UTILIZATION OF MEDICAL CARE
BY SASKATCHEWAN INDIANS NORTH BATTLEFORD AREA
A COMPARATIVE STUDY

A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfilment of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

in the
Department of Social and Preventive Medicine

by

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Saskatoon, Saskatchewan
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ABSTRACT

This study compares the utilization of health services by treaty Indians on eight reserves with that by non-Indians in the surrounding region. Comparisons are also made of the utilization of the services by groups within the Indian population with different levels of social organization. It is the first study of this type made in Canada for an Indian population.

The health utilization data were collected by the household survey method, using instruments of study that had been developed for the World Health Organization International Collaborative Study on Medical Care Utilization. The data on utilization with respect to social organization within the Indian population were according to a sociological status index developed by the author of this study. A unique feature of the survey was the use of Indian women as interviewers. The study region was one where Indians theoretically had equal access to the offered health services as the non-Indians. Both the Indian and non-Indian populations lived in a rural setting surrounding one main economic and cultural centre.

Even though most, if not all, of the basic costs of the services are paid under the Medical Care insurance plans, significant differences in their utilization by the two populations were discovered. With the exception of hospitals, all services were used to a lesser degree by the Indians. Status within the Indian population affected both their attitudes toward and their use of health services. Persons in higher status levels showed a greater tendency to use the services and a lower
tendency to play the sick role. The results indicate that the higher the status of the head of the household and the more organized the leadership within an Indian community the more the individuals manifest the attitudes and actions toward health services of the non-Indian population in the surrounding areas.

Implications of the findings with respect to improving communication between the providers of health care services and the Indians are discussed briefly.
ACKNOWLEDGMENTS

I wish to express my gratitude to the large number of people who have been directly or indirectly helpful in the development of this study.

I wish to thank Dr. V.L. Matthews, Professor and Head of the Department of Social and Preventive Medicine for his patient guidance and counselling during the study.

To Professors J. and E. Abramson, I am grateful for their guidance and advise on the sociological aspect of this study especially in the development of the sociological status index.

The encouragement received from Dr. B.W. Currie, former Dean of the Graduate College, to undertake the study is gratefully acknowledged as is his direction in the writing of the thesis and his critique of the manuscript.

To the other members of my committee, I thank them for their time and consideration.

Thanks also go to Dr. J.E. Gomph and his staff at the North Battleford Indian Hospital, for making available staff and facilities and to the late Dr. H.A. Procter, Director of Medical Services, Department of National Health and Welfare, for his interest and encouragement.

From Indian Affairs Branch in the Battleford area, valuable assistance was given by providing access to files and to the agency consultants.
I wish to acknowledge the assistance of a staff member from the Medical Social Statistics Section, Department of National Health and Welfare, Ottawa, and the Public Service Commission in making available a hand computer and the guidance of their consultant.

I wish also to acknowledge the permission of the International Collaborative Study for the use of their instruments of research and am grateful for the arrangements made for the consistency checks on data done at Johns Hopkins University, Baltimore.

To the many others whose names are not mentioned here and who have assisted, I also would like to offer my appreciation.

This investigation was supported by a research grant from the Department of National Health and Welfare.
PREFACE

The indices on which utilization of Medical Services has been measured in the past have been mainly those related to health service facilities such as hospitals and clinics and their ratios or percentages of patients per unit of population, and to the method of payment. These indices have not been too useful especially when dealing with different population groups as health statistics are measures of people who utilize the services but fail to show the undiagnosed diseases or the full extent of social pathology. A defined population also utilizes services in addition to those reflected in existing records. Utilization of health services by an individual appears to be a function of illness combined with a number of attitudes, his perception of the value of health care, his acquired behaviour towards health services personnel, the degree to which he perceives illness as pathological and the degree to which socialization has prepared him to seek or accept the health services offered. Within the last decade, there has been increased interest in comparative studies of the utilization of health services where the data for comparisons have been collected from the consumers and not the producers.

The World Health Organization, as well as individual countries, has taken an active interest in research on medical care utilization. The planning of studies has brought together in scientific collaboration representatives of a variety of disciplines, each making a specific contribution in ascertaining whether valid, reliable and comparable
data on the use of health services during a given period of time can be collected simultaneously in different settings by standardized epidemiological procedures. The results of these studies has proved the feasibility of these procedures. In addition, certain important factors affecting utilization have been identified.

For this comparative study, data were collected from two specific populations, Indian and non-Indian living in close proximity to each other. Instruments of research that had been developed for an international study were used to collect the basic data for the comparison between the Indian and the non-Indian populations. Additional instruments were developed for collecting background data within the Indian population and for the development of a sociological index to be used in measuring the association between the social organization of status and utilization of health care.

During the period of data collection, changes in the provision of medical care for the Indians were under scrutiny by the federal government. In fact, the whole spectrum of services for Indian health, education and welfare, had been a subject of heated discussion. This period could be likened to a transition to a new era for the Indians.

This thesis treats only some aspects of the concern by medical and sociological specialists interested in comparative studies. It is relevant on both the applied and theoretical levels. Although many comparative studies have been done this is the first involving the
Indian population of Canada. At the level of social policy an understanding of the various factors involved in the utilization of health facilities by members of Indian bands may provide a practical basis in planning for health programs especially in the field of health education or health promotion.

The present study has a number of unique aspects which may be useful in giving further insight into the existing theories about health behaviour among the Indian population. On the theoretical level, one aspect involved the development and utilization of a status or sociological index for the Indian population which was then utilized in examining specific hypotheses. Community organization within the reserves was assessed and the data examined for evidence of the influence of this variable. The influence of two other independent variables, age and sex, were studied in the comparison of utilization of health services by the Indians and non-Indians.

The study area has two special features. It is an area in a province where Medicare exists and where the Indians have equal access to all services available to the non-Indians. In addition, the area has both Indians and non-Indians living in a rural setting surrounding one main economic and cultural centre.

Another unique aspect of the study is the utilization of Indian women selected from the study area for the collection of the data on the Indian population.
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CHAPTER I
INTRODUCTION

Health practices of populations have been studied by many researchers using the data generated by the producers of health care; relatively few studies have been done using data generated by the consumers. No comprehensive study of the utilization of health care and factors contributing to their use or non-use has been done in Canada based on data collected from the Indians as consumers. A few have been done on utilization of services for specific diseases or special groups based on data collected by the producers of health care.

An acceptable yardstick or frame of reference when comparing two or more populations is the utilization pattern of a health care system. It is generally believed that the pattern of utilization is ultimately determined by a combination of economic, political, social and cultural factors as well as the method of payment and the attitudes of the purveyors of the care. The utilization of a health care system is conceptualized in Figure I which sets out the main determinants and their relationship to the use or non-use of the system.

The main objective of this study was to examine the differing patterns of utilization within the registered Indian population on eight reserves around North Battleford and to relate these to social variables of status, geographic location and organization within the Indian

* A registered Indian is defined as one who lives on a reserve, is a member of the Band and is subject to the rights as well as the restrictions contained in the Indian Act.
FIGURE I

CONCEPTUAL MODEL
INTER RELATIONSHIP BETWEEN VARIABLES

MORBIDITY
a Perceived Symptoms
b Perceived threat to health
c Perceived Requirements

PREDISPOSING FACTORS
a Demographic
b Attitudes
c Knowledge
d Past Experience

ENABLING FACTORS
a Accessibility
b Availability
c Cost

USE OR NON USE of HEALTH SERVICES
population, and to compare the patterns of utilization with those of non-Indians living within the boundaries of the designated study area. In order to carry out the main objective of the study the following activities were undertaken and can be considered as a sub-set of objectives. These were: 1) to test the feasibility of using Indian interviewers who ordinarily are not asked to apply questionnaires of this nature to their own people and, 2) to describe health care systems and the health picture in the study area as determined by existing data.

A secondary objective of this study was to test four hypotheses relating to the patterns of the utilization of health care.

1. The first hypothesis is that the Indians utilize the services at a lower rate than the non-Indians but that their need is greater as measured by the patterns of morbidity.

2. The second hypothesis is that the social position a person holds within the society influences the utilization of medical care. More specifically it may be stated that the higher the status the more the patterns of medical care resemble those of the population in the surrounding area.

3. The third hypothesis is that the reserves geographically clustered tend to manifest similar patterns of utilization of health services and attitudes towards health care.

4. The fourth hypothesis is that the higher the level of organization for community action, the more the pattern of utilization resembles those of the population in the surrounding area.
The basic and overriding assumption made for this study is that the major economic barrier of the need for payment has been removed by the universal coverage under medicare.

In Saskatchewan the population is covered by a comprehensive Medical Care Plan, but as the federal government traditionally holds the responsibility for the health care of the registered Indian population, there are two levels of health care systems in operation. These cannot be considered to be two airtight compartments for when a change is affected in one of the systems it inevitably affects the other. In 1957, Indians in Saskatchewan were eligible for admission to any hospital under the Provincial Hospital Services Plan. Another factor affecting the services to Indians was the passing of the National Medical Care Act in 1968 which resulted in Indians becoming eligible for Medical Care Insurance in Saskatchewan in January 1969. This was during the data collection period of this study. The Indians now have freedom of choice of physicians as well as hospitals with the federal government paying the premiums where necessary.

The first hypothesis is based on the results of comparable types of studies\textsuperscript{9,10,11,12} which indicate that lower socio-economic groups utilize services at a lower rate than the higher groups and that most features of the non-white in relation to utilization of services overlap those of the lowest socio-economic group. Although economic barriers have been removed for both the Indian and non-Indian groups social barriers may still exist. The status consciousness of the
Indian that he belongs to a different class in society is still strong.

The "image" of the Indian is similar to that of the rural poor as pictured in the literature of social science as well as in popular publications and government statements. The Indian is portrayed as remote and inaccessible, not only geographically but socially and psychologically. This image is undoubtedly communicated to, and felt by the Indians. The literature indicates that there is power in an image and it inclines the victim to self-perpetuating actions. In a study in Saskatchewan done on the power of an image to affect commitment to social action, a semantic differential questionnaire was administered to key people involved in a rural rehabilitation program. The questionnaire dealt with the concepts of five different groups in society, namely, low income farmers, middle income farmers, low and middle income city workers and registered Indians. In comparison with the other four groups, the image of the Indian was extremely negative. The general profile emphasized the traits of outcasts such as unimportant, dirty, lazy, yielding (as against persistent), ignorant, spending (as against thrifty), powerless and traditional.

Hypothesis two is based on the following assumptions:-
- that not all the individuals in an Indian community react the same to their social environment and that individual differences lead to status differential within the population;
- that a status index could be developed for this study that would measure the relative position of persons on the Indian reserves;
that the status which the head of a household enjoys influences the status of all persons in the household;

- that there is a greater interaction between the higher status persons on the reserves and the non-Indian society that has led to information transference, and as a result has influenced attitudes towards health care.

In general, research studies indicate that the relevant variable with regard to man's reaction to social environment is not the actual environment or the experiences themselves but the perception of these. It seems logical to believe that if individuals are influenced by heredity, temperament, cultural background and individual life experiences, perception will differ between individuals, families and groups within the population. This will influence behaviour and therefore have an effect on utilization of health care.\footnote{14}

Social ranking has also been indicated as having an influence on morbidity with the lower the ranking the higher the risk of ill-health.\footnote{15,16} Studies of this type have mentioned the confused identity and the feeling of isolation which lead to less value placed on self with the resulting influence on health, high rate of accidents, suicide and other self-inflicted suffering.

Other studies have indicated that where there is social interaction between two societies, this interaction forms the basis for information transference between the two and of the acceptance or rejection of any outside innovation.\footnote{17,18} The contact situation as well as the structure of the health care system is of great importance in the evaluation by
the people of the usefulness and the acceptability of the services.

