

A UTILIZATION STUDY OF HEAVY SERVICE USERS
IN THE CHURCHILL HEALTH CENTRE

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CAROLYN HURSH.

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A dissertation submitted to the Faculty of Graduate Studies of
the University of Manitoba in partial fulfillment of the requirements
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ABSTRACT

This thesis is an in-depth analysis of the computerized program monitoring system in the Churchill Health Centre. Its purpose is to describe the characteristics and service utilization patterns of a group of thirty-eight families known to be heavy users of the Centre's Outreach Services.

These families, who were 6.8% of all families seen by the Centre, accounted for 54.8% of the services provided. These service contacts were either with the client alone or with someone involved in the client's situation. They primarily involved assistance regarding day-to-day needs, were individual rather than family focused, and lasted less than half an hour. Typically many program areas and a variety of workers were involved with each family unit.

Medical information was also collected to determine these families basic medical problems and medical use patterns. It was found that the family members who were high users of Outreach services tended to use more medical services (both outpatient and hospitalization services) than the family members who were low users of Outreach services.

Regarding demographic characteristics, it was found that the majority of heavy user individuals were of native descent (Metis or Treaty Indian) and were clustered in three age-sex categories. A predictive analysis was attempted and tentative profiles of heavy user clients were developed.

It is expected that the information provided by this study can be incorporated into programming and planning decisions at various levels of Health Centre operation.

CHAPTER 1

BACKGROUND FACTORS

1. The Development of Information Systems

Accountability is not a new phenomenon in the health care professions. For many years it has been standard procedure to monitor and evaluate the care given to hospital inpatients. But it is only in recent years that similar demands have been made in the fields of ambulatory medical care and social services.

Brenner and Paris (1973) point out that prior to 1960, outpatient services were only provided on a limited basis and were characterized by episodic and fragmented care. During the last two decades, ambulatory services evolved to take their place as an integral part of the modern health system. Parallel to their development has come a growing demand for better assurance of the quality of care provided. This demand comes from the public as consumer of services in addition to a variety of governmental, licensure, and accreditation bodies.

A similar sequence of events took place in the social service field. Early social work programs operated on a kind of face validity and generally a blanket 'sanction' did away with the need for stringent measures of evaluation. This continued throughout the twentieth century during an unchecked expansion of social work agencies. According to Rosenberg and Brody (1974), it was a time of bandwagon programs, idealistic goals, and uncontrolled budgets. But in the 1960's, there was a slow realization that social work programs were not achieving the beneficial results expected of them. Findings of recent evaluation studies (Brown, 1968;

Geismar's review, 1972; Fischer, 1973) added to a growing skepticism concerning social work's effectiveness. The resultant 'crisis of confidence' (Reid, 1974) lead to demands for accountability. The demand came from the general public as users and taxpayers, from funding agencies as providers of increasingly scarce resources, and from within the ranks of the Social Work profession itself.

The Oxford Dictionary (1964) defines accountability as being able to answer for conduct or performance. Reid (1974) states that is the capacity to ascertain and report the true nature and effects of one's efforts. For a profession, this means the ability to accurately specify what it does to whom for what purpose and with what results.

There were essentially two methods that an agency or organization used to accomplish this task. A special time-limited study could be set up to monitor program activities and evaluate the results. Or the existing record system could be reviewed and the necessary information extracted.

The first option was to use an evaluation study to derive an overall measure of effectiveness. This involved assessing the success of a given program in meeting its stated objectives. Doing this kind of study required the existence of an impact model (Rutman, 1975) which included: 1) a clear articulation of the program, 2) a precise specification of the goals, and 3) a rationale that links the program to the goals. When these three conditions were met, it was possible to 'test' the program against its stated goals. But social and health programs in their formative stages are often characterized by vague goals, flexible changing programs, and only a rudimentary conceptualization of the

theoretical linkages connecting the treatment to the end result. In these cases, it would be premature to perform this kind of outcome measurement.

Even with a well-defined impact model, there were additional problems with the actual evaluation 'test'. Ideally this should have been in the format of an experimental design where all the conditions of the experiment could be controlled by the researchers. Chommie and Hudson (1974) discuss the problems in isolating key variables, in establishing proper control groups, in designing adequate measuring instruments, or in maintaining a constant program from start to finish. The difficulties are such that Rossi (1972) claims that many of the research designs used were not powerful enough to make undisputed evaluative statements.

If all the above conditions were met and a valid evaluation study was carried out, the results would still only partially address the accountability issue. A focus on overall program performance produces results of the pass-fail variety. Evidence showing whether or not a program is working can be used as justification for its continuance or its termination. But this kind of evaluation cannot capture the nuances in-between. It cannot contribute towards understanding why a particular program was not working or how it could be made better.

The second option, that of using existing record systems, would appear to hold more promise. Not only would there be information on the end results but it would also be possible to access information regarding other components of the delivery system. But this potential was never realized due to inherent inadequacies in the design of these systems.

According to Brenner and Paris (1973), outpatient reporting systems were never standardized and the result was a wide disparity in the amount

and quality of information collected. In general, the fast-paced setting of ambulatory medicine was not conducive to extensive record keeping of any kind. Murnaghan (1973) summarized the current state of affairs as:

" . . . we have at the present little usable information on the distribution of problems, symptoms and complaints brought to physicians in offices and outpatient clinics, on the scope and nature of services provided, on the disposition of patients, or on the patterns of use or non-use of ambulatory medical care services."

Contrary to this, Hoshino and McDonald (1975) point out that social workers were not adverse to data collection as evidenced by the vast quantities of case recordings maintained in agency files. Here the problem was more one of overloading the system with unorganized and often irrelevant information. Retrieval and analysis of this information was such a laborious and time consuming process that research attempts had to be limited in size and scope. For very different reasons then, both social services and ambulatory medicine were left with record systems that were relatively useless for research purposes.

It was apparent that the question of accountability could only be partially realized by utilizing existing record systems and outcome research studies. The obvious solution was to follow the example set by hospital inpatient services. They had dealt with their accountability issues long ago by putting to use the technical advances in computer processing. Key information was fed into an automated system where it was processed and analyzed to meet the hospital's information needs.

Robertson (1973) reports that computers were initially used in hospitals for general business functions such as payroll, billing, accounts receivable and stock inventory. Currently their use has expanded to include such diverse functions as admission scheduling,

history taking and multi-phasic screening. They paved the way for automated laboratories, central patient files containing all diagnoses, tests and treatments, and regional record systems. Their range extends from a micro to a macro level; from detail monitoring of intensive care treatment to simulating a national health system in order to project future needs and resources. Brenner and Paris (1973) point out that automated systems have made it possible to intensively analyze the hospital inpatient from an administrative, organizational, clinical or economic point of view.

Given this versatility, it is not surprising that both ambulatory medical services and social services are experimenting with automated data systems as the solution to their accountability problems. On the medical side, Murnaghan (1973) reports that many new information systems are being tested by different clinics, group practices, and hospital outpatient departments in the United States. In an attempt to bring some order and coordination to this formative stage of data system development, a Conference on Ambulatory Medical Care Records was held in Chicago in 1972. It focused on the concept of the basic data set: discussing minimum requirements for data collection and general uses of the data analysis. The Conference ended with a resolve for a continuing group to refine and develop the minimum basic data set and to promote its use by all parties concerned with ambulatory medical care (Murnaghan, 1973).

Social work agencies have progressed at a slower and less well organized pace. One of the earliest systems, the Family Unit Register in which four St. Paul agencies gathered information on multi-problem families (Greater St. Paul United Fund and Council, 1968) was developed in the 1950's. During the 1960's and 1970's, the literature shows that

a variety of different kinds of social work organizations in different parts of the country developed data systems including: a family service agency in Seattle (Seaberg, 1965); a child guidance centre in New York Vasey, 1968); a child and family service centre in Connecticut (Fein, 1975); a community health service in California (Hershey and Moore, 1975); a treatment centre for emotionally disturbed children in Minneapolis (Hoshino and McDonald, 1975); a community mental health centre in Tampa (Kivens and Bolin, 1976); and a hospital social work department in Baltimore (Volland, 1976). Although this indicates that data systems are being introduced into many areas of social service, there is as yet no national organization working to coordinate their development.

In addition to the traditional medical and social service organizations, data systems are also being incorporated by the newest development in the health delivery system: the Neighborhood Health Centre in the United States or the Community Health Centres in Canada. These multiservice centers offer comprehensive services centred around a definition of health that encompasses the physical, mental and social well-being of individuals, families and communities. The development and implementation of the American health centre's information system is described in Sparer and Alderman (1971), Sparer and Johnson (1971), and Nitzberg (1971). The system was designed to help each centre improve the delivery of its services and to gather comparable data from all the centres so that their activities could be monitored and compared. A proposed model for the Canadian health centres can be found in Trute (1977) or in a series of articles by the Department of Social and Preventive Medicine, Laval University (1974).

2. The Use of Information Systems

Automated data systems made it possible to begin the systematic collection of basic information about service delivery. Despite the different mandates of medical and social organizations, their information needs are similar. Their basic requirements include socio-demographic data about the client (age, sex, education, ethnicity, etc.); information about the actual contact (referring information; place, type and purpose of contact); the diagnostic category (or major problem areas); information about the treatment plan and services provided (type, location and duration of services); and the disposition (outcome) of the case (Seaberg, 1965; Greater St. Paul United Fund and Council, 1968; Vasey, 1968; Murnaghan, 1973; Hershey and Moore, 1975; Volland, 1976).

The collection of data is just the first step. Leventhal and Adlerstein (1966) state that ". . . unless analysis rather than collection becomes the dominant theme, the finest reporting system in the world remains merely a collection of bits of dutifully recorded information." This is very true. Data in its raw state is virtually useless. It must be combined, analyzed and interpreted according to the particular information needs of the organization.

The extent of analysis possible will vary with the design of the system. The main feature of any system is that it enables detailed study of the processes taking place. All of the component parts of the system can be identified and analyzed - separately or in relation to each other. The focus of analysis is shifted from measuring outcomes to increasing understanding about the on-going interaction between the staff, the program, and the client (Chommie and Hudson, 1974).

In addition to the above, some systems also include an outcome measure (or perform additional evaluation studies that measure outcomes). This takes the analysis one step further in that it becomes possible to connect actual program activities to the end results. It becomes possible to determine which elements of the organization's structure and function contribute towards or hinder success. This contributes to understanding the phenomena of how and why change occurs.

This kind of analysis enables an agency to specify what it does to whom for what purpose and with what results. In short, it can be accountable for its actions.

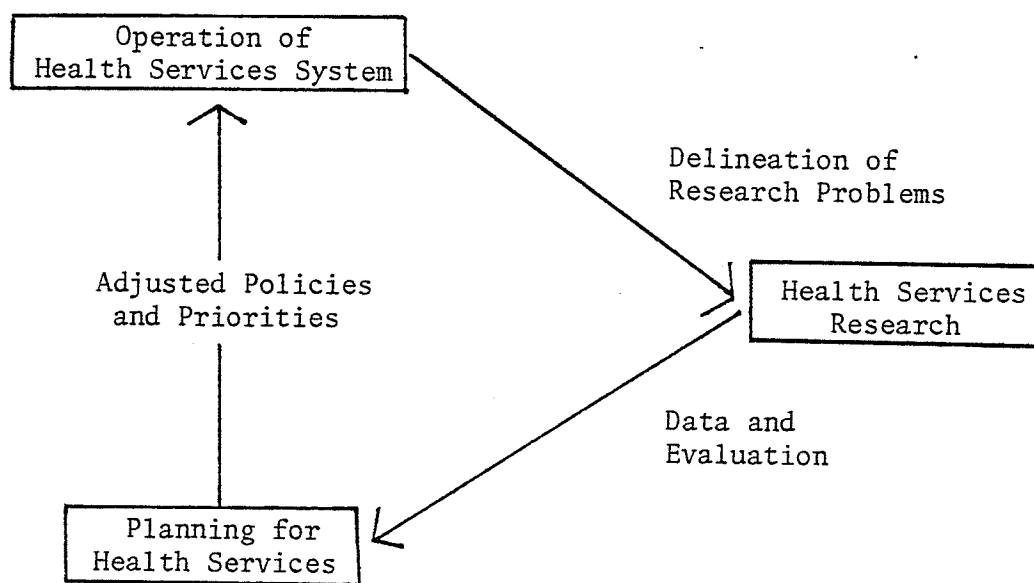
Brenner and Paris (1973) point out that it was the demand for accountability that revolutionized health services record keeping. It is interesting to note, now that record systems are being established, that these new systems have in turn extended accountability into new and broader arenas. Flook and Sanazaro (1973) indicate that this kind of research analysis is developing a larger and more scientifically based body of knowledge regarding health care delivery. This knowledge, in addition to satisfying the public and regulatory bodies, is being used in the actual policy, administrative and budgetary decisions made by the organization and is thus developing a stronger empirical base for social planning.

Where data systems exists, research has become an integral part of organizational planning. The present program is taken apart and analyzed, and information is learned about client characteristics, high risk groups, illness distributions, utilization patterns, treatments used, staff workloads, etc. This information is then considered in relation to the

actual workings of the organization. It is used to guide day-to-day operating decisions (both clinical and administrative) and it forms the basis for long-range plans and policies at every level of the health services structure (Flook and Sanazaro, 1973).

The essence of data system analysis lie in its relevance to the current concerns of the agency. It is not basic research dealing with 'knowledge for its own sake' (Greenwood, 1957); rather it is operational research that produces information used in the organization and operation of the agency.

The intricate relationship that is needed between research and social planning and between planning and program design is illustrated in Weinerman's (1971) model.



Despite the apparent simplicity of this model, it is seldom fully implemented in real life (Weinerman, 1971). But increasingly more organizations are recognizing the integral relationship between research, planning and programming and are incorporating this model whenever possible.

As this happens there is an increase in the number of planning decisions that can be based on empirical information. The result is a dynamic yet rational health system that can move towards continual improvement in the delivery of health care.

CHAPTER 2

PURPOSE OF THE STUDY

This study will demonstrate how an organization can learn about a particular target group from the analysis of information extracted from its automated data system.

The organization involved is the Churchill Health Centre. It is a community health centre offering comprehensive health and social services to the town of Churchill and outlying settlements. Its basic facilities include a thirty-one bed hospital, an outpatient medical clinic and a wide range of community services (the Outreach Services) which include public health, day care, home care, probation and parole, child welfare, family services and alcohol services.

In 1975 the Churchill Centre implemented a computerized program monitoring system which provides a continuous analysis of the Outreach Services. Data system coverage has not yet been extended to include medical services although this is intended for the future.

At the present time, two basic types of data are systematically collected. General socio-demographic data obtained on each client includes information on age, sex, marital status, family size, education, ethnicity, employment, migrancy and living accommodations. In addition, encounter data is provided for every contact between a staff member and a client. This includes information on the location, duration and type of contact; who initiated the contact; whom the contact was with; and the purpose of the contact. Because the Centre serves a relatively small population in a geographically enclosed catchment area, it has been possible to maintain a family based record system. This permits analysis by children, by adults,

by families, or by total client population. For further elaboration of the Churchill system, see Trute (1977).

It should be noted that this system has no provision for collecting data on the results of service. Outcome information is gathered separately by each of the five major Program Areas (Public Health, Family Services, Child Welfare, Probation and Alcohol Services). Generally this involves problem oriented goal attainment scaling. It is hoped that each of the Program Areas will eventually be able to develop more systematic outcome measures such as the 'symptom disability checklist' used by the Alcohol Program (Trute, 1977).

Even without outcome data, an organization is able to learn a great deal about itself from the process data gathered by its information system. This study describes an analysis made of the Churchill Centre data. A data set as extensive as the Churchill one can naturally be analyzed from many different angles. This study chose to focus on the concept of utilization with particular reference to those clients who are heavy users of services.

Community health centres were designed to increase access to services. The Churchill Centre works toward "the provision of the highest possible standard of service and care to Churchill and the surrounding area with the intent of maximizing the individual, family and community states of complete physical, mental and social well-being" (Churchill Health Centre - Overview, 1976). Since it began operation in 1975, this broad goal has been operationalized into a variety of specific programs and services. The Centre expects and encourages the surrounding population to use the services offered. With time, certain standards of usage are established

for the particular population being serviced. A deviation from the norm, whether in the form of overutilization or underutilization, serves as a warning about possible problems in the service delivery system. A subsequent investigation might determine that these unusual utilization patterns stem from legitimate reasons or it might discover problem areas that require immediate attention.

With reference to the heavy service users, it should be pointed out that there are two types of overutilization: short term and long term (Densen et. al., 1959). The first reflects a temporary aberration in a family's normal utilization patterns. A family may go through a crisis period in their lives during which time they require an excess amount of support and services. As the crisis is resolved, the family stabilizes and their need for services returns to average levels. Heavy service use contained within a three month period (or slightly longer depending on the circumstances) would fall under this heading. The organization has to be able to respond to the temporary need with additional services and then gradually withdraw its support as the problem passes.

The second type of overutilization pertains to those families who maintain consistently high utilization patterns month after month. There are two forms of this long term overutilization. In the first case there could be a family situation where special needs or circumstances dictate a planned intervention of intensive long term treatment. Although this use of services is above average, it is deemed as appropriate by the organization given the nature of the task at hand.

The second form of long term overutilization is demonstrated by

families with deeply rooted complex needs who receive a variety of services month after month yet who demonstrate little change in the overall status of their problems. Typically this situation is characterized both by deeply entrenched multiple client problems and by inadequacies in the service delivery system (such as overlap in service provision and insufficient coordination mechanisms). These two factors interact in such a way that the situation is perpetuated indefinitely. The concern here is two fold: first, for the family who has to struggle on with little relief from its multitude of problems, and secondly for the organization which is outlaying great amounts of time and resources with little to show for their efforts. If this type of overutilization is present, the organization should take steps to counteract it.

The existence of heavy user clients in Churchill was discovered in a preliminary review of general utilization patterns (Trute, 1977). It was noted that certain families required a disproportionate amount of staff time and resources to the point where some families individually used five percent of the total services provided. Because the Churchill Health Centre has just recently been established, virtually nothing is known yet about these heavy service users. It is not known who they are, what kinds of problems they have, what kind of help they have sought and received, and why they require more services than the rest of the population. It is not known whether the overutilization is short term or long term; whether it is the result of planned intervention or of problems in the service delivery system. Whatever the case, the existence of overutilization is deemed serious enough to warrant further investigation.

The primary aim of this study is to identify and describe this

target group. Obviously, there are too many unknowns in this situation to develop hypotheses. The analysis will thus be exploratory in nature and will focus around three central questions:

1. What are the characteristics of heavy user families?
2. What kinds of medical and social problems do they have?
3. What kinds of programs and services are they using?

Answers to the above questions will be determined by performing a number of statistical analyses on the data collected by the Health Centre's information system. It is expected that the results will provide relevant information to several levels of the Health Centre:

1) for treatment staff:

- an up-to-date listing of all heavy user families including a breakdown by worker caseload
- a profile of heavy user families pointing out specific characteristics and major problem areas
- a summary of current service usage specifying the nature, type, location, and duration of services provided.

This kind of summary description is used to increase knowledge about the target population. When the staff know who and what they are dealing with, they can use this information in treatment planning. It could have particular use in the coordination and development of services based on an understanding of the total family situation.

2) for supervisory staff:

- a record of the amount of total staff time spent on this group of families
- a listing of how these families are distributed on the worker's caseloads

- a summary of the type, place and duration of services offered to each family
- information on what other program areas are involved with the family or with individual members of each family
- more specific information on the needs, problems and pathologies of these families.

This information will help supervisors monitor their staff's activities with these families and could result in recommendations for such things as: a redistribution of case loads among the workers, joint case conferences with other Program Areas, improved coordination of services between Program Areas, a change in treatment focus (i.e. becoming more family oriented), or ideas for in-service training related to the special needs of these families.

3) for medical staff:

- a description of the major medical problems presented by heavy user families
- a record of the type of medical service used by these families and the frequencies for each type of utilization
- an indication of the relationship between the use of medical services and the use of social services within these families.

Specific information on a family's social problems will add a new dimension to the treatment of the family's medical problems. It could also point to the need for joint conferences between medical and Outreach staff.

4) for management:

- a summary of how many of each type of service from each type of provider were required by these families
- an age-sex-race distribution of these families

- a summary of key factors relating to overutilization.

This will facilitate a current assessment of client needs, program objectives, and existing staff and resources. It may point out operational problems, unmet needs, or inadequate service areas. The information learned could be used as the basis for reaffirming or changing program priorities, for improving coordination between the Program Areas or between Outreach services and medical services, or for redistributing staff and resources. This information will also be used to predict the future needs of this client group and to assess their future demand for services. The Health Centre can use knowledge about current conditions and estimates of future utilization patterns as the basis for rational decisions regarding the modification and development of its treatment programs.

As indicated above, there are many potential ways of incorporating research findings in the day-to-day operation of the Churchill Centre or in its long-term planning. This study will be organizing and analyzing the data and displaying the results in statistical tables and charts. Basic recommendations regarding how the Centre could incorporate the findings will be made. Discussions with management, supervisors and line workers upon completion of the report will hopefully extend these recommendations into working proposals. In addition, if specific hypotheses are developed from the exploration study, then specific programs to test them may be devised at a later date.

The importance of this study is primarily with regard to the Churchill Health Centre. Its value to the Centre lies in the knowledge gained about a segment of its client group. This information could potentially be used in treatment planning, in case management, in monitoring service

activity, in program coordination, in resource allocation, and in program development. It will hopefully enable the Centre to function in a more efficient and effective way in relation to this particular client group.

To a lesser degree, this study also considers the sociological phenomenon of overutilization. The Churchill findings will be compared to the body of knowledge on overutilization and noted as to where they substantiate or dispute existing information. Since the data collected is specific to the Churchill setting, no attempt will be made to generalize the results to a larger population. However, the findings will add to epidemiological information about the inhabitants, social problems and service use patterns of this geographic location.

The study also has importance to the Social Work profession. Although data systems are being introduced into a variety of social service agencies, social workers as a group are still not research oriented (Kirk, Omsloo and Fischer, 1976). Much of this is due to the fact that in the past, the findings of research evaluations have had little application to the day-to-day needs of line workers (Aronsen and Sherwood, 1972). Thus there is a need within the profession for case examples such as this study that can demonstrate how the analysis of process data is relevant to many levels of the organizational hierarchy. It will show how the collection and organization of ordinary data can result in specific recommendations regarding day-to-day service delivery and long-term social planning.

CHAPTER 3

LITERATURE REVIEW

There is no straightforward body of literature regarding overutilization. Most of the research concerning general utilization practices has taken place in medical settings; however, here the concept of overutilization has been virtually ignored. In the social service field, where little attention has been devoted to general utilization behaviour, many studies have focused on the heavy service utilizer. The following review is an attempt to synthesize the findings from both medical and social work studies regarding overutilization of health and social services.

1. Utilization Studies in Social Work

The majority of early social work studies contained the ingredients for extensive utilization research although the analysis was usually quite limited in scope. These studies, classified as operational research (Greenwood, 1957), gathered statistics on the distribution of problems, the characteristics of clients, and the number of clients served. The information was used to describe the nature and extent of problems and to document the need for more services.

This same information was rarely considered with regard to the science of utilization behaviour - a new field of research within the medical profession. Social work agencies were generally not too concerned with why and how people used their services. It was taken for granted that needy people would seek services and that these would be provided according to the availability of resources. The social work

literature reveals very few studies that focus on utilization behaviour such as ones that would compare rates of service usage between different client groups, that would identify the characteristics of users and non-users of service, that would trace trends and changes in patterns of use over time, or that would use existing utilization rates to predict future need for services.

2. Social Service Overutilization

The one aspect of utilization behaviour that has become a focal point in social work research involves overutilization. The existence of heavy service users was first documented by a 1948 epidemiological study of the financial, health, social adjustment and recreational problems dealt with by all the public and private agencies serving Ramsey County, Minnesota. This and subsequent studies of other counties pointed out an unusual phenomena: in each county, despite great differences in their basic characteristics, approximately 6% of the families absorbed over 50% of the services provided (Greater St. Paul United Fund and Council). In St. Paul, 1949, a conference was called to discuss these findings. It was there that the term 'multi-problem family' was first coined to describe these heavy service users.

This phenomena created a flurry of research activity around the world. The pattern of a relatively small group of families utilizing a disproportionate amount of services has since been found to exist in a variety of settings in many different countries. In what is to date the most comprehensive review of the literature on this subject, Schlesinger (1970) cites studies on the multi-problem family from Australia, Britain, Canada, France, Holland, and the United States. From the present author's

rather cursory review, it appears that research in this area generally falls into one of three categories.

The first category incorporates all studies which focus on identification of these families. This includes attempts to define who these families are, attempts to develop classification schemes for diagnosing these families, and attempts to determine the origin of these families (why they exist).

It is interesting that in spite of the attention focused on them, multi-problem families have eluded precise specification. Most of the definitions used are simply descriptions of their conditions, problems and behaviours. These have been derived from field observations and from in-depth case studies. They include such characteristics as dirt, squalor, disease, malnutrition, uncleanness, inadequate overcrowded housing, large family sizes, chronic debt, dependency, poverty, alcoholism, delinquency, prostitution, child neglect, mental deficiency, marital incompatibility, and alienation from the community (Schlesinger, 1970).

These families are generally well known to a variety of community agencies. The multitude of services offered do not appear to have any effect on the nature and extent of the problems. The families thus live in a state of chronic dependency on the social services. To summarize, Briar (1966) identifies the two main features of these families as:

- 1) the presence of multiple social, psychological, economic and/or health problems affecting one or more in the family group and
- 2) the persistent failure to respond to conventional methods of intervention.

Other studies have taken what they believe to be the underlying concept of these families and developed it into a classification scheme.

These were seen as an aid to proper diagnosis so that eventually the appropriate treatment technique could be applied to a given family type. In the 1950's, the Community Research Associates classified families according to the number and chronicity of problems in the areas of economic dependency, ill-health, and social maladjustment. Geismar and LaSorte (1964) refined this by focusing on the family's level of social functioning in relation to (1) family relationships, (2) neighbourhood and community relationships, and (3) performance of health, economic and household tasks that are designed to maintain the family as a physical unit. Another development was Beisser's (1962) classification of family types based on the degree of pathology in the family. In contrast to these family approaches, other authors chose to focus on the individual. Schlesinger reports that the two main personality types associated with the multi-problem family are the passive-dependent and the anti-social personality.

