 6 = V4B 7 = S4 0 = missing
17	DIAGNOS (diagnosis) ① well, routine procedures ② Acute medical services ③ surgical - lac ④ surgical sprains, fractures ⑤ surgical, other, accidents, trauma ⑥ surgical, other ⑦ psychotherapy ⑧ chronic, recurrent med or other ⑨ missing or illegible

- 18-19 MONBIRTH (month of birth)
number of month (1 to 12)
00 = missing
- 20-21 DAYBIRTH (date of month of birth)
01 to 31--actual date
00 = missing
- 22-23 YEARBIR (year of birth)
49 to 71
00 = missing
- 30 RACE/ETH (race, ethnicity)
1 = white
2 = negro
3 = spanish-american
0 = missing
9 = not applicable
- 31 INSURANC
1 = welfare or medicand
2 = bc/bs or other
3 = other
4 = none or unknown
0 = missing
9 = not applicable
- 32 ~~SEXOFHH~~ ^{HEAD OF HH} (sex of head of HH)
1 = male
2 = female
0 = missing
9 = not applicable
- 34 CROSSREG (reg. at other center) ³
1 = yes
2 = no
9 = not applicable
(3 = Yes, but in storage (not seen 1/2 yrs))
(Recorded as 1)
- 36 DATREGCH (dat registered at CHER)
1 = since 6/1/70
2 = 1/1/70 to 6/1/70
3 = 1969
4 = 1968
5 = 1967
6 = before 1967
7 = never
9 = not applicable
0 = missing
- 37 DATREGME (date reg. at MEHC)
1 = since 6/1/70
2 = 1/1/70 to 6/1/70
3 = 1969
4 = 1968
5 = 1967
6 = before 1967
7 = never
9 = not applicable
0 = missing

39-40 VISCHERS (visits CHER since 6/1/70)
 actual number
 88 = missing
 99 = not applicable

41-42 VISCHERP (visits CHER before 6/1/70)
 actual number
 88 = missing
 99 = not applicable

43-44 VISCOPDS (visits CHOPD since 6/1/70)
 actual number
 88 = missing
 99 = not applicable

45-46 VISCOPDP (visits CHOPD before 6/1/70)
 actual number
 88 = missing
 99 = not applicable

48-49 VISMESI (visits to MEHC since 6/1/70)
 actual number
 88 = missing
 99 = not applicable

50-51 VISMEPRE (visits to MEHC before 6/1/70)
 actual number
 88 = missing
 99 = not applicable

53 INPATCH (inpatient at CHER)
 1 = yes, once
 2 = yes, more than once
 3 = no, never
 0 = missing
 9 = not applicable

FOOTNOTESChapter I

1. Anne R. Somers, "Some Basic Determinants of Medical Care and Health Policy: An Overview of Trends and Issues," Milbank Memorial Fund Quarterly v. 46 (January, 1968, Part 2), p 918.
2. Gerald Rosenthal, "Health Care," in The State and the Poor, ed. by Samuel H. Beer and Richard E. Barringer (Cambridge: Winthrop Publishers, 1970) pp 207-208.
3. Office of Human Resources Programs, Report of the Mayor's Task Force on Public Health Goals, the District of Columbia, 1970, p 61.
4. John Stoeckle, "The Future of Health Care," in Poverty and Health: A Sociological Analysis, ed. by John Kosa, Aaron Antonovsky, and Irving Kenneth Zola (Cambridge: Harvard Univ. Press, 1970) p 299.
5. These terms will, in a sense, be used interchangeably in this thesis since in many respects the organizational structure of the hospital dictates which one of these two sources of care provides the care here spoken of. In many hospitals, it is the clinic which provides the majority of this care, while the emergency room is used during those hours in which the clinic is not open or when the wait is perceived as having a shorter wait than the clinic. For other hospitals, the emergency room serves as the major source of care with the clinic used only as a referral unit for specialty problems.
6. E. Richard Weinerman, Robert S. Ratner, Anthony Robbins, and Marvin Lavenhar, "Yale Studies in Ambulatory Medical Care; V. Determinants of Use of Hospital Emergency Services," American Journal of Public Health v. 56 (July, 1966) p 1037
7. Ibid, p 1052
8. Jerry Solon and Ruth Riggs, "Patterns of Medical Care Among Users of Hospital Emergency Units, (Paper Presented at the American Public Health Association Conference in Houston, Texas on October 29, 1970).