The underlying assumption in hypothesis three is that a more extensive network of communication exists between reserves adjacent to each other than between those geographically more remote. Some studies have indicated that proximity of location leads to similar patterns of action.\textsuperscript{19}

Hypothesis four is based on the assumption that in a well organized Indian community there is a greater degree of communication between the people on the reserve and the surrounding area.

There is evidence in the literature that where a community has been able to work together to rebuild an organization that replaces the traditional leadership by utilizing some of the cultural values of the larger society, communications between the two groups are facilitated and perceptions, attitudes and actions are shared to a greater extent than in areas where this organization has not taken place.\textsuperscript{20}

In utilizing similar questionnaires for gathering data from both the Indian and the non-Indian populations, the assumption was made that there would be among the two populations sufficient number of respondents to whom the questions would have the same meaning in order that the data could be used for comparative purposes. Although the Indians in the study area are of Cree and Saulteaux background the majority understand English. On the other hand, although in the non-Indian population all are virtually English speaking, not all are of the same ethnic background.
The selection of the study area was influenced by the fact that in 1968, the University of Saskatchewan was involved in the World Health Organization International Collaborative Study on Medical Care Utilization. Within the seventeen incorporated municipalities around North Battleford, from which the rural sample of the study was to be drawn, were eight Indian reserves not included in the study. It was proposed that the population on the eight Indian reserves be selected as a basis for this study with data collection timing being the same as that of the International Study. The University expressed interest in the proposal and supported an application for a National Health and Welfare Research Grant. The Saskatchewan Director of the International Study also made provision for the use of data from the rural stratum for comparative purposes.

Following is the pattern of the presentation of the study. Chapter II contains a survey of the literature or references considered to be the most pertinent for a study of this nature. Background information on the health care systems is presented in Chapter III as well as the health care picture as depicted by the statistics available from the producers of health care. Chapter IV outlines the methodology used in the study and reviews in some detail two of the important aspects, the selection and training of native interviewers and the development of the sociological status index utilized in the study. In relation to the utilization of native interviewers, Chapter V contains some pertinent observations.
Chapter VI presents the findings of the field survey according to the conceptual model. Utilization, morbidity, predisposing and enabling factors are compared between the Indian and the non-Indian population as well as within the Indian population according to status, geographical location and community organization. Chapter VII lists the implications of the study and the overall conclusions.

The appendices contain information on the economic and geopolitical background of the study area as well as a detailed description of each of the eight Indian reserves. Controversial cases between the Indians and the federal government over the responsibility of medical care are included and some current attitudes of the Indians as expressed in letters to the editor of 'The Native Voice'. Copies of the supplementary questionnaires are attached and reference made to the questionnaires used from the International study on the utilization of medical care. Additional information is included on public health indices used in the study. Included also is the nomograph used to calculate the significance of differences between two percentages.
CHAPTER II
REVIEW OF LITERATURE

A review of the literature revealed no definitive study of medical care utilization among the Indian population in either North or South America. A few studies have been done on utilization of services for specific diseases, e.g., rheumatism and mental disease, or by specific groups such as maternal and child health. A number of studies have been done on the need for health care and on some of the specific problems involved in providing services to meet these needs. This review is organized around four areas of main concern to this study: demographic and cultural factors influencing perception of symptoms and conditions for which use or non-use occur, the barriers between the dispensers of care and the patient, the influence of social organization and the value of health education in removing barriers to positive action. Each area is considered a dimension of the underlying element. The review of literature touches on both general and specific matters but makes no attempt to be exhaustive. Although the studies cited differ in philosophy and methodology they constitute useful insights into the complex problems of medical care utilization.

A. Demographic and Cultural Factors

Socio-economic status is one of the demographic variables receiving the greatest attention in relation to utilization of
health services. Suchman\(^1\) in contributing to an overview of the influence of socio-economic status, states that large differences in the incidence of diseases are to be found between different socio-economic groups. Of unexpected significance is the effect of this socio-economic status on the individual's definition of illness, his decision to seek medical care, his acceptance of treatment, the treatment he receives and his subsequent adjustment to rehabilitation. Koos\(^2\) in 1954 in his study of the health in Regionville (a typical town in upstate New York) reports the divergent attitudes towards illness, health and medical care. He divided the population into three major groups or classes based on occupation of the head of the family. The labourer group, both village and rural, showed a marked difference in the answers to questions related to perception of illness. The greatest sensitivity was shown in class one, the business and professional group. In the incidence of disabling illness and use of medical care, there was a lower rate amongst the upper class than in the other two, yet the percentage seeking medical care was highest in the middle class. In the use of substitutes for a regular physician the lower class bought medical care from a druggist to a greater extent than the other two.

An extensive study done in Chicago and Cook County by Bedger, Gelpin and Jacobs\(^3\) relating socio-economic characteristics to maternal and child health, utilized a number of socio-economic factors and health indices derived from all the geographical units in the area.
The analysis verified that where low socio-economic status prevailed, poor health rates including high occurrence of infant mortality, prematurity and illegitimacy also prevailed.\textsuperscript{4,5,6} The study also indicated that although non-whites were found in all income groups, a higher percentage congregated in low economic areas and that a greater percentage of the problems appeared when the income was less than $4,500.00 per year (in 1964). As in other studies, these data indicate that after a certain necessary minimum income is available for white and non-white, additional income has little effect on health factors. This supports the hypothesis that disparity and health rates among non-whites reflect economic differences rather than racial.

All societies possess certain theories about health and disease which influence their attitudes, and, thus, determine the form of overt behaviour displayed by individuals within a particular society. This is documented by many studies.\textsuperscript{7,8,9,10,11,12,13,14} When working among the Navajos, Mico\textsuperscript{15} and others\textsuperscript{16} realized that without an understanding of the framework of knowledge of attitudes, covert and overt behaviour patterns, an essential element was lacking in diagnosis as well as the necessary foundation for planning an active program in health education. Their studies utilized hospital admissions, clinic and out-patient records, as well as attitudinal surveys and research in community organization with emphasis on the extended family. Mico reported that although approximately forty pregnant
women attended the hospital per month, 92 per cent of mothers failed to return in six weeks to the postnatal clinic, although each had been told to do so by the attending doctor or nurse. He also found that 15 per cent of all hospital admissions were children under one year of age, frequently for preventable diseases, and that the majority of deaths among Indian infants were under six months, whereas for non-Indians, the majority were under two months. A more intensive educational program utilizing Navajo hospital personnel was planned for all mothers both English and Navajo prior to the time they were discharged with their babies.

Research in the community revealed that Indians often see the hospital as a place of contact with ghosts of those who had died there before. The Navajo traditional custom of seeking a medicine man for medical care, as in other native groups, delayed the use of non-native services. Medical care was also blocked when the faith of the native was in any way undermined. Mico reported that when the doctor at the sanatarium suggested that the patient have a "sing" (a religious ceremony) before and after sanatarium treatment there were fewer absentees without medical leave. One solution of bridging the gap between the dispensers of medical care and the natives was the training of the local opinion leaders as health workers. This has also been done among Indians and Eskimos in Canada.17 Similar studies on cultural theories have been done in other countries.18,19,20,21,22,23
Maclean\textsuperscript{24,25} discussed the health opinion survey in Ibadan in assessing the local population acceptance of hospitals and the extent of continued dependence on a traditional form of treatment. She discovered that while local methods of healing existed in varying degrees in all sections of the population, old people seemed to be more inclined to their use, whereas the wealthier educated Nigerians and especially educated Nigerian women appeared to be effecting a break in tradition. Graham-Cumming\textsuperscript{26} reported that young Canadian Indian mothers and therefore those who had been more exposed to formal education, utilized prenatal services more than older women who were inclined to cling to traditional attitudes.

The Davidson's, in a study in a small Nova Scotian fishing village\textsuperscript{27}, over a two year period collected data on the perception of illness and injury and the action taken in the case of each. The village was small, forty-eight primary and three joint families, almost all living close to their neighbours and related by blood or marriage. Their homes were frame dwellings, rooms few and furnishings sparse. The women had little respect for a poor housekeeper and all considered cleanliness a mark of propriety. The researchers found that little attention was given to dental hygiene, and to environmental hygiene. An unscreened flimsy privy was often found near the shallow well where drinking water was obtained. Symptoms of illness were seen as physical only. Children's diseases were taken lightly and most illnesses
accepted fatalistically as they expected to have a good deal of illness in a lifetime. Many diseases were seen to be beyond their control. There was a liberal use of patent medicines for all illnesses and medical care was delayed as long as possible. In other words, perceptions, attitudes and actions were all taken within their value orientation.

Other motivational research on social and psychological factors includes studies done on reasons for seeking polio vaccinations\(^{28,29}\), where motivation was linked to the influence of friends, neighbours and family doctors; or seeking care for cancer where fear, age, sex, race and ethnic origin were the factors.\(^{30,31,32}\).

On studies related to dental health\(^{33,34,35}\), the researchers found that levels of tooth salvage were related to ethnic and social class sub-groups and were similar for all individuals within similar family groupings. A marked relationship existed between the dental behaviour of mothers and income. Maternal decision-making in health affairs in family groups is the most important and this was found to be equally strong in all social classes.

An important study that concentrated on the individual differences was one done by Hinckle and Wolfe.\(^{36}\) Among the five groups that they studied, about one-fifth of the individuals accounted for one-half of the illnesses and for most of the time lost through disability. The researchers decided that an underlying factor was the attitude of the individual, rather than environmental and was due to the
subject's perception of life situations. Among the influencing factors noted were heredity, temperament, cultural background and individual life experiences. These lead back to the family complex of individual and socio-economic influences.

Important studies have been conducted on the most notable population change taking place today. The number of old people increased eighteenfold in the United States between 1850-1950 as compared to six-fold increase in the total population. In the United Kingdom the number of old people ages 67-74 years is expected to be 25-33 per cent higher in 1981 than it was in 1961 and the number aged 85 years and older up to 50 per cent higher. The young people tend to be more mobile and thus become separated from older members of the family. The recent conference on the aged held in Ottawa brought together public health workers, social scientists and others to study the problem. One of the main concerns was the need to consider special programs for the aged. One study examined the role of old-age centres similar to well-baby centres as part of the public health programs of government departments. This would provide health to the aged instead of waiting for them to come to the services.

Somers and Somers made additional deductions from research on changing patterns in the utilization of medical care. The use of hospital based care, both out-patient clinics and emergency departments, was replacing visits to doctors' offices, with the main reason being the inability of patients to reach their own doctors on weekends,
nights and holidays. Also, hospitals were providing more ambulatory care. In commenting on the influence of demographic features of age and sex in the use of medical care, Somers and Somers concluded that the average American woman had considerably more days of disability and used more physician's services at a higher rate than men. The city man uses more medical care than the rural, the industrial more than the farmer. Persons over 65 have twice as many restrictive disabilities as the population in general and over twice as many beds and hospital days.

More recent surveys have collected information on sociological grouping since it appears more productive to look behind the observed differences in the occurrence of illness according to sex, age, race and religion and seek similar sociological interpretation and their implications within the population.

B. Barriers Between The Dispensers of Care and The Patient

One of the key elements in influencing the use or non-use of medical care is the therapist who provides the care and the setting in which the care is given. Adair and Deusche\textsuperscript{43} reported on some of the problems of the physicians on Navajo reservations which included language and cultural differences. They concluded that the ability to work with Indians depended on the physician being able to adapt and adjust his knowledge and skills learned in one situation to meet a remarkably different set of circumstances. These principles are further reinforced by Saunders.\textsuperscript{44} Goffman\textsuperscript{45} argues that all social
relationships are governed in part by the social setting in which they occur.

The communication problems of doctors and patients as well as organizational difficulties within the hospital have been extensively studied by Duff and Hollingshead.\textsuperscript{46} The main message of their study is that patient care is far from what it could be, and confirms the earlier work done by Hollingshead and Redlich.\textsuperscript{47}

Cordtz\textsuperscript{48} states that more than anybody the doctors can and should be held responsible for the unequal distribution of health services. They decide who gets what treatment for what illness. Alonzo\textsuperscript{49} showed that statistics suggested inequities in health care. He stated that health care of the disadvantaged (the poor, the coloured) is frequently inadequate, sometimes quite poor, provided with little dignity and compassion and rarely related to the total needs of the individual family.