Many researchers have also attempted to analyze why these families exist. The issue of causality is still far from clear. At various times, the existence of multi-problem families has been attributed to subnormal intelligence, immature emotional development, socio-cultural underdevelopment, a sense of anomie and isolation, the lack of coordination among treatment agencies, an inadequate distribution of societal resources, and the social disintegration of slum areas (Schlesinger, 1970). Over the years, the tendency to place the blame on family defects has shifted to a consideration of the effect that societal disorganization has had in producing and maintaining these problem families.

The preceeding discussion indicates that the concept of the multi-

problem family has many different interpretations and can be applied to a widely diverse group of families. There has been considerable debate over whether these families constitute a unitary group. The Younghusband Committee (1959) stated that "They are only an entity in that they represent a problem to society". Other authors have suggested that the concept is too comprehensive to be functionally useful and should thus be abandoned (Schlesinger, 1970).

While the debate continues over the characteristics and causes of the multi-problem family, the fact remains that they continue to use services. The second category of research includes all of the studies that are concerned with the use (and mis-use) of services. As Schlesinger (1970) points out, it is axiomatic that families with a multiplicity of problems will be involved with a multiplicity of agencies. But right from the start, these multiple agencies were never coordinated in terms of a master treatment plan. Services were provided in an unplanned, unsystematic way resulting in duplication and fragmentation of services.

Geismar and LaSorte (1964) have said that "Problematic family functioning and inadequate agency functioning may be viewed as two sides of the same coin." In light of this, the three major factors which have stood in the way of helping these families are: 1) the fragmentation and lack of coordination among health and welfare services, 2) the lack of a family focus meaning that each family problem and often each family member was treated by a different agency (and often the agencies were unaware of each other's existence), and 3) the absence of continued long-term contact between client and worker (Schlesinger, 1970).

If it has accomplished nothing else, the concept of the multi-problem

family has served to focus attention on the need for coordination, integration, and planning within the health and social services. Studies such as Lagey and Ayre's checklist survey of Vancouver agencies (1960) gave evidence of the variety of services involved, the overlapping of some services and the separation of others. Intensive case studies highlighted the problems and confusion experienced by individual families. In response to this, programs and projects of several sizes and descriptions were set up to provide more effective service for these families.

In an attempt to bring some order into the activity surrounding multi-problem families, Lagey and Ayres (1962) surveyed 260 North American communities to identify what work if any was being done on their behalf. In the final report, outlines of the purpose, structure, method and evaluation for 108 projects were combined and classified according to the major treatment approach used. These five approaches include: the intensive casework approach (long-term involvement with the whole family); the case conference approach (involving community wide coordination of services); the multi-service approach (combining casework, group-work and community organization techniques for all health, welfare and recreational services); the community development approach (with massive intervention into all areas of social disorganization); and other less common approaches (volunteer case aides, homemaker services, etc.). This work represents the first major sharing of experiences, problems, and ideas in this field.

All of the projects documented by Lagey and Ayres, as well as other programs reported on in the literature, attempted to find a better way of dealing with multi-problem families. Most of them were able to

reduce the number of services involved or to develop new ways of coordinating these services. The third category of research on the multi-problem family involves the studies that assess the effectiveness of these new programs. In general their effectiveness was judged by the change in the family's social functioning.

The task of measuring change in a client's functioning is common to all areas of social work practice that wish to demonstrate effectiveness. The development of an operationalized measure that adequately captures a person's progress towards some goal has plagued social work researchers. Over the years a number of measuring devices have been created: Hunt and Kogan's Movement Scale (1950), van der Veer's Family Q Sort (described in Wattie, 1974), and the Family Service Association of America's Family Service Study (1974). The measuring device used most frequently in conjunction with multi-problem families is the 'Profile of Family Functioning' developed by the Community Research Associates in St. Paul (for a thorough description of this instrument, see Geismar, 1971).

The results of research evaluating new programs for multi-problem families have not been favourable. In London Ontario, between 1963 and 1966, a family-centred project was developed for multi-problem families using the intensive casework approach. In spite of heavy investments of money, time, staff, and new treatment techniques, the experimental group only showed a slightly greater improvement in overall functioning than the control group (United Community Services, 1967). Similarly, in Chemung County, New York, fifty multi-problem families were treated with intensive social casework during a 31 month period. The results showed that there was no statistically significant difference in the functioning

of the experimental group from the control group (Brown, 1968). In a review of eight treatment programs dealing with multi-problem families or public assistance families, Geismar (1972) indicated that only three were able to demonstrate significant positive changes; the others had mixed or negative findings.

Obviously there is still much that we need to learn about these families. In his 1966 review of family service research, Briar commented on the lack of studies aimed at describing these families. He noted that most of the recent research effort had gone into measuring change in family functioning. As mentioned above, few of these were able to show positive results. Five years later, in his 1971 review of family service research, Briar noted that research on the multi-problem family had almost dwindled to a stop. This may indicate that agencies, therapists and researchers have become discouraged with their lack of success. It points out the need to return to the beginning with a more concentrated focus on describing and analyzing the families, their problems and their patterns of service use.

Actually, a beginning was made in this direction in an earlier study by Geismar and LaSorte (1964). Seventy-five low income families were rated by the Profile of Family Functioning and were subsequently divided into three groups of high, medium, and low family functioning. The characteristics of the families were compared to determine if certain traits were associated with disorganized families. It was hoped that this procedure would help in the early identification of problem families so that preventive measures could be instituted.

The study revealed certain characteristics and background factors

that were common to families with low functioning levels. In particular, it appeared that the factors differentiating stable from unstable families occurred early in the family history. This finding could have very important implications for intervention programs. As it had been derived from retrospective data, it was decided to verify it in a longitudinal study.

Geismar (1973) reports that in this study, they determined the social characteristics and functioning levels of 555 young families with one infant child. A subgroup of 175 families were subsequently interviewed several times over the next five years to determine changes in functioning. They found that family's initial functioning level was related to social and ethnic status factors and to the functioning levels of the parent's families. During the five year period, 47% of the families showed downward movement in their total functioning scores (39% showed positive change and 14% showed no change). The researchers attempted unsuccessfully to find an association between particular characteristics and decreased functioning. They had hoped to develop indices which would indicate the families likely to begin malfunctioning in their early years.

Although this study was unable to develop a predictive model regarding family malfunctioning, it demonstrates a level of analysis that offers exciting possibilities for social work. It is now possible to determine the cluster of personal and socio-demographic variables that relate to, say, a certain level of functioning or a particular pattern of service use. This extends the traditional analysis of client characteristics and problems into new areas. Furthermore, it is also possible to relate this in terms of prediction; for instance, indices could be developed which

would identify high risk groups within the population.

Despite their promise, Social Work has been very slow to capitalize on these statistical advances. This is due in part to the fact that Social Work has a treatment orientation. The urgency of the problems and the constant demand for services meant that historically, agencies just provided what they could whenever they had the resources (Geismar, 1964). It was almost as if treatment began before the problems and the clients were properly identified. Unlike the fields of public health or medicine, there was little concern for the epidemiology of social problems. Until Social Work decides to study pathology in relation to population characteristics, it will not need the kind of statistical devices mentioned above. And it is only when the focus of the profession turns to prevention that the need to develop and use predictive models will emerge.

In recent years, Social Work has begun to define a preventative role for itself. To carry this role out, the profession will have to develop new methods of enquiry. More studies along the line of Geismar's work will have to be implemented. However, this is where another stumbling block is encountered. The development of predictive models involves the use of advanced statistical methods. In 1976, Kirk et. al. found that over two-thirds of N.A.S.W. members had never conducted any research. Of those who had, only 5% had conducted more than four studies. If this is indeed representative of the field, then we can assume that most social workers would not even know it was possible to conduct the kind of study required here, let alone be responsible for carrying it out.

Thus, within the social work profession, the analysis of over-utilizers and of overutilization comes to a stop at this point. In

order to understand the potential for further developments in this area, it is necessary to turn to the medical profession and review their study and analysis of utilization behaviour.

3. Utilization Studies in Medical Settings:

Utilization research was primarily developed within medical settings. Although there were very few studies on utilization prior to 1950, they began to appear with increasing frequency during the next decade. Since 1960, the number of medical utilization studies has more than tripled. Flook and Sanazaro (1973) reported that it is now considered as a distinct category within the field of health services research.

Medical utilization studies were first developed to assess what percentage of the population were receiving medical care (Bice and White, 1969). The initial focus was on hospital utilization although this was soon expanded to include the broader spectrum of medical care. The basic question underlying these studies has been phrased by Shindell and James (1973, p. 178) as: "Who is getting what kind of service in what volume from what source and for what reasons?" The data analysis for these studies was primarily descriptive.

It quickly became apparent that there were wide variations in the rate and extent of use of medical services. Since this variation had implications for planning the future development and delivery of services, it became important to understand what caused different population groups to use services in different ways. Thus utilization studies began to focus on the analysis of utilization behaviour.

In its very simplest terms, Bice and White (1969) point out that an individual's utilization behaviour can be analyzed from the point of

view of: 1) the internal tendencies which predispose him to behave in certain ways, and 2) the external influences and opportunities in his immediate social system which favour or impede particular courses of action. Although these are the underlying principles, the two major reviews of research in this area (McKinlay, 1972; Anderson, 1973) have identified four common approaches to the current study of utilization behaviour.

The first of these is the socio-demographic approach. The utilization of medical services has been related to age (Anderson, 1972); sex (Berki and Kobashigawa, 1976); education (Bice, Eichhorn and Fox, 1972); family size (Kirscht, et. al., 1976); ethnicity (Anderson, 1972); family income (Reinke, 1973); urbanization (Anderson, 1972); and socio-economic status (Richardson, 1970). There is some controversy over the value of these variables. McKinlay (1972) points out that socio-demographic studies identify patterns of utilization in the population but do not contribute to explanations of why these variations exist. Anderson (1973) claims that their value to utilization behaviour lies in their indirect effects ie. socio-demographic variables affect important intervening variables which are directly related to utilization behaviour (this will be elaborated on later).

A second approach to utilization behaviour lies in sociocultural studies. These suggest that the recognition of symptoms and response to them are culturally conditioned. In his work in this field, Suchman (1964) found that group structure (including community, social and family levels) will affect the individual's medical orientation which in turn will affect his health and illness behaviour. In particular his findings

indicate that a close-knit cultural group will work in opposition to modern medicine. In a replication of Suchman's study, Geertson, et. al. (1975) interpreted their results to mean that strong group ties can work to either support or oppose modern medicine. These studies demonstrate the influence of ethnic beliefs and practices in help-seeking behaviour. In a similar fashion, McKinlay (1973) and Hoppe and Heller (1975) have studied the effects of kin and friendship networks on the individual's use of medical services.

The analysis of social-psychological variables constitutes the third approach to utilization behaviour. This involves the process whereby an individual realizes that he is ill and decides to seek medical help. The first step involves the ability to recognize symptoms and define them as requiring medical care. This is determined by the person's sensitivity to symptoms, his knowledge of disease (Anderson and Bartkus, 1973); the amount of personal discomfort (Bice and White, 1969); and the disruption to his daily activities (Berki and Kobashigawa, 1976). Once the individual has defined himself as being ill, his decision to seek help will be affected by his health beliefs regarding the threat of illness and the efficacy of medical care (Kirscht, et. al. 1976); his sense of alienation from the larger community (Hoppe and Heller, 1975); and his own and his friends' appraisal of the available services (Anderson and Bartkus, 1973). McKinlay (1972) reports that other researchers in this area are attempting to take the actual decision to seek medical care and break it down into identifiable and measureable stages.

The organizational approach is the fourth way to study utilization behaviour. Here the focus of attention is on how the structure and

characteristics of the health care delivery system affects the individual's use of services. Various studies have shown that utilization rates are affected by the kind of payment system used (Hastings et. al., 1973); the accessibility of care (Greenlick et. al., 1972); the availability of care (Bellin and Geiger, 1972); the distance from care facilities (Weiss and Greenlick, 1970); the kinds of treatment programs offered (Shapiro, Fink and Rosenberg, 1972); and the organizational structure delivering the care (Beloff and Korper, 1972).

In the preceding discussion the dependent variable was invariably the utilization of medical services. Generally this has been assumed to refer to the volume of services received by the individual. Some studies refer to a total figure; others break it down into such elements as physician visits, hospitalization days, lab tests, medications, etc. Bice and White (1971) lament that this simplistic view of utilization is 'premature closure' of a multidimensional concept.

Utilization studies in the 1970s are recognizing that medical utilization is not a unitary concept and are consequently using dependent variables that more adequately capture its essence. Elements that should be considered include: the component of service being used (physician visit, emergency room, hospital service); the mode of contact used (telephone call, scheduled appointment, unscheduled walk-in visit); the initiator of the contact (individual, Doctor, referring agency); the reason for the contact (treatment - either acute care or long term management, or prevention), and the location of the contact within a series of contacts (entry, follow-up, or visit #4 in a continuous episode of care). (synthesized from Weiss and Greenlick, 1970; Bice and White, 1971;

Hershey et. al., 1975). The importance of having a variety of dependent variables was shown by Hershey et. al. (1975) whose study demonstrated that the relative importance of independent variables as predictors changes according to the type of utilization behaviour being investigated.

The studies mentioned in the four approaches used a variety of different indices of utilization behaviour. But, in general, it was the utilization behaviour of the individual that was being investigated. A recent trend in utilization studies has been to consider family patterns of medical care behaviour.

McKinlay (1973, p. 275) states that it has long been known that "the family, its kinship and friendship networks, influence the manner in which individuals define and act (or fail to act) upon symptoms or life crises." But it is only in recent years that attempts have been made to understand the role of the family in illness and health and to specify the nature of the family's influence on help-seeking behaviour. To focus on the family as a basic unit of health, Litman (1971) studied the health status, attitudes, beliefs and behaviours of seventy three-generational families (210 nuclear units). Through this he was able to investigate such areas as the socialization of health attitudes, family reactions to illness, and family decision-making in health care.

Other studies have made direct attempts to specify the nature of the family's influence in health care behaviour. McKinlay (1973) separated users of maternal health care services into two groups of utilizers and underutilizers. He found differences in the structure of their kin and friendship networks and differences in the way the two groups consulted these networks regarding problems. Close-knit kin

networks appeared to be related to underutilization of necessary medical services.

Hoppe and Heller's study (1975) found that a strong sense of family was positively related to the use of preventive services but not to curative services. From these studies, it is apparent that a familial influence of some sort does exist but further work is needed to identify how this influence is exerted in relation to particular medical conditions, treatment services, network structures, age groups, and geographic locations.

If the family influences the definition of illness and the decision to seek help, then it follows that there could be intra-familial patterns of utilization behaviour. Picken and Ireland (1969) studied the utilization behaviour of 780 members of 220 families over a four year period. A high correspondence was found between fathers and sons (from large families in low social classes) and between mothers and daughters (from smaller families in middle classes). They believe that psychosocial factors operating within the families could be producing these familial patterns of medical care utilization.

Due to the positive findings of these investigations, the use of the family as the unit of analysis is becoming more common as seen in Anderson (1968), Sparer and Alderman (1971) and in Hershey et. al., (1975).

The studies cited up to this point have described the relationship of a variety of demographic, social, psychological, cultural, organizational and familial variables to medical utilization behaviour. Although there are advocates for each approach, many researchers now believe that

a single set of variables is insufficient to account for variations in the use of medical services. Instead it is becoming more common for researchers to develop models of utilization behaviour which incorporate independent variables from some or all of the major approaches.

Hershey et. al. (1975) elaborates this notion of a multidimensional model. They suggest that a meaningful interpretation of utilization behaviour is impossible unless a large set of both dependent variables and independent variables is obtained. In their analysis of users of a health centre in California, they demonstrated how the inclusion or exclusion of certain variables would affect the results. Their final model related five sets of independent variables (income, demographic information, measures of accessibility to care, attitudes toward health care, and a measure of utilization behaviour).

A utilization model is used to explain variations in the use of medical services. Often this will be focused on the behaviour of a particular target group. Anderson and Bartkus (1973) developed a model to account for different patterns of utilization among student users of a university health centre. They were able to link socio-demographic characteristics to economic, ecological, need and social-psychological variables which in turn were linked to a measure of health services utilization. In a similar fashion, Kirscht et. al. (1976) developed a model to determine which variables are important in a mother's decision to bring her child to a health clinic for treatment.

Typically, models relate the individual behaviour; however, Anderson (1968) developed a model to explain families' use of health services. It suggests that use is dependent on the predisposition of

the family to use services, their ability to secure services, and their need for such services. Utilization models can also be used to compare characteristics across population groups. Bice and White (1969) studied the utilization behaviour of people in Vermont, England and Yugoslavia. This report was in preparation for a large-scale international comparative study of medical care utilization.

Analysis of utilization behaviour is usually undertaken in relation to the health services system. Its primary purpose lies in its contribution to the planning process. For instance, the model used by Sparer and Alderman (1971) to estimate utilization rates of health centre populations helps determine the high priority families, the staffing needs, and the number and kind of services required.

Because a utilization model captures the interrelationships between the health system and the social structure of the target population, Anderson (1972) demonstrates that it can be used to predict how population changes will affect health services requirements. His study pointed out that the New Mexico hospital services would soon be inadequate for the health needs of the urban population. In another elaborate study, Hall et. al. (1975) used a utilization model to project the demand for health care in Chile during the twenty year period, 1968-1988. This demand for service would then be translated into manpower and other resource requirements to facilitate the rational development of the health services systems.

The field of medical utilization analysis has moved from observational-descriptive studies to the explanatory or analytic level of research. Increasingly sophisticated methods of collecting and analyzing

data are being used. The preceding section has reviewed these developments in relation to general utilization behaviour. The concern of this report, though, is on aberrations in utilization patterns - in particular, those families who overutilize services. The existence of overutilization in the social service field was well documented; it is now necessary to review this phenomena in the medical field.

4. Medical Overutilization

A careful search of the medical utilization literature reveals very little on overutilization of services. It is not that overutilization does not occur in the medical world. In fact, its existence was demonstrated in a study by Densen, Shapiro and Einhorn (1959) between the years 1954 and 1956. In their analysis of the Health Insurance Program of New York, they found that 4% of the people accounted for 25% of the services provided. Of this initial group, twenty per-cent maintained a consistent high utilization pattern over the next two years.

The follow-up studies that would be expected after this kind of preliminary investigation were not forthcoming. The existence of high utilization patterns was briefly referred to in Picken and Ireland (1969) and in Beloff and Korper (1972) but was not elaborated on. Although suggestions have been made regarding further studies in this area (McKinlay, 1972), there has been little interest in the personal characteristics or social circumstances that lead to overutilization. The only related study was done by Shuval (1970) regarding medical utilization in Israel. This country is noted for its high utilization rates despite relatively low morbidity patterns. His analysis focused on the latent functions of the medical institution for Israelis and how this

resulted in increased use of services.

The above provides very little information about multi-problem families. Social work studies indicated that these families had a multitude of social and health problems and used a disproportionate amount of social services. Yet there does not seem to be a correspondingly high use of medical services. One possibility could be that the health problems of these families are incidental and thus play a lesser role in service utilization.

This possibility is highly unlikely given that a strong association between health and social problems has been repeatedly documented in the literature. Back in 1959, a study by Hrubec clearly demonstrated that the presence of social problems was related to the presence of medical problems in individuals and in families. In 1963, Crombie found that general practitioners rated 48% of the medical problems they dealt with as having a psycho-social component.

In the last ten years more evidence showing the relationship between health and social problems has been accumulated. In 1967, Alpert et. al. had 500 low-income families keep a family health chart for one month. The analysis revealed a positive relationship between the number of medical symptoms reported and the number of upsetting events experienced by the family. Richardson (1969) in his study of poverty groups found that as income levels decrease, there was an increase in the number of chronic conditions that limit activity (such as heart conditions, mental problems, visual impairments, etc.). In Canada, the Special Senate Committee on Poverty (1972) pointed out that poor nutrition, inadequate housing, lack of education, and marginal lifestyles characterize

the 20% of the Canadian population who are classed as poor. They state that this 20% of the population suffers 75% to 85% of the major illnesses.

These studies confirm that people with social problems are likely to have health problems. Therefore, it is self-evident that multi-problem families, who are known for their social problems, will also have a variety of medical disorders. But the fact remains that the families who overutilize social services do not also overutilize medical services. In fact, studies have shown that families with identical characteristics to social service overutilization actually underutilize medical services (McKinlay and McKinlay, 1972).

It is necessary to point out here that the medical and social service professions place a different value on utilization per se. Because of the remedial nature of most of the social services, utilization is usually associated with problems or malfunctioning. Although it has become more acceptable for families to seek help with social problems, there is still an expectation that this help is time-limited. If a family extends their use of services, it is classed as dependency and further utilization is viewed negatively. However, a different situation prevails in the medical profession. Being ill is rarely considered as a personal failing; sick individuals are expected to come forward for treatment. Due to its preventative focus, the medical profession also encourages utilization for non-urgent matters such as yearly check-ups, early detection of symptoms, pre-natal care, and well-baby clinics.

In order to maintain certain standards of health, it is necessary for the whole population to utilize a certain amount of medical services. The overutilizers are those individuals with high morbidity patterns or

idiosyncratic behaviour. However, because they are at least within the medical system, they do not represent the same kind of problem as those individuals who are not known to the medical system or who do not receive necessary treatment. Therefore, the primary concern of the medical profession has been with groups in the population who are not receiving services. The main focus of medical utilization studies has been to determine who these individuals are and why they underutilize services.

5. Medical Underutilization

Studies in this area revealed that a common factor among under-utilizers was poverty. As discussed above, underuse by low income groups is not related to lower morbidity patterns. Richardson's (1969) analysis of National Health Survey data clearly indicates that the poor suffer from more chronic conditions and have more 'disability days' than the non-poor. Despite their obvious need for more health services, poor families use fewer services. Richardson points out that low income families have lower rates of preventive services, annual check-ups, dentist visits, and specialist services.

There has been considerable controversy over the cause of this underutilization. Early investigators tended to focus on the personal characteristics and socio-cultural milieu of lower-class families. It was argued that a lower class subculture promoted values, attitudes, and beliefs that were incompatible with an efficient use of health services (reported in Bice, Eichhorn and Fox, 1972; McKinlay, 1972). Others proposed that close familial ties and a general estrangement from the mainstream of middle-class society resulted in underutilization of medical services (reported in Hoppe and Heller, 1975).

The tendency to blame lowincome families for their underutilization has received less support over the years as other explanations were developed. In a review of the literature, Bice, Eichhorn and Fox (1972) pointed out that very few studies today lend positive support to social-psychological and cultural explanations for differential use by the poor and other studies contradict or disprove earlier findings.

However, recent investigations by McKinlay and McKinlay are worth reporting. In a study of maternal care utilization behaviour in Aberdeen Scotland (1972), they compared the characteristics of 'ideal utilizers' to women who obviously underutilized services. The underutilizers were characterized by a crisis existence, chronic unemployment, financial problems, marital instability and dependence on relatives for housing (these are similar traits to those of the multi-problem family). On the other hand, the utilizers demonstrated stable patterns of housing, employment and marital relationships and exhibited more control over their future. A subsequent investigation (McKinlay, 1973) revealed that underutilizers have close-knit interlocking social networks which they rely on for medical advice and consultation. The utilizers are more independent of their family and friends and consequently are freer to use the available medical services.

Apart from this work, current research focuses more on other factors that account for differential use of services. Not surprisingly, economics has been found to play a major role. For years, although medical care was considered universally desirable, it was not a universal right. It was a privilege and an expensive one. It seems very obvious, retrospectively, that the poor would know they were sick and would want proper

health care but would simply be unable to afford the necessary services. With the advent of Medicare, Medicaid and other health insurance schemes, low income groups have increased access to medical care.

In a review of medical utilization trends over the last forty years, Bice et. al. (1972) found that the difference in utilization rates between low and high income groups has diminished considerably. Except in the case of children under sixteen (because rich children use more preventative services), there was little relationship between family income and use of services.

There are many studies which have examined the relationship between financial accessibility and medical care utilization. As an example, Greenlick et. al. (1972) compared the use of medical services between the general membership of a health care plan and the poverty members of an OEO Neighborhood Health Centre. In this situation, where both groups are in the same medical system and have no financial barriers to care, they found many similarities in the rates of service and in the types of service used.

Although the differentials between low and high income groups were lowered by new financial programs, key differences remain between these two groups. With the new medical financing system, Richardson (1970) found that the poor had similar utilization rates for serious conditions but much lower utilization rates for non-serious conditions (including check-ups, follow-up, preventative services, etc.). Greenlick et. al. (1972) discovered similarities in use of scheduled appointments, but they found that the poor had a much greater use of walk-in services.

They related this to differences in disease patterns: low income groups



have higher proportions of injuries, accidents and illnesses with an emotional component - all of which necessitate immediate action. Thus, even with finances accounted for, it appears that the poor underutilize certain kinds of services, maintain a high usage of what are often considered inappropriate services (walk-in visits and emergency room treatment), and continue to have a lower health status than the rest of the population.

The above would indicate that even though financial constraints were a major barrier to the use of medical services by the poor, they obviously were not the only barrier to care. Other factors were also involved. These are related to the fact that the health system was not designed to accommodate the poor. When the poor needed and wanted medical care, the services were often unavailable, a great distance away, or of inferior quality. It is becoming more apparent that these situational barriers and organizational impediments were responsible for restricting the poor's use of medical services. And consequently, as the health system changed to make medical care more available and accessible to the poor, their utilization rates increased.

To demonstrate this, Bellin and Geiger (1972) studied a low income public housing community in Massachusetts with very poor access to medical services prior to the introduction of a community health centre and then again after the centre had been operating for two years. The community health centre is designed to eliminate many of the traditional barriers to care by making available free of charge high quality services that consider the special needs of the local community. This before and after survey measured the impact of the health centre on the population's

health behaviour and health attitudes.

Their findings show an increase in the use of services; in particular health examinations and immunizations increased while delays in seeking medical care decreased. Although no effort was made to modify community beliefs through mass education, they found changes in health attitudes. For instance, there was more agreement that check-ups were good and more recognition of symptoms as a reason to seek care.

Bellin and Geiger concluded that the health centre experience induced these changes in attitude and behaviour. The main factor behind this change was seen to be the reduction in the situational problems that used to be associated with receiving care (such as time, inconvenience, money, care for children, long waiting periods, impersonal services, etc.). They believe that it was these factors more than a social class subculture that accounted for the poor's underutilization of medical services. Thus attempts to change the attitudes and behaviour of the poor without changing the health care system were doomed to failure. However, when the system was changed to meet the situational needs of the health consumers, then the desired changes in attitude and behaviour followed.