9. Arthur S. Lesser, "Closing the Gaps in the Nation's Health Services for Mothers and Children," Bulletin of the New York Academy of Medicine v. 41 (December, 1965) p 1253.
10. Joel J. Alpert, John Kosa, Robert H. Haggerty, Leon Robertson, and Margaret C. Heagarty, "The Types of Families that Use an Emergency Clinic" Medical Care v. 7 (Jan.-Feb., 1969), p 56. These four terms were defined in the study as certain answers to questions by the respondents. If a respondent said he had an established relationship with a physician who usually gave care, and then said he came to the clinic because he was referred by a physician or couldn't reach a physician, this was called a stable MD relationship. If he said he came because people recommended it, previous visits, the clinic is the best place, or the hospital is his doctor, this was called an unstable MD relationship. If the respondent said he did not have an established relationship with a physician who usually gave care, and then said he came to the clinic because the clinic was the best place or the hospital is his doctor, this was called an stable hospital relationship. If he said he came to the clinic because he was referred by a physician, was unable to reach a physician, people recommended it, or previous visits, this was called an unstable hospital relationship.
11. Ibid, p 58
12. Marvin B. Sussman, The Walking Patient: A Study in Outpatient Care (Cleveland: Press of Western Reserve Univ., 1967), p 1.
13. Lester Breslow, "New Partnerships in the Delivery of Services--A Public Health View of the Need" American Journal of Public Health v. 57 (July, 1967) p 1095
14. James E. Weiss, Merwyn R. Greenlick, and Joseph F. Jones, "Determinants of Medical Care Utilization: The Impact of Ecological Factors", (Paper presented at the American Public Health Association Conference in Houston, Texas on Oct. 26, 1970).
15. Laura Bruton, "Locational Factors in Hospital Utilization: A Case Study of Massachusetts General Hospital", (Unpublished Master's Thesis for the M.I.T. Department of City Planning, September, 1966).

16. George James, "The Emergency Room: Entry to the Health Care System," Hospital Topics v. 47 (October, 1969).
17. Lawrence Bergner and Alonzo S. Yerby, "Low Income and Barriers to Use of Health Services," New England Journal of Medicine v. 278 (March 7, 1968) p 544.
18. Rowand L. Mindlin and Paul Densen, "Medical Care and Urban Infants: Continuity of Care," American Journal of Public Health v. 59 (August, 1969) p 1301.
19. These ideas represent a fusion of the ideas mentioned in many of the articles listed in the bibliography. For a fuller discussion of the issues see especially the works of John C. Norman, John Kosa et. al. H. Jack Geiger, and Donald Maddison as listed in the bibliography.
20. John D. Stoeckle and Lucy Candib, "The Neighborhood Health Center--Reform Ideas of Yesterday and Today", New England Journal of Medicine v. 280 (June 19, 1969).
21. Gerald Sparer and Joyce Johnson, "Evaluation of OEO Neighborhood Health Centers" (Paper presented at the American Public Health Association Conference in Houston, Texas on October 29, 1970) p 10.
22. Ibid, p 5.
23. John T. English, "Is the OEO Concept--The Neighborhood Health Center--The Answer", in Medicine in the Ghetto, ed. by John C. Norman (New York: Meredith Corp., 1969) p 262.
24. Sparer and Johnson, op cit pp 11-17.
25. Donald Maddison, "Organized Health Care and the Poor", Medical Care Review v. 26 (August, 1969) p 787.
26. United States Department of Health, Education and Welfare, Delivery of Health Services for the Poor, (Washington, D.C.: U.S. Government Printing Office, December, 1970).
27. Willy de Geyndt and Linda M. Sprague, "Factors Affecting Target Area Penetration and Outreach in a Comprehensive Care Program" (Paper presented at the American Public Health Association Conference in Houston, Texas on October 26, 1970) Table 2.