Many studies have been done on the perception of the patients or individuals seeking care in relation to dispensers of health care.\textsuperscript{50,51,52,53,54} Rosenblat and Suchman\textsuperscript{50} related social class with the selection of a physician and concluded that the higher status patients were more concerned with a rational approach to selecting a physician than were the non-whites or the less sophisticated.

Cahal\textsuperscript{55} in studying how the patients viewed the doctors found that most people have a favourable image about their own doctors but the attitude towards physicians in general was less favourable.
Other studies indicated that all professional personnel straddle two worlds, one of their profession and the other of the agencies or institutions they represent. This affects both their perception of their work and clientele and vice versa. Heatherington\(^56\) in a study of 116 physicians found that three distinct physician-types could be defined. One was the "cosmopolitan" with strong orientation towards scientific goals and a limited attachment to institutions and communities. Two types of local physicians were the medical politician who was a high participator in organized medicine and civic organizations and the generalist strongly oriented to "his" practice, "his" colleagues and "his" community.

Several studies emphasized the dentist-patient relationship.\(^57,58,59\). Findings indicate that unfavourable views of the dentist were held generally by the public; this view was influenced by the physical office setting. The studies also indicate that motivation of parents was essential to the procurement of dental care by the children. In the study done among dental students it was found that stereotyping of patients was prevalent.

C. Influence of Social Organization on Use or Non-Use of Medical Care

Much of the literature reviewed in the first two sections has implied the effect of social organization in the decision of an individual, or a family to seek health care. Other studies reveal further information on the subject.\(^60,61,62,63,64,65\). A few pertinent studies will be referred to here.
Suchman, in a study in New York among different ethnic groups involving approximately 1,800 persons, revealed that differences in knowledge about disease, attitudes towards medical care and behaviour during illness were more related to the forms of social organization than to ethnicity. He found that the more ethnocentric and socially cohesive the group or a community, friendship or family level, the more likely are its members to display low knowledge about disease, scepticism towards professional medical care and dependency during illness. He concluded that the under utilization of medical facilities by the minority groups and their lack of cooperation in community health programs may be simply one more expression of their general estrangement from the mainstream of middle class society. In this respect, medical disorganization among these groups is another form of social disorganization. To remove the barriers of health care for the poor and deprived would require full participation in all other aspects of society. In this study, as in most of his studies, Suchman examined medical behaviour within the broad framework of a socio-cultural setting rather than in trying to identify single specific factors associated with certain observed behaviour as is done in many studies.

Social illness is a loss of a group's ability to re-establish its own dynamic balance but physical illness can be a result of the stress caused by the task of maintaining the group cohesion. Sociologists have pointed out that the primary group, the family is changing. The extended family was able to meet the needs of all of its members,
but the nuclear family is not well adapted to do so.\textsuperscript{66,67,68} Family membership is not an unmixed blessing. The levels of wellness in families exhibit a systematic characteristic such that family health is more than a summing up of the condition of each member.\textsuperscript{69} Therefore, the designated "patient" is not always the sick member.

Hinkle and Plummer\textsuperscript{70} studied 1,800 workers in the New York Telephone System. Their findings were that 30 per cent had 70 per cent of the illnesses and suffered from several illnesses simultaneously. It was of interest that the research showed that in this high risk group, the illness pattern was mostly established by age eighteen. A major variable within the 30 per cent of subjects was the marital status. They were predominantly single women living at home, having to look after ill or aging parents. The authors believed that this group suffered from a chronic low grade dissatisfaction with their status in life. Other researchers have documented psychological reactions to stress. On the individual level rapid change in life's circumstances or the way in which the various segments of one's experience are integrated, is related to health changes, although these changes may be more subtle.\textsuperscript{71} Studies indicate that communities are systems of relationship and that each part is important and unique. The influence of one part on another needs to be assessed and understood before programs are planned and executed.\textsuperscript{72,73} In other words, the "holistic" approach\textsuperscript{74} is required in the solution of problems in
planning for adequate health care.

D. The Value of Health Education in Removing Barriers to Positive Action in Medical Care.

Godber\textsuperscript{75} made the statement that preventive medicine must convey its message more effectively to the general public and that more health education is most needed now to persuade people to do, or refrain from doing things for themselves for their long-term benefit. Doctors should define the objective but they are not necessarily the best people for the persuasive work.

Literature abounds with attempts to define and evaluate health education. All writers agree that health education involves planning for change.\textsuperscript{76,77,78,79,80} A World Health Organization Expert Committee\textsuperscript{81} defined the purpose of health education of the public in the following way:

"To help individuals to become competent in and to carry on those activities they must undertake for themselves, as individuals or in small groups, in order to realize fully the state of health defined in the Constitution of the World Health Organization and to promote the development and 'proper' use of health services."

They also state that the degree to which these goals can be achieved is determined by a series of interrelated facts. It is necessary that all health workers and others involved in health education recognize that the attainment of changes in health behaviour is conditioned by social, psychological and economic realities and by the quality, amount and availability of health services."
Mathews\textsuperscript{77} has stated that no longer can society be thought of as fixed. Change is perhaps the only constant one can depend upon. Still much education follows a tradition of imparting knowledge - a practice based on an unchanging environment and the idea that what is presented is what is learned. There is a need to rely on the process of learning not on static knowledge.

Candau\textsuperscript{82} in discussing medical education in developing countries states that curative medicine must be provided alongside of preventive measures and that medical education must break away from the "old country" model of subjects taught and the method of teaching. Innovation is what is needed. This is also the theme of other studies\textsuperscript{83,84,85}, which state that in light of the relationship between behaviour and health, and the individual's responsibility for his own care, the notion of "provider" and "consumer" while useful until now, has serious conceptual and operational limitations. The essence of the processes is involvement of the clients as an active partner. The techniques needed now are social and behavioural in nature.

Changes are occurring in the field of medical education,\textsuperscript{86,87,88*} in both substance and form. The question has been raised by Lifson as to how best the physician can carry out the health education aspect of his practice.\textsuperscript{89} Personal health education for the patient through his physician, or through auxiliary personnel, or both, will require greater attention the years ahead. Much health education will be needed in the communities as public health and medicine cannot bring about a

renaissance on a personal basis. Considerable experimentation is indicated to find the best way to assist physicians with the health education aspect of their work.

The Expert Committee on Training of health personnel in health education of the public, listed the health workers for whom training in health education is necessary. They listed all members of the health team from private medical practitioners to all professional health personnel in all branches of work, as well as other health workers according to local conditions. The committee also listed the scope of health education opportunity. They decided health education may be carried on among healthy persons during school days, military service, in the factory, office, in the farm and among the general public. School health has become the focus of interest for many studies, and was the subject of a National Conference in Ottawa in October 1972. All writers emphasize a need for a planned and effective school health education program in the rapidly changing world with new health problems and new possibilities of health promotion.

The hospital role in health education has been well documented. All stress the consumer input and the need for bridging the gap between education and service and the need for team work in both. Another target for health education is the community, and participation of the community groups and some of the difficulties
involved. Many of the main difficulties are found within the structure of the health services.

Basic to health education is communication. All methods are used from face-to-face to the most sophisticated media. Public health educators are faced every day with questions as to which of several education methods might be used in a given situation. Roberts reports on an experimental study of the relationship between planned educational communication on an individual basis and action for infant care and postpartum care among Indian women. This study was carried out in a Public Health Service hospital which serves most of the western Navajo reserve, and was not an isolated effort but part of a total program. The results of the study showed that planned person-oriented contact with staff, combined with the communications of simple action-oriented information in understandable and meaningful language, is positively and significantly associated with an increase in the action recommended in the communication.

Communication has two main aims, information and persuasion. Kaprio in an overview of 31 member states in the World Health Organization stated that there was no end to what could be done in community health care, and suggests that health education could play a major role in innovations in communication. He concludes that the world needs more people trained in the modern approach to communications to provide a cadre of specialists through which administrators could work in making effective contributions to the improvement of individual,
family, and community health. Martikainen\textsuperscript{109} studied the role of the health education specialist in the preparation of other health workers on an international basis. She studied the role from the point of view of health education specialists at national and provincial or state levels, administrators to whom they were responsible and professors of health education in accredited schools of public health in the United States. Seven groups of specified health education activities were examined. Differences in degree of consensus on the expectations for performance were found in the responses to questions pertaining to activities within those grouped as well as between them. A higher consensus was found within the expectations held for a considerable number of the performance items. Both among the health education specialists and their administrators there was a higher degree of intensity in the expectations for the future than for the present performance of specified activities. Grossman raised some pertinent questions on the search for purpose in the field of health education.\textsuperscript{110} He suggested that health educators question the purpose of promoting optimum health among the public. In 1971 an interdisciplinary study group prepared a report on the innovative process applied to health education.\textsuperscript{111}

Jones has stated\textsuperscript{112} that emotions, prejudice, individual motives and attitudes defy the precise measurement that the physicists used and now the epidemiologists require for research in behaviour. The human factors are the basic elements of health education. Because no exact tool has yet been developed for measurement, the critics often scoff at the descriptive investigations that do take place, yet
research can be a useful tool in the development of effective health education programs. 113

In evaluating health education there can be confusion between two types of research, scientific and applied. This according to Hochbaum 114 has led to much research that neither advances the frontiers of knowledge nor helps to improve health education. He stresses the qualitative aspect of data. To him the meaning and interpretation of the data collected in health education research are more critical than the statistical sophistication with which they are collected and presented. Hochbaum believes what is needed to move beyond the present plateau in inducing the public to act intelligently about health is a long-range concerted effort to develop sounder attitudes towards health in all populations. Putting more money into what we are already doing is not the answer. Human behaviour is complex and there are no simple explanations or easy ways of providing change. 115

This literature review would not be complete without some reference to methodology of research, as one of the sub-objectives of this study was to test the feasibility of the use of indigenous women to collect the data. Some studies deal with the effects of race as a source of bias in research interviews. 116,117 Three important factors were suggested as influencing the interview results; anonymity, status differences and the state of inter-group relationships. It would be difficult to apply specific findings of these studies in differing situations. A special feature of the International Collaborative Study
of Medical Care Utilization was an attempt to test the reliability of health services data collected by similar methods in twelve areas in seven countries. The two reliability studies done on the international data\textsuperscript{118} indicate possible weaknesses of the household survey as a tool to gather population data. Valuable background information for the interpretation of data should be provided from the findings of the international study as well as from the results of the study that is the subject of this dissertation.
CHAPTER III

HEALTH CARE SYSTEMS AND HEALTH STATISTICS

The two health care systems, the provincial and the federal (Indian Health Services), provide care for all the populations in the seventeen incorporated municipalities around North Battleford. As mentioned earlier, theoretically Indians and non-Indians have equal access to all medical services, hospitals, doctors, both non-specialists and specialists, with the exception of the Indian Hospital which caters exclusively to those members of the Indian population who elect to use it or who are through circumstances forced to use it. The public health services for the two populations are separate with the provincial staff providing services for the non-Indians and the federal staff for the Indians on the reserves.

A. Health Care Systems

The Health Care Systems, as with the economic and geopolitical systems*, have developed side by side and like the others are interwoven. In 1969, the federal government presented a "White Paper" which contained proposals for the extension of all provincial services to reserves across Canada. The White Paper was violently opposed by the Indian people. The provision of medical care was never a Treaty obligation of the government. The only Treaty which makes any mention of medical care is Treaty number six, requiring that a medicine chest be kept in the office of the local official.