Other researchers do not trust situational factors alone to encourage the development of positive health beliefs and behaviour. In New York, Shapiro, Fink and Rosenberg assume that the poverty population is still at a disadvantage in terms of receiving necessary care even when that care is available on a similar basis for all economic classes. They believe that a defined action program is needed to change the health behaviour, health habits, and health status of the population. In a program described in Shapiro et. al. (1972), illness is detected in

poverty and non-poverty groups by an automated multi-phasic health testing centre. A variety of medical services, counselling, and health education is then made available. They believe that it will take a structured health action program of this magnitude to truly bring the health behaviour and health status of poverty groups up to the non-poverty level.

Other well defined health action programs are also having positive results in meeting the health needs of lower income families. Cowen and Sbarbaro (1972) report that the Denver Department of Health and Hospitals is using a decentralized program of family centered 'team' health care to reach 100,000 medically indigent patients. Tubesing et. al. (1977) discusses the success of the Wholistic Health Centre Project with disadvantaged groups in Ohio. These demonstrate the belief that a special program can increase medical utilization which in turn will improve the health status of the poor.

A common theme in all of the above examples has been the use of interdisciplinary teams. The use of teams to provide comprehensive care represents a change in the traditional organizational structure of the health delivery system. Many believe that it is this factor which is responsible for changing the utilization rates of poverty groups.

To demonstrate how this change affects patient behaviour, Beloff and Korper (1972) studied 31 multi-problem families for thirty months while they received comprehensive team care. Initially the families demonstrated an illness response pattern where they used physician or emergency services for acute care. During the study period, this changed to a health orientation response pattern. There was less

emphasis on doctors and more use of allied health personnel and services. There was more focus on health maintenance than on therapeutic treatment. Their total utilization rate increased to just over the national average of 4.5 visits per person. But, most importantly, this overall increase reflected a decrease in inappropriate utilization (late stage treatment, emergency services) and an increase in appropriate utilization (check-ups, early detection of symptoms, and use of less expensive alternate services). They conclude that changes in the delivery of care are the important factor in changing the utilization patterns of the poor.

It is too soon to tell what the combined effects of new financial programs, new treatment methods and new delivery systems will be. There is considerable skepticism about being able to achieve significant changes in the poor's health without corresponding changes in their economic, educational, and housing situations. Despite this, it is evident that a dent has been made in the underutilization patterns of low income groups. And it appears that increased rates of service use and more appropriate utilization patterns will help improve the health status of poverty populations.

6. Summary

Because the current study is focused on the heavy service users of the Churchill Health Centre, it was necessary to review what is currently known about overutilization of health and social services. This review determined that social service overutilizers are typically referred to as multi-problem families. These families are noted for their complexity of needs that appear resistant to treatment and for their involvement with a multiplicity of service agencies. Due to

their cost to society, the research emphasis has been on how to change these families rather than on developing a more accurate picture of their characteristics, pathologies, and service use patterns.

It was also discovered that overutilization in the medical profession represented quite a different entity from overutilization in the social services. However, it was shown that underutilizers of medical services have very similar characteristics to social service overutilizers. It is not surprising then that, while the social service profession has been preoccupied with overutilizers, the medical profession has been concerned with underutilizers. As a result, a large number of medical utilization studies have focused on identifying the underutilizers and the factors that cause lower service usage.

Utilization theory has been largely developed within medical settings. Researchers have drawn from information systems, medical records, health surveys, census data, accessibility measures, and psychological tests to devise a variety of independent variables and utilization measures. These are then combined into elaborate models which identify and explain variations in utilization behaviour.

The models reveal that a combination of personal, social, psychological, and cultural factors influence utilization behaviour. But it was also demonstrated that the health system itself can affect utilization behaviour. Studies were cited that showed that changes in financing arrangements, treatment modalities and delivery systems were able to reverse the underutilization patterns of low-income groups. Typically these changes came about through the development of what is known as the community health centre.

The social work profession, although obviously concerned about

certain aspects of utilization behaviour, has done relatively little in the field of utilization research. To the present author's knowledge, models that would improve understanding of social service utilization behaviour have not been developed. Neither have there been studies, parallel to the medical ones, of the effects of the community health centre on the utilization of social services. It would appear that utilization analysis contains a wealth of potential information that has yet to be tapped by the social work profession.

The above discussion refers to medical and social service utilization as two distinct entities and indeed, these two services have been delivered separately for years. However, as discussed in the literature review, a close association has been shown to exist between medical and social problems. When it was realized that the problems affecting individuals and families could no longer be divided into separate categories, the community health centre concept came into being. It became evident that the treatment of these problems could no longer remain separate, and thus the joint delivery of health and social services was begun.

When the services were delivered apart, all utilization studies were conducted separately. Now that the services are delivered out of the same organization, it becomes possible to simultaneously study medical and social service utilization. Although it is possible to study individual behaviour, this is also an excellent opportunity to use the family as the unit of analysis. It now becomes possible to trace a family's movement through the medical and social programs offered by a Centre, or to compare the utilization behaviour of individual family members in relation to each other. However it is done, a joint

utilization analysis would contribute to a deeper understanding of the way in which an individual or a family seeks and receives help.

7. Purpose of the Study Restated

As stated previously, the purpose of the present study is to describe the characteristics and utilization patterns of a group of families known to be heavy users of the Outreach services provided by the Churchill Health Centre. It is thus a family based study of both social and medical utilization behaviour. However, it is of necessity fairly elementary in both design and conceptualization.

This study should be viewed as a tool to provide working information to the Health Centre with regard to a particular target group. This information should provide the basis for rational programming and planning decisions at various levels of Health Centre operation.

This research is not intended to be a full-scale utilization study which would fully explain the behaviour of these heavy user families. An information system alone simply cannot compete on the same grounds as other studies which also include information from health surveys, psychological tests, and a variety of other sources in the development of utilization models. Rather than developing a precise explanatory model, this study will use the available information to accurately describe the client group under consideration and shed some light on the intricacies of heavy service use by considering some elementary correlational analyses. Although no formal hypotheses are being put forward, the discussion will indicate where the study findings either support or contradict the major points made in the literature review.

CHAPTER 4

METHODOLOGY

1. The Study Population¹

The time period of the present study is from April 1st, 1975 to September 30th, 1976. The study is restricted to these eighteen months because, although no formal internal reliability test was performed, this was the most reliable period in terms of data collection². During these eighteen months, a total of 555 families were seen by Outreach staff. During that time, there were 20,646 contacts with these families. The total contacts per family ranged from a low of 1 to a high of 892 - with an average of 37 contacts per family.

As there is no commonly accepted criteria for determining what constitutes heavy service use, it was decided to use a selection process based on the average weekly number of family contacts. A family that averaged at least two contacts a week with an Outreach worker for the entire duration of the study period (78 weeks) would be considered as a

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1. It should be understood that the present study cannot be taken to be representative of Churchill in any quantitative sense. It is not a study of the Churchill Community, it is simply an examination of certain users of the Churchill Health Centre Outreach Services.
 2. The program monitoring system was introduced to the Churchill Health Centre in January 1975. After the initial start-up period (where some unreliability in the data is expected), the five major program areas systematically recorded information until about October 1976. At this time several workers, either partially or totally, stopped recording their contacts and the dataset became unreliable. Since then, there has not been an extended period of time where all five program areas were recording information simultaneously. As information from all programs is essential in the study of heavy service users, it was decided that the analysis would have to be done ex post facto. Although the study time period is dated, it is believed that the information about heavy service users will still be applicable to the present service delivery.

heavy service user³. Thus a family total of 156 contacts was taken as the minimum requirement for selection into the heavy user group. This is over 4 times the average number of family contacts, justifying any reference to it as overutilization.

TABLE 1
PERCENTAGE DISTRIBUTION OF FAMILIES IN
RELATION TO NUMBER OF CONTACTS

April 1st 1975 to September 30th 1976

total number of families seen		555				
total number of Outreach contacts		20,646				
% of total number of families		% of total number of contacts				
12.7	6.8	3.6	5.9 33 families 1-2 contacts a week(78-155)	17.2	54.8	72.0
			3.2 18 families 2-3 contacts a week(156-233)	16.4		
			2.3 13 families 3-5 contacts a week(234-289)	19.6		
			1.3 7 families 5 + contacts a week(390 +)	18.8		

3. Throughout the study, the term 'contact' is equated with 'service' and thus someone with many contacts becomes a 'heavy service user'. However, a contact as defined by this information system has multiple interpretations and not all of these have equal weight in terms of the amount of service that is provided. For instance, a 2 minute telephone call arranging for transportation and a 1 hour counselling session regarding marital problems are both referred to as contacts. Both of them do indeed refer to a provision of service, although there is considerable difference in the quantity and quality of what is actually provided. Thus it is possible that someone with 100 contacts may have received more 'service' (in terms of effort expended by the worker) than someone with 200 contacts. But when we are dealing with aggregate terms as in this section there is no way of making this distinction. Thus references to heavy service use must be considered in absolute terms as a total number of distinct service units without reference to the qualitative aspect of those units.

Table 1 gives a breakdown of family service use utilizing the notion of average weekly contacts. Of the 555 families, 7 families (1.3%) averaged over five contacts a week. These seven families alone accounted for 3,875 contacts or almost one-fifth of all the Outreach contacts during the study period. The four groups together include 71 families. It is startling to realize that in every ten Outreach contacts, seven of them are directed towards one of these 71 families.

The group singled out for special attention in this study includes the 38 families that each had over 156 contacts. In percentage terms, they constitute 6.8% of all users and they consumed over half (54.8%) of all services provided. This group of 38 families became the primary unit of analysis.

Due to the growing movement towards family based intervention, the need for a family based analysis is self-evident. However, within each heavy user family, there are family members who are low users and family members who are high users. It was felt that proper understanding of high utilization per se could best be achieved by studying the actual heavy users. So a second study group was formed of all individuals who averaged at least one contact per week for 78 weeks. Fifty-five individuals in the top 38 families and 10 individuals from the next group of 33 families met this criteria - making a total of 65 individuals. These 65 people became a secondary unit of analysis.

2. Methods of Data Collection

Three types of information were used for the study: demographic information, process information, and medical information.

The demographic information was collected via a demographic face

sheet (see Appendix A). Whenever an Outreach worker opened a new case, this form was completed. It includes information on ethnicity⁴, age, sex, religion, place of birth, marital status, family size, education, living accommodations, source of referral, and primary worker assigned to the case. A separate facesheet is completed for each family member.

Process information was collected by means of 'contact forms' (see Appendix B). Every time an Outreach worker had a meeting with an individual, a family, or with someone in regards to the individual or family, a contact form would be completed. This includes information on the worker and program area involved, the reason for the contact, the type of contact, who initiated the contact, who the contact was with, where the contact took place, and the duration of the contact.

These two types of information are systematically recorded by the Outreach worker in Churchill. The forms are then collected and sent to Winnipeg where they are coded, keypunched onto cards, and fed in as raw data to the computer at the University of Manitoba computer centre. The information can be accessed in relation to a particular time period or to a particular population group. For this study, the demographic information on the 38 families (207 individuals) and on the 65 individuals was isolated from the rest of the demographic information. On the process side, all contacts with the 38 families during the 18 months and all contacts with the 65 individuals during the 18 months were isolated for separate analyses.

4. Ethnicity here refers to the ethnic category recorded by the worker. Apart from the Registered Treaty Indian designation, the ethnic categories have no clear out boundaries and depend upon the perception of the client or the worker.

It has been pointed out already that the Churchill information system does not yet include any of the Health Centre's medical services. However, because of the relationship of medical and social problems, it was felt that knowing the medical histories of family members during the same time period would be important. This information had to be obtained by a search of the medical charts. Due to time limitations for the collection of this data, it was decided to only extract medical information on the top 20 families (102 individuals) - those families who averaged over 3 contacts a week with Outreach workers.

The author visited Churchill in November 1977 to collect this information. The first step was to obtain written consent by the family head (or the legal guardian in the case of children) for permission to search the medical files (see Appendix D). The author spent several days with Outreach workers in order to visit the families, explain the study, and obtain their consent. Because of the difficulty in locating adult children, it was decided that medical information would only be obtained for family members who had not reached their 18th birthday at the end of the study period (and thus were still under their parents' jurisdiction at the time of the study). It was impossible to obtain consents for seven families who had left the Churchill area. In these cases, medical records' personnel searched the files and recorded the information without using the family name so as to protect confidentiality⁵. Where they were used, the consent forms were left on the medical charts.

Medical information was collected for the same time period (April

5. This course of action was approved by the Management Committee of the Churchill Health Centre.

1st 1975 to September 30th 1976). The information was separated between clinic visits, emergency department visits, and hospitalizations. The date of each contact and the primary reason for the contact were recorded. Medication prescriptions were also recorded but were later excluded from the analysis, (see Appendix C). The data was then taken back to Winnipeg where it was coded, keypunched and fed into the computer.

3. Limitations in the Data

The Churchill information system is an experimental system which will eventually pave the way for similar systems in other health centres. However, its experimental nature and the fact that it was a learning device do provide some problems regarding the reliability of the data collected.

The first problem encountered was in relation to the coding of the contact forms. Because the Centre was deciding what information would be relevant to collect, the contact form was revised several times over the years. Thus it became necessary to perform a series of transformations in the dataset in order to account for these changes. To the author's knowledge, this has been successfully accomplished.

In any information system, it is crucial that a form is completed for each and every contact that takes place and that each form accurately reflects the substance of the contact. If these conditions are not met, there is a problem with the reliability of the data.

In Churchill, several steps were taken to ensure the reliability of the data. When the system was implemented, the workers were oriented to the system and were instructed regarding the meaning of each of the variables and its values. In this way the forms would be completed on the

basis of objective criteria rather than subjective interpretation. The workers were also instructed to complete the forms right at the time of the contact rather than allowing them to pile up. This would ensure that the details of the contacts would be recorded while they were still fresh in the worker's mind. The then Director of Outreach Services held regular sessions with the workers to reinforce the importance of the contact sheets and to check on their completion and accuracy. Thus although there is likely to be some error or incompleteness in the data, it is believed that the above steps held this to a minimum.

There was more of a problem with the collection of demographic data and a considerable amount of this type of information is missing on this particular study group. Although there was supposed to be a facesheet for every individual seen, for many of the study individuals there was no demographic information available or at best only partial information. The actual extent of the missing data for each variable is reported in the results section.

The preceding discussion has indicated where some error or incompleteness in the dataset might be found. However, because measures were taken to control for or correct errors, it is believed that the information available is of sufficient quality and quantity to accurately reflect Outreach activities during the time period studied. The results will certainly serve to inform Outreach staff regarding this target population and can be used as the basis for future planning activities.

CHAPTER 5

DATA ANALYSIS AND RESULTS

1. The Multi-Problem Nature of the 38 Families

An underlying assumption of this study is that the heavy users of Outreach services fall within the category of clients known as 'multi-problem families'. It was deemed important to ascertain this information at the outset because of its importance in subsequent discussion of findings.

Three facts provided by the analysis point to the multi-problem nature of these families. First of all, as already stated, these 38 families, who constitute 6.8% of all users consumed over half (54.8%) of all the services provided by Outreach during the study period. This is virtually identical to the findings of the Greater St. Paul study (1949) where, in each county, approximately 6% of the families absorbed over 50% of the services. These were the families that were subsequently labelled 'multi-problem'.

A key feature of these families is their persistent failure to respond to conventional methods of intervention (Briar, 1966), which is demonstrated by a long term dependency on the social services. In an early section the distinction was made between short term and long term overutilization. Heavy use contained within a three month period would be considered as short term intensive use - reflecting a temporary crisis in a family's life which necessitated excess service use. To check for this possibility, each family's total contacts were broken down to see how they were distributed on a month by month basis. In all cases, the

use of services was fairly evenly dispersed among the 18 months, indicating consistent heavy utilization over an extended period of time.

The characteristic multi-problem family has a multitude of problems and is seen simultaneously by a variety of different service agencies. Because of the unique nature of the Churchill Health Centre, a variety of health and social services are provided from the Outreach Department. Together the major program areas (public health, family services, child welfare, probation and parole, and alcohol services) could be expected to encounter most of the typical problems of the multi-problem family: malnutrition, disease, uncleanness, marital incompatibility, child neglect, delinquency, prostitution, alcoholism, etc. (Schlesinger, 1970).

To determine if these particular families had multiple problems and were being seen by a variety of services, each family's total contacts were analyzed to see how they were distributed among the program areas. No family was only involved in one program area; in fact all of them were involved with four to nine program areas. This would indicate that each family has a variety of problems. Twenty-five of the families were primarily involved with one program area but also had contacts with many other services. The other thirteen families equally distributed their contacts among multiple program areas. It appears that even though the services operate out of a single building, the heavy user families use a little bit of every service available.

The above discussion shows that the defining characteristics of multi-problem families are evident in this group of 38 families. However, the literature review made clear that, apart from these gross indicators, there is still no unitary concept of the multi-problem family and there

is no definitive means for treating them. For the purpose of this study, knowing that these families fit the multi-problem model gives us a frame of reference to work in but it does not provide ready solutions regarding treatment. It rests upon the Churchill Health Centre to isolate the characteristics and usage patterns of its multi-problem families and, considering these in relation to available resources, determine future intervention strategies. It is hoped that the remainder of this analysis will facilitate this process.

2. Demographic Characteristics

a) The 38 Heavy User Families

There were 38 families who ranked as heavy service users; upon closer inspection of the family composition, it was found that one of these 'families' was actually just a single adult male. Of the rest, 2 were a husband and wife alone, 26 were a two-parent family with anywhere from one to eleven children, 8 were single parent (mothers) families with two to five children, and 1 was a single parent (father) family with two children. Thus the heavy user families show a range of family composition and family size, but primarily fit the two-parent nuclear family model. In total we are dealing with 30 adult males, 37 adult females, and 141 children of whom 71 were boys, 39 were girls, and 31 had no identifying information regarding sex.

As indicated before, there was a considerable amount of missing data in the demographic information; this will be reported as applicable. Also, in order to have some basis on which to evaluate the demographic distribution of heavy user families, demographic information for the town

of Churchill should be included. Table 2 presents a summary of information extracted from the 1971 Census using Enumeration Areas 351 to 361. Although the categories are not absolutely equivalent the general distribution for the overall population can be determined. It should also be noted that the population of Churchill has diminished considerably in the seven years since the census was taken. It can only be assumed that the proportions are still the same.

In Table 3 a detailed age-sex-race distribution of the heavy user families is presented. Of the 207 individuals, 99 were male and 74 were female (16% missing). Thus although there are equal numbers of males and females in the population at large, there are more males than females in the heavy user families.

The Census data only indicated ethnicity by the mother tongue of the individual. Overall half speak English or French and half speak another language which we can presume to be one of the Indian or Eskimo dialects. In very rough terms, the population would appear to be half Caucasian and half native. In the study data however, two-thirds of the individuals were native: 32% were Treaty Indian, 32% Metis and 2% Eskimo. Another 8% were Caucasian (26% missing). Thus native people are more highly represented in heavy user families than they are in the general population.

The ages of family members ran from 1 to 98; however there was a heavy distribution in the younger age categories. The table shows that 45% were under 18, 27% between 18 and 64, and 3% were over 65 (24% missing). Although the young and old are represented according to their overall population distribution, there are fewer adults in the study group than

TABLE 2

1971 CENSUS DATA

CHURCHILL, MANITOBA

Enumeration Areas 351-361

AGE BY SEX DISTRIBUTION

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	
0-5	390	410	800	19%
6-12	425	420	845	20%
13-17	225	205	430	10%
18-34	610	595	1205	28%
35-64	470	395	865	20%
65 +	<u>70</u>	<u>50</u>	<u>120</u>	3%
	2190 (51%)	2075 (49%)	4265	

LANGUAGE BY SEX DISTRIBUTION

<u>Mother Tongue</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	
English or French	1120	1050	2170	51%
Other	<u>1070</u>	<u>1025</u>	<u>2095</u>	49%
	2190 (51%)	2075 (49%)	4265	

DISTRIBUTION BY FAMILY TYPE

Total no. of families	870
Husband with families	745
Single parent families - male head	45
female head	80

MARITAL STATUS BY SEX DISTRIBUTION

<u>Marital Status</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	
Single	1325	1225	2560	60%
Married	815	780	1595	37%
Widowed	40	65	105	2½%
Divorced	<u>10</u>	<u>5</u>	<u>15</u>	½%
	2190 (51%)	2075 (49%)	4265	

TABLE 3
THE AGE-SEX-RACE DISTRIBUTION
OF THE 38 HEAVY USER FAMILIES

CAUSASIAN

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Age</u>	<u>Total</u>
0-5	2	1		3
6-12	1	0		1
13-17	3	1		4
18-34	0	2		2
35-49	1	1		2
50-64	1	0		1
65 +	2	0		2
No info	<u>1</u>			
	11	5		16

TREATY INDIAN

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Age</u>	<u>Total</u>	
0-5	11	2	3	16	24
6-12	11	1	2	14	27
13-17	5	6		11	44
18-34	5	6		11	28
35-49	1	6	1	8	20
50-64	3	1		4	7
65 +	2	0		2	7
No info	<u>1</u>				
	39	22	6	67	207

METIS

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Age</u>	<u>Total</u>
0-5	1	1		2
6-12	4	3		7
13-17	15	12		27
18-34	6	8		14
35-49	3	5		8
50-64	2	0		2
65 +	1	1		2
No info	<u>3</u>	<u>1</u>		<u>4</u>
	35	31		66

ESKIMO*

2	2	4
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NO INFO. ON ETHNICITY

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Age</u>	<u>Total</u>
0-5	1	1	1	3
6-12	3	0	2	5
13-17	1	1	0	2
18-34	0	1	0	1
35-49	2	0	0	2
50-64	0	0	0	0
65 +	0	1	0	1
No info	<u>5</u>	<u>10</u>	<u>25</u>	<u>40</u>
	12	14	28	54
	99	74	34	207

* To protect confidentiality, the age-sex breakdowns were not provided for the four Eskimo individuals as it was feared that this might reveal their identities.

shown in Churchill overall. In looking at the total distribution, it is apparent that the majority of heavy user families are relatively young Indian and Metis families with children. The few Caucasian and Eskimo individuals do not show any particular trend.

In Churchill as a whole, 60% of the population is single, 37% married and 3% widowed or divorced. The marital status breakdown for the heavy user families is provided in Table 4. It shows slightly more children and fewer married individuals than in the overall population. This could be because the Census data counted common law individuals as single people whereas they have been included in the married category in the present study.

The high proportion of single individuals (70%) is not unusual given the number of children in the sample. But it is interesting to note that there are almost twice as many boys as girls in this younger group. We see that most of the adults are in stable marital or common-law relationships as opposed to being divorced or separated. The marital distribution among the various ethnic groups is proportionate to their distribution in overall numbers. Educational information was only available for slightly over half of the study group (44% missing), but it indicates fairly low levels of education: 15% had no education, 14% had Grade 1 to 4, 19% had Grade 5 to 8, 4% had Grade 9 to 11, and another 4% did not know what education they had. The heavily weighted lower end of the spectrum is again influenced by the number of children.

The majority of respondents for whom religious information was available were Anglican (47%); however 43% of information on this variable was missing.

TABLE 4
THE DISTRIBUTION OF MARITAL STATUS
ACCORDING TO SEX AND RACE

SEX			FOR THE 38 FAMILIES					RACE		
Male	Female	No Info	Total	Caucasian	Treaty	Metis	Eskimo*	No. Info.		
Single	71	39	144	11	46	45		39		
Married-C/L	25	30	55	5	20	17		13		
Wid/Div/Sep	3	5	8	0	1	4		2		
	99	74	207	16	67	66		54		

* excluded for reasons of confidentiality

Most of the heavy user family members were born in Canada, lived in Churchill, and usually resided within a family unit (as opposed to room and board). However, 38% of the information was missing for these categories.

Very little information was available on the source of referral (61% missing). From what is known, 14% were self-referrals while the R.C.M.P. referred 9%, and doctors referred another 4%. Most frequently the intake worker and the primary worker assigned to the case were from the Probation or Child Welfare program areas.

b) The 65 Heavy User Individuals

Sixty-five individuals met the criteria for inclusion into this group. They came from 43 families: 29 of the families had a single heavy user individual in them and 15 of the families had multiple (from 2 to 5) heavy user members. The heavy user individuals were split between adults (33) and children (32). Of the adults, there were twice as many females as males (23 females to 10 males). Of the children, there were 14 girls 11 boys and 7 on whom information was not available. Most of the heavy user children were either the first or second child in the family. It appears, in comparing the heavy user families to the heavy user individuals, that greater percentages of the female members of the families tend to become the heavy user individuals.

The age-sex-race distribution of these individuals is presented in Table 4. In all, there were 37 females, 21 males and 7 on whom there was no identifying information. Thus in the actual high users, females are represented more than they are in the general population.

Almost three-quarters of the groups were of native descent: 39%

Treaty Indian, 35% Metis, and 3% Eskimo. Caucasians made up 8% (total missing 15%). This distribution is very similar to the family group and shows the same disparity from ethnic proportions in the overall population. Although males and females are equally divided for Caucasians and Eskimos, there are almost twice as many female Indian and Metis heavy users as there are male.

Their ages ranged from 1 to 91 years old. In comparing these heavy users to the population age distributions, there are several disparities. Young people (under 18) are represented less in this group than in the general population. However, there is a higher proportion of elderly (over 65) amongst heavy users than in the overall population. The adult group was about the same.

The average age of the heavy user group was 29 years. Half of the heavy users were between 13 and 34 years old and these were primarily Indian and Metis. The only very young heavy users (under 12 year) were Treaty Indian. About 15% of this group were over 50 and all ethnic groups were represented among them. Male heavy users were concentrated either in the 13 to 17 age bracket or over 50. Most (75%) of the female heavy users were between 13 and 50 years old.

From the above information, it is possible to draw a couple of characteristic profiles of a heavy service user. First, they will primarily be either Treaty Indian or Metis. Within this ethnic division, there are three distinct focuses: the teenager (13 to 17 years) either male or female, the young mother (age 20 to 49), and the older man (age 50 plus).