28. HEW, op cit p 40.
29. "Community Health Care Centers-A Two Page Report", Boston Sunday Globe pp A2, 3.
30. Ibid.
31. Leon Robertson, John Kosa, Joel J. Alpert, and Margaret C. Heagarty, "Anticipated Acceptance of Neighborhood Health Centers by the Urban Poor" Journal of the American Medical Association v. 205 (September 16, 1968).
32. Ibid, p 818.
33. Seymour H. Bellin and H. Jack Geiger, "Actual Public Acceptance of the Neighborhood Health Center by the Urban Poor," Journal of the American Medical Association v. 214 (December 21, 1970).
34. Ibid; The data source for this statement is not mentioned in the article.
35. As described, this center is not strictly a Neighborhood Health Center, although it might be considered to be the smallest modular unit of such a center.
36. Jerry Solon, "Changing Patterns of Obtaining Medical Care in a Public Housing Community: Impact of a Service Program," American Journal of Public Health v. 57 (May, 1967)
As used, the term "central source" denotes the source which people feel most confidence in; "volume source" denotes the source they used most. The figures add up to more than 100% because the overlap between categories is large.
37. Eva J. Salber, Jacob J. Feldman, Hannah Offenbacher, and Shirley Williams, "Characteristics of Patients Registered for Service at the Neighborhood Health Center," American Journal of Public Health v. 60 (December, 1970).
38. Eva J. Salber, Jacob J. Feldman, Lynn Rosenberg, and Shirley Williams, "Utilization of Services at a Neighborhood Health Center" (Draft of a paper accepted for publication in Pediatrics)

39. Ibid, p 1
40. Judith Williams, "The Role of the Emergency Room in a Comprehensive Child Care Project," (Paper presented at the American Public Health Association Conference in Houston, Texas, on October 28, 1970).

Chapter 2

1. This area includes tracts V2, V3, V4A, V4B, and part of S4.
2. Martha Eliot Health Center Fact Sheet (Unpublished description of the MEHC, December, 1970).
3. Telephone interview, Ron Hafer, Ecumenical Social Action Committee, April 25, 1971.
4. Untitled collection of tables based on data collected in the 1967 census of the MEHC area.
5. Informal conversation, Dr. Rosenberg, March 28, 1971.
6. Children not residing in this area may also register and use the services of the MEHC. However, services for these children are provided on a fee-for-service basis.
7. MEHC Fact Sheet, op cit p 1
8. Ibid
9. Informal interview with Jo Andfield, Pediatric Coordinator at the MEHC, and with Barbara Fons, Director, of the Record Room at that center.
10. From observations I made as a volunteer in the CHER during the Fall, 1970.
11. Ibid.

Chapter 3

1. A slightly different perspective on the choice between centers can be gotten by looking only at the acute medical diagnostic category--the largest one. Since well child care was gotten only at the MEHC, and many surgical cases could be described as properly emergency

cases where use of the CHER was appropriate, the acute medical category represents the major one where a choice was available between the two types of centers. Of the 635 persons seeking relief from acute medical conditions at either center, about 4 times as many went to the MEHC as the CHER. Most who went to the CHER were cross-registered at the MEHC, and most went when the MEHC was closed. It would appear then that the CHER is perceived as an alternate source for use when the MEHC is closed, but that the MEHC is the overwhelming choice.

2. Definition of cross-registered--a child identified at one center but also registered at the other. At times this term will be followed by the center of cross-registration, i.e. the center at which the child was not identified at, but was cross-registered at.
3. See findings given later on for an elaboration of this view.
4. It can be debated whether registration at the CHER is that important as a precondition to usage since all it means is attendance at the CHER before that date.
5. This excludes the three cases with "other" insurance coverage at the CHER who were all cross-registered.

Chapter 4

1. Informal conversations with Jo Andfield, Coordinator of the Pediatric Clinic at the MEHC, and with Barbara Fons, Director of the Record Room at that center 4/14/71.
2. Unpublished charts of the 1967 census of the MEHC area available from the MEHC.
3. Informal study by Dr. Frederick Berrien, obtained from Dr. Rosenberg at the MEHC.
4. See footnote 1.
5. See Chapter 1, Section 1.3.

6. Informal conversation with staff people at the CHER while I was a volunteer there during the Fall, 1970.
7. Informal conversations with residents at the CHER 4/2/71.
8. Figures from the 1967 census show that 24% of the children in the area are between 10-14 years of age, and 23% are between 15-21 years of age.

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