*For background on economic and political systems see Appendix A-5.
administering the Indian Affairs\(^1\). This Treaty was made with the Indians in Saskatchewan in 1876 at a time when the area was completely unsettled and void of both physicians and hospitals, indicating that it was not a custom to provide medical care through a public agency at that time. Whereas no legal obligation appears to exist, the government has adopted the moral obligation and has been "taking care of the Indians in a general way"\(^2\).

1. Indian Health Services

In 1944, the Department of National Health and Welfare was established and the Minister was empowered with duties, powers and functions including "all matters relating to the promotion or preservation of health, social security and social welfare of the people of Canada of which the Parliament of Canada has jurisdiction". In 1945, the administration of health services for Indians was transferred to the Department of National Health and Welfare, to a special branch called Indian Health Services. Prior to this, health care had been administered along with education and welfare by the department of the Federal Government administering the affairs of Indians. This separation of the responsibility for health from education and welfare has posed many problems for both the Indians and the government agencies concerned. In 1955 when the responsibility for health services of the Yukon and the Northwest Territories was added to Indian Health, the service became known as
Indian and Northern Health Services, and was under the same director. In 1962, responsibilities were further expanded to include additional services which are the responsibilities of the Federal Government and the name was changed to Medical Services. The Indian Health Services portion of the programme still has the same purpose, which was:

- To arrange for diagnostic treatment and health promotion services to indigent Indians.
- To stimulate the sense of community responsibility for health in Indian communities.

There is now an on-going dispute between the Indian community and the Federal Government about provision of Health Services to Indians. (For examples of court cases, see Appendix E-1). The Indians feel that the treaties should have stipulated a full range of health care.

For administration purposes, Medical Services, at the time of the study, was headed by a Director General in Ottawa. For purposes of execution of the programme the country is divided into regions. The necessary diagnostic treatment and public health services are arranged by the regional directors for the Department of National Health and Welfare in co-operation with the Indian chiefs and Band Councils, various professional associations, university schools of medicine and locally available health resources.

The Regions were in the past subdivided into zones, where generally there was a base hospital and the Zone Director functioned as the hospital superintendent. The current policy is to gradually close the
Indian Hospitals, or to convert them to general hospitals serving both Indian and non-Indian populations.

Saskatchewan is a region with its Regional Office in Regina. When this study was undertaken in 1968, North Battleford was a designated "area" (in reality a zone). The North Battleford Indian Hospital, situated approximately two miles east of the city, was the centre of administration for the North Battleford area which covers a total of 24,000 square miles in the northwest portion of the province. The director of the area was also superintendent of the hospital.

Besides the fifty-bed Indian Hospital there are eight other medical centres where the Indian and non-Indian population in the study may seek care. These are situated in small towns near the reserves, each with a hospital (and at least one physician) serving as a medical centre. Other medical centres are in North Battleford with a range of medical specialties, and the city of Saskatoon with its medical college and University Hospital. (See Fig. II). The total count of non-specialists and specialists available to the study population is 320.* Records show that in 1968, Indians in the Study area sought care from fourteen non-specialists, four ophthalmologists and two dentists. No record was kept of specialists serving Indians when patients were in Saskatoon hospitals. With the passing of the Medicare Act in 1968 the Indians were given freedom of

*None could converse in Cree, although several knew a few words of the language.
Figure II

HOSPITAL FACILITIES : LOCATION : TYPE AND RATED BED CAPACITY

- TURTLEFORD
  GENERAL HOSPITAL 25 BEDS

- EDAM
  GENERAL HOSPITAL 4 BEDS

- RABBIT LAKE
  GENERAL HOSPITAL 20 BEDS

- CUT KNIFE
  GENERAL HOSPITAL 7 BEDS
  PSYCHIATRIC HOSPITAL 1000 BEDS
  INDIAN HOSPITAL 50 BEDS

- UNITY
  GENERAL HOSPITAL 24 BEDS

- WILKIE
  GENERAL HOSPITAL 31 BEDS

- NORTH BATTLEFORD
  GENERAL HOSPITAL 136 BEDS

- BIGGAR
  GENERAL HOSPITAL

- SASKATOON
  GENERAL HOSPITAL
  T.W. SANITORIUM
  CHRONIC CARE UNIT

Source: International Study
choice of physician. Prior to this a three doctor-clinic in North Battleford received a monthly stipend to give services to the Indians. These same doctors received additional fees for services given at the out-patient clinic at the Indian Hospital.

Providing public health services for the eight reserves in the study is the North Battleford health centre staff (under the administration of the area superintendent at the Indian Hospital) consisting of three public health nurses, although at times not all positions were filled, one public health inspector and the part-time services of a nutritionist and health educator. Two of the reserves had community health workers who are native people selected from the community and trained to work in the field of public health.

During the data collection, supplementary questions were asked of all adults in the Indian sample on their knowledge of the health services offered them and their opinion as to who should be providing them with care. (See Appendix F-10). Fifteen per cent (57 persons) said they were aware that some changes had been made over the past two years. When asked what they thought about the changes, seven per cent (29) said the services had improved, seven per cent (29) said they had changed for the worse. As to why these changes were made, only two per cent felt it was for improved care, the others 'didn't know'. Six per cent (23) liked it for various reasons and the same number expressed a definite dislike. When asked what other services Indian people should be getting, four per cent (14) wanted
more community health workers and five per cent (18) wanted free drugs, false teeth and glasses. Six per cent (23) wanted better communications between Indian Health services and the people. In reply to the question as to who should provide the health services to Indians, eighteen per cent (70) said the Federal Government, four per cent (14) the Provincial Government, two per cent (9) some other agency, and the others 'didn't know'. Two main reasons given by over fifty per cent of those answering - in favour of the Federal Government were - it was the Federal Government's responsibility and they were 'doing all right now'; the other was a fear of being under provincial care. A lack of knowledge of the present situation, fear of answering, or a lack of interest in who provides the services may be responsible for the small number of answers.

2. Pro vincial Health Services

The provincial regional Health Services programmes are carried out under the authority of the Public Health Act and the Health Services Act. The branch consists of a headquarters unit in Regina, eleven health regions and the Northern Health District. The branch director is responsible to the provincial Deputy Minister of Health. Each Region has a medical health officer supported by a trained staff in the various disciplines required. All but dental staff are responsible to the Director and Medical Health Officer who must co-ordinate the services at the local level, integrate them with
other agencies, plan new programmes and stimulate public health programmes. Each region is divided into districts and each municipality appoints a local resident on the health council, a lay body which acts as the voice and ear of the local residents. This lay body is primarily advisory and works mainly on preventive measures but it has the authority beyond the scope of the provincial health programme and may tax local municipalities in their region for the purpose of establishing treatment programmes.

The non-Indian sample was drawn from within the area covered by the Provincial Regional Health Unit #13 with its headquarters in North Battleford (Fig.III). The area has a staff of seventeen public health nurses. It is divided into five health districts with each district having a Public Health Inspector. The Director is assisted by a Nursing Supervisor, a Health Educator and a clerical staff of three full time and five part-time employees.

B. Health Statistics

Records show that for the past few years the leading cause of death among Indians has been accidents, not disease. (Table 1). Graham-Cumming stated that the basic causes underlying these statistics must be sought in deep-rooted social malaise which for cure will require much more than adequate funds, good housing or the best of medical care, the traditional methods of attempting to deal with problems of this nature.
Figure III
Location of Study Area

Saskatchewan Health Regions

Study Area - #13 North Battleford
Table 1
FIVE LEADING CAUSES OF DEATH

Non-Indian Study Area

<table>
<thead>
<tr>
<th>Causes</th>
<th>Rate/1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Arteriosclerosis and degenerate disease of heart</td>
<td>2.2</td>
</tr>
<tr>
<td>2. Malignant neoplasm</td>
<td>1.4</td>
</tr>
<tr>
<td>3. Vascular lesions of central N/S</td>
<td>0.9</td>
</tr>
<tr>
<td>4. Pneumonia</td>
<td>0.4</td>
</tr>
<tr>
<td>5. Motor vehicle accidents</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Indians in Saskatchewan

<table>
<thead>
<tr>
<th>Causes</th>
<th>Rate/1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Accidents</td>
<td>2.2</td>
</tr>
<tr>
<td>2. Pneumonia</td>
<td>1.3</td>
</tr>
<tr>
<td>3. Heart Disease</td>
<td>1.0</td>
</tr>
<tr>
<td>4. Diseases peculiar to infants</td>
<td>0.8</td>
</tr>
<tr>
<td>5. Gastroenteritis and Colitis</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Source - 1. International Study Statistics 1966
2. Annual Reports Medical Services Saskatchewan Region National Health & Welfare 1967
Although in Saskatchewan heart diseases were the leading causes of death in terms of life years lost, accidents were the leading cause of death in all age groups from one to forty-four years, and were one of the leading causes of death in all other age groups\textsuperscript{3}.

When the total statistics of Indian mortality relative to non-Indian are studied (Table 2) it will be noted that the registered Indians contribute more than their share of deaths to the Canadian population. From 1965-68, this occurred every year with regular consistency. An examination with respect to age shows deaths of the Indians during the first decade of life exceeding their contribution to population by 3.32 times, i.e. Indians under ten years of age contributed three times as many deaths to Canadian mortality as their proportionate share. In the third and fourth decades, their contribution is about 3.5 times to male deaths and 4.7 to females. This excessive mortality in young adult life has sociological and health implications that require special attention by the dispensers of health care.

On examination of the use of hospitals in Saskatchewan (Table 3) it would appear that the Indians have a much higher rate of hospitalization than the non-Indians, although their average length of stay over a six year period is very much the same. The age structure of those using the hospital according to vital statistics is different, with fifty per cent of the Indian in-patients being in the under four age groups. Table 4 represents the use the Indians made of the Indian
# TABLE 2
## INDIAN CONTRIBUTION TO MORTALITY STATISTICS IN CANADA 1967

### MALE STATISTICS

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Mid-Year Population</th>
<th>Male Deaths</th>
<th>Indian Per Cent Contribution to Population</th>
<th>Times Contribution to Death Exceeds Contribution to Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indian Total</td>
<td>Indian Total</td>
<td>Contribution to Population &amp; Deaths</td>
<td></td>
</tr>
<tr>
<td>0-9 years</td>
<td>39,304</td>
<td>2,274,200</td>
<td>362</td>
<td>6,300</td>
</tr>
<tr>
<td>10-19 years</td>
<td>26,186</td>
<td>2,067,600</td>
<td>57</td>
<td>1,839</td>
</tr>
<tr>
<td>20-29 years</td>
<td>17,175</td>
<td>1,427,800</td>
<td>100</td>
<td>2,466</td>
</tr>
<tr>
<td>30-39 years</td>
<td>11,977</td>
<td>1,288,000</td>
<td>80</td>
<td>2,395</td>
</tr>
<tr>
<td>40-49 years</td>
<td>8,452</td>
<td>1,192,900</td>
<td>82</td>
<td>5,542</td>
</tr>
<tr>
<td>50-59 years</td>
<td>6,443</td>
<td>931,800</td>
<td>82</td>
<td>11,361</td>
</tr>
<tr>
<td>60-69 years</td>
<td>4,401</td>
<td>599,000</td>
<td>113</td>
<td>17,548</td>
</tr>
<tr>
<td>70+</td>
<td>3,342</td>
<td>466,500</td>
<td>274</td>
<td>40,849</td>
</tr>
<tr>
<td>All Ages</td>
<td>117,280</td>
<td>10,247,800</td>
<td>1150</td>
<td>88,300</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>16,365</td>
<td>489,700</td>
<td>158</td>
<td>4,678</td>
</tr>
</tbody>
</table>