The previous family analysis did indicate that heavy user families

TABLE 5

THE AGE-SEX-RACE DISTRIBUTION
OF THE 65 HEAVY USER INDIVIDUALS

CAUCASIAN

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Sex</u>	<u>Total</u>
0-5	0	0		0
6-12	0	0		0
13-17	1	0		1
18-34	1	1		1
35-49	1	1		2
50-64	0	0		0
65 +	$\frac{1}{3}$	$\frac{0}{2}$	$\frac{0}{0}$	$\frac{1}{5}$

TREATY INDIANS

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Sex</u>	<u>Total</u>	
0-5	1	1	1	3	3
6-12	2	1	2	5	.6
13-17	2	3	0	5	14
18-34	2	4	0	6	17
35-49	0	2	0	2	6
50-64	0	1	0	1	3
65 +	2	0	0	2	6
No Info	$\frac{0}{9}$	$\frac{1}{13}$	$\frac{0}{3}$	$\frac{1}{25}$	$\frac{10}{65}$

METIS

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Sex</u>	<u>Total</u>
0-5	0	0		0
6-12	0	0		0
13-17	4	4		8
18-34	1	8		9
35-49	0	2		2
50-64	2	0		2
65 +	$\frac{1}{8}$	$\frac{1}{15}$	$\frac{0}{0}$	$\frac{2}{23}$

ESKIMOS*

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>No Info. on Sex</u>	<u>Total</u>
0-5	0	0	0	0
6-12	0	0	1	1
13-17	0	0	0	0
18-34	0	1	0	1
35-49	0	0	0	0
50-64	0	0	0	0
65 +	0	1	0	1
No info	$\frac{0}{0}$	$\frac{4}{6}$	$\frac{3}{4}$	$\frac{7}{10}$
	21	37	7	65

* excluded for reasons of confidentiality.

were primarily Indian and Metis. Extending this into an individual analysis, a clear pattern of who the high service users are within these families emerges.

Continuing the analysis into a marital status breakdown, we see in Table 6 that, as before, the children are single and that most of the adults are either married or living common-law. Only 6% were separated or widowed and these were either Metis or Eskimo individuals. Compared to Churchill as a whole, this heavy user group had fewer single people, about the same proportion of married people and more widowed/divorced people than are represented in the general population.

The educational background of the heavy user individuals essentially is the same as the family study: here 9% had no education, 14% had Grades 1 to 4, 39% Grades 5 to 8, 3% had Grades 9 to 11, and 12% did not know their level of education (23% missing). Compared to the family analysis, we see that here there were fewer with no education and twice as many with Grade 5 to 8 education. This is probably because the individual study eliminated the large numbers of small children found within the heavy user families.

In terms of religion, the majority (62%) were Anglican, 8% were Roman Catholic and 8% were of other faith (23% missing).

As in the family study, the majority of these individuals were born in Canada, lived in Churchill, and resided with their families.

Of the available referral information, it is known that 17% referred themselves, the R.C.M.P. referred 12%, doctors 9%, friends 5%, and the Church 2%, (46% missing). Most frequently the intake worker assigned to the case were from the Probation or Child Welfare program areas.

TABLE 6
THE DISTRIBUTION OF MARITAL STATUS
ACCORDING TO SEX AND RACE
FOR THE 65 INDIVIDUALS

	SEX		No Info.	Total	RACE				No Info.
	Male	Female			Caucasian	Treaty	Metis	Eskimo*	
Single	12	16	4	32 49%	2	15	12	0	2
Married-C/L	7	16	0	23 35%	3	10	8	0	2
Wid/Div/Sep.	2	2	0	4 6%	0	0	3	0	0
No Info	0	3	3	6 10%	0	0	0	0	6
	<u>21</u>	<u>37</u>	<u>7</u>	<u>65</u>	<u>5</u>	<u>25</u>	<u>23</u>	<u>0</u>	<u>10</u>

* excluded for reasons of confidentiality

3. Characteristics of Service Use

The previous section identified the characteristics of heavy user families and, in particular, the demographic commonalities of heavy user individuals. Having acquired some understanding of 'who' the heavy users are, this second section will focus on an analysis of how these families utilized the Outreach services.

The analysis that is reported in this section is based on the 38 families. An analysis of service usage was also completed on the 65 heavy user individuals. The results of the latter were virtually identical to the results of the family-based analysis. This is not surprising since the heavy users within each family naturally had the most contacts and would dominate the results. The printouts were compared and in all the tables, the difference between the individuals and the families was at most a few percentage points. Because of the similarity, it was decided to simply report the results of the family based analysis.

The presentation format will involve a summary of pertinent findings in each area followed by a discussion. It is hoped that this approach will demonstrate the use of statistical analysis in understanding and developing treatment strategy. However it should be made clear from the start that the comments made in relation to the statistical findings are simply the author's interpretation of the data; they are not undisputable facts. These observations will have to be considered in light of the worker's perspective of the situation but hopefully they will at least serve as the starting point for discussion.

1. General Findings

In total the 38 families had 11,307 contacts with Outreach staff

during the eighteen month study period. It should be pointed out that this is over half (55%) of the total number of contacts with the 555 families seen during this period (20,646). Within the 38 families, 56% of the contacts (6,275) were with the children, 28% (3,151) with adult females and 16% (1,794) with adult males. When these are adjusted for the number of individuals in each group, the 141 children averaged 45 contacts each, the 36 adult females averaged 88 contacts each, and the 30 adult males averaged 60 contacts each. This indicates that the female adult group were the highest users of all.

Program Areas Involved: For this group of families, the highest number of contacts (27%) took place in the Child Welfare program area. Public Health followed with 22% of the contacts. Probation and Family Services were next with 14% and 13% of the contacts respectively. The Community Development area accounted for 6% of services, while the Home Care and Alcohol programs both had 5% of the contacts. The remaining areas were respectively financial services (1%), Prevention (.4%), and Day Care (.1%).

The top four program areas are not surprising since these are the services that deal with most of the characteristic problems of multi-problem families. The low number of contacts in the financial services area is due to the fact that most of the families who were on welfare received financial assistance from outside agencies. The most surprising finding is the relatively low level of involvement with the Alcohol program. It wouldn't have been unusual to find a high percentage of alcoholism among these families; however with this group, this does not appear to be one of the prominent problem areas.

Initiator of Contacts: Almost two-thirds (62%) of all contacts were

initiated by the Outreach workers. These of course include the initial contact and all subsequent contacts in the episode of care. Clients initiated 22% of the contacts and another 16% were initiated by 'others'. These 'others' were primarily other worker, other agencies, and foster parents. Less than 1% of all contacts were initiated by doctors⁶.

Two possible meanings can be attached to the high percentage of worker initiated contacts. On the negative side, it could be viewed as a form of iatrogenic treatment where the workers perpetuate dependency on the social services by refusing to 'let go' of their clients and continually seeking new areas where assistance is needed. However, if these families follow the pattern of other multi-problem families, then their problems are already in evidence to the families, the helping agencies, and the community at large.

It is more likely that the workers are taking an active role in relation to these families offering constant support and guidance as the families learn to cope with the day-to-day problems that beset them. This active stance is the approach advocated by Hollis (1968) and Visotsky (1963) with regard to these families.

Type of Contacts: The majority of contacts (72%) were direct, that is they were conducted on a fact to face basis. The telephone was used for 19% of the contacts and letters were used in another 3%. The high percentage of face to face contacts is probably due to the smallness of the town and the advent of the health centre. It cannot help but facilitate

6. Note that this is not talking about 'referrals' from doctors but about those situations where a doctor initiated a contact with a worker to discuss a client.

case planning where it is necessary for various workers to share information and make joint decisions.

Place of Contacts: The contacts were primarily divided between Outreach (39%) and the client's home (34%). The Detox Centre (which is no longer used) accounted for 3% and about 1% of the contacts were held in each of the following locations: schools, the hospital or clinic, worker's homes, and the community.

It appears that a movement has begun away from the traditional provision of agency services which involved appointments, office hours, and waiting lists. Although there is still minimal work being done in many areas of the community, at least one-third of Outreach activity is taking place in these client's own homes. Both Polansky (1969) and Hollis (1968) have stated that this type of 'Outreach' activity, where the worker meets the client on his own ground and focuses on the practical problems presented in these real-life situations, is of particular benefit to the multi-problem family.

Who Contacts Were With: Over a third of the contacts (36%) involved just the worker and the client. In 14% of them, the contacts were with family members, and 8% involved the client and his family together. The largest portion of Outreach contacts concerning these families (39%) were with the 'other' category. This involved contacts with other agencies, other workers, the police, doctors, friends, and teachers.

Because these families are confronted with a wide variety of problems, it is often necessary to involve many community services to make a proper assessment and decide on appropriate action. Thus it is not surprising that there were so many contacts with other individuals

involved with the families. Here, however, we just see the gross statistic. In the more detailed analysis of subsequent sections, the uses to which these contacts with other people were put will be investigated (and questioned).

The other somewhat disturbing finding is that there has been minimal work done with these families as a family unit. Geismar and LaSorte (1964) pointed out the inadequate social functioning in family relationships and in the performance of health, economic, and household tasks that is characteristic of these families. If this is true, then all members of these families will be affected in some way. And there are many working in this area who feel that intervention has to involve all family members in an attempt to strengthen the family's coping abilities.

In the Churchill Health Centre, it appears that intervention has primarily focused on separate individuals within the family with some consultation with other family members on the side. There may of course be situational reasons for taking this approach. What is important here is that the reasons behind a particular treatment strategy should be identified and understood by all using that approach.

Reason For Contacts: In all the program areas combined, a major portion of the contacts (38%) were for direct services (the provision of material needs - food, clothing, shelter, nursing treatment, etc. - or of emotional support). Follow-up services constituted the next largest group at 13% (this refers to when a worker returns to check up on something done before - and thus is often closely associated with the provision of direct services). Providing information involved 9% of the contacts. Eight per cent (8%) of the contacts involved assessments and 7% were for counselling

(this combines individual, group and family counselling). Consultation with other staff or other agencies involved 6% of the contacts. Other contacts were used for case recording (3%), referral (2%), transportation (2%), immunization (.3%), and education (.2%).

Given the crisis existence of many multi-problem families, it is not surprising to see that the major type of assistance given is related to the needs of day-to-day functioning. The fact that direct service, follow-up and information are the three most common forms of service provided indicates that the Outreach workers are responding to these families in a practical down-to-earth manner. They are not alone in taking this approach. In his 1972 study, Geismar found that the most frequent type of resource offered to low-functioning families by workers were information, support, and direction.

However, the need for practical assistance and crisis intervention does not entirely do away with the need for longer term intervention. It is true that the typical lower class person does not always benefit from traditional casework methods. Studies have shown that the kind of person who is likely to succeed in therapy is one who is psychologically oriented, highly motivated, with an ability to communicate his feelings and deal with abstracts (Aguilera, 1970). This description undoubtedly will not fit most of the heavy users in Churchill. Again referring to Geismar's study, he also found that the more 'analysis' provided by workers, the less likely it became that the family's functioning would improve.

But, if we consider counselling as any intervention focused on changing particular behaviour or attitudes, this does not have to be

solely by 'analysis' or traditional therapeutic means. There are new techniques and strategies that have been shown to be successful with low-income families. These include such things as the use of games and crafts to reveal family conflicts, role playing techniques, demonstration of social skills, confrontation regarding the effects of certain behaviours and practices, etc. (Reissman, 1964). Thus counselling can be regarded as producing change in a manner that is congenial to the family's lifestyle. It appears that very little of this, or any form of counselling, is taking place with these families.

An interesting point shows up in the findings in this section. Earlier it was noted that 39% of the contacts were with people 'other' than the client or his family. It was assumed that this was for sharing information and making plans. However, here, apparently only 6% of the contacts are recorded as being spent on consultation with other staff or agencies. So, although the workers meet often with outside people, the focus of these meetings is not on coordination of services.

Duration of Contacts: With regards to time, almost half of the contacts (45%) took place in less than 10 minutes and 38% lasted from 10 to 30 minutes. This means that over 80% of all Outreach contacts in relation to these families took place in less than half an hour. About 8% of the contacts lasted between 30 to 60 minutes, 5% were from 1 to 2 hours, and 5% were a half day to a whole day. The findings indicate that the majority of contacts are of very short duration. Only 14% fall within what could normally be considered a regular session between worker and client - from half an hour to two hours.

At the beginning of this section, it was noted that there are

various types of 'service' that can be provided under the heading of a 'contact'. It was pointed out that these services could vary in the effort expended by the worker and in what was accomplished for the client. Some might be very short and others very lengthy; some might be therapeutic and others for organizational purposes. But in all cases, a 'contact' meant that some type of service was provided either directly to or on behalf of the client.

If we take the data at face value, during this study period Outreach workers had 5,088 contacts of less than 10 minutes duration and another 4,297 contacts between 10 and 30 minutes duration either with or on behalf of these 38 families (out of a total of 16,307 contacts). It is important to ask what 'service' was provided in all of these many brief contacts. Certainly we know that a reason for the contact was put down on every contact form. Yet the number and the brevity of these contacts makes one wonder if workers counted as 'contacts' some activities that really were not a true provision of service. For instance: a ten minutes chat with another worker in which a family's name gets brought up informally is counted as a contact for 'consultation'; or a worker is making home visits and runs into a client whom she was not scheduled to see that day. They chat informally for a few minutes and this is counted as a contact for 'direct service'. These examples show how a contact with a client or with other workers might not actually involve the provision of 'service' in the true sense of the word. These 'non service' contacts are inevitable in the course of a worker's day. If they are being included in the 'service provision' contact category, then the data could be greatly inflated - particularly at the lower end with an

overabundance of brief encounters.

For the present study, there is no way of checking whether or not the data represents true service contacts or whether it has been inflated by non-service contacts. We will have to proceed with the assumption that the data is correct as stands and interpret it accordingly. This point was only raised here because it is one possible explanation of the skewed results. The concern will be conveyed to the Health Centre so that this error, if it is indeed being made, can be prevented in the future.

Summary: It is possible to summarize the major points made in the above information and develop a profile of Outreach involvement with heavy user families. Typically workers from Child Welfare, Public Health, Probation, and Family Services initiate the contacts which are primarily with the client alone or with someone involved in the client's situation. The contacts are usually on a face-to-face basis, taking place either at Outreach or in the client's home, and they last less than half an hour. The principle reason for these contacts is the provision of direct services. The above points were commented on in relation to what is known about the treatment of multi-problem families.

This section has discussed the major findings in relation to each process variable. A more detailed analysis of service usage provides a closer examination of each variable in turn. The following sections highlight the important findings of further process variable breakdowns.

2. Analysis by Program Area

Although it is important to know how Outreach as a whole has dealt with the heavy user families, it is also important to study how the responses varied among the different program areas. For this analysis,

the five major program areas; Public Health, Alcohol, Probation, Child Welfare, and Family Services were chosen. These five programs will be studied with regard to: who initiated the contact, the type of contacts, where the contacts took place, who the contacts were with, the reason for the contacts, and the duration of the contacts.

Initiator of Contacts:

TABLE 7
PERCENTAGE BREAKDOWN
OF THE INITIATOR OF CONTACTS
ACCORDING TO PROGRAM AREA

	Client Initiated	Worker Initiated	Other Initiated
Public Health	32%	57%	11%
Alcohol Services	33%	55%	12%
Probation	7%	71%	21%
Child Welfare	10%	70%	20%
Family Services	<u>16%</u>	<u>63%</u>	<u>21%</u>
TOTAL	22%	62%	16%

In all program areas, most of the contacts were initiated by the workers, followed by client-initiated contacts and then other initiated contacts. In Public Health and Alcohol, about one-third of the contacts were initiated by the clients - far more than in other areas. There were almost twice as many contacts initiated by outsiders in Probation, Child Welfare and Family Services which is probably related to community concern regarding family activities. These three areas were also very high in worker initiated contacts and had very few contacts initiated by clients.

Type of Contacts:

TABLE 8
PERCENTAGE BREAKDOWN
OF THE TYPE OF CONTACT
ACCORDING TO PROGRAM AREA

	Direct	Phone	Letter	Recording
Public Health	88%	10%	.7%	.4%
Alcohol Services	90%	7%	.2%	0%
Probation	71%	18%	5%	3%
Child Welfare	57%	30%	5%	6%
Family Services	<u>62%</u>	<u>29%</u>	<u>6%</u>	<u>2%</u>
TOTAL	72%	19%	3%	.2%

The majority of all contacts in all program areas were conducted on a face-to-face basis. There was a higher percentage of face-to-face contacts in the Public Health and Alcohol areas. In the other three areas, the reduction in direct contacts was offset by an increased amount of telephone contacts. This can probably be explained by the necessity of making other living or institutional arrangements for certain clients which would require organizational work by phone. Probably for similar reasons, these three areas also conducted more contacts by letter than the others. There was little evidence of case recording except for the Child Welfare Program.

Place of Contacts: Although the majority of contacts took place in either Outreach or the Client's home, the other five places were included to show trends in the use of other contact places. Most of the contacts in

TABLE 9
PERCENTAGE BREAKDOWN
OF THE PLACE OF CONTACT
ACCORDING TO PROGRAM AREA

	Out- reach	Clients Home	Detox Centre	Hosp. Clinic	School	Comm- unity	Workers Home
Public Health	33%	51%	.6%	2%	1%	.9%	.2%
Alcohol	24%	20%	36%	.2%	.3%	5%	3%
Probation	39%	21%	2%	.5%	1%	2%	.7%
Child Welfare	54%	17%	.2%	.3%	1%	1%	1%
Family Services	<u>52%</u>	<u>16%</u>	<u>2%</u>	<u>4%</u>	<u>4%</u>	<u>.3%</u>	<u>.1%</u>
TOTAL	39%	34%	3%	1%	1%	1%	.6%

Probation, Child Welfare, and Family Services took place at Outreach. This somewhat dispels the earlier notion that the workers were breaking away from traditional forms of service delivery by doing more work in the client's own environment. However, a move in this direction is at least indicated in the data.

It is the Public Health program that has half of its contacts in the client's home; hopefully indicating an active interventive stance against problems of uncleanness, malnutrition, and disease. The surprising finding here was the small amount of Public Health activity in the schools.

The Alcohol program shows the most variation in contact place with the majority taking place in the Detox centre and others divided between Outreach and the client's home. The Alcohol program also showed the largest trend towards using the community and the worker's home as alter-

nate meeting places.

The largest user of the Hospital/Clinic or Schools location as contact places was the Family Services area. The former may indicate a trend towards introducing social services in a medical setting.

Who Contact Was With:

TABLE 10
PERCENTAGE BREAKDOWN
OF WHO CONTACTS WERE WITH
ACCORDING TO PROGRAM AREA

	Client	Family	Client & Family	Other
Public Health	55%	13%	12%	16%
Alcohol	73%	9%	3%	13%
Probation	29%	15%	4%	51%
Child Welfare	20%	12%	3%	63%
Family Services	<u>24%</u>	<u>15%</u>	<u>2%</u>	<u>57%</u>
TOTAL	36%	14%	8%	39%

When the contacts are divided up according to who the contact was with, different treatment perspectives show up among the program areas. In Public Health and Alcohol, the majority of the contacts are with the client alone. However, in Probation, Child Welfare and Family Services, most of the contacts take place with other individuals. This brings us back to the earlier discussion on the need to be involved with a variety of community agencies in the treatment of multi-problem families. However important this theory may be, it is unlikely that the need to consult with others requires twice the amount of time than that spent with the

client themselves! Only about one-quarter of these program's contacts are spent with the clients and slightly less than this with the client's families. This seems very low. It is interesting that the program area that spent the most time with the whole family together is Public Health. Although a family-based intervention is more commonly associated with any of the other four areas, these programs showed little evidence of this type of treatment focus.

Reason For Contacts:

TABLE 11
PERCENTAGE BREAKDOWN
OF THE REASON FOR CONTACTS*
ACCORDING TO PROGRAM AREA

	Assess- -ment	Follow -up	Coun- selling	Consul- tation	Infor- mation	Direct Service	Immuni- zation	Tran- sport	Refer
Pub. Health	8%	14%	3%	1%	5%	49%	.9%	.7%	1%
Alcohol	3%	18%	23%	6%	9%	32%	0%	1%	2%
Probation	15%	23%	13%	7%	14%	12%	0%	2%	3%
Child. Welf.	6%	10%	5%	12%	12%	28%	0%	3%	3%
Family Serv.	<u>10%</u>	<u>9%</u>	<u>11%</u>	<u>5%</u>	<u>12%</u>	<u>26%</u>	<u>0%</u>	<u>.7%</u>	<u>4%</u>
TOTAL	8%	13%	7%	6%	9%	34%	.9%	2%	2%

* Due to small numbers three types of activity were excluded from the table: resource development, education and case recording.

Table 10 shows the distribution of different kinds of service activities among each of the program areas. In four out of five areas, the provision of direct service was the number one activity. But, in the Probation program, follow-up was the major reason for contacts, with assessments,

provision of information and counselling all involving more contacts than direct services.

Almost half of the Public Health program involves direct services, followed by follow-up and assessments. There was very little in the way of counselling here. For the Alcohol Program counselling and follow-up services were next in line to direct services. This area could be noted for its lack of emphasis on assessments. In Child Welfare, we again see relatively little focus on assessment or counselling; however providing information and consultations played larger roles. Family Services had approximately equal numbers of contacts for assessments, follow-up, counselling, and providing information, with its major activity again being direct services. This area also had the largest number of referrals.

Duration of Contacts:

TABLE 12
PERCENTAGE BREAKDOWN
OF THE DURATION OF CONTACTS
ACCORDING TO PROGRAM AREA

	10 mins.	10-30 mins.	30-60 mins.	1-2 hrs.	2 hrs. +
Public Health	52%	43%	4%	.7%	.3%
Alcohol	20%	26%	20%	10%	24%
Probation	27%	51%	11%	4%	.2%
Child Welfare	55%	36%	7%	2%	.1%
Family Services	<u>53%</u>	<u>36%</u>	<u>8%</u>	<u>2%</u>	<u>.1%</u>
TOTAL	45%	38%	8%	5%	5%

The outstanding factor within all program areas is the short

duration of their contacts. In Public Health, Child Welfare and Family Services, over half of all their contacts with these families were less than 10 minutes long. Furthermore, approximately 90% of all their contacts were under half an hour duration. Probation is close behind with 78% of all contacts less than 30 minutes, although two-thirds of these were in the 10 to 30 minute category. The short duration of contacts is probably most warranted by the Public Health department because many of their tasks only require a short amount of time (i.e. immunizations). But in the other three areas, it was expected that the worker-client relationships would necessitate longer periods of time together. Only about 10% of the contacts are over 30 minutes long (with Probation up to 15%). Public Health, as might be expected, has even fewer contacts over 30 minutes. The one exception to all this is the Alcohol program; it had approximately equal numbers of contacts in each time span. The high proportion of contacts over 2 hours long is explained by their involvement with the Detox Centre.

3. Analysis by Reason For Contact

Similar to the preceding analysis of each program area, each activity or reason for the contact can be looked at in the same way. Here all the information is contained in Table 13. The key to reading this table is to take each program activity in turn and read across the chart from left to right. The percentages are not meaningful if read up and down instead of across. Some of the minor reasons for contacts were excluded for simplicity's sake. This information refers to the total Outreach Department.

Assessments: The table shows the Outreach assessments are, not surprisingly,

primarily initiated by the workers and take place on a face-to-face basis. The location for assessments is equally divided between Outreach and the Client's home. It is somewhat confusing to see that most of the assessments take place with people 'other' than the client - the reasons for this are not self evident. However, one-third of the assessments are with the client alone and another fifth are with his family. There has been very little emphasis on attempting family based assessments. It also appears that the assessments that do take place are very rushed: 86% are over in less than half an hour and 33% take less than 10 minutes. It hardly seems that an accurate evaluation of the client's circumstances could be made within these time limits.

Follow-up: When a worker returns to check on something done before, it is usually initiated by himself and in most cases is accomplished in person. About half the time, he will return to the client's home, another quarter of the follow-up visits take place in Outreach. Follow-up visits primarily involve the client alone but can also be with the family or other people. These contacts are relatively short as might be expected with over 90% taking place in less than half an hour.

Counselling: Two-thirds of contacts for the purpose of counselling are initiated by the worker, one quarter are initiated by clients, and very few are suggested by other people. The majority are face-to-face (actually counselling is the type of contact with the highest percentage of face-to-face encounters). Slightly more counselling is done at Outreach than in people's homes. Also more counselling takes place elsewhere in the community than any other type of service activity. Over half of the counselling sessions are with the client alone, one-quarter

TABLE 13

PERCENTAGE BREAKDOWN
OF REASON FOR CONTACT

	INITIATOR			TYPE			PLACE		
	Worker	Client	Other	Direct	Phone	Letter	Outreach	Client's Home	Community
Assessments	64	15	21	85	12	1	32	32	7
Follow-up	65	22	14	79	17	3	28	49	8
Counselling	67	26	5	90	9	0	35	28	13
Consultation	52	4	43	61	36	2	68	4	8
Information	66	13	21	47	44	6	55	16	6
Direct Service	55	36	8	74	17	4	31	47	7

WHO WITH

	Client +		TIME					Total
	Client	Family	Other	<10	10-30	30-60	1-2 hrs.	
Assessments	33	22	6	37	33	11	2	8
Follow-up	41	21	9	28	44	6	1	13
Counselling	52	25	3	16	12	22	13	7
Consultation	5	1	1	92	50	7	1	6
Information	21	14	4	60	75	2	3	9
Direct Service	49	15	8	27	49	5	5	34

are with his family and 16% are with other people. Only 3% of all counselling involves the total family. Given the fact that these are families with a variety of problems that affect all family members, there is a striking lack of emphasis on family-based intervention. However, it was somewhat reassuring to see that counselling sessions did take longer than other types of activities - over half of them ranged from 30 minutes to a full day. The emphasis on sessions over 2 hours in length is again related to the Detox Centre activities.

Consultation: This activity refers to conferences among Outreach workers or between Outreach workers and other community services. Although half of these were initiated by Outreach workers, a major portion were suggested by the other parties. Many of these (36%) took place over the phone, but the majority (61%) were face-to-face meetings and most took place at Outreach. As it should be, almost all consultations were with people 'other' than client or family. The consultations were very brief: 50% less than 10 minutes and 91% less than half an hour. The short duration of these consultations would indicate that they probably do not take the form of the 'case conference' approach described by Lagey (1962). In this, all of the relevant workers and services involved with the family meet to discuss the case and develop a treatment plan based on community wide coordination of services. This type of consultation requires a substantial amount of time. Even if this is not happening, there is at least evidence that some form of communication (however brief) is taking place among the people involved with these families. It will probably be necessary for this low-key attempt at service coordination to be extended.

Information: About one-tenth of all contacts were for the purposes of providing information. Although it would be expected that this activity would result from outside requests, only one-third were initiated by clients or others while two-thirds were initiated by workers. This type of activity had the largest percentage of contacts by phone and by letter of any type of activity but still almost one-half of the information was given in person. Outreach was the primary location for dispensing information. In 60% of the cases, the information was given to another party - only about one-third was directed towards clients and or families. Naturally, the provision of information was done relatively quickly with 75% taking less than ten minutes of a workers' time.

Direct Service: The major reason for contacts with Outreach was the provision of material assistance or emotional support. Clients requested this type of assistance more than any other although over half of these contacts were still initiated by the workers. Some direct service was provided via telephone but most involved direct contacts. Almost half took place in the client's home. Most of the direct services were focused on a particular client alone. The large proportion involving 'others' could refer to organizational contacts required before provision of aid was possible. Usually this type of contact was fairly brief with 80% taking under 30 minutes to complete.

4. Analysis by Initiator of Contact

In this section, the contacts are separated into three groups according to who initiated the contact and then the characteristics of each group are elucidated. Table 14 shows the breakdown of this particular analysis.

PERCENTAGE BREAKDOWN FOR INITIATOR OF CONTACT

	TYPE		PLACE			WHO WITH				
	Direct	Phone	Letter	Outreach	Client's		Client	Client &		
					Home	Community		Family	Family	Other
Worker Initiated	74	15	5	34	37	7	32	14	8	43
Client Initiated	73	19	3	40	44	9	67	17	10	6
Other Initiated	60	36	2	59	12	8	11	11	4	70

	REASON					TIME						
	Assess -ment	Follow -up	Couns -el.	Consul tation	Infor mation	Direct Service	<10	10-30	30-60	1-2hrs	2hrs +	Total
Worker Initiated	8	13	7	5	10	30	41	41	9	5	4	62
Client Initiated	6	13	9	1	6	56	50	29	6	5	9	22
Other Initiated	11	11	3	16	12	19	53	38	6	2	1	16

Worker Initiated vs. Client Initiated Contacts: For conceptual clarity, these two categories will be discussed simultaneously. Overall, the workers initiated three times as many contacts as clients. In both cases, most of the contacts were face-to-face and took place equally between Outreach and the client's home. It is interesting that when the workers initiate the contacts, the majority of them are to see 'other' people, with clients and families taking lower priority. When the clients initiate contacts though, it is primarily because they want an individual appointment with the worker. Contacts involving the whole family were relatively scarce; it appears that in percentage terms, the clients initiated more of this type of contact than the workers. When the workers initiated contacts, most (30%) were for direct services with follow-up services coming next. Other contacts were initiated for information, assessment, counselling and consultation in declining order. Of contacts initiated by clients over half (56%) were for direct service followed by follow-up services and counselling services. In percentage terms, clients initiated more contacts for counselling than did the workers. Most of the contacts were of short duration regardless of who initiated them.

'Other' Initiated Contacts: When contacts were initiated by others, a third were by phone and almost two-thirds took place in person with the majority occurring at Outreach. Although some outsiders suggested a contact between a worker and a client, most of the time when another person initiated the contact it was so they could meet with the Outreach worker. There was no distinctive pattern in the reasons for contacts - they primarily involved direct services, consultations and the provision

of information. Over half took less than 10 minutes and over 90% were less than half an hour. If a proper communication network existed to coordinate services to these heavy user families, (as described in the literature) we would expect to see a fairly large portion of the worker's time taken up by lengthy consultations with other individuals rather than by these brief conversations.

5. Analysis by Type of Contact

Essentially all contacts with regards to heavy user families were face-to-face (72%) or by telephone (19%). This section takes a detailed look at these two types of contacts in relation to the other variables. The results are displayed in Table 15.

Direct Contacts: Workers initiated three times as many direct contacts as clients. The majority took place in the client's home primarily to see the client alone. Over a quarter of the direct contacts were with other people and these may have been the ones held at Outreach. The major reason for direct contacts was the provision of direct services (35%). There was no particular emphasis on any other reason for contacts. Most of the contacts were in the 10 to 30 minute range and 80% were under half an hour. The workers are seeing the clients in their own homes but the visits are relatively short for the purposes of establishing a relationship and effecting change.

Telephone Contacts: Most phone contacts were initiated by the workers but other individuals also initiated almost one-third of them. Naturally, the majority of the phone contacts were based out of Outreach. These calls primarily involved other people with only one-fifth going to clients. They were used mainly for direct services (probably organizaing for same),

TABLE 15

PERCENTAGE BREAKDOWN
FOR TYPE OF CONTACT

	INITIATOR			PLACE		WHO WITH			
	Worker	Client	Other	Outreach	Client's Home	Community	Client	Family	Client + Family
Direct	64	22	13	26	42	9	44	17	9
Telephone	48	22	30	72	12	4	21	9	.2
									28
									67

REASON

TIME

	Assess-ment	Follow-up	Couns-elling	Consult-ation	Infor-mation	Direct Service	<10	10-30	30-60	1-2 hrs	2hrs +	Total
Direct	10	14	9	5	6	35	36	44	10	5	5	72
Telephone	5	11	4	11	22	31	80	19	1	0	0	19

providing information, consultation, and follow-up. The work was accomplished in under 10 minutes for 80% of these phone contacts.

6. Analysis by Place of Contact

There were two primary locations for all contacts: 33% took place at Outreach and 34% happened in the client's home. For this analysis, the six other locations (day care, worker's home, hospital-clinic, school, community and the Detox centre) were combined together (16%) to form a third location known simply as the community. The other process variables were assessed according to where they took place. The results are presented in Table 16.

Contacts at Outreach: Of the contacts that took place at Outreach half were initiated by the workers and a quarter each by clients or others. Half were on a face-to-face basis but there was also a large number of telephone contacts from this location. When Outreach was used, the contacts were mainly with other people (61%) and only one-quarter were with clients. These contacts were primarily focused on the provision of direct services (28%), followed by information giving (13%) and consultation (10%). Contacts at Outreach were all relatively short with 57% under 10 minutes and over 90% under half an hour.

Contacts at the Client's Home: Contacts in the clients' homes were mainly initiated by the workers or the clients and naturally involved face-to-face contact most of the time. Half of them were with the client alone, one-fifth with his family alone, and another fifth with the whole family together. From this it appears that family based intervention takes place within the home not out of an Outreach office. Nearly half of the contacts involved providing direct service with another fifth being for

TABLE 16

PERCENTAGE BREAKDOWN
FOR PLACE OF CONTACT

	INITIATOR			TYPE		WHO WITH		
	<u>Worker</u>	<u>Client</u>	<u>Other</u>	<u>Direct</u>	<u>Phone</u>	<u>Client</u>	<u>Family</u>	<u>Client + Family</u> <u>Other</u>
Outreach	54	22	24	48	36	24	10	2 61
Client's Home	66	28	6	88	7	50	21	19 9
Community	63	17	19	82	14	37	12	2 47

	REASON				TIME				
	<u>Assess- ment</u>	<u>Follow- up</u>	<u>Couns- elling</u>	<u>Consul- tation</u>	<u>Infor- mation</u>	<u>Direct Service</u>	<u><10</u>	<u>10-30</u>	<u>30-60</u> <u>1-2 hrs</u> <u>2hrs + Total</u>
Outreach	7	9	6	10	13	28	57	34	6 2 .5 39
Client's Home	8	19	5	1	4	47	38	41	6 8 7 34
Community	7	15	11	16	9	24	36	35	12 8 10 16

follow-up. Counselling only accounted for 5% of the contacts within the home. Most of the contacts were short but there was evidence of some lengthy sessions as 20% ranged from half an hour to all day long.

Contacts in the Community: Contacts in the community are initiated three times as often by workers as by clients. They are primarily face-to-face and involve either people other than the actual clients or the clients alone. The major activities in community settings are direct services and consultation. The relatively high proportion of counselling here is due to the fact that the Detox Centre is part of these grouped community locations. As elsewhere, the majority of contacts were short. The fact that almost a third were between 30 minutes and a full day is again related to the lengthy sessions in the Detox Centre.

7. Analysis by Who Contacts Were With

As described earlier, most of Outreach contacts were either with people other than the actual clients (39%) or with the clients by themselves (36%). Meetings with the clients' family accounted for 14% overall and contacts with all family members together only involved 8% of all contacts. This section takes a look at each of these types of contacts. The results are displayed in Table 17.

Contacts With the Client Alone: Although the workers had a slight edge, both workers and clients were active in initiating this type of contact. The major part of them were conducted on a face-to-face basis using the client's home twice as often as Outreach. The major reason for the contacts was direct service with follow-up next in frequency. Just over one-tenth of these contacts were used for counselling. Contacts with clients alone were relatively brief.

PERCENTAGE BREAKDOWN

FOR WHO CONTACTS WERE WITH

	INITIATOR			TYPE			PLACE		
	<u>Worker</u>	<u>Client</u>	<u>Other</u>	<u>Direct</u>	<u>Phone</u>	<u>Outreach</u>	<u>Client's Home</u>	<u>Community</u>	
Client	55	40	5	87	11	25	47	10	
Family	61	26	12	87	12	28	51	4	
Client + Family	65	26	9	79	.6	10	83	1	
Other	68	3	28	51	33	60	8	7	

	REASON						TIME					Total
	Assess- -ment	Follow -up	Couns- elling	Consul- tation	Infor- -mation	Direct Service	<10	10-30	30-60	1-2hrs	2hrs +	
Client	7	15	12	1	5	46	39	38	10	6	7	36
Family	13	20	11	.5	9	35	42	41	7	3	7	14
Client + Family	6	14	2	.7	4	34	26	37	6	20	11	8
Other	8	9	2	14	14	24	56	36	6	1	1	39

Contacts With The Client's Family: Workers initiated seeing the client's family three times more frequently than the clients did. These were usually face-to-face meetings, most often held in the client's home. Direct service and follow-up were the principle reasons for seeing the family although assessments also figured quite highly. Most contacts (83%) with families were over in under 30 minutes.

Contacts With Client and Family Together: This type of contact is of particular interest with regard to multi-problem families. Two-thirds of them were initiated by the workers; they were naturally on a face-to-face basis and overwhelmingly took place in the client's home. The activities engaged in with the whole family were again follow-up and direct services. These encounters were not change-oriented as only 2% involved counselling. Longer periods of time were spent when the whole family was involved. Almost one-third were sessions of over an hour's duration with only 63% less than half an hour. However, although longer periods of time were spent with the total family unit, it does not appear that anything different happened during that time.

Contacts With 'Other' People: Contacts with people other than clients were initiated by these other individuals 28% of the time. One-third were conducted by phone; the others face-to-face. They primarily took place at Outreach. Although the provision of direct service (or arranging for it) was still the most frequent activity, providing information and consultations were also regular activities. Very few of these contacts were lengthy with 92% occurring in under 30 minutes time.

8. Analysis by the Duration of Contacts

All contacts were divided into one of six time categories according to the duration of the contact. These six categories are studied to see how they vary with respect to the other variables. The findings are in Table 18.

Under 10 Minutes: These brief contacts accounted for 45% of all work done with the heavy user families. They were initiated half by workers and half by clients and others combined. A third were telephone contacts and the others direct. Half of them occurred at Outreach and over one-quarter at the client's home. They primarily involved the client alone or other individuals, usually with regard to direct services or information giving.

Between 10 to 30 Minutes: These contacts were initiated by workers, were mainly direct and took place equally frequently in Outreach and the client's home. They usually involved the client alone or someone else relevant to the situation. This length of contact was used primarily for direct service, follow-up and assessments.

Between 30 to 60 Minutes: Contacts for this duration were initiated mainly by workers, were direct and took place in Outreach, client's homes, and the community (in descending order of frequency). They were primarily with clients alone or with other individuals. Although direct service was the most common reason for this length of contact, counseling services ranked second with assessments and follow-up behind.

Between 1 to 2 Hours: These were direct contacts initiated by the workers and primarily taking place in the client's home. They often involved the client alone, but one-third involved all family members together. Direct

TABLE 18
PERCENTAGE BREAKDOWN
BY DURATION OF CONTACTS

INITIATOR		TYPE			PLACE		
Worker	Client	Other	Direct	Phone	Outreach	Client's Home	Community
57	24	19	58	34	49	29	5
67	17	16	83	10	35	38	6
70	17	13	91	2	32	26	14
64	28	6	75	1	13	58	10
65	33	2	79	.3	6	58	8
36	58	4	89	1	1	28	66
10 mins.							
10-30 mins.							
30-60 mins.							
1-2 hrs.							
2-4 hrs.							
All Day							

WHO WITH		REASON						
Client	Family	Client + Family	Other	Assess-ment	Follow-up	Couns-elling	Consul-tation	Infor-mation
31	13	5	22	6	13	2	7	16
37	16	8	37	11	17	7	6	5
47	12	6	33	11	11	21	6	3
44	10	33	11	4	2	15	1	5
51	21	20	7	2	2	32	0	2
65	17	16	2	0	0	4	0	2
10 mins.								
10-30 mins.								
30-60 mins.								
1-2 hrs.								
2-4 hrs.								
All Day								

WHO WITH		Direct	Client's Home	Community	Total
31	13	58	34	29	45
37	16	83	10	38	38
47	12	91	2	26	7
44	10	75	1	58	5
51	21	79	.3	58	3
65	17	89	1	28	1

service and counselling were the two major activities necessitating this length of time.

Between 2 to 4 Hours: One-third of these half day contacts were initiated by clients with two-thirds initiated by workers. They were face-to-face meetings usually in the client's home. Half involved the client alone, and two-fifths involved family members or the whole family together. The principle reasons for this length of contact were direct service and counselling.

Full Day Contact: Contacts of this duration were mostly initiated by clients, they were direct and took place in the community (specifically the Detox Centre). They were usually just with the worker and client alone and the majority involved direct service (in relation to the Detox Centre, this would be referring to providing emotional support).

9. Analysis by Workers

Service usage has thus far been analyzed in terms of the families, the program areas, and the major process variables. This section looks at service usage in terms of the Outreach workers who were involved with the heavy users. The first part focuses on the workers' involvement with the families; the second part considers their involvement with the heavy user individuals.

(a) The 38 Families

During the eighteen month study period, the Outreach workers had a total of 29,594 contacts. Not all of these were with families. During that time there were 7,909 'casual' contacts which means that the clients were not given a Health Centre case number. For individuals who are only in Churchill temporarily or who have very short term needs, assistance

is provided without going through the formal intake procedure. These are known as casual contacts. Another group of contacts also did not involve clients per se. These were contacts with schools, with alcoholic groups, with community agencies, with administration, etc. During the eighteen months, there were 953 contacts of this type. In addition to these there were 86 contacts that were not coded properly. Taking these three factors into consideration, it means that Outreach workers had 20,646 contacts with clients as reported in Table 1.

The program analysis gave statistics on 99 different workers. To simplify consideration of worker involvement, only the top 40 workers who had over 50 contacts each were included. The other 59 workers numbers included students, part-time personnel, temporary aides and a few key-punch errors.

The top 40 workers were then studied in relation to their involvement with the 38 heavy user families. The results of this analysis are shown in Table 19. The numbers of the top 40 workers are displayed across the top of the chart; the family numbers of the 38 heavy user families are entered on the left hand side of the Chart⁷. Using this chart, it is possible to take each worker in turn and see which families he/she was involved with and how many contacts he/she had with each family during that time.

The summative information for each worker is recorded in Table 20. In addition to the number of families seen and the total number of contacts

7. To protect confidentiality, the worker numbers and family numbers are only available to the Churchill Health Centre. Here the workers are numbered W1 to W40 and the families are numbered F1 to F38.

Table 19 continued

	W29	W30	W31	W32	W33	W34	W35	W36	W37	W38	W39	W40	Total	contacts	# of workers involved
F1	7	4	1	4	15			8	19	2			204		17
F2	3			9	7				3	8			205		15
F3	21	4	4	33	41	10		29	16				581		24
F4	5			9	4				88	5			185		12
F5			4	54	2			12	30				305		18
F6	3			3	1			4	48	2			238		14
F7	4			9	35	5		2	106				418		18
F8	18			27	29			13	56	2			226		15
F9	23		6	30	38				193		2		572		14
F10	5				2			16	121	1			154		9
F11	3							4	205	11	2		379		14
F12	2		35		7			1	320	1			446		18
F13	2	3	9		1			9	75	11			309		24
F14	2		48	5	3			4	52	1			200		16
F15			25	1		2			178	7			285		14
F16	37		25	18				2	105	4			494		17
F17	9			15	7	10			42	1			275		17
F18	14	2	1	6	4	6			143	2			229		17
F19	6								141	4			211		13
F20	2			1	2				99	2	1		158		15
F21	7		7	4	2			3	196	5			318		20
F22	5	21							36				192		14
F23	30			44	2	2		2	10	4			156		15
F24	4			2	1	4		2	58	12	1		175		17
F25									136				221		6
F26	47			354	1			12		1			871		16
F27	5		3	2					52	9			156		15
F28	6				1				118				221		13
F29	59		109			17		3					330		13
F30	3		1						155	7			187		8
F31	83			98	3	1		4	9	31	2		423		18
F32	1	10	1	13				4	234	2			354		12
F33	11			67					12	1			271		10
F34	60			5					200	9			358		10
F35	5			13									169		7
F36	4								53	100			170		9
F37	13								180	33			287		9
F38									135	9			158		4

the worker had with all of the 38 families, Table 20 also provides other information. For each worker, a score is given which represents the total number of contacts he or she had with any family during the 18 months. Then on the bottom line, the worker's contacts with heavy user families are shown as a percentage of his total contacts with all families. This gives an indication of how much of the workers caseload was spent on the heavy user family group.

From Table 20, we see that the total contacts of the workers ranged from a low of 51 to a high of 6,432. A monthly breakdown was not provided so it is not known how many of the workers were at Outreach for the entire 18 months. It can only be assumed that the discrepancy in total contacts is a function of length of time at Outreach, i.e. someone with 51 contacts may have just come on staff when the study ended and someone with 6,432 contacts has presumably been at Outreach through all 18 months.

It is interesting to note that there were also wide variations in the number of heavy user families seen by the workers. Two of these workers did not see any of the heavy user families whereas workers no. W28 and W38 both saw 35 out of the 38 families. In the same fashion, the number of contacts with the heavy users ranged from 0 to 3,624 per worker.

These figures are next considered as a percentage of the worker's total contacts. These percentages ranged from 0% to 94% (with an average of 28%). Thus some workers never had to deal with a multi-problem family while others spent the majority of their time with them. The tangle of problems and the self-defeating behaviour of so many multi-problem families exert a special pressure on the worker dealing with them and

TABLE 20
A SUMMARY OF WORKER INVOLVEMENT
WITH 38 HEAVY USER FAMILIES

<u>Users 38</u>	<u>Worker Contacts</u>									
Worker No.:	<u>W1</u>	<u>W2</u>	<u>W3</u>	<u>W4</u>	<u>W5</u>	<u>W6</u>	<u>W7</u>	<u>W8</u>	<u>W9</u>	<u>W10</u>
No. of families:	5	11	29	27	28	9	9	8	6	28
No. of contacts:	259	51	614	1698	382	15	54	15	13	248
Total contacts:	277	98	1823	3601	1329	91	172	84	168	1074
H.U. contacts as % of total:	94%	52%	34%	47%	29%	16%	31%	18%	8%	23%
Worker no.:	<u>W11</u>	<u>W12</u>	<u>W13</u>	<u>W14</u>	<u>W15</u>	<u>W16</u>	<u>W17</u>	<u>W18</u>	<u>W19</u>	<u>W20</u>
No. of families:	11	7	1	4	6	24	7	0	6	8
No. of contacts:	98	29	1	217	33	99	29	0	18	55
Total contacts:	372	51	67	258	92	684	265	120	55	170
H.U. contacts as % of total:	26%	57%	1%	84%	36%	14%	11%	0%	33%	32%
Worker no.:	<u>W21</u>	<u>W22</u>	<u>W23</u>	<u>W24</u>	<u>W25</u>	<u>W26</u>	<u>W27</u>	<u>W28</u>	<u>W29</u>	<u>W30</u>
No. of families:	3	2	28	11	5	21	4	35	34	5
No. of contacts:	5	2	336	50	31	116	10	647	509	23
Total contacts:	118	55	1450	411	169	606	106	1117	1285	61
H.U. contacts as % of total:	4%	4%	23%	12%	18%	19%	9%	58%	40%	38%
Worker no.:	<u>W31</u>	<u>W32</u>	<u>W33</u>	<u>W34</u>	<u>W35</u>	<u>W36</u>	<u>W37</u>	<u>W38</u>	<u>W39</u>	<u>W40</u>
No. of families:	14	27	15	15	0	15	7	35	29	6
No. of contacts:	170	936	174	104	0	83	78	3624	287	10
Total contacts:	456	2082	375	537	127	677	351	6432	1719	89
H.U. contacts as % of total:	37%	45%	46%	19%	0%	12%	22%	56%	17%	11%

often require special skills and techniques. Given this, there should be some consideration by supervisors as to how these families are distributed on the worker's caseloads.

Having discussed the number of families per worker, it is possible to turn this idea around and consider how many workers each family has been involved with. Returning to Table 19, we can take each family in turn and see how many workers it saw and for how many contacts. These results are summarized in the far right hand columns of this table.

During the 18 months and considering only the top 40 workers, one family saw 4 different workers. That family was unusual. Two other families were each involved with 24 different workers during that same period of time. These families represent the extremes. But on the average, each of the 38 heavy user families had contacts with 14 different workers. This does not mean that all these workers were involved simultaneously; obviously some represented staff turnover and worker replacement. But the evidence here points to at least two of the conditions of the multi-problem family: a multiplicity of services (Schlesinger, 1970) and a lack of continuous contact between worker and client (Geismar and LaSorte, 1964). From the earlier section we know that one-third of the contacts were with the client alone; thus it is also possible that each family problem and each family member are being treated by a different worker.

(b) The 65 Individuals

Similar to the above, it was decided to determine each worker's involvement with the actual heavy user individuals. Table 21 shows the detailed breakdown of this analysis for all 65 heavy users. This time only the top 30 workers were included.⁶

8. To protect confidentiality, worker numbers and individual numbers are only provided to the Churchill Health Centre. Here the workers are recorded as W1 to W30 and the individuals are I1 to I65.

The results of the worker involvement are summarized in Table 22. As before, for each worker, statistics are provided on the number of heavy user individuals he worked with, the number of contacts this involved, the number of total contacts he had with all clients during the study period, and the number of contacts with heavy user individuals as a percentage of his total contacts.

The findings again show wide disparity in workers involvement with heavy users. Among these 30 workers, the minimum involvement entailed working with 3 heavy users; the maximum involved working with 52 of the 65 heavy users. Worker contacts with all heavy users ranged from 14 to 2,256 while their total contacts ranged from 43 to 6,432. When work with heavy user individuals is considered as a function of total contacts, we see that from 5% to 93% of a worker's time might be spent with these individuals. On the average, workers devoted one-third of their time (33%) to working with this group of users.

On the extreme right hand side of Table 21, we see the total contacts for each heavy user individual and the number of workers that that person was involved with. At the low end some people were only involved with 4 workers; at the other extreme some individuals were involved with 14 workers. On the average there were 9 workers per heavy user individual.

Multiple worker involvement in the family context was seen as a danger sign because it probably meant that each family member was being treated by a different service. These latest results indicate that it is not even that simple. If this group of users are any indication, it appears that each family member is being seen by several program areas and several workers simultaneously.