### FEMALE STATISTICS

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Mid-Year Population</th>
<th>Male Deaths</th>
<th>Indian Per Cent Contribution to Population</th>
<th>Times Contribution to Death Exceeds Contribution to Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indian Total</td>
<td>Indian Total</td>
<td>Contribution to Population &amp; Deaths</td>
<td></td>
</tr>
<tr>
<td>0-9 years</td>
<td>38,655</td>
<td>2,169,200</td>
<td>270</td>
<td>4,774</td>
</tr>
<tr>
<td>10-19 years</td>
<td>25,892</td>
<td>1,990,900</td>
<td>31</td>
<td>815</td>
</tr>
<tr>
<td>20-29 years</td>
<td>16,289</td>
<td>1,432,400</td>
<td>46</td>
<td>848</td>
</tr>
<tr>
<td>30-39 years</td>
<td>10,759</td>
<td>1,251,300</td>
<td>53</td>
<td>1,354</td>
</tr>
<tr>
<td>40-49 years</td>
<td>7,661</td>
<td>1,204,900</td>
<td>45</td>
<td>3,116</td>
</tr>
<tr>
<td>50-59 years</td>
<td>5,542</td>
<td>920,100</td>
<td>57</td>
<td>5,764</td>
</tr>
<tr>
<td>60-69 years</td>
<td>3,689</td>
<td>626,000</td>
<td>67</td>
<td>9,474</td>
</tr>
<tr>
<td>70+</td>
<td>2,990</td>
<td>562,400</td>
<td>196</td>
<td>35,868</td>
</tr>
<tr>
<td>All Ages</td>
<td>114,477</td>
<td>10,157,200</td>
<td>765</td>
<td>61,983</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>15,813</td>
<td>468,300</td>
<td>128</td>
<td>2,763</td>
</tr>
</tbody>
</table>

### TABLE 3

HOSPITALIZATION RATES AND AVERAGE LENGTH OF STAY, INDIAN AND NON-INDIAN, SASKATCHEWAN, 1962-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Separations per 1,000 Population</th>
<th>Patient days per 1,000 Population</th>
<th>Average days Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indian</td>
<td>Non-Indian</td>
<td>Indian</td>
</tr>
<tr>
<td>1962</td>
<td>431</td>
<td>202</td>
<td>4,278</td>
</tr>
<tr>
<td>1963</td>
<td>439</td>
<td>209</td>
<td>4,296</td>
</tr>
<tr>
<td>1964</td>
<td>451</td>
<td>215</td>
<td>4,201</td>
</tr>
<tr>
<td>1965</td>
<td>468</td>
<td>211</td>
<td>4,271</td>
</tr>
<tr>
<td>1966</td>
<td>460</td>
<td>206</td>
<td>4,211</td>
</tr>
<tr>
<td>1967</td>
<td>448</td>
<td>209</td>
<td>4,057</td>
</tr>
<tr>
<td>1968</td>
<td>480</td>
<td>208</td>
<td>4,207</td>
</tr>
</tbody>
</table>

Source: Saskatchewan Hospital Services Plan Annual Reports

During 1968 registered Indians received 133,753 days of hospital care (excluding newborn care). This represents 4,207 days per 1,000 Indian beneficiaries. The 0-4 age group according to vital statistics represents over 50% of the total care provided to the Indian population. Rates are higher also among females, related to pregnancies (due to higher fertility rate among Indians).
Hospital in North Battleford and the other eight non-Indian hospitals offering care to the population on the eight reserves during a three month period. Admittedly, the data were collected over the same three months, one year apart, but presuming that the non-Indian hospitals were utilized at the same rates in 1968, thirty-three per cent of all hospital admissions were to the Indian Hospital. For two of the Indian reserves (five and six) the Indian Hospital is the closest (See Table 1). For reserves three and eight, it is not the nearest. The people on these reserves are among those mentioned earlier as being forced (as they see it) by circumstances to use the Indian Hospital. The main reason as gleaned during the data collection being "the Indians are not liked by staff" (at the other hospitals) or that they are admitted only in case of emergency and then transferred as quickly as possible to the Indian Hospital. This seemed to be especially emphasized by the people from number three reserve.

Two questions during the field survey, provided data on the attitudes of respondents towards hospitals. Table 5 presents data on those who would or would not choose the Indian Hospital. Twenty-four per cent of all respondents would choose the Indian Hospital as compared to ten per cent who would not. Reserves showing the highest percentage of the people who would choose the Indian Hospital are those that show the highest per capita admission (Table 4). The only hospital receiving over fifty per cent positive responses was
<table>
<thead>
<tr>
<th>Reserve</th>
<th>Population</th>
<th>Indian Hospital Admissions</th>
<th>Non-Indian Hospital Admissions</th>
<th>Per Capita Use</th>
<th>Non-Indian Hospital Admissions</th>
<th>Projected to a 12 Month Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indian Band</td>
<td>Out Admissions</td>
<td>Admissions</td>
<td>Indian</td>
<td>Hospital</td>
<td>Indian Hospital Admissions</td>
</tr>
<tr>
<td></td>
<td>Patient Visits</td>
<td></td>
<td></td>
<td>Hospital</td>
<td>Admissions</td>
<td></td>
</tr>
<tr>
<td>1. Poundmaker</td>
<td>454</td>
<td>58</td>
<td>10</td>
<td>28</td>
<td>.128</td>
<td>.022</td>
</tr>
<tr>
<td>2. Little Pine</td>
<td>578</td>
<td>62</td>
<td>12</td>
<td>71</td>
<td>.107</td>
<td>.021</td>
</tr>
<tr>
<td>3. Sweet Grass</td>
<td>497</td>
<td>138</td>
<td>33</td>
<td>17</td>
<td>.278</td>
<td>.066</td>
</tr>
<tr>
<td>4. Thunderchild</td>
<td>663</td>
<td>44</td>
<td>13</td>
<td>152</td>
<td>.066</td>
<td>.020</td>
</tr>
<tr>
<td>5. Moosomin</td>
<td>435</td>
<td>118</td>
<td>43</td>
<td>18</td>
<td>.271</td>
<td>.099</td>
</tr>
<tr>
<td>6. Saulteaux</td>
<td>327</td>
<td>65</td>
<td>26</td>
<td>17</td>
<td>.199</td>
<td>.080</td>
</tr>
<tr>
<td>7. Red Pheasant</td>
<td>516</td>
<td>52</td>
<td>12</td>
<td>26</td>
<td>.101</td>
<td>.023</td>
</tr>
<tr>
<td>8. Mosquito</td>
<td>384</td>
<td>71</td>
<td>26</td>
<td>26</td>
<td>.185</td>
<td>.068</td>
</tr>
<tr>
<td></td>
<td>3,854</td>
<td>608*</td>
<td>175*</td>
<td>355*</td>
<td>.158</td>
<td>.045</td>
</tr>
</tbody>
</table>

Data Source:
Hospital Records - Indian Hospital, October - December 1968
Non-Indian Hospitals, October - December 1969 (data not available in 1968)

*These figures may include more than one visit by the same person.
(Per capita use corresponds closely to 1966 records of North Battleford Indian Health Services.)
### TABLE 5
ATTITUDE TOWARDS THE INDIAN HOSPITAL OF INDIANS
15 YEARS AND OVER IN STUDY AREA BY RESERVES
EXPRESSED AS PERCENTAGE

<table>
<thead>
<tr>
<th>Reserves</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of respondents on each Reserve</td>
<td>52</td>
<td>69</td>
<td>38</td>
<td>65</td>
<td>45</td>
<td>25</td>
<td>58</td>
<td>32</td>
<td>384</td>
</tr>
<tr>
<td>Percentage on each reserve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would Choose</td>
<td>17</td>
<td>13</td>
<td>36</td>
<td>5</td>
<td>56</td>
<td>60</td>
<td>12</td>
<td>34</td>
<td>24</td>
</tr>
<tr>
<td>Would not Choose</td>
<td>17</td>
<td>13</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>17</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

Answers in reply to the following questions:
If you had to be admitted to a hospital, is there any particular hospital you would choose to go to? Which hospital is that?

Is there any particular hospital you would not want to go to?
(a) Can you tell me the name of the hospital?
(b) Would you like to tell me more about that?

Source:
Question 2 & 4 - Supplementary Questions (Adult) See Appendix F-6.
the Turtleford Union by respondents from reserve number four. This is their nearest hospital. All other responses were scattered.

During the period of the study, Medical Services was negotiating with the Union Hospital in North Battleford to include in their new building plans sufficient facilities to make it feasible and possible to close the Indian Hospital*

In reviewing the indices of public health in the two populations, it might be well to take a brief look at the tuberculosis situation in Saskatchewan. More patient days are provided for Indians than non-Indians and the rate of new cases is significantly higher (see Table 6). Further statistics show that 21 deaths occurred in Saskatchewan from tuberculosis in 1967[^4]. It was reported that of the 64 new cases among Indians 36, or 56 per cent, were under 9 years of age compared with 23, or 18 per cent, of the 128 cases among non-Indians. The average length of stay for Indians in sanitoria is approximately twelve months as compared with eight months for the non-Indians. The longer length of stay for Indians is related to the hesitancy of returning patients to a home environment conducive to an aggravation of the symptoms and where the patient may neglect to take the necessary medication.

Community Tuberculosis surveys are carried out in Saskatchewan by the Tuberculosis League. By 1969, the League surveys replaced the Indian Health Services Survey usually carried out during the yearly

[^4]: The federal government (1972) has approved a 1.2 million dollar contribution to the re-building of the North Battleford Union Hospital. When construction is completed the Indian Hospital will cease to function as a hospital. There are to be five Indians on the thirty-five member board, two of whom are to be on the executive.


### TABLE 6

**PATIENT DAYS IN SANATORIA AND NEW TUBERCULOSIS PATIENTS**

**INDIAN AND NON-INDIAN, SASKATCHEWAN 1963-67**

<table>
<thead>
<tr>
<th>Year</th>
<th>Indian Patient Days</th>
<th>New Cases Indian</th>
<th>Non-Indian Patient Days</th>
<th>New Cases Non-Indian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Rate*</td>
<td>Number</td>
<td>Rate*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>Rate+</td>
<td>Number</td>
</tr>
<tr>
<td>1963</td>
<td>21,435</td>
<td>797.7</td>
<td>73</td>
<td>271.7</td>
</tr>
<tr>
<td></td>
<td>63,330</td>
<td>69.4</td>
<td>154</td>
<td>16.9</td>
</tr>
<tr>
<td>1964</td>
<td>25,402</td>
<td>919.1</td>
<td>55</td>
<td>199.0</td>
</tr>
<tr>
<td></td>
<td>63,581</td>
<td>70.1</td>
<td>162</td>
<td>17.9</td>
</tr>
<tr>
<td>1965</td>
<td>30,989</td>
<td>1076.6</td>
<td>72</td>
<td>250.1</td>
</tr>
<tr>
<td></td>
<td>51,124</td>
<td>55.9</td>
<td>126</td>
<td>13.8</td>
</tr>
<tr>
<td>1966</td>
<td>35,821</td>
<td>1197.3</td>
<td>77</td>
<td>257.4</td>
</tr>
<tr>
<td></td>
<td>40,321</td>
<td>43.8</td>
<td>152</td>
<td>16.5</td>
</tr>
<tr>
<td>1967</td>
<td>32,832</td>
<td>1055.0</td>
<td>64</td>
<td>205.7</td>
</tr>
<tr>
<td></td>
<td>40,449</td>
<td>43.6</td>
<td>128</td>
<td>13.8</td>
</tr>
</tbody>
</table>

*Rate per 1,000 population

Rate per 100,000 population

---

Public Health Report

Saskatchewan - 1968
treaty-payment days on the reserves in the North Battleford area.

It is traditionally believed that the native population of the Americas have a genetic susceptibility to certain infectious diseases such as measles and tuberculosis. Evidence to the contrary, however, was presented in 1969 to a meeting held under the auspices of the Pan American Health Organization, the World Health Organization's Regional Committee for the Americas, where physicians, geneticists, anthropologists and sociologists discussed the different biochemical challenges presented by the American Indian. They concluded that there is no basis for the belief that the American Indians have a racial susceptibility to tuberculosis or measles. The underlying cause for the higher incidence of tuberculosis among the Indian population will have to be sought in areas other than that of racial background.