TABLE 21

BREAKDOWN OF CONTACTS BY INDIVIDUAL AND BY WORKER

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22
I1			4	12	11	11	3				3	2			14		9	5	4	21	4	W22
I2			128		1	1									2	1		2				24
I3			172						1						4	1		2				2
I4			23									2			7			2				3
I5	38		62		1		29	7	4		1					4		5	1	3		7
I6			3	90											1			1	16		4	27
I7	4		7				2								12			6	6	3		2
I8				95	2		2													7		45
I9			3	101			7					5		3	1	1				2		3
I10		6		4					2													2
I11			9	3					18			1							10			2
I12			10				3								15			9	8	4		24
I13		1		60			4												3	20	3	
I14				73											1					1		
I15		5		8			2		1										17			
I16		7		1															10			
I17								1														
I18		3		2	2	39	7				3									2		
I19				1	6										2	2			5	3		
I20					17		1												10			
I21			4			2	2							1	1		12					
I22			2		9	16	1	3			9	2		20	3		2	13		2	26	
I23			2		15		2	10				7			2			4		8		
I24			11										83					1				
I25				2	1	1						1		11			2		3	1		
I26				32								3		12					23	1	36	5
I27								1							1				2		22	
I28	1		3	47	3		1															
I29			5	20	17	2		4						5					22	2	1	
I30	2			75															48	26	24	17
I31			34		5		4		1				9			3			7	3		1
I32	2				13		3					2		8					7	2		1
I33			1	2			11								6	1			4			
I34				2	8							1			3				5	3	9	
I35			1	4	7			7							3	6		4	4			

Table 21 continued

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22
I36			1	7	1	7	2				8			1				2	8	5	3	3
I37																			14			
I38		1	8		40		1					2			29	1			1			
I39		2	6	3			8		3			1			11			2	2	19		34
I40				38															11			
I41				25											3				3			
I42	50		87	8			9			47		2			7			8	13	25		157
I43	89		64	5		1	7			38		1			8			2	2	21		196
I44			10		10		4						2		3				1	19		46
I45					29		2					9			6				4	3		
I46		1	4		1		4					1			1			1		28		39
I47			1												11			4		1		
I48			23									1			6			2	3	2		5
I49			27				7					1			17			1		26		60
I50	2		62				9			5		1			3			1		32		46
I51					2														11	2		1
I52			7		2		10					4			30					1	45	30
I53			5		1		11					1			20			2		37		58
I54																			34			3
I55																			38			4
I56				88			1								1							
I57	53		19		1					55								2		8		36
I58	1		33		2		2			1								3		3		28
I59																		1		1		8
I60				2		2	1											1	3	14		2
I61				2															9	4		
I62	20		50	1			8			68									6	2		11
I63				3				34				1							2			
I64								4														
I65				6			17												2	3		

Table 21 continued

	W23	W24	W24	W26	W27	W28	W29	W30	Total contacts	# of workers involved
I1	1	1			29		12		168	17
I2	13	4					1		157	11
I3	27	5					3		218	9
I4		2					20	1	82	11
I5							23		227	14
I6				10			25		131	8
I7	1								77	6
I8							1		133	12
I9	17	1							135	7
I10	17	3					103		126	6
I11	29		2		1		52		133	10
I12			12				2		91	8
I13									81	7
I14	10	2					32		136	6
I15	28						49		87	5
I16							56		75	5
I17					1		109	1	131	7
I18	2	2		14			57	6	141	13
I19			4				64	3	88	7
I20							57	1	79	6
I21					1		116	1	187	13
I22	7		1				13		127	16
I23	1				9		29	7	78	9
I24					23		4	2	104	6
I25							20		109	13
I26	2				4		14	3	89	8
I27						2	100	4	110	5
I28							7		88	9
I29							39		209	12
I30									81	4
I31				2			14	10	90	12
I32	1	1					50	2	81	8
I33							6	25	73	10
I34							53	3	78	8
I35							90	2	128	10

Table 21 continued

	W23	W24	W25	W26	W27	W28	W29	W30	Total contacts	# of workers involved
I36							38	2	88	14
I37						2	106	1	123	4
I38			2				23		108	10
I39			2				1	1	94	13
I40						1	78		129	5
I41						1	55		87	5
I42	1			7					421	13
I43				5				1	440	14
I44		4		19				2	120	11
I45						2	34	3	93	10
I46		1					2		82	10
I47						2	68		89	7
I48							30		70	7
I49		12							151	8
I50		1							165	11
I51				3			116	5	137	6
I52		1		1					131	10
I53				2			1		138	10
I54	2						103		142	4
I55	1						98		141	4
I56	21						2		113	5
I57							12		186	8
I58			13					1	87	10
I59			92					3	106	6
I60			2				54	1	81	9
I61						1	94		110	5
I62									160	7
I63							45	1	89	5
I64							21	67	95	5
I65							54	17	97	5

TABLE 22
A SUMMARY OF WORKER INVOLVEMENT
WITH 65 HEAVY USER INDIVIDUALS

<u>Users 65</u>	<u>Worker by Person</u>									
Worker no.	<u>W1</u>	<u>W2</u>	<u>W3</u>	<u>W4</u>	<u>W5</u>	<u>W6</u>	<u>W7</u>	<u>W8</u>	<u>W9</u>	<u>W10</u>
No. of users	8	12	34	34	27	8	35	9	7	6
No. of contacts	257	36	609	1119	240	41	191	72	28	214
No. of total contacts	277	98	1823	3601	1329	172	1074	372	51	258
H.U. contacts as % of total	93%	37%	33%	31%	18%	24%	18%	19%	55%	83%
Worker no.	<u>W11</u>	<u>W12</u>	<u>W13</u>	<u>W14</u>	<u>W15</u>	<u>W16</u>	<u>W17</u>	<u>W18</u>	<u>W19</u>	<u>W20</u>
No. of users	4	23	3	8	34	10	4	22	42	39
No. of contacts	21	54	94	61	243	22	25	73	391	362
No. of total contacts	92	684	120	170	1450	411	169	606	1117	1285
H.U. contacts as % of total	23%	8%	78%	36%	17%	5%	15%	12%	35%	28%
Worker no.	<u>W21</u>	<u>W22</u>	<u>W23</u>	<u>W24</u>	<u>W25</u>	<u>W26</u>	<u>W27</u>	<u>W28</u>	<u>W29</u>	<u>W30</u>
No. of users	13	34	17	14	3	15	4	10	52	28
No. of contacts	186	1025	180	40	107	86	65	14	2256	178
No. of total contacts	456	2082	375	537	127	677	351	43	6432	1719
H.U. contacts as % of total	41%	49%	48%	7%	84%	13%	19%	33%	35%	10%

It is probably too extreme to say that every current Outreach member is involved with members of every heavy user family, but the trend is certainly in that direction. And, although there is no proof, it is likely that this multiple worker involvement is contributing to the problems already faced by these families. Unless it is extremely well coordinated, this multiple involvement results in duplication of some services while others are ignored. As well as being inefficient and costly, this kind of 'treatment' can be very confusing to the clients.

This demonstrates what Geismar and LaSorte (1964) meant by saying that problematic family functioning and inadequate agency functioning are like two sides of the same coin. Although it cannot be proven, it is possible that the multiple involvement of Outreach workers has possibly contributed to the mass of problems and thus helped maintain the high utilization patterns of these families.

10. Summary of Service Usage

The findings in this part of the analysis have provided information about the kinds of social problems faced by multi-problem families and about the ways in which these families have sought and received help from the Outreach Department of the Churchill Health Centre.

Although this information system does not include a section for the type of problem, it is possible to deduce this in very general terms from other data. For instance, if this group of families are involved with a program designed to treat problems a, b and c then it is fairly safe to assume that these families as a group experience some or all of the problems a, b and c. Using this logic, frequent involvement with the Child Welfare program would likely indicate problems related to family

functioning in such areas as child care, parenting skills and child neglect⁹. Problems dealt with by the Public Health program could include areas of health, cleanliness and malnutrition. These families probably also experience some problems in delinquency, acting-out behaviour and family relationships as indicated by their involvement with Probation and Family Services.

Although it is possible to make the general connection from the program to the problems experienced, we cannot safely assume the opposite. That is, these families' minor involvement with the alcohol program does not necessarily imply that they do not have alcoholism problems. This is a possibility, but it is also possible that the Alcohol program has not reached these particular families who may actually have a very high percentage of alcoholism.

It is apparent that each of these families has multiple problems because they are all simultaneously involved with a variety of services. And from these different program areas, a number of different workers are involved with each family.

There were two thrusts of activity in relation to these 38 families. The first concerns worker involvement with the actual clients. These generally took place in the client's home. When the meeting involved the client alone, it was usually quite short and for the purposes of providing direct service. When the meeting involved family members, it lasted

9. It would however be overstretching the data to specifically conclude that a particular family had a child neglect problem because they saw a worker from the Child Welfare program area. The above section is talking in general terms only.

longer but the focus was still direct service. There was some emphasis on providing information but relatively little in the area of counselling. Counselling involving the whole family was very rare.

This indicates that the Outreach workers are primarily using an individually-based intervention plan. It is centered in the client's own environment and focuses on providing practical day-to-day support, information, and assistance. This type of straightforward approach is cited in the literature as being an effective way of helping the multi-problem family identify its problem areas and engage in problem solving behaviour.

The Outreach workers identify their major activity with clients as direct service not as counselling. However the process described above is or certainly can be change-oriented. We may simply be dealing with semantics here or it could be that the workers do not realize the potential benefits of the routine situations they find themselves in with these clients.

Although there is no conclusive evidence, Geismar's study (1972) indicates that the most effective technique for producing change in multi-problem families was providing support, information, and practical help. These three elements are also paramount in the techniques for working with low-income families described by Hollis (1968). Traditional casework and strong directive therapy have not been successful with this group of families. However, as Visotsky (1963) points out, if families are able to successfully resolve the small day-to-day crises, they develop more adaptive coping behaviour and gradually display less disorganized behaviour.

If we use this as a guideline for treatment, it appears that the Outreach workers are moving in the right direction at least in terms of the

focus and location of their work. But it is not clear whether they just happen to be doing this unknowingly, or whether this is the result of a planned interventive strategy. If the latter were true, then one would expect them to have labelled their activities as being more change oriented than they did.

Two other comments can be made about worker intervention with clients. The literature in this area stresses the importance of working with the entire family. The reasoning behind this is simply that since the problems affect all family members, all family members will have to be involved in identifying and resolving them. Outreach focuses on the individual with some attention to family members apart from the client, but there is little contact with the whole group together. Typically, the problems affecting these families are so complex and interwoven that they cannot be neatly separated one from the other. It is recommended that even what appears to be an individual's problems should be considered in the context of the entire family.

The second comment is in relation to the time spent on each contact. The emphasis seems to be on many brief encounters. Some of this is viable and reflects efficient work. But when 80% of the contacts are under 30 minutes, it has to be wondered if the workers are all allowing enough time for any type of activity; whether it involves assessing the family situation, listening to problems, making decisions with the family, giving practical assistance, or whatever. The short nature of the contacts is intensified when it is considered that these brief visits are not just with one worker but with a variety of workers representing different programs. Under these conditions, it would be difficult to develop the 'continuity of care' that is so important in any form of helping relation-

ship.

The second thrust of activity in relation to the 38 families concerns worker involvement with people other than client or family. This involves a large portion of the workers' time. The meetings generally take place at Outreach either by phone or in person. It appears that the main purpose of these contacts is to make whatever arrangements are necessary for the provision of direct service. This is a necessary activity and one that has to be done.

Despite this, it was expected that worker contacts with other people would include more meetings centered around coordinating services to these families. It is known that each family is involved with several program areas and a variety of workers and in many cases, each family member may be involved with several workers simultaneously. This situation, unless carefully controlled, is ripe for both duplication of services and confusion among the clients.

There is no way of showing in this analysis the extent of fragmentation or the lack of coordination in Outreach service provision. All that can be gone by is the fact that these workers report spending a small amount of time in consultation with each other or with other agencies. However, it is most likely that these workers have a good idea of who else is involved with a family and they probably do discuss the case on an informal basis.

There are many working with multi-problem families who believe that an informal communication network is not sufficient to adequately coordinate the necessary services. The case conference approach as described in Lagey (1962) involves all agencies meeting together to form

a group diagnosis, draw up a treatment plan, and assign responsibility for treatment. It is obvious that this type of conference is not taking place in Churchill because the consultations that have taken place are too brief in time to allow a discussion of this nature to take place.

The really essential fact in all of the above discussion is that multi-problem families do pose a special kind of problem to helping agencies. If this is not recognized, the situation builds up and begins to perpetuate itself. More and more services and workers get involved, treatment becomes fragmented, services are duplicated, delivery costs rise, workers become frustrated, and clients get confused. The end result is that a small group of families utilize most of the community resources without showing any sign of improvement.

It may be unfair to state that this is happening in Churchill, but this study does show that elements of the above situation are present. As said before, there is no single or simple solution to the multi-problem family dilemma. The groundwork has begun here by identifying the families and by describing the current way in which services are provided. Based on this and on what is available in the literature, the Health Centre can then decide which elements of its present service delivery it wants to keep and which it wants to modify.

From this author's perspective, probably the most important element is to bring the number of workers and services involved under control. There are two ways of accomplishing this. The first is based on the case conference approach. Here, each of the families is assigned to a primary therapist who assumes responsibility for coordinating the treatment plan. In this way different agencies and services can be used as necessary,

but the key person is always informed and in control of these happenings. This also allows the family to identify with a single worker and permits the continuity of care idea to develop. This system can also benefit the workers by distributing major responsibility for the various families among all the staff. This would remove unnecessary pressures and allow them to devote special attention to their family.

Another possible approach would be to develop a team of multi-problem family 'specialists'. This group could include representatives from each program area and would handle all of the problem families. As above, the team could alternate primary responsibility among its members. The difference here is that this small unit of workers would be expected to develop special skills and expertise in working with this group of families. This approach would also free up to the other Outreach workers who could subsequently spend more time with other families or in developing other programs in the community.

The key is not so much in what is done but in developing some sort of a planned approach to dealing with the situation. Once the service delivery is brought back under control, then aspects of the intervention strategy can be developed. As indicated previously, this might be to leave the focus on practical assistance within the home but move towards slightly longer sessions involving more family members. The workers might also focus more on how particular types of activities work towards achieving set goals so that there is a conscious direction to even the most casual encounter with these families.

4. Characteristics of Medical Utilization

Medical data was collected for the top twenty families, that is

those families who averaged at least 3 contacts a week with Outreach workers. This involved 102 individuals. Of these 33 belonged to the high user group (where each individual averaged one contact per week with Outreach) and 69 were classed as relatively low users of Outreach services. While it is important to study the medical behaviour of heavy user families in general, it will also be informative to analyze the differences in medical utilization patterns between high user and low user individuals within these families. Thus in the following section, an analysis is first made of the 20 families as a group and then a distinction is drawn between low and high users within it.

1. General Findings

It should be noted right at the start that it will be very difficult to make accurate statements about these findings vis a vis the major points of the literature review. This is because we are dealing with a study of a single group at one point in time. The author has no idea of what constitutes regular medical behaviour in Churchill, whether there are different utilization patterns between low income and high income groups, or whether the advent of the Health Centre has produced changes in utilization behaviour. Thus these findings have to be taken primarily by themselves with some cautious interpretation in relation to the literature review.

In total, the 20 families had 679 medical contacts (including clinic visits, emergency visits, and hospitalizations). Seven of the families had 40 or more contacts during the study period which means that they utilized medical services on the average of twice a month. Eight families had between 20 and 40 medical contacts indicating that they required

service about once or twice a month. The remaining 5 families had under 20 contacts.

Included in the 20 families were 13 adult males, 19 adult females, and 70 children. The adult males accounted for 146 medical contacts. The 5 high user males required 84 contacts (average 17) while the 8 low user males had 62 contacts (average 8). In all, adult females utilized 225 medical contacts: the 14 high users required 210 of these (average 15) while the 5 low users only used 15 contacts (average 3). Among the children, the total of 308 contacts were divided with 14 high users using 70 contacts (average 5) and 56 low users requiring 232 contacts (average 4).

To summarize this, 33 individuals who were high user of Outreach services required 370 medical contacts. Thus one-third of the family members accounted for just over half (54%) of the medical services. The other 69 family members, who were not heavy Outreach users themselves, accounted for the remainder of the medical services - 328 contacts. It appears that within these heavy user Outreach families, the largest consumers of medical services are the high user adult females and the high user adult males.

Each of the medical contacts were classified according to the primary purpose of the visit. The classification used was a modified version of the "Nature of Encounter" category used by Quebec's health care centres' integrated record system (Department of Social and Preventive Medicine, 1974). The breakdown of purposes for the medical encounters are provided in Table 23. For a full description of each label, see Appendix E. The first column refers to all family members, then columns 2 and 3 pertain to the high users and low users respectively.

TABLE 23
 PERCENTAGE BREAKDOWN
 OF REASON FOR MEDICAL CONTACT

	All Members n = 102 % of Contacts	High Users n = 33 % of Contacts	Low Users n = 69 % of Contacts
Illness	54.2	57.6	50.2
Initial Wound	14.6	11.4	18.4
Follow-up re Wound	6.5	5.9	7.1
Adult Check-Up	.1	0	.3
Child Check-up	.9	.8	1.0
Prenatal Care	.3	.5	0
Postnatal Care	.1	.3	0
Surgery Elective	.4	.8	0
Surgery Nonelective	.7	.8	1.0
Counselling	1.2	.3	1.0
Consultation	9.3	1.4	6.5
Missed Appointment	8.1	11.6	9.1
Pt. not wait for Dr.	.6	7.3	.3
Dr. won't see Pt.	0	.3	0

The groups show remarkable similarity in their reasons for medical contacts. Over one-half of the contacts pertained to a physical or mental condition considered as illness here. Another fifth related to either the initial contact or follow-up of wound (a condition resulting from an accident, poisoning, or act of violence). With these families, the wounds were primarily due to falls, fights, or an object cutting skin. However with the high user group, suicide attempts were the number one cause of wounds. It is interesting that the low Outreach users had a higher proportion of these accidentally caused problems (and a slightly lower proportion of physical illness) than their high using relatives. It would be interesting to know whether the proportion of wounds in this overall group is higher than in the rest of the population (which is the thesis advocated by Greenlick et. al. (1972).

There was relatively little done in the area of check-ups or preventive medicine. This coincides with Richardson's (1970) findings in which the poor had normal utilization rates for serious conditions but were much lower for non-serious conditions such as check-ups, follow-up and preventive services. And, although this group of people have a variety of social problems, there was very little indication of this being a primary focus during a medical contact (of course, there may have been times when supportive counselling took place but was secondary to the principle purpose of the contact).

Almost one-tenth of all contacts were missed by the patients. This seems high but again there are no standard figures to compare with. The high users of Outreach missed more appointments than other family members for a variety of different reasons.

Once the nature of the contact was established, it was decided to determine what the problem was that necessitated medical attention. The classification system used was a modified version of the "Problem Codes" section of the Quebec reporting system (Department of Social and Preventive Medicine, 1974). A full description of the problems is given in Appendix F. The findings again are broken down into all family members, high Outreach users and low Outreach users and are shown in Table 24.

TABLE 24
PERCENTAGE BREAKDOWN OF MAJOR PROBLEM
NECESSITATING MEDICAL CONTACT

	All Members n = 102 % of Contacts	High Users n = 33 % of Contacts	Low Users n = 69 % of Contacts
Skin & Sub. Tissue	20.5	16.2	25.6
Sense Organs (ENT)	13.7	11.6	16.2
Muscular System	11.5	11.1	12.0
Nervous System	7.8	9.2	6.1
Digestive Tract	5.7	5.4	6.1
Respiratory System	5.6	4.6	6.8
Alcoholism, DT's	4.6	7.0	1.6
Genito-Urinary	4.3	6.2	1.9
Psychological	4.0	5.7	1.9
Circulatory System	2.9	5.1	.3
Broken Bones	2.7	1.6	3.9
Tumors	1.9	3.0	.6
Infectious Diseases	1.5	2.2	.6
Endocrine System	.4	.5	.3
Pregnancy	.4	.8	0
Newborn	.1	.3	0
No Information	.4	.5	.3

The most frequent reason for medical service involved problems with the skin or subcutaneous tissue. These of course are related to the numerous cuts and bruises received as 'wounds'. The next highest category overall was problems with sense organs. In general these related to ear, nose, and throat disorders, particularly Otitis which is an indulent inflammation of the middle ear common to native people in northern communities. The next category was problems with the muscular system, some of which is again related to accidents. These three categories constituted the main problem areas.

Lower on the list were problems with the nervous system (several people were epileptics), with the respiratory system and with the digestive tract. Although the proportions are relatively the same between low users and high users for most problems, the high users had higher frequencies of circulatory problems, genito-urinary problems, and problems related to alcoholism.

Over all there was relatively little medical service regarding alcoholism. Only in 16 of 102 cases was there any indication of alcohol abuse in the charts. Of these 16, 11 were high Outreach users and 5 were low users. This should not be automatically interpreted as an absence of alcohol-related problems in these families. It is possible that even well-known cases of alcoholism would not be recorded as such in the charts if that was not the primary reason for medical attention.

In all, 64% of the medical contacts were handled by the attending doctor. Another 22% were referred to Winnipeg and 9% required medical specialists. These included consultations with orthopedics, ophthalmology, ENT, gynecology, general surgery, pediatrics, cardiology, and urology

(listed in descending order of frequency of consultation). There were very few referrals to Outreach indicated in the charts; likewise there was little mention of any Outreach involvement with these families.

The three basic types of medical contacts included visits to the Outpatient Clinic, visits to the Emergency Ward, and hospitalizations. In all, the 20 families had 427 clinic visits, 173 emergency visits and 60 hospitalizations. Multi-problem families are typically noted for an emphasis on using 'walk-in' type treatment over scheduled appointments (Greenlick, 1972). It is difficult to judge this phenomenon with the present data. Definitely one-quarter (25%) of the medical contacts are 'walk-in' contacts because these are visits to the emergency ward. With the clinic visits, some of them are scheduled appointments and others are unscheduled. Without an exact breakdown, it is hard to know what the overall proportion of 'walk-in' contacts was.

Some differences between low and high using family members were seen with regard to the type of contact. The high user group accounted for 75% of the hospitalizations (45 out of 60). They also were involved in 57% of the clinic visits (242 out of 427) and 46% of the emergency visits (80 out of 173). Thus one-third of the family members utilized three-quarters of the hospitalizations and one-half of the outpatient visits. Correspondingly, the low user individuals accounted for 15 hospitalizations, 185 clinic visits, and 93 emergency visits.

Because there are different numbers of low user and heavy user individuals in these families, it was decided to consider the average number of visits to each type of service for each group. Altogether the members of the 20 families averaged .6 hospitalizations during the

study period. The low users each averaged .2 hospitalizations, but the high users averaged 1.4 hospitalizations each.

With regard to clinic visits, the total group averaged 4.2 visits during the 18 months. Considered alone, the high users averaged 7.3 visits and the low users 2.7 visits.

All family members together averaged 1.7 contacts with emergency services. Taken separately, the high users had 2.4 contacts each and the low users averaged 1.3 visits.

For each type of medical service provided, individuals who are the heavy users of Outreach services are shown to use more medical services than other family members. This is particularly true with regard to clinic visits and hospitalizations.

The 60 hospitalizations together involved 336 bed days, averaging out to 5.6 days per stay. The high user group used 242 bed days which meant an average stay of 5.3 days. The low user group used a total of 94 bed days but had an average stay of 6.3 days in hospital.

Within these 20 families, it is apparent that family members who are heavy users of Outreach services use more medical services (of every type) than family members who use relatively low amounts of Outreach services. Although studies (Alpert, 1967 and Richardson, 1969) have shown the high association of medical and social problems in families, this is not always connected to the same individual as shown here. In Hrubec's 1959 study, illness in one family member was highly related to the risk of behaviour problems in another family member. From this it appears that some members would be high users of medical services and some would be high users of social services. But in this study, the

family members who utilize the most Outreach services are also more frequent users of available medical services.

It was decided to investigate the family and individual based associations between medical use and social service use more thoroughly by means of correlational analyses. The family was used as the first unit of analysis. Two indices of medical use were constructed: the family's total number of outpatient contacts (including clinic and emergency visits), and the family's total number of hospitalizations. The index of social service use was the total number of family contacts with Outreach. The results are displayed in Table 25.

TABLE 25
A CORRELATIONAL ANALYSIS BETWEEN
FAMILY MEDICAL USE AND FAMILY OUTREACH USE

		<u>Family Outreach Total</u>	
Fam. Outpt. Total	$r = -.10$	$r^2 = .01$	$p < .33$
Fam. Hosp. Total	$r = .60$	$r^2 = .37$	$p < .002^*$

* indicates a significant relationship

This shows that there is very little relationship at the family level between the number of Outreach contacts and the number of outpatient visits. Heavy Outreach use is therefore not associated with this type of medical use. However, a moderately positive relationship exists between Outreach usage and the total number of family's hospitalizations. Thus the higher a family's Outreach score is, the more likely it is that

they will have a high number of hospitalizations. This finding is significant at the .002 probability level.

Having shown a positive association between family based medical use and social service use, the analysis now focuses on the individual relationship between these usage scores. On the medical side, four indices of use were used: the number of clinic visits, the number of emergency visits, the total number of outpatient visits, and the number of hospitalizations. For Outreach, the index used was the individual's total number of contacts with all program areas.

The correlations were first done on all 102 individuals of the 20 families; they were then repeated for high user individuals and low user individuals. The results are in Table 26.

TABLE 26
A CORRELATION ANALYSIS BETWEEN
INDIVIDUAL MEDICAL USE AND INDIVIDUAL OUTREACH USE

	All Members n = 102			High Users n = 33			Low Users n = 69		
	Outreach Score			Outreach Score			Outreach Score		
	r	r ²	sig.	r	r ²	sig.	r	r ²	sig.
Clinic Visits	.35	.12	p<.002*	.07	.01	p<.34	.05	.00	p<.33
Emerg. Visits	.11	.01	p<.14	-.12	.02	p<.25	.12	.01	p<.16
Outpt. Visits	.30	.09	p<.001*	.00	.00	p<.50	.09	.01	p<.22
Hosp'izations	.60	.36	p<.000*	.50	.25	p<.002*	.16	.02	p<.10

Looking at all 102 family members together, we see that an individual's Outreach score is positively related to several medical indices. A

significant but relatively weak relationship is shown between a high Outreach score and a high number of clinic visits and total outpatient visits. Since Emergency visits were nonsignificant, the total outpatient visits' significant finding simply reflects the significant clinic findings. Both these correlations are highly significant. A stronger positive relationship is demonstrated between an individual's Outreach score and the number of times he requires hospitalization. There is less than one in ten thousand chances that this result happened by chance.

When the families are divided into low and high user members, the weak relationships disappear and only the association between Outreach contacts and hospitalizations remains in the high user group.

To summarize, when the number of hospitalizations is taken as an index of medical use, there is a family based association between medical use and social service use. This also applies on the individual level: that is, a person who uses Outreach frequently will have a high hospitalization rate. To a lesser extent, this individual will likely also show higher rates of clinic contacts.¹⁰

It must be remembered that these findings only pertain to the 20 families under study. These families are the top 20 heaviest users of Outreach services and thus may be quite atypical from the general popul-

10. It should be pointed out that other analyses showed that a moderately positive correlation exists if we use an individual's Outreach score to determine his family's hospitalization rate or if we use the overall family Outreach score to determine the individual's hospitalization rate. These exist because of the positive correlation between an individual Outreach Score and a family Outreach score ($r = .55$ $p < .000$). These were not reported in detail because they are not as conceptually meaningful as the other.

ation. Because they are not likely to be a representative group, it would be unwise to try to generalize these results to the larger population.

It is also very difficult to consider the full impact of these findings without knowing what constitutes normal medical behaviour in this community. However it is possible to compare them to standardized medical utilization rates. Since the author did not have access to standard hospitalization rates, it was decided to take the American national average of 4.5 health visits per person per year (Beloff and Korper, 1972), standardize the Churchill study results to a 12 month period, and then compare the Churchill findings to the national average. This method would provide a basis for rating at least the outpatient visits of this group.

Considered in this way, the members of these 20 families averaged 3.9 outpatient visits (clinic or emergency) over a one year period which means that as a group they will underutilize medical services to some extent. However, when we break this down to the low user and high user classification, the low users of Outreach services only average 2.7 medical visits per year thus they are considerably under the national figure. On the other hand, the heavy users of Outreach services averaged 6.5 visits which means that they exceed the mean utilization rates.

Thus as a group, the Churchill multi-problem families follow the typical utilization pattern described in the literature. They use fewer medical services than the national average although they are not far below the average. At first glance, it would appear that the influence of the Health Centre on their health behaviour probably accounts for this

nearly normal utilization behaviour.

However, this study shows that this 'average' figure is obtained because there are two utilization patterns at work among the family members. The individuals who are not heavy users of Outreach services underutilize medical services; and the individuals who are heavy users of Outreach services tend to overutilize medical services. When put together, there is a pattern of nearly normal utilization behaviour. To the author's knowledge, a similar finding has not been reported in the utilization literature.

There were no figures available to do a similar analysis of this group's hospitalization rates. The hospitalization rates of these families may be the norm for the Churchill area or they may represent a wide deviation from average utilization. If it turned out that they were atypical (and that this group of families were inflating hospital service costs), then knowing that a high Outreach score correlates fairly strongly with this index of medical use could be useful in further analyses.

It might be possible to use the Outreach usage score as one of the measures used to predict out hospitalization use¹¹. If the individuals in the population who were likely to require hospitalizations (the most expensive form of medical treatment) could be identified, then it might be possible for the medical profession to develop some form of preventive treatment in relation to this target group and perhaps ultimately lower health costs. This is leaping ahead into the future, but it does show some of the potential uses of this information system when it is fully

11. Tables 25 and 26 demonstrate that on both an individual and family basis, the Outreach score alone accounts for over one-third of the variance in hospitalization rates.

incorporated into the entire Health Centre.

2. Summary of Medical Findings

During the eighteen month study period, the top 20 Outreach user families required 679 medical contacts. These encounters were primarily in relation to physical illnesses or accidental wounds. There were relatively little preventive services. The principle reasons for the contacts were related to problems of the skin, of the sensory systems (especially ENT) and of the muscular system. There was little medical involvement concerning problems of alcoholism.

Most of the contacts were handled by the attending doctors. The contacts took place in the clinic, in emergency, and in hospital. Family members who were high users of Outreach services averaged more contacts than other family members for all types of medical services.

A correlational analysis showed a fairly strong positive relationship between Outreach use and hospitalization rate. This held on both the family or individual level. A weaker but still significant positive relationship was also shown between an individual's Outreach usage score and his number of clinic visits.

Average hospitalization rates were unavailable to compare the Churchill findings to; however, a comparison was made between the Churchill outpatient statistics and the American national average of outpatient visits. It was found that this group of multi-problem families were slightly under the average utilization rate - as would be expected according to the findings of other utilization studies.

What was not expected was the finding that within these families, the members who were heavy users of Outreach services tended to over-

utilize medical services and that the members who were not heavy Outreach users tended to underutilize medical services. These two usage patterns combined to form a relatively average looking utilization rate for these families.

It appears then that, at least within these 20 heavy user families, there are a minority of members who are receiving excessive amounts of both medical and social services. At the same time, there are other family members who have received very little attention from the helping professions. There is no simple explanation for the extreme variations in service usage among individuals who are part of the same family and who would presumably be exposed to many of the same stresses and problems. It could be that they are an integral part of the problem situation but have scapegoated another family member. It could be that they do indeed have problems which have been overshadowed by more vocal aggressive family members and thus overlooked by the helping professions. It could be that they experience less of the problems than other family members or that they have developed adaptive coping mechanisms to deal with them and are in fact healthy individuals who have no need for professional intervention. It will be important for the Health Centre to consider the possible reasons for the discrepant utilization rates within each multi-problem family and what implications these have for the Centre in the planning of future programs.

5. The Development of a Predictive Model

1. Introduction

The medical section briefly referred to the possibility of identifying

potential heavy users of hospital services. Although this data system does not yet have the capabilities of doing this, some forms of prediction are possible. And ultimately this will be one of the most relevant forms of analysis for the Health Centre.

It is useful to visualize the uses of an information system on two levels. On one, it produces facts and figures that are directly related to the present delivery of service. This type of immediate feedback is useful in monitoring worker activity, in checking caseload distributions, in identifying client groups, and in making treatment plans. On the other level, the system provides information that can be used in long term planning. This would include such areas as staff development, identifying new target areas, setting policy priorities, or developing programs to meet new needs.

In the case of the multi-problem families, this study has shown how the monitoring system can provide relevant feedback to workers and supervisors regarding day-to-day program activities. In particular, it has pointed out client characteristics, medical conditions, and patterns of service use. Because of the amount of time and resources focused on these families, it is indeed important to use this information to develop more efficient and more effective services.

However, it has been shown that much of family disfunctioning begins early in the family's life history (Geismar & LaSorte, 1964). It follows that if these families can be identified before the problems multiply and become chronic conditions, then there is a greater chance for successful treatment. Therefore, while it is important to continue improving existing methods of treatment, in the long term it will be

even more important to be able to identify potential multi-problem families and provide preventive services that will enable them to maintain good functioning levels.

The idea of being able to predict service usage or high risk groups is not new. The literature review described several medical utilization models which are being used to explain different patterns of use, to identify high priority families, to compare population groups, or to project future health needs. However, these techniques have not yet been used to the same extent in the social service profession.

This section of the study attempts a somewhat elementary predictive analysis. The purpose is to determine if there is a particular combination of factors that help explain the phenomena of high usage of Outreach services. This will be used to develop client profiles of high risk individuals. It is hoped that early identification of multi-problem families would allow for preventive action to be taken. By building in strengths and coping skills in the early stages of disfunctioning, it is expected that serious problems and chronic use of the social services could be averted.

This of course represents the ideal state. The author is aware that there are inherent dangers in using a typology of any sort. Even when the use of a profile is well-intentioned, there is a danger caused by labelling a person as a high risk individual. Although the intent is to try to prevent problems from occurring, it is possible that the process used could actually create more of a problem by stigmatizing certain individuals. And there will always be people who fit the 'profile' but who are functioning perfectly well and who do not require any type of

intervention - now or later.

The author suggests that the client profiles developed in the final part of this paper represent an elementary attempt at prediction and thus should be considered regarding negative implications and used cautiously.

2. Multiple Regression Analysis

The type of prediction referred to above is accomplished by using multiple regression analysis¹². This technique will be used to investigate two areas of concern: first the factors that result in heavy family usage (the multi-problem family per se) and secondly the elements that lead to a high individual utilization rate. The first analysis will actually be broken down into a section concerning the adults within heavy user families and a section concerning the children of heavy user families. In the individual analysis, adults and children will be considered together.

Two sets of factors were considered important as possible predictors. The first were the demographic variables including: ethnicity, sex, age, and marital status (not used in the children's run since it was assumed that nearly all would be single). The other set of factors related to the nature of the contacts including: the major program area involved, the principle reason for the contact, and the initiator of the contact.

In order to help visualize the above, Table 26 presents the different combinations of dependent and independent variables.

Multiple regression is simplest when the variables are on an interval

12. Since this information system is not designed to accomodate a multiple regression analysis, please refer to Appendix G for a discussion of how this was facilitated.

TABLE 27

DEPENDENT AND INDEPENDENT VARIABLES
USED IN MULTIPLE REGRESSION ANALYSIS

Heavy User Families Adults		Heavy User Families Children		Heavy User Individuals Adults and Children	
Y - Total family Outreach score		Y - Total family Outreach score		Y - Individual Outreach score	
X ₁ - Program 1) Public Health 2) Alcohol 3) Probation 4) Child Welfare 5) Family Services 6) Other		X ₁ - Program 1) Public Health 2) Alcohol 3) Probation 4) Child Welfare 5) Family Services 6) Other		X ₁ - Program 1) Public Health 2) Alcohol 3) Probation 4) Child Welfare 5) Family Services 6) Other	
X ₂ - Reason 1) Assessment 2) Follow-up 3) Counselling 4) Information 5) Direct Service 6) Other		X ₂ - Reason 1) Assessment 2) Follow-up 3) Counselling 4) Information 5) Direct Service 6) Other		X ₂ - Reason 1) Assessment 2) Follow-up 3) Counselling 4) Information 5) Direct Service 6) Other	
X ₃ - Initiator 1) Client initiated 2) Worker initiated 3) Other initiated		X ₃ - Initiator 1) Client initiated 2) Worker initiated 3) Other initiated		X ₃ - Initiator 1) Client initiated 2) Worker initiated 3) Other initiated	
X ₄ - Ethnicity 1) Caucasian 2) Treaty Indian 3) Metis Indian 4) Other		X ₄ - Ethnicity 1) Caucasian 2) Treaty Indian 3) Metis Indian 4) Other		X ₄ - Ethnicity 1) Caucasian 2) Treaty Indian 3) Metis Indian 4) Other	
X ₅ - Sex 1) Female 2) Male 3) No information		X ₅ - Sex 1) Female 2) Male 3) No information		X ₅ - Sex 1) Female 2) Male 3) No information	
X ₆ - Age 1) 18 to 34 2) 35 to 49 3) 50 to 64 4) 65 + 5) under 18		X ₆ - Age 1) 0 to 5 2) 6 to 12 3) 13 to 17 4) 18 to 34 5) over 35		Z ₆ - Age 1) 0 to 12 2) 13 to 17 3) 18 to 34 4) 35 to 49 5) 50 +	
X ₇ - Marital Status 1) Single 2) Married-C/L 3) Divorced or Separated 4) Widowed 5) Other		X ₇ - Marital Status 1) Single 2) Married-C/L 3) Divorced or Separated 4) Widowed 5) Other		X ₇ - Marital Status 1) Single 2) Married-C/L 3) Divorced or Separated 4) Widowed 5) Other	

scale. Here, however, all of the independent variables are categorical; this is, they differ in type but it is not an ordered or ranked difference. In order to use categorical variables in a multiple regression, it is necessary to code them as dummy variables. The coding method chosen here was effect coding¹³. (See Appendix H for an example of effect coding).

The effect coding method is analogous to the fixed effects linear model which would include the main effects, first order interactions, second order interactions, third order interactions, etc. If we were to use all the variables and include all the interaction terms, we would end up with hundreds of dummy variables. This is not desirable because it would greatly inflate the 'subjects to predictor' ratio; it is also not possible because the computer program used only allows a maximum of 100 dummy variables to be entered at any given time.

Because of the above, we had to effect a compromise and three separate regression runs were done for each of the groups (adults of heavy user families, children of heavy user families, and heavy user individuals). The first run involved the demographic variables alone. The second run incorporated only the process variables. In both of these, only the main effects and the first order interactions were included¹⁴. These two runs provide separate pictures of the combinations

13. This method was chosen because of its simplicity in calculation and interpretation. Each regression coefficient reflects the effect of the factor it represents. This means that variables that are not included in the final regression equation did not have an effect (they did not contribute to the multiple R). However, variables that did affect the multiple R will be represented in the regression equation.

14. In the first and second run, the loss of the higher order interactions is permissible because 1) they are difficult to interpret meaningfully and 2) They would have greatly increased the subject/predictor ratio.

of demographic variables and the combinations of process variables that relate to heavy service use.

Obviously, the ideal regression run here would be to combine all demographic and process variables (main effects and all interactions) together. This was simulated in the third run. Here the demographic and process variables were combined together but only the main effects were included. Naturally some information is lost when the interaction terms are taken away. Complete lists of the dummy variables used in each run are printed in Appendix I. There is also a discussion regarding other factors involved in this multiple regression analysis contained in Appendix J.

3. Multiple Regression Results

A total of nine multiple regression runs were completed. For each group (children of heavy user families, adults of heavy user families, and high user individuals), three separate runs were done using demographic predictors, process predictors and demographic and process predictors combined

The free floating stepwise multiple regression approach was used for all of these. With this, the multiple R is expressed as the sum of a set of semi-partial correlations of the form:

$$R^2_{y.12...k} = r^2_{y1} + r^2_{y(2.1)} + \dots + r^2_{y(k.1,2,...k-1)}$$

The first variable to enter the equation is the predictor with the highest zero order correlation with the dependent variable; the second variable is the predictor with the highest semi-partial correlation with the dependent variable and so on.

Beginning with the children of heavy user families, the results of

the three regressions are printed in Table 27. For each set, the multiple R, the multiple R^2 , the adjusted R^2 (for shrinkage) and the F ratio testing the significance of the multiple R are printed. These are taken from the last point in the regression analysis where a variable makes a significant contribution to the R^2 .

For the demographic predictors, we see that four variables are listed. Each of these has increased the Multiple R by a significant amount ($p < .05$). Given the parameters of this analysis, it is actually possible for more variables to enter the regression equation; however, after the 4th step, these variables no longer contribute a significant increase to the overall Multiple R. For this study, it was decided to only present the combination of predictors that significantly increased the Multiple R. The analysis stops at the point of the last increase; the regression equation and regression statistics are also taken from this point.

Looking at the demographic predictors alone, we see that a combination of four variables accounts for 16% (using the adjusted figures - see note in Appendix J) of the variance of high family Outreach scores. This does not seem to be very much, but then facts about children alone cannot account for all the variability in a family score.

It does alert us to a particular combination of characteristics (Metis children both boys and girls and particularly boys aged 13 to 17 years) that are typical of the children of multi-problem families. This confirms what was derived earlier by crosstabulation analysis.

It should be pointed out that when a variable in the equation has a negative weighting (such as -40.0 D20) this means that the Males/age

TABLE 28
MULTIPLE REGRESSION ANALYSIS
FOR CHILDREN OF HEAVY USER FAMILIES

Demographic Predictors

$R^2 = .43$
 $R^2 = .18$
 $R^2_{adj} = .16$
 $F = 7.60$ significant

$$Y = 229.1 + 33.1 D8 - 40.0 D20 + 91.2 D2 + 76.5 D1$$

Step	Var.	Var. Name	R^2_{cum}	df	F	Sig	R^2_{added}	df	F	Sig
1	D 8	Metis	.089	1,138	13.48	yes				
2	D20	Males/age 13-17	.127	2,137	9.99	yes	.038	1,137	6.03	yes
3	D 2	Males	.159	3,136	8.55	yes	.023	1,136	5.25	yes
4	D 1	Females	.183	4,135	7.60	yes	.024	1,135	3.96	yes

Process Predictors

$R^2 = .38$
 $R^2 = .14$
 $R^2_{adj} = .12$
 $F = 7.53$ significant

$$Y = 273.2 + 139.1 D25 + 63.2 D32 - 47.7 D56$$

Step	Var.	Var. Name	R^2_{cum}	df	F	Sig	R^2_{added}	df	F	Sig
1	D25	Probation/Couns.	.055	1,138	7.97	yes				
2	D32	ChildWelf/Dir Ser	.114	2,137	8.79	yes	.059	1,137	9.12	yes
3	D56	WkerInit/Info.	.142	3,136	7.53	yes	.028	1,136	4.44	yes

Demographic and Process Predictors

$R^2 = .52$
 $R^2 = .28$
 $R^2_{adj} = .23$
 $F = 6.22$ significant

$$Y = 199.8 + 2.4 D5 + 116.4 D21 + 42.7 D17 - 27.6 D22 - 50.1 D20$$

$$+ 43.9 D16 + 96.1 D2 + 96.3 D1$$

Table 28 continued:

<u>Step</u>	<u>Var.</u>	<u>Var. Name</u>	<u>R² cum</u>	<u>df</u>	<u>F</u>	<u>Sig</u>	<u>R² added</u>	<u>df</u>	<u>F</u>	<u>Sig</u>
1	D 5	Metis	.089	1,138	13.49	yes				
2	D21	Counselling	.123	2,137	9.64	yes	.034	1,137	5.31	yes
3	D17	Child Welfare	.148	3,136	7.89	yes	.025	1,136	3.99	yes
4	D22	Information	.176	4,135	7.19	yes	.028	1,135	4.59	yes
5	D20	Follow-up	.190	5,134	6.29	yes	.014	1,134	2.32	no
6	D16	Probation	.204	6,133	5.68	yes	.014	1,133	2.34	no
7	D 2	Males	.223	7,132	5.39	yes	.019	1,132	3.23	no
8	D 1	Females	.275	8,131	6.22	yes	.052	1,131	9.45	yes

13 to 17 interaction is a suppressor variable (Darlington, 1974). These suppressors do not necessarily correlate highly with the dependent variable (family usage). Quite often they correlate highly with another predictor variable and thus serve to 'clean up' that variable and make it a better predictor.

Looking now at the Process predictors, we see that three variables entered the equation, together accounting for 12% of the variance in family usage. Thus the children of heavy user families are most likely to receive counselling from the Probation program, direct service from the Child Welfare Program, or information that is initiated by the worker.

Considering both demographic and process variables together, the Metis ethnic status is still the single most important predictor of heavy family usage. This combines with the Child Welfare program area and counselling and information services to account for almost 18% of the variance. After these four variables are entered into the equation, something rather unusual takes place. The next three variables entered do not themselves make a significant contribution to the multiple R. However, the 8th variable, the female sex, does make a significant increase. It is unusual to see this in a free floating regression; the most likely explanation is that variables 5, 6 and 7 combine and correlate with 'females' in such a way that 'females' becomes a strong predictor. It is probably safest to just consider the first four variables as being the key variables relating to children of heavy user families.

The same three regression runs were then done to see if there was anything significant about the adults of heavy user families. Under the demographic predictors, it was seen that the most significant combination

of variables were a Metis ethnic status and a married Treaty status. These two alone accounted for 18% of family usage score. No other variables made a significant increase to the multiple R. These results are printed in Table 28.

Under the process predictors we see that the Multiple R is not significant even at the very first step (these are the figures reported in Table 28). Because of this no variables are entered into the regression equation.

As expected, when demographic and process variables are taken together (no interactions), only the Metis variable enters the equation. In this case, there is actually only a single zero order correlation, not a multiple R. As with the children, we again see the similarity to the earlier cross-tabulation results. Adults who are native (either Metis or Treaty Indian) and particularly married Treaty Indians are potential members of heavy user families. There is nothing significant about the adults' service usage that would help predict out a multi-problem family.

The last set of regression runs aimed to point out the key factors related to a high individual Outreach score. Under the demographic predictors, the three variables that combined to form a significant multiple R were Metis ethnic status, being married, and the interaction term of married Metis status. These variables explain over one-quarter of the variance of high user scores.

With the process predictors, there was only a significant simple correlation involving the Child Welfare program area. Thus the key factor in a high user's pattern of service use is contact with the Child Welfare

TABLE 29

MULTIPLE REGRESSION ANALYSIS
FOR ADULTS OF HEAVY USER FAMILIES

Demographic Predictors

$$\begin{aligned} R &= .42 \\ R^2 &= .18 \\ R^2_{adj} &= .15 \end{aligned}$$

F = 6.78 significant

$$Y = 304.4 + 87.9 D5 - 53.1 D53$$

Step	Var.	Var. Name	R ² cum	df	F	Sig.	R ² added	df	F	Sig.
1	D 5	Metis	.125	1,64	9.13	yes				
2	D53	Treaty/married	.177	2,63	6.78	yes	.052	1,63	4.00	yes

Process Predictors

$$\begin{aligned} R &= .16 \\ R^2 &= .03 \\ R^2_{adj} &= .01 \end{aligned}$$

F = 1.74 not significant

Demographic and Process Predictors

$$\begin{aligned} R &= .35 \\ R^2 &= .12 \\ R^2_{adj} &= .11 \end{aligned}$$

F = 9.13 significant

$$Y = 298.3 + 72.9 D5$$

Step	Var.	Var. Name	R ² cum	df	F	Sig.	R ² added	df	F	Sig.
1	D 5	Metis	.125	1,64	9.13	yes				

program.

For the combined demographic and process predictors, two variables combine to form a significant multiple R. Metis status and worker initiated contacts together account for 20% of the variance in high individual use. In total, the four factors of being Metis, being married, having contact with the Child Welfare program and having worker initiated contacts would appear to be relevant in predicting out a potential high user individual. These results are displayed in Table 29.

4. Summary

A beginning predictive analysis was undertaken on the Outreach data. First of all the children and adults of heavy user families were studied to see if there were particular characteristics or service use traits that helped explain the phenomena of high family usage of Outreach.

We can tentatively draw a profile of children in heavy user families as being Metis boys and girls (especially boys between 13 and 17) who, at the worker's initiative, are involved with the Probation or Child Welfare programs primarily for counselling, direct service, or information. The only outstanding characteristic of the adults in heavy user families is that they are likely to be Metis or married Treaty Indians. There are no particular patterns of service use which would identify the adults in these families.

The second predictive approach was to determine the key factors in high individual service use. Here the profile of the high user appears to be a married Metis who is involved with the Child Welfare program at the worker's initiative. Since a high individual score correlates positively with a high family score, knowing these characteristic traits

TABLE 30
MULTIPLE REGRESSION ANALYSIS
FOR HEAVY USER INDIVIDUALS

Demographic Predictors										
$R_2 = .56$ $R_2 = .31$ $R_{adj} = .28$ $F = 9.18$ significant										
$Y = 107.3 + 24.1 D5 + 54.3 D57 + 30.9 D11$										
Step	Var.	Var. Name	R^2_{cum}	df	F	Sig	R^2_{added}	df	F	Sig
1	D 5	Metis	.147	1,63	10.65	yes				
2	D57	Metis/married	.243	2,62	9.95	yes	.096	1,62	7.87	yes
3	D11	Married	.311	3,61	9.18	yes	.068	1,61	6.02	yes
Process Predictors										
$R_2 = .24$ $R_2 = .06$ $R_{adj} = .05$ $F = 4.01$ significant										
$Y = 137.2 - 27.7 D4$										
Step	Var.	Var. Name	R^2_{cum}	df	F	Sig	R^2_{added}	df	F	Sig
1	D 4	Child Welfare	.060	1,63	4.01	yes				
Demographic and Process Predictors										
$R_2 = .48$ $R_2 = .23$ $R_{adj} = .20$ $F = 9.25$ significant										
$Y = 117.7 + 40.0 D5 + 82.6 D24$										
Step	Var.	Var. Name	R^2_{cum}	df	F	Sig	R^2_{added}	df	F	Sig
1	D 5	Metis	.145	1,63	10.65	yes				
2	D24	Worker Init.	.230	2,62	9.25	yes	.085	1,62	6.84	yes

of a high user individual would also be helpful in identifying a multi-problem family.

The above indicates that a beginning has been made in the attempt to predict out the factors related to high utilization. This will provide some clues for the process of indenifying the potential problem families. However the factors used here at most only account for 25% of the variance; thus there are still many other variables that play an important role in the phenomena of heavy service use.

It was explained before that the full-scale utiliztion models incorporate demographic variables, process variables, census data variables, psychological test variables, motivational variables, accessibility variables, health status variables, etc. All of these or some combination of them play a role in the making of a heavy service user. By being limited to demographic and process vairables, there will automatically be large amounts of unexplained variance.

The purpose of this part of the study was not however to develop a perfect predictive model of heavy utilization. The intent was to try to get some sort of a handle on the primary elements of heavy service use. It was believed that this could be used in identifying potential problem families to the Health Centre. This has been achieved, albeit in a somewhat limited fashion. Tentative profiles have been drawn of the heavy users. Although it is not much to go on, these profiles might be used as the basis for identifying a group of clients and initiating some form of preventive service.

This is a beginning use for a beginning information system. As the system develops over the years, more sophisticated methods of analysis

and prediction will become possible. And as this happens, the research undertaken will have increasing relevance in the planning and operation of the Health Centre.

This is not to say the present study does not have relevance. In the final chapter, the major findings and ideas of this analysis and some of their implications for the Churchill Health Centre are drawn together.

CHAPTER 6

SUMMARY OF KEY ISSUES

The preceeding data analysis revealed numerous factors regarding the characteristics and service use patterns of heavy user families. This chapter will highlight some of the key issues that were raised by the study. It is hoped that these issues will serve as the starting point for discussions in the Health Centre.

The first issue revealed by the data is that a small percentage of the Health Centre clients fit the sterotype of the multi-problem family. This was determined by their consistent heavy use of all Out-reach services over an extended period of time. The overutilization is in part a function of the many complex problems faced by these families and in part a function of problems in the service delivery system (poor coordination, fragmentation, duplication, etc.). The two factors combined create a spiralling effect and the situation is perpetuated.

The data indicates that the above situation was present in the Churchill Health Centre at the time of the study. This must be checked against the staff's perception of present circumstances. Although they may have changed somewhat over the years, the facts and figures presented in this study are real; there is room however for somewhat different interpretations and this should be encouraged.

One way to checking the worker's perceptions is to ask them questions. Are they aware of the continuous contact of these families with Outreach, of the involvement of many workers and program areas, and of the total amount of services provided to each family unit? Whenthey provide extended services to a person, do they think of him as a heavy user individual or

as a member of a heavy user family? When they are involved with one family member, do they consider how his behaviour has been affected by other family members and in turn how his behaviour has affected them? Do the workers realize that these families are extraordinary in the amount of services they are provided with? Do the workers feel each service (each contact) is necessary? Are they aware of any overlap with other program areas? Do they ever feel frustrated with the lack of progress? Do they think they divide their services among too many people and lose a sense of continuity of care?

If the workers respond negatively to the above question, several possibilities could exist. It could be that there is a multi-problem dilemma in Churchill that the workers are enmeshed in without knowing it. In this case a straightforward presentation of the figures might enable them to recognize the dimensions of the problem. However, if after this, they still do not accept a multi-problem interpretation, then this whole assumption should be reconsidered. The figures cannot be changed but there could be another explanation for them. For instance, it is possible that the overutilization is in fact a result of planned intervention whereby each of these families requires an intensive multi-service approach. If the workers and the families view the services as appropriate and if it results in improved family functioning, then the basic tenet of this study is proven false. However, it is extremely unlikely that this situation could exist for 38 families simultaneously.

If the workers respond positively to these questions, then they are acknowledging that many elements of a multi-problem situation are present. It may be that they have never considered it in these terms until the

situation was presented this way. Or it may be that they recognized the symptoms but did not know what alternatives were open to them. In any case, if the workers realize that they and the families are caught in a never-ending relationship, then it is likely that they will have the motivation to work their way out of this situation.

If the workers agree that elements of the multi-problem family dilemma exist in Churchill, the next step would be to find out what they know in general about these families and their treatment. A special 'in-service' training session might be required to supplement their information. It is hoped that sharing the experiences, frustrations and ideas of other agencies who are working with multi-problem families might lessen a defensive reaction on the part of the Churchill workers. Because, inevitably, it has to be recognized that the perpetuation of the problem situation is a result of both inadequate families and inadequate services. And it appears that the key to changing the inadequate families lies in reorganizing and redirecting the provision of services.

The study findings, in conjunction with the literature review, indicated two major areas of service delivery that could be improved. The first of these concerns the overall coordination of services. The analysis pointed out that multiple services and workers were involved although minimal time was allotted for consultation among them. It appears that information was shared through an informal communication system.

As before, this should be checked against the workers' perceptions. Are they aware of other program's involvement with their families? Do they feel that some services are being duplicated? Do they believe that

the services are fragmented? Are they aware of other worker's activities with their families? Are they able to appropriately coordinate the actions of all involved.

Inadequate coordination poses many problems. When one worker is involved with multi-problem families, it can be a very exasperating and emotionally draining experience. To a worker who is only involved with a single family member, it can be like putting a jig-saw puzzle together, without all the pieces. To the family who, individually or together, are involved with multiple workers, it produces a disorganized and confused situation.