Indians appear to be at a disadvantage in that their morbidity and mortality rates are higher than the non-Indian and they run a higher risk of dying, not from disease, but from accidental death. Further information on public health statistics are presented in Appendix A-2. From these data it appears that Indians are also at a social disadvantage as judged by middle class standards.
CHAPTER IV

METHODOLOGY

The relationship that exists between the methodological approach of this study and some of its objectives makes it essential to describe in detail several of the aspects of the methodology.

In preparation for the study, arrangements were made with the Director of the North Battleford area of Medical Services (Indian Health), National Health and Welfare, to use the Indian Hospital as a base of operations. Information on the eight reserves was collected both from the staff of Medical Services and the Indian Affairs Branch. Maps of the reserves were obtained from both services and were up-dated by use of an informant from each reserve and through a tour of the area.

At the time of the 1968 census, these reserves had a total registered population of 3,854, but the on-reserve population was listed as 3,409. The study population included all persons living on the reserve who had no other place of residence regarded as permanent at the time of the interview.

There is considerable movement on and off the reserves without any change of status as far as registration is concerned. The population on reserves is subjected to a certain reduction during the particular period when the Indians leave for seasonal work (e.g. planting and harvesting of sugar beets) or to attend pow-wows. Interview timing was planned to avoid these periods as much as possible.
The Indians of the eight reserves in the study area are of Algonkian stock, the most numerous of the ten basic linguistic groups in Canada. One of the well-known Algonkian tribes is the Cree. Approximately ninety per cent of the population on the reserves is of Cree background; the other ten per cent are from the Ojibwa or Chippewa tribes designated as Saulteaux¹, a name derived from "Saultiers" which dates from the Ojibwa dealings with the French traders around Sault Ste. Marie. This group lives mainly on the Saulteaux Reserve and a few on the adjacent Moosomin Reserve. On one reserve (Mosquito) there are a few Indians designated by the others as "Stoney" who are descendents of a small branch of the Assiniboin tribe. (The majority of the Stoney are settled on a reserve at Morley, Alberta).²

A major portion of the Indian population speaks English and the native dialect. Those with little or no English are found mainly among older people and a few of the younger adults who have received little or no formal education. The two major religious designated groups are Anglican and Roman Catholic with a small portion belonging to other protestant groups or professing the traditional native beliefs.

A. The Sampling Plan and Sample Selection

(1) Indian Sample

A decision was made to use the housing units as the frame of reference for the sample. As the observation unit was the individual, the household could be considered as a cluster of eligible units of study.
All persons residing in the housing unit at the time of the initial contact who had no other permanent address were considered eligible for the interview. For research purposes the reserves were considered in four geographical clusters (Table 7 and Fig. IV) where it was believed the majority of the population in each area focussed on a common centre for medical and material needs.

Within each geographical area a proportionate sample was systematically drawn (without replacement) using a random number. The four quarterly samples were selected on June 1, September 1, December 1, 1968 and March 1, 1969. In order to reduce biases that may ensue if empty or demolished houses were selected or new ones missed, the maps of the reserves were carefully checked with an informant before each sample was drawn. As it was planned to attempt comparisons between geographic areas, a proportionate sample was drawn from each of the four clusters. A random sample of the total population may have led to an uneven clustering of neighbours. The closer two reserves are to one another, the more likely they are to share common traits or common patterns of behaviour. The method of proportionate sampling from geographic clusters reduces the variance within the areas and makes it less than the variance between areas, thus making a sociological sub-study more feasible. In order that the survey would yield sufficient data for statistical comparison, the initial determination of the sample size was 126 households, estimating on the average of six persons per household. Because of the expectation that the non-
TABLE 7
RESERVES IN INDIAN STUDY - SAMPLE CLUSTERS

<table>
<thead>
<tr>
<th>Clusters</th>
<th>Reserves</th>
<th>Focus Towns</th>
<th>Nearest Hospital</th>
<th>Direction and distance from North Battleford Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>1. Poundmaker</td>
<td>Paynton - 15 miles</td>
<td>Cutknife - 15 miles</td>
<td>W - 45 miles</td>
</tr>
<tr>
<td></td>
<td>2. Little Pine</td>
<td>&quot; - 17 miles</td>
<td>&quot; - 13 miles</td>
<td>S.W. - 49 miles</td>
</tr>
<tr>
<td></td>
<td>*3. Sweetgrass</td>
<td>Gallivan - 5 miles</td>
<td>&quot; - 12 miles</td>
<td>W. - 30 miles</td>
</tr>
<tr>
<td>II.</td>
<td>4. Thunderchild</td>
<td>Turtleford - 8 miles</td>
<td>&quot;</td>
<td>N. - 60 miles</td>
</tr>
<tr>
<td>III.</td>
<td>5. Moosomin</td>
<td>Cochin - 1 mile</td>
<td>N.B. Indian</td>
<td>N. - 21 miles</td>
</tr>
<tr>
<td></td>
<td>6. Saulteaux</td>
<td></td>
<td>N.B. Union</td>
<td>N. - 25 miles</td>
</tr>
<tr>
<td>IV.</td>
<td>7. Red Pheasant</td>
<td>Red Pheasant - 2 miles</td>
<td>Wilkie</td>
<td>S. - 35 miles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cando - 6 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Mosquito</td>
<td>Red Pheasant - 2 miles</td>
<td>Wilkie</td>
<td>S. - 33 miles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cando - 6 miles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reserve 4, 5 and 6, are considered the 'Northern' reserves.

* Number 3 reserve has a different focus town from the other two in the cluster but the nearest hospital is the same and is in the largest town near the three reserves.
FIGURE IV
STUDY AREA* AND POPULATION DENSITY

*Seventeen municipalities surrounding
North Battleford

X North Battleford

Source: Map made for International Study and data from Indian Affairs Branch of Dept. of Indian Affairs and Northern Development.
response rate might be high, this number was increased (Table 8). The response rate of 99.4 per cent resulted in statistical data being gathered on 909 individuals. Sampling by household leaves some responsibility in the hands of the interviewers who had to discover all the people living in the household eligible for interviewing and, as Indians are a highly mobile group, this at times posed a problem.

The methods of household sampling involved an occasional interviewing problem especially when the houses were small and the family large. As it was sometimes difficult to obtain a private interview in the house, interviews were conducted outside or others went out until their turn came. On occasion interviewing was done in the car. These actions were carried out in order to avoid the anticipation on the parts of other adults of some of the interview content.

(2) Non-Indian or Rural Stratum

The sampling plan for the rural stratum of the International Study used the registration files of Saskatchewan Hospital Services Plan as a sampling frame, and the individual as the observation unit. The sample population was drawn from all residents of the incorporated towns (except the Battlefords) and villages, unincorporated hamlets, on farms and other scattered locations throughout the rural area (excluding residents of Indian reserves). This defined study population includes certain groups that are not part of the study population and omits others. The major differences are the results of recorded moves. This movement of people and the lag in recording this in SHSP lists
TABLE 8
RESERVE POPULATION AND SAMPLING RESULTS

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Reserves</th>
<th>Total Population</th>
<th>On Reserve Population</th>
<th>Total Homes</th>
<th>Homes in Sample Homes</th>
<th>Ratio</th>
<th>Population per home</th>
<th>*Average Population per home</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1. Poundmaker</td>
<td>454</td>
<td>375</td>
<td>59</td>
<td>18</td>
<td>1:3.3</td>
<td>107</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2. Little Pine</td>
<td>578</td>
<td>547</td>
<td>79</td>
<td>23</td>
<td>1:3.5</td>
<td>167</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>3. Sweetgrass</td>
<td>497</td>
<td>431</td>
<td>64</td>
<td>19</td>
<td>1:3.5</td>
<td>80</td>
<td>4</td>
</tr>
<tr>
<td>II</td>
<td>4. Thunderchild</td>
<td>663</td>
<td>514</td>
<td>78</td>
<td>22</td>
<td>1:3.2</td>
<td>153</td>
<td>7</td>
</tr>
<tr>
<td>III</td>
<td>5. Moosomin</td>
<td>435</td>
<td>403</td>
<td>51</td>
<td>16</td>
<td>1:3.2</td>
<td>124</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>6. Saulteaux</td>
<td>327</td>
<td>303</td>
<td>25</td>
<td>8</td>
<td>1:3.5</td>
<td>57</td>
<td>7</td>
</tr>
<tr>
<td>IV</td>
<td>7. Red Pheasant</td>
<td>516</td>
<td>467</td>
<td>70</td>
<td>20</td>
<td>1:3.5</td>
<td>135</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8. Mosquito</td>
<td>384</td>
<td>369</td>
<td>51</td>
<td>15</td>
<td>1:3.4</td>
<td>83</td>
<td>6</td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td>3,854</td>
<td>3,409</td>
<td>477</td>
<td>141</td>
<td>1:3.4+</td>
<td>909</td>
<td>6+</td>
</tr>
</tbody>
</table>

* Not necessarily the size of each family at home as each home or household may have from 1 - 3 families or include grandchildren or foster children taken on an independent voluntary basis or through placement services.

+Average ratio.
result in the omission of recent in-migrants and the inclusion of recent out-migrants who are no longer in the study population. Although for this study, all the non-Indians are classed as one group there are ethnic differences. The three major strata of the Saskatchewan sample on the international study, includes people from many different ethnic backgrounds, a half being of British origin, followed by those of German, Ukrainian, French and Scandinavian descent. The population of the ethnic groups in the study area almost parallels the proportion of these groups in the total Saskatchewan population.(See Table 9)

B. Population Characteristics

Some background characteristics of the Indians and non-Indians are presented here for comparative purposes. An analysis of the age structure of the Indian and non-Indian populations of Saskatchewan, the study area and the samples are given in Table 10. The statistics presented indicate that the Indian population under study is a much younger population than the non-Indian, as the mean age of the Indian population in both the study populations and the samples is twenty-one years as compared with the non-Indians' thirty-three years. The data also show that fifty-seven per cent of the Indian population is under fifteen years of age as compared with thirty-one per cent of the non-Indians. The 't' test has established that there is no significant difference between the two study populations and their samples. Two figures, V and VI indicate the rate of population increase in Saskatchewan. In 1967 on the average, Indians in the productive phase
TABLE 9

ETHNIC BACKGROUND OF POPULATION FOR CANADA, SASKATCHEWAN AND THE STUDY AREA — 1961 CENSUS

<table>
<thead>
<tr>
<th>Ethnic Groups</th>
<th>Canada %</th>
<th>Saskatchewan %</th>
<th>Study Area* %</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Origin</td>
<td>43.9</td>
<td>40.7</td>
<td>47.0</td>
</tr>
<tr>
<td>German</td>
<td>5.7</td>
<td>17.1</td>
<td>14.9</td>
</tr>
<tr>
<td>Ukrainian</td>
<td>2.6</td>
<td>8.5</td>
<td>9.0</td>
</tr>
<tr>
<td>Scandinavian</td>
<td>2.1</td>
<td>7.3</td>
<td>6.0</td>
</tr>
<tr>
<td>French</td>
<td>30.3</td>
<td>6.4</td>
<td>6.0</td>
</tr>
<tr>
<td>*Indians</td>
<td>1.1</td>
<td>2.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Others</td>
<td>14.3</td>
<td>17.4</td>
<td>15.1</td>
</tr>
</tbody>
</table>

The German, Ukrainian, Scandinavian and Indian groups have considerably higher percentages in Saskatchewan and the study area than in the total Canadian population.

Source: Saskatchewan Hospital Services Plan Covered Population and Canada Year Book.