It becomes essential to 1) take a look at the number of families on the workers' caseloads and distribute these more evenly, and to 2) look at the number of workers assigned to a particular family and eliminate those that are providing duplicate or unnecessary services. The simplest way to do this, as discussed in the paper, is to adopt the case conference approach. In this, all relevant community agencies are gathered together, the family's problems are laid out, decisions are made as to who is to provide which service, and one individual is assigned the responsibility of being the 'primary worker' who will coordinate all future involvement with that family. This brings the number of involved workers down to a manageable level and it makes each worker focus on his/her contribution to the overall treatment plan while eliminating duplicate or irrelevant services.

The second area requiring attention concerns the actual treatment strategy. The data pointed out both strengths and weaknesses in the actual intervention. To recapitulate, the workers are taking an active

stance by initiating contacts with the clients in their own homes and focusing on day-to-day practical assistance and support. These are all cited in the literature as being beneficial to multi-problem families.

In other aspects though, the Churchill workers do not conform to the techniques cited in the literature. There may be sound reasoning behind their actions but to this author the following are areas that should at least be discussed: the brevity of assessments, the brevity of most worker-client contacts, the focus on the individual, the lack of emphasis on family-based intervention, the lack of emphasis on change oriented techniques, and the necessity of so many 'organizational' type contacts with 'other' people in the provision of direct service.

The study also showed that within heavy user families, some members are high users and some are low users. It would be expected that the family's problems would involve all family members. It would be interesting to know how the workers perceive the families and what makes them focus on certain individuals within them. What kind of service could or should be provided to these other family members - alone or in conjunction with the total family group?

In addition to studying Outreach utilization patterns, the study also looked at medical utilization patterns. Contrary to the literature, these multi-problem families did not utilize excessive amounts of walk-in services nor did their illnesses have a high emotional component. Compared to national averages, these families were just slightly under the mean utilization rates. This follows the results of other studies in which multi-problem families who use many social services are shown to underutilize medical services.

However, within these families a very interesting distinction was found between the family members. Individuals who were high users of social services were also high users of medical services; similarly individuals with low social service utilization rates also had low medical utilization rates. We know that social problems affect all family members, we also know that families with social problems have a lot of medical problems; it would follow that the medical problems could affect all family members. However, only certain individuals within these families are being identified by medical and social services professionals as needing help. Thus there could be unmet needs even within these heavy user families. This is where a more family based intervention would encompass all family members in assessing the problems and determining the treatment plan. Left as it is now, we do not know whether these low users simply experience less of the family problems, whether they have special coping skills, or whether their needs are being drowned out by more aggressive family members. The concept of 'outreach' usually applies to whole areas of unmet needs; this shows a case where the Centre's 'outreach' activities should begin with family members not yet receiving services.

The above section has shown that there is fairly extensive medical involvement with these heavy user families. Previously we discussed the necessity of coordinating all the various Outreach services. It becomes clear that it will also be necessary to coordinate the Outreach services with the medical services in order to provide the most effective treatment.

All of the above focuses on ways of improving the delivery of services to multi-problem families. As important as treatment is and will

always be, the area of prevention holds more promise. This study demonstrated an elementary attempt at prediction. If the key characteristics of multi-problem families can be identified, then the Health Centre could set up an early identification system. Services could be provided to high risk groups in an attempt to thwart problems before they compound and multiply. In this way, families are taught problem solving skills and coping methods before they find themselves in a chronic state of malfunctioning.

This chapter has summarized some of the main issues brought forth in the data analysis. As they are interpreted to fit the realities of the actual working experience, they should help clarify which aspects of the present delivery system are sound and which require modification. From this it is expected that the Health Centre can develop actual working proposals for change. When these changes are actually incorporated into the operation of the Centre, then the model described by Weinerman (see page 9) will have come full circle. And as the results of research studies affect the planning and operation of the health services system, there should be a move towards more efficient health delivery and better functioning families.



CHC NUMBER

159

Churchill Health Centre

Churchill Manitoba · R0B 0E0

Telephone (204) 675-8881

NAME OF CLIENT _____

Surname

Given Name(s)

Address

Telephone Number

Birthdate

Marital Status

Ethnic Origin

Education

Occupation

Length of Time In Churchill

MALE

FEMALE

CHILDREN:

	Name	Birthdate	Grade	Whereabouts
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

LIVING ARRANGEMENT: Family___ Board & Room___ Lives Alone___ Other___

REFERRAL SOURCE: Self___ Hospital___ RCMP___ School___ Friend___ Other___

REASON FOR REFERRAL: _____

Program Area(s) Referred To: _____

Primary Worker Code _____

Intake Worker Code _____

Signature _____



WARD # _____	New _____
CHC # _____	Readmitted _____

Churchill Health Centre

Churchill Manitoba R0B 0E0

Telephone (204) 675-8881

CHILD INFORMATION:

Legal Name _____		Known As _____	
Birthdate - day _____ month _____ year _____		Birthplace _____	Religion _____
Race _____	Treaty Status - yes _____ no _____ band _____ # _____		Grade _____
Languages Spoken _____		MHSC # _____	SAHS # _____

FAMILY INFORMATION:

Full Names _____	Mother _____	Father _____	CL Partner _____ PF _____
Address _____		_____	
Phone # _____		_____	

SIBLINGS:

	Name	Birthdate	Grade	Whereabouts
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

ADMITTING INFORMATION: Reason for Apprehension _____

Date of Apprehension _____ Place of Apprehension _____

STATUS - Temporary Ward _____ Permanent Ward _____ Supervision _____

TYPE OF CARE - Receiving _____ Foster _____ Special Foster _____ Group _____ Institution _____

Primaty Worker Code _____

Intake Worker Code _____

Signature _____

CASE NUMBER

<u>CONTACT PLACE</u>		<u>CONTACT SOURCE</u>		<u>CONTACT WITH</u>	
Outreach Centre	<input type="checkbox"/>	1 Client initiated	<input type="checkbox"/>	1 Client & Family	<input type="checkbox"/>
Home	<input type="checkbox"/>	2 Worker initiated	<input type="checkbox"/>	2 Client	<input type="checkbox"/>
Day Care Centre	<input type="checkbox"/>	3 Family	<input type="checkbox"/>	3 Family	<input type="checkbox"/>
Worker's Home	<input type="checkbox"/>	4 M.D.	<input type="checkbox"/>	4 Friend	<input type="checkbox"/>
Hospital	<input type="checkbox"/>	5 Employer/MP	<input type="checkbox"/>	5 M.D.	<input type="checkbox"/>
School	<input type="checkbox"/>	6 Other Worker/Team	<input type="checkbox"/>	6 Employer/MP	<input type="checkbox"/>
Community	<input type="checkbox"/>	7 Teacher/School	<input type="checkbox"/>	7 Other Worker/Team	<input type="checkbox"/>
Other	<input type="checkbox"/>	8 Police	<input type="checkbox"/>	8 Teacher/School	<input type="checkbox"/>
		Other Agency	<input type="checkbox"/>	9 Police	<input type="checkbox"/>
<u>CONTACT TIME</u>		Foster Parent	<input type="checkbox"/>	10 Other Agency	<input type="checkbox"/>
10 min. or less	<input type="checkbox"/>	Other	<input type="checkbox"/>	11 Foster Parent	<input type="checkbox"/>
10 - 29 min.	<input type="checkbox"/>			Other	<input type="checkbox"/>
30 - 60 min.	<input type="checkbox"/>	<u>CONTACT FOR</u>			
1 - 2 hrs.	<input type="checkbox"/>	4 Assessment	<input type="checkbox"/>	1 <u>PROGRAM AREA</u>	
2 - 4 hrs.	<input type="checkbox"/>	5 Follow-up	<input type="checkbox"/>	2 Financial	<input type="checkbox"/>
Full Day	<input type="checkbox"/>	6 Individual Couns.	<input type="checkbox"/>	3 Alcohol	<input type="checkbox"/>
		Group Couns.	<input type="checkbox"/>	4 Day Care	<input type="checkbox"/>
<u>CONTACT TYPE</u>		Family Couns.	<input type="checkbox"/>	5 Prevention	<input type="checkbox"/>
Direct	<input type="checkbox"/>	Consultation	<input type="checkbox"/>	6 Probation	<input type="checkbox"/>
Telephone	<input type="checkbox"/>	Resource Dev.	<input type="checkbox"/>	7 Child Welfare	<input type="checkbox"/>
Letter/Telex	<input type="checkbox"/>	Education	<input type="checkbox"/>	8 Family Services	<input type="checkbox"/>
Recording	<input type="checkbox"/>	Information	<input type="checkbox"/>	9 Comm. Dev.	<input type="checkbox"/>
Other	<input type="checkbox"/>	Referral	<input type="checkbox"/>	10 Home Care	<input type="checkbox"/>
Specify		Case Recording	<input type="checkbox"/>	11 Public Health	<input type="checkbox"/>
		Transportation	<input type="checkbox"/>	12 Medical	<input type="checkbox"/>
Worker's Code _____		Immunization	<input type="checkbox"/>	13 Home Economics	<input type="checkbox"/>
Worker's Initials _____		Direct Service	<input type="checkbox"/>	14 Other _____	<input type="checkbox"/>
		Crisis Inter- vention	<input type="checkbox"/>	Specify	
		Community Advo- cacy	<input type="checkbox"/>		
		Other _____	<input type="checkbox"/>		
		Specify			

APPENDIX C

MEDICAL INFORMATION FORM

Outreach Number

MHSC No.

Date of BirthCLINICDate of ContactReason for ContactPrescriptionsEMERGENCY WARDDate of ContactReason for ContactPrescriptionsHOSPITALDate of ContactReason for ContactPrescriptions

APPENDIX D

CONSENT FORM

We are doing a study to find out what kinds of medical and social service care people get from the Churchill Health Centre. Your family is one of the families we chose to study.

When we know how you and other families use the Health Centre services, we will talk about it with the Health Centre staff. We hope this will help them give better service to you and to other families.

After the study is over, we are going to write a report. No one will be identified by name in this report.

C. Hursh - Researcher

I understand what this study is about. I have been assured that the privacy of my family will be protected in the written report. I realize that information about my family will be discussed with the Health Centre staff. I give permission to Mrs. Carolyn Hursh to take information on all members of my family from the Health Centre files.

Head of Household on
behalf of:

APPENDIX E

PRIMARY PURPOSE OF MEDICAL CONTACT - DEFINITIONS

Illness - a physical or mental condition, either acute or chronic, i.e. influenza, psychosis, tonsillitis.

Initial Wound - the first visit relating to a condition caused by an accident, poisoning, act of violence, etc.

Follow-up re Wound - subsequent contacts to check up on the wound.

Adult Check-up - when patient presents himself for physical examination when there is no apparent reason to do so.

Child Check-up - same as above except as applies to a child or infant.

Pre-natal Care - refers to all care provided to a woman related to her pregnancy.

Post-natal Care - the care provided to a woman during the 6 weeks after delivery which relate to the delivery.

Elective Surgery - refers to a non-urgent operation.

Non-elective Surgery - refers to a medical operation that requires immediate attention.

Counselling - when the primary purpose of the contact is for counselling family planning, etc.

Consultation - refers to contacts with a medical specialist.

Missed appointment - recorded when the patient had a scheduled appointment but did not show up for it.

Pt not wait for Dr. - refers to when the patient came for his appointment but left before seeing the doctor

Dr. won't see Pt. - recorded when the patient came for appointment and was refused service due to patient's inebriated state.

APPENDIX F

PRIMARY PROBLEM REQUIRING MEDICAL ATTENTION

- Diseases of the Skin and Subcutaneous Tissue - refers to infections or inflammation of the skin and underlying tissue (including breast diseases). Includes various cuts, scrapes and bruises resulting from 'wounds'.
- Diseases of the Special Sense Organs - includes all congenital, inflammation, infectious or traumatic diseases related to eyes, ears or nose, i.e., otitis media.
- Diseases of the Osteo-Muscular System and Connective Tissues - pertains to problems in the limbs or muscular system such as bursitis, arthristis, pulled ligaments, strains, etc.
- Diseases of the Nervous System - includes all diseases of the central nervous system, i.e., epilepsy, paraplegia.
- Diseases of the Digestive Tract - pertains to any anatomical, infectious or inflammation disease within the digestive tract, i.e., dental decay, diverticulitis, cirrhosis, pancreatitis, etc.
- Diseases of the Respiratory System - involves acute and chronic conditions of the respiratory tract, i.e., pneumonia, bronchitis, asthma, influenza, lung tumors, etc.
- Alcoholism, DT's - refers to alcohol related conditions, i.e., iniebriation, withdrawal symptoms.
- Genito-Urinary - includes all diseases of the urinary system, i.e., vaginal infection, prostrate lesion, syphillis, gonorrhea, tumors, etc.
- Mental and Psychologic Problems - covers acute and chronic psychological conditions, i.e, senility, functional psychoses, misadaptation, etc.
- Diseases of the Circulatory System - refers to conditions that affect the viens, arteries, or heart, i.e., coronary arterio sclerosis cardiac deficiency, etc.
- Broken Bones - single and multiple fractures.
- Tumors - refers specifically to lesions and growths.
- Infectious Diseases - includes diseases of infectious or parasite origin.
- Endocrine Glands, Nutrition and Metabolism Diseases - refers to endocrinic diseases such a diabetes or obesity, thyroid diseases, and all health problems related to deficient nourishment.

Pregnancy - refers to all visits during pregnancy whether normal or with complications. Also includes initial post partum visit.

Newborn - refers to medical treatment provided for a newborn infant.

APPENDIX G
MULTIPLE REGRESSION ANALYSIS
WITH THE CHURCHILL DATA

Multiple regression analysis is used to isolate the particular combination of independent variables (predictors) that account for the greatest amount of variance in the dependent variables. To do this, each individual in the sample must have a single score (or value) for each predictor and for the dependent variable. This is quite straightforward with the demographic data: an individual is scored either male or female, either married or single, etc. Thus he has only one value for each predictor variable.

However, this does not apply to the other variables. All of the process information is gathered by a succession of contact forms which are not computed into any total scores. For instance, the dependent variables here 'total usage score' or 'family usage score' are not recorded anywhere; they can only be derived by literally counting up the total number of contacts for a given individual. Similarly, the information for each individual is contained on a number of contact forms. And, furthermore, the values on these variables differ from form to form ie. an individual is not consistently seen for the same reason - on one contact form it may be for assessment, on another for counselling, on another for information, etc.

The first step is to aggregate this information into some meaningful form for each individual in order to determine: 1) which program area he used most frequently, 2) what the primary reason for his contacts was, and 3) who initiated most of his contacts. These are, of course, the

modal scores (the most frequently occurring score).

By using contingency tables, it was possible to get an individual breakdown of scores according to Program area, Reason for contact, and Initiator of contact.

PERSON BY PROGRAM BY FAMILY*							
	(1)	(2)	(3)	(4)	(5)	(6)	family 732091
	P.H.	Alc.	Prob.	C.W.	F.S.	Other	Total usage score
father 100	11	61	0	0	7	2	81
mother 200	78	14	0	3	6	1	102
child 301	2	0	168	24	6	3	203

* the family number and the data provided are 'made up' for the purposes of demonstration - they are not real data.

Similar printouts were obtained for the Reason and Initiator breakdowns. From these it was possible to extract the modal category for each individual and his total usage score (the dependent variable). A new set of data cards were then typed as follows:

		Total Usage Score	Most Freq. <u>Program</u>	Most Freq. <u>Reason</u>	Most Freq. <u>Initiator</u>
732091	100	081	2	3	2
732091	200	102	1	5	2
732091	301	203	3	2	1

These cards then become the input for the regression runs (of course, the above example does not show the demographic variables which were included on the real data cards).

APPENDIX H

DEMONSTRATION OF EFFECT CODING

		<u>D1</u>	<u>D2</u>	<u>D3</u>	<u>D4</u>	<u>D5</u>	<u>D6</u>	<u>D7</u>	<u>D8</u>	<u>D9</u>	<u>D10</u>	<u>D11</u>
P1	R1	1	0	0	0	0	1	0	0	0	0	0
	R2	1	0	0	0	0	0	1	0	0	0	0
	R3	1	0	0	0	0	0	0	1	0	0	0
	R4	1	0	0	0	0	0	0	0	1	0	0
	R5	1	0	0	0	0	0	0	0	0	1	0
	R6	1	0	0	0	0	-1	-1	-1	-1	-1	-1
P2	R1	0	1	0	0	0	1	0	0	0	0	0
	R2	0	1	0	0	0	0	1	0	0	0	0
	R3	0	1	0	0	0	0	0	1	0	0	0
	R4	0	1	0	0	0	0	0	0	1	0	0
	R5	0	1	0	0	0	0	0	0	0	1	0
	R6	0	1	0	0	0	-1	-1	-1	-1	-1	-1
P3	R1	0	0	1	0	0	1	0	0	0	0	0
	R2	0	0	1	0	0	0	1	0	0	0	0
	R3	0	0	1	0	0	0	0	1	0	0	0
	R4	0	0	1	0	0	0	0	0	1	0	0
	R5	0	0	1	0	0	0	0	0	0	1	0
	R6	0	0	1	0	0	-1	-1	-1	-1	-1	-1
P4	R1	0	0	0	1	0	1	0	0	0	0	0
	R2	0	0	0	1	0	0	1	0	0	0	0
	R3	0	0	0	1	0	0	0	1	0	0	0
	R4	0	0	0	1	0	0	0	0	1	0	0
	R5	0	0	0	1	0	0	0	0	0	1	0
	R6	0	0	0	1	0	-1	-1	-1	-1	-1	-1
P5	R1	0	0	0	0	1	1	0	0	0	0	0
	R2	0	0	0	0	1	0	1	0	0	0	0
	R3	0	0	0	0	1	0	0	1	0	0	0
	R4	0	0	0	0	1	0	0	0	1	0	0
	R5	0	0	0	0	1	0	0	0	0	1	0
	R6	0	0	0	0	1	-1	-1	-1	-1	-1	-1
P6	R1	-1	-1	-1	-1	-1	1	0	0	0	0	0
	R2	-1	-1	-1	-1	-1	0	1	0	0	0	0
	R3	-1	-1	-1	-1	-1	0	0	1	0	0	0
	R4	-1	-1	-1	-1	-1	0	0	0	1	0	0
	R5	-1	-1	-1	-1	-1	0	0	0	0	1	0
	R6	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

This coding would be repeated twice more downwards to make 12 and 13. Of course these are only the first 11 vectors, there are 46 more, if the whole design was being shown.

APPENDIX I-1

DUMMY VARIABLES

DEMOGRAPHIC PREDICTORS - CHILDREN

D1 Male
D2 Female
D3 Ages 0-5
D4 Ages 6-12
D5 Ages 13-17
D6 Caucasian
D7 Treaty
D8 Metis
D9 Male/Ages 0-5
D10 Males/Ages 6-12
D11 Males/Ages 13-17
D12 Males/Caucasian
D13 Males/Treaty
D14 Males/Metis
D15 Female/Ages 0-5
D16 Female/Ages 6-12
D17 Female/Ages 13-17
D18 Female/Caucasian
D19 Female/Treaty
D20 Female/Metis
D21 Ages 0-5/Caucasian
D22 Ages 0-5/Treaty
D23 Ages 0-5/Metis
D24 Ages 6-12/Caucasian
D25 Ages 6-12/Treaty
D26 Ages 6-12/Metis
D27 Ages 13-17/Caucasian
D28 Ages 13-17/Treaty
D29 Ages 13-17/Metis

APPENDIX I-2

DUMMY VARIABLES

DEMOGRAPHIC PREDICTORS - ADULTS

D1	Female	D39	Caucasian/65 +
D2	Male	D40	Caucasian/single
D3	White	D41	Caucasian/married
D4	Treaty	D42	Caucasian/div./sep.
D5	Metis	D43	Caucasian/widowed
D6	Ages 18-34	D44	Treaty/18-34
D7	Ages 35-49	D45	Treaty/35-49
D8	Ages 50-64	D46	Treaty/50-64
D9	Ages 65 +	D47	Treaty/65 +
D10	Single	D48	Treaty/single
D11	Married	D49	Treaty/married
D12	Div/Sep.	D50	Treaty/div./sep.
D13	Widowed	D51	Treaty/widowed
D14	Female/white	D52	Metis/18-34
D15	Female/Treaty	D53	Metis/35-49
D16	Female/Metis	D54	Metis/50-64
D17	Female/18-34	D55	Metis/65 +
D18	Female/35-49	D56	Metis/single
D19	Female/50-64	D57	Metis/married
D20	Female/65 +	D58	Metis/div./sep.
D21	Female/single	D59	Metis/widowed
D22	Female/married	D60	Age 18-34/single
D23	Female/div./sep.	D61	Age 18-34/married
D24	Female/widowed	D62	Age 18-34/div./sep.
D25	Male/white	D63	Age 18-34/widowed
D26	Male/Treaty	D64	Age 35-49/single
D27	Male/Metis	D65	Age 35-49/married
D28	Male/ages 18-34	D66	Age 35-49/div./sep.
D29	Male/ages 35-49	D67	Age 35-49/widowed
D30	Male/ages 50-64	D68	Age 50-64/single
D31	Male/ages 65 +	D69	Age 50-64/married
D32	Male/single	D70	Age 50-64/div./sep.
D33	Male/married	D71	Age 50-64/Widowed
D34	Male/div./sep.	D72	Age 65 +/single
D35	Male/widowed	D73	Age 65 +/married
D36	Caucasian/18-34	D74	Age 65 +/div./sep.
D37	Caucasian/35-49	D75	Age 65 +/widowed
D38	Caucasian/50-64		

APPENDIX I-3

DUMMY VARIABLES PROCESS PREDICTORS
CHILDREN AND ADULTS

- D1 Public Health
- D2 Alcohol Services
- D3 Probation & Parole
- D4 Child Welfare
- D5 Family Services
- D6 Assessment
- D7 Follow-up
- D8 Counselling
- D9 Information
- D10 Direct Service
- D11 Client initiated
- D12 Worker initiated
- D13 Public Health/Assessment
- D14 Public Health/Follow-up
- D15 Public Health/Counselling
- D16 Public Health/Information
- D17 Public Health/Direct Service
- D18 Alcohol/Assessment
- D19 Alcohol/Follow-up
- D20 Alcohol/Counselling
- D21 Alcohol/Information
- D22 Alcohol/Direct Service
- D23 Probation/Assessment
- D24 Probation/Follow-up
- D25 Probation/Counselling
- D26 Probation/Information
- D27 Probation/Direct Service
- D33 Family Services/Assessment
- D34 Family Services/Follow-up
- D35 Family Services/Counselling
- D36 Family Services/Information
- D37 Family Services/Direct Service
- D28 Child Welfare/Assessment
- D29 Child Welfare/Follow-up
- D30 Child Welfare/Counselling
- D31 Child Welfare/Information
- D32 Child Welfare/Direct Service
- D38 Client Initiated/Public Health
- D39 Client Initiated/Alcohol
- D40 Client Initiated/Probation
- D41 Client Initiated/Child Welfare
- D42 Client Initiated/Family Services
- D43 Worker Initiated/Public Health
- D44 Worker Initiated/Alcohol
- D45 Worker Initiated/Probation
- D46 Worker Initiated/Child Welfare
- D47 Worker Initiated/Family Services

D48 Client Initiated/Assessment
D49 Client Initiated/Follow-up
D50 Client Initiated/Counselling
D51 Client Initiated/Information
D52 Client Initiated/Direct Service
D53 Worker Initiated/Assessment
D54 Worker Initiated/Follow-up
D55 Worker Initiated/Counselling
D56 Worker Initiated/Information
D57 Worker Initiated/Direct Service

APPENDIX I-4
DUMMY VARIABLES
DEMOGRAPHIC AND PROCESS VARIABLES
CHILDREN AND ADULTS

D1 Female
D2 Male
D3 Caucasian
D4 Treaty
D5 Metis
D6 Age 0-12
D7 Age 13-17
D8 Age 18-34
D9 Age 35-49
D10 Single
D11 Married
D12 Div/Sep.
D13 Widowed
D14 Public Health
D15 Alcohol
D16 Probation
D17 Child Welfare
D18 Family Services
D19 Assessment
D20 Follow-up
D21 Counselling
D22 Information
D23 Direct Service
D24 Client Initiated
D25 Worker Initiated

APPENDIX J

There are several factors that should be taken into consideration prior to doing multiple regression analysis. The first is whether or not the data is linear. When the data is continuous, trend analysis is used to describe the nature of the nonlinearity in the data. However, categorical variables (and the dummy variables that represent them) are not continuous and thus linearity has no meaning here.

The next item to consider is the subject of shrinkage. If the regression weights from one sample are applied to the scores of another sample, and predicted scores are correlated with observed scores, the resulting R is almost always smaller than the initial R . This is the phenomena of shrinkage. It means that the original Multiple R has been overestimated. One of the principle reasons for this (and it certainly applies here) is a large subject/predictor ratio.

The amount that the multiple R is inflated can be estimated by performing a cross validation. This either requires two samples or randomly splitting one sample into 2 groups. Since we do not have two samples, and since the 'n' per group is rather small to consider splitting, the author decided not to use a cross validation approach. Instead, we will use the Multiple R given in the SPSS program that is 'adjusted' for a shrinkage factor.

Another area of concern is the non-orthogonality of the design. Since this was not an experimental study, it was impossible to control the number of individuals assigned to each cell. This means that the design is non-orthogonal (unequal n's). When the n's are equal, there are no intercorrelations between treatment effects and interactions, the parti-

tioning of the sums of squares is unambiguous, and the order of entry into the regression equation is unimportant. However, none of this applies when the n 's are unequal as they are here. The unequal n 's create correlations among the effects and the order of entry into the equation becomes of prime importance.

There are several ways of dealing with the shared variance created by the intercorrelations. In the present study, it was decided to use a free floating stepwise regression. This means that the variance in common will be attributed to whichever effect makes it into the equation first*. The parameters were set so that a maximum of 25 variables could enter the equation, and F to enter** was set at .50, and the minimum tolerance*** was set at .10.

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- * The other possibilities are 1) remove the common variance and attribute it to neither effect or 2) force order the variables into the equation according to an a priori causal ordering so that the variance gets attributed to what is considered to be the 'pre-existing' variable.
 - ** F to enter: refers to the F statistic determining the significance of a predictor variable if it were to be the next one to be added to the regression equation. Here a variable must exceed an F of .50 before it could be entered into the equation.
 - *** Tolerance: refers to the portion of the variance in a predictor variable that is unrelated to other predictors. Here only 10% of a predictor's variance is required to be unique or uncorrelated with the other predictors.

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