+Registered Indians
*The total study area for the International Study including rural, small towns and urban strata.
TABLE 10

POPULATION OF SASKATCHEWAN, THE NON-INDIAN POPULATION AND THE INDIANS ON RESERVES IN THE STUDY AREA AND THE SELECTED SAMPLES BY AGE GROUPS EXPRESSED AS PERCENTAGES

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>All Saskatchewan</th>
<th>Indians Study Area</th>
<th>Non-Indians Study Area</th>
<th>Sample Study Area</th>
<th>Sample Non-Indians Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total N=955,344</td>
<td>N=3,409</td>
<td>N=21,299</td>
<td>N=31,894</td>
<td>N=615</td>
</tr>
<tr>
<td>0-4</td>
<td>11</td>
<td>21</td>
<td>21</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>5-14</td>
<td>22</td>
<td>31</td>
<td>32</td>
<td>36</td>
<td>23</td>
</tr>
<tr>
<td>15-24</td>
<td>16</td>
<td>18</td>
<td>18</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>25-44</td>
<td>23</td>
<td>18</td>
<td>17</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>45-64</td>
<td>19</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>65+</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Mean Age 21.2 21.8 32.9 33.1
St. Dev. 19.1 21.0 23.0 22.8

\[ t = 0.8367 \]
\[ d.f. = 4.316 \]
\[ *significance \]
\[ Sample ratio = 1:3.75 \]
\[ *t with \( \infty \) d.f. requires a size of 1.960 for significance at the 5% level of confidence, and 1.645 for the 10% level. \]

Reference table  Appendix A-1
FIGURE V

RATE OF POPULATION INCREASE IN SASKATCHEWAN FROM 1900-1970 WITH POST WAR RATES OF LIVE BIRTHS PER 1000 POPULATION AND PER 1000 FEMALES 15-44 YEARS

* The dashed line indicates the live births/year/1000 females for non-Indians and Registered Indians

Courtesy Dr. G.J. Miller, Medical College, University of Saskatchewan
FIGURE VI
RATE OF POPULATION INCREASE OF REGISTERED INDIANS FOR THREE DIFFERENT TIME PERIODS

Total Saskatchewan Pop. A minus Registered Indian Pop. A

Registered Indians

Canada

Saskatchewan

0.65 %/year
(107 years to double)

3.3 %/year
(21.3 years to double)

4.3 %/year
(16.5 years to double)

Year

1924 '29 '34 '39 '44 '49 '54 '59 '64 '69

Log Population - (1000's)

Courtesy: Dr. G.J. Millar, Medical College, University of Saskatchewan
FIGURE VII
DEPENDENCY RATIOS SASKATCHEWAN COMPARISON BETWEEN TOTAL POPULATION AND REGISTERED INDIANS

Dependents (15 and 64 years)
100 Producers (15-64 years)

Registered Indians
All Saskatchewan

Dependents (20 and 64 years)
100 Producers (20-64 years)

Registered Indians
All Saskatchewan

YEAR
1935 40 45 50 55 60 65 70

Courtesy: Dr. G.J. Millar, Medical College, University of Saskatchewan
produced about two and a half times the number of births as did comparable non-Indian women. The fact that the Indians have been increasing at a more rapid rate than non-Indians could account for the higher percentage of young people in the Indian Sample population.

Figure VII adds further information on the two populations under study. The calculations indicate that the Indians are at a greater disadvantage than the non-Indians with reference to the dependency load. When ratios were calculated on the basis of producers being 15-64 years, the values are 126.1 (Indians) against 73.6 (all Saskatchewan). On the basis of producers being 20-64 years, the 1967 values were 191.1 (Indians) as against 108.2 (all of Saskatchewan). The struggle is harder for Indians than non-Indians in their attempt to become and remain self-supporting.

C. Instruments of Research

Primary data were collected by means of four questionnaires: (1) A household list which included questions to determine the family relationship, the age, the sex, and marital status of each person eligible for interview in each of the dwelling units; (2) the interview folder containing a record of calls to the dwelling unit, a list of persons to be interviewed, and a list of questions to be asked once in each dwelling unit; (3) an adult questionnaire for persons 15 years of age and older to be completed separately and privately and (4) the child's questionnaire for persons under 15 years of age to be administered to a related adult, usually the child's mother. (For questionnaires see Appendix F). The child and
adult questionnaires provided the data on the utilization of Medical Services, information about the person's health, attitudes towards health care and personal data on income, education and occupation. The questions were grouped in sections with most of the replies pre-coded. A few questions were open ended. Supplementary questions for adults provided additional data on socio-economic and family background and perceptions of health services.

In order to develop a sociological index to be used in an attempt to measure the sample families' position in the system of relationships within the Indian and larger communities, a two page questionnaire was developed (See Appendix F-8) and administered to three selected respondents well acquainted with both the reserve and the family. All questions were pre-tested prior to the collection of data and necessary revisions were made from the results of these tests.

Consideration was given to the translation of the questionnaires into Cree as this is the language spoken by the group from which the Indian sample was selected with the exception of one small reserve, Saulteaux where the population spoke a mixture of Cree and Saulteaux. After some pre-testing, it was realized that the Cree language has such severe limitations in scope and conceptualization that it would be difficult to handle the meanings of some of the questions. Also, it was not deemed necessary to attempt translation as most of the people in the area spoke English with a few exceptions mainly among the older people. It was decided to discuss, during the training of the interviewers,
how best to administer the questionnaires to those whose tongue was 
Cree and whose English was limited.

D. Selection and Training of Interviewers

It was recognized that selection and training of interviewers 
were crucial elements in the success or failure of the study. Contact 
was first made with field nurses of Medical Services (Indian Health) 
to ask for their help in selecting Indian women who were in the age 
range of twenty\(\textsuperscript{to}^{\text{to}}\) fifty-five years, proficient in handling both abstract 
concepts and human relationships, and resided in the study area and had 
no extensive family commitments. The nursing supervisor suggested that 
the Community Health Worker from one of the reserves also be involved 
in some way in the study.

Letters accompanied by an application form were sent to the women 
considered suitable by the Indian Health nurses and Indian Affairs 
Branch. The latter being responsible for the education and welfare of 
Indians. Five applications were returned. Letters of acknowledgement 
of the applications were sent out and a personal visit to each candidate 
followed, during which time a clerical accuracy test was administered. 
The survey team selected was comprised of the Community Health Worker 
and four other women.

Prior to the training session the Community Health Worker spent three 
days with the researcher reviewing the scope, content and procedures of 
the study. The questionnaires and an interviewer's manual* were 

*Available from the University of Saskatchewan, Department of Social and 
Preventive Medicine or the researcher.
reviewed and the Community Health Worker was encouraged to try out the questionnaires on members of her family and identify (if possible) any questions that might prove to be problems to the interviewers and any section of the manual that might require more detailed explanation.

The interviewers received training in a two week workshop session during which time the questionnaires were reviewed section by section. The manual was studied and role playing used to familiarize the women with interviewing techniques. Practical application of the questionnaires was provided through field exercises using the staff of the Indian Hospital and registered Indian families living in North Battleford as neither of these groups would be included in the sample population.

Further discussion took place on the supplementary questions; method of field organization; selection of the sample and interview assignment; procedure for handling questionnaires; procedure for handling refusals; the response rate; conferences during field work; methods of filling out time sheets and of payment.

Statements of confidentiality were signed and letters of introduction given to each interviewer. (See Appendix F-5). The training ended with enthusiasm to get into the "real" activity and to try out their newly acquired skills.

Before the commencement of the second quarter, the interviewers, supervisor and researcher met for one day in order to discuss general
problems from the preceding quarter's field work, both as viewed from the supervisory position and that of the interviewer. Role playing and demonstration interviews were used in order to review difficult points. The group decided that one day was not long enough for a refresher course. The subsequent retraining sessions were of two days' duration.

E. Data Collection

Prior to the commencement of the data collection, a letter had been sent to the Chief and Council of each reserve acquainting them with the study and requesting their cooperation. (See appendix F-2). This was followed by visits by the researcher and the supervisor (The Community Health Worker). The researcher, supervisor and interviewers adopted a team approach in the collection of data on each reserve.

During the initial visit, as far as possible, the household folder and one or two interviews were completed. Return visits were made when necessary and the timing usually planned with the respondents. When the family was large and the mother or a responsible adult had to reply for many children, an attempt was made to break up the interviewing period. This was not always possible as respondents often wanted to get it over with, so they could go to town or be on the move somewhere.

During the first quarter the team utilized a tent trailer. This made it possible in the evenings to check questionnaires together and hold conferences on problems as they came up. It was also possible to assist each interviewer individually on the trips to and from the sample homes as the researcher for a major portion of the data collection was also the chauffeur.
During the subsequent quarters as it was too cold for camping, a change was made in the approach to interviewing in that the group went as a team, researcher included, to the northern reserves, returning each night to North Battleford. The interviewers then worked on their own reserves in the southern part of the area with the supervisor or researcher making one or two visits during this period.

The collecting of the data for the calculation of the sociological index required interviews of three selected informants about the heads of each household falling into the Indian sample. To keep the interviews as consistent as possible they were carried out by the supervisor with some assistance from the researcher. The informants, two of Indian background and one non-Indian, all of whom had knowledge of the families, were interviewed at convenient times not necessarily during the period when the household interviews were carried out. The Indian respondents were usually an interviewer and the Chief or a Councillor and the non-Indian respondent who was the nurse or the Indian Superintendent.

Background data on present utilization services and health statistics were also collected from the records of the Indian Health Services and the Provincial Health Department. A validation study was carried out on all hospitalizations reported in the questionnaires where those interviewed named the Indian Hospital as the place where care was received.
F. Handling of the Data

1. Utilization Survey

The questionnaires from the utilization survey were subjected to several checks, (1) by the interviewer before leaving the house, (2) by the interviewer after leaving the house, (3) by the supervisor or the researcher, (4) a final check by the coders. Return visits were made when necessary for missed questions or inconsistencies.

The data from the questionnaires were coded on optical scan code sheets by two independent coders, one copy was submitted to the data center at Johns Hopkins University, Baltimore, the centre for the data collection of the International Study. The other was retained at the University. The code sheets in Baltimore were subjected to machine editing for internal validity and inconsistency checks. In the "cleaning" process error rates (i.e. blank, non-sense codes, etc.) of less than one per cent for each priority variable were accepted. The convention used was that when an error rate for a variable was less than one per cent, the error was recorded as "information not ascertained", and records of the changes were kept. When the error rate equalled or exceeded one per cent an archive correction sheet was returned for correction from the original questionnaires*. Corrections were returned to Baltimore and also made on the

*The majority of 'errors' in the Indian data were found in the coding of family relationships especially in the case of foster children as these were not always coded as part of the primary family but as a separate family within the household. No use of data related to 'family' is used in this study. The group data used is calculated on the Household.
retained code sheet. Assured of "clean" data, cards were then punched from the code sheets. Using mainly the Statistical Package for Social Sciences, tables and cross tabulations for selected variables were prepared from both the Indian and the non-Indian samples.

On receipt in June 1971 of the cleaned up archives tape on the Indian sample from Baltimore, additional tables were prepared. Some were used as validation checks on tables prepared from the cards. Other tables were run on variables relating to households, sociological status and selected dependent and independent variables. The status index for each family had been added to the tape.

It was originally planned to expand the observed frequencies to the population frequencies rate per 1000 for the two areas. The plan was to utilize the standard population that had been calculated from the data for the first two quarters of the International Study. Calculations were done for some of the tables in the Indian sample but when it was ascertained that the detailed breakdown by age and sex was not available for the population from which the non-Indian sample was drawn this method of data handling was abandoned. The second method selected was that of calculating percentages from all observed frequencies and these rates were subjected to the Chi Square test using the non-Indian results as the expected frequencies and the Indian sample rates as the observed frequencies (expressing the hypothesis that there would be no difference in utilization by the two sample populations). The method adopted was that of expressing the data on the utilization of medical care for Indians and non-Indians as rates per 1000 population. Percentages were calculated for all other data.
A Chi Square test is considered a valid one when raw frequencies are used. This test of significance was computed where possible. In other data the 't' test of significance was employed using either the statistical formula or the nomograph for the significance of difference between two percentages (see Appendix D).

2. Development of the Status Index

The position of a person in the social structure of a group is associated with a pattern of behavior that reflects the rights and obligations of that position. Therefore, it seems logical to assume that the way in which health services are used by Indians will be influenced by their position or status in their group. In attempting to compile, collate and assess an index that would measure status on the Indian reserves, several types of social positions were taken into consideration. The indices developed are based on both traditional elements of status as exemplified in the Indian traditional society and western achievement-oriented elements. Those classed as traditional are the size and influence of the extended family and participation in the affairs of the Indian community. Hereditary positions such as chiefs no longer have the traditional status on the Indian reserves included in this study. Status is still attached to family names especially those bearing the same name as the reserve.

The Indian traditional and Western achievement-oriented elements on which position in the social structure of Indian reserves are based are elements in transition and are associated with role behaviour that
is both ascribed and achieved. For a definition of ascribed and achieved status as set forth by Theodorson and Theodorson⁴ see footnotes (1) and (2). Linton⁵ points out that there are often ascriptive elements in many statuses defined as achieved, especially for some persons, and many achieved elements in ascribed statuses. He defines status of an individual as the sum total of all of the statuses which he occupies unless the term is qualified in some way. Status represents a person's position with relation to the total society.

Data gathered by selected questions* from the following questionnaires were studied: -- Family Questionnaire (Appendix F-8) administered to the three informants on the families falling into the Indian sample; the Household List (Appendix F-9), the Adult Questionnaire (Appendix F-9) and the Adult Supplementary Questionnaire (Appendix F-6), -- all administered directly to the heads of households.

From the assembled data a pattern seemed to emerge and the components were grouped to give a measure of location for each family in the three categories of: family leadership structure, community leadership structure and in access to success goals. The following conceptual model was formulated. (Figure VIII).

---

(1) Ascribed status has been defined as any status that is not based on individual ability, skill, effort or accomplishment but on an inherited position in the society.

(2) Achieved status is one acquired by an individual through his efforts often through competition and the use of special abilities, knowledge and skills.

*For the selected questions used in compiling the status indices see Appendix C-2.
The model rests on judgement of sociological theory past and present. The basic assumption here is that status in the Indian community is influenced by the location in the family and community leadership structures as well as the access to success goals.

Scores for each sub-set of indicators were calculated for each family. From frequency tables prepared for each reserve, the families were ranked for each category into a low, medium and high. In order to test the Model for 'fit', Chi Squares were calculated as a test of association for combinations of the three indices. Associations were also calculated against a measure of "respect for the family in the community" — a question asked of the three informants about the family. (Question 9 — on Family Questionnaire).
Different combinations of components were used in the tabulations. As a result of this exercise, some of the original components were eliminated as they seemed to contribute little to the measurement. One question (No. 8 on Family Questionnaire) had been dropped at the beginning because of lack of confidence in the answers as contributing to a measurement of status.

The following groupings were drawn up with a certain feeling of security that the unified measure taps a general underlying property. The components are a combination of subjective and objective elements.

1. Location in the Family Structure

   This score is based on:
   - size of kin group
   - people seeking advice, from members of the family
   - family sharing what they have with others
   - behaviour of children
   - marital status of head of the household
   - language spoken in the home

2. Location in Community Leadership Structure

   This score is based on:
   - attendance at band meetings
   - speaking up at band meetings
   - opinion of speaker valued
   - membership on the band council
   - active in groups, clubs or associations

3. Access to Success Goals

   This score is based on:
   - grade of school completed by head of the household
- *Work of head of household
- Ownership of car or truck in good working order
- Type of home
- Conditions of home
  (a) inside  (b) outside
- Room/person ratio
- Television in home

The weight attached to each component of a group is given in Appendix C-2. When the answers from all three correspondents did not agree, an average score was computed according to the relationship

$$S_w = \frac{n_1w_1 + n_2w_2 + n_3w_3}{3}$$

where $w_1, w_2$ and $w_3$ are the respective weights attached to the responses, and $n_1, n_2$ and $n_3$ are the corresponding number of responses. As an example, take the component, attendance at band meetings, in sub-section 2 (Location in Community Leadership Structure). The weights are 3 for regular attendance, 2 for about half time, 1 for sometimes, and 0 for never. If one respondent reported "regular", another "sometimes", and the third, "never", the weighted score would be

$$S_w = \frac{(1 \times 3) + (0 \times 2) + (1 \times 1) + (1 \times 0)}{3} = \frac{4}{3} = 1.33.$$  

It is difficult to define status differential in a complex society; much more simple in a traditional society but as mentioned earlier the Indians are a society in transition. Strengthened by the calculations of association among the three groups of elements plus Mendelbaum's research on the Cree Indians\textsuperscript{6}, and Edmonson's research on status terminology and social structure\textsuperscript{7}, two indices were developed:

*Work status was used as an indicator instead of occupation as most Indians were employed in seasonal work.
Ascriptive Status - combining the scores for -
- Location in family leadership structure and
- Location in community leadership.

Achieved Status - access to success goals

The measurements consist of a sub-set of indicators that are area-specific (ascriptive status) and a sub-set which are more generally applicable in the larger society (achieved status).

Frequency tables were prepared for the total sample (combining the eight reserves) for the two indices with three ranks of low, medium and high. (Table II)

TABLE II

FREQUENCIES FOR SOCIOLOGICAL STATUS INDICES

<table>
<thead>
<tr>
<th></th>
<th>Ascribed</th>
<th>Total</th>
<th>Achieved</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>6-13</td>
<td>52</td>
<td>3-7</td>
<td>33</td>
</tr>
<tr>
<td>Medium</td>
<td>14-21</td>
<td>73</td>
<td>8-12</td>
<td>79</td>
</tr>
<tr>
<td>High</td>
<td>22-29</td>
<td>16</td>
<td>13-17</td>
<td>29</td>
</tr>
</tbody>
</table>

141

141

=====

=====
As a final test for measure of relationship between the two indices, Pearson's product moment correlation was calculated pairing the ascribed and achieved indices for the 141 families.

The following formula was used:

\[ r_{xy} = \frac{N \Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N \Sigma x^2 - (\Sigma x)^2][N \Sigma y^2 - (\Sigma y)^2]}} \]

where \( x = \) ascriptive status, \( y = \) achieved status, \( N = 141 \). Since \( r_{xy} = 0.4465 \) with 140 d.f. the relationship is significant beyond the 1% level of confidence. (The correlation is low).

The two indices were combined in a 3 x 3 table (Table 12) and the appropriate number between 1-9 was allocated to each household in the sample. These numbers were punched on cards and were added to the data from the household survey.
TABLE 12
SOCIOLOGICAL STATUS

Combined Achieved and Ascribed Indices. The number in the upper right hand corner of each cell indicates the status level. 'F' represents the families in each cell and the bracketed quantity the number of persons.

<table>
<thead>
<tr>
<th></th>
<th>Achieved Status</th>
<th>Total Families</th>
<th>Total Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Ascribed Status</td>
<td>1.</td>
<td>4.</td>
<td>7.</td>
</tr>
<tr>
<td>Low</td>
<td>F = 22 (135)</td>
<td>F = 25 (129)</td>
<td>F = 5 (26)</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>5.</td>
<td>8.</td>
</tr>
<tr>
<td>Medium</td>
<td>F = 11 (73)</td>
<td>F = 45 (296)</td>
<td>F = 17 (97)</td>
</tr>
<tr>
<td>High</td>
<td>3.</td>
<td>6.</td>
<td>9.</td>
</tr>
<tr>
<td></td>
<td>F = 0 (0)</td>
<td>F = 9 (89)</td>
<td>F = 7 (64)</td>
</tr>
<tr>
<td>Total Families</td>
<td>33</td>
<td>79</td>
<td>29</td>
</tr>
<tr>
<td>Total Persons</td>
<td>(208)</td>
<td>(514)</td>
<td>(187)</td>
</tr>
</tbody>
</table>

In the distribution of families by achieved status of the head of the household there is approximately the same proportion of families in the low as in the high status levels. (33 as compared to 29). The proportion is different in the distribution of families according to the ascribed
status of the head of the household with 52 in the low status levels and only 16 in the high. The greatest overlapping of the structural characteristics of status are found in the levels one and five.

For this study it was postulated that the status a person is ascribed or has achieved in the Indian community has an influence on the use and non-use of medical care.

The assigned status for each household was correlated with utilization, morbidity and attitudinal data collected from the Indian sample.

3) Assessment of the Development of the Reserves

During the data collection an attempt was made to gather opinions on the comparative development of each reserve. Informants were selected from personnel whose work brought them in close contact with all the reserves and therefore would be in a position to have an overview of the area. Personnel participated from the administration, educational and community development staff of Indian Affairs and from the federal Medical Services. Some of the informants were Indians. On separate occasions the informants were given eight cards each bearing the name of one reserve and were asked to rank them according to their own ratings. When asked for their criteria those most frequently mentioned in their assessment were closely related to organization within the community which included an effective Band Council, and effective committees, integration of children into non-Indian schools, individual integration by way of farming and other
employment and the level of sanitation on the reserves.

Not all the ratings were identical. The reserves receiving the highest number of votes for the top rank was reserve number four followed by three and two. Number four was ranked first because of its strong council, active community committee and its complete integration of the school children. Number three received its votes for economic development because of the presence on the reserve of a pre-fab housing factory and number two for its individual enterprises. Number six and eight seemed to vie for the lowest rank with each receiving an equal number of votes. Number six is the smallest reserve, has an hereditary Chief who is getting on in years and seemed unable to cope with the situation. There was little evidence of community willingness to work together. Although number eight reserve had an active council no informant felt that there was any effort put forth to work together for the betterment of the community. The leaders seemed more concerned with their own advancement. To some of the informants there seemed to be a deliberate movement especially among the young unemployed to destroy common property such as community wells or the public telephone booth placed on the reserve. It was agreed there was evidence of vandalism on all reserves but there seemed to be more on reserve number eight.

It was necessary to assess the reserves for organizational development as it was postulated for this study that the level of organization within a reserve would have an influence on the utilization of medical care. In order to measure any influence organization may have on medical care, data from the reserve ranked
as the most highly organized would be contrasted with data from the least organized. In view of the evaluation by the informants and the information gathered on the reserves (See appendix B 1-8) number four and eight were selected. Number eight was selected over number six because of its larger population.

4) Other Indices Used in this Study

Raw data from the results of the field study were used to create new scores for certain variables. Instructions used were contained in a Manual prepared for the international study.* The indices used in this study are:

1) scepticism towards medicine,
2) scepticism towards medical doctors,
3) tendency to use services for somatic problems,
4) tendency to use services for psycho-social problems,
5) tendency to use services for children,
6) perceived availability of care,
7) anxiety, and
8) dependency in illness.

The interview questions used to obtain these scores are indicated in Appendix C-1.

* A copy of this manual is available through the Department of Social and Preventive Medicine, University of Saskatchewan.
CHAPTER V
OBSERVATIONS ON NATIVE INTERVIEWERS

A. Selection

In the selection of interviewers the overriding purpose was to ensure that those selected would make efficient and accurate interviewers. In retrospect the clerical accuracy test administered after the personal interview proved to be a fair measure of the prospective interviewer's ability to follow instruction and her accuracy in recording interviews. The suggested time limit for completing the test was not strictly adhered to as accuracy was felt to be of more importance than speed. The educational level of those writing the test ranged from grade five to ten with the highest score gained by the person with grade five who worked slowly and deliberately and who later proved to be the best interviewer. One candidate was eliminated, not because of her lack of ability, but because, in the opinion of the Community Health Worker, she was not well liked generally by the people of the area. It was anticipated that this might create problems of gaining acceptance in some of the homes. The only candidate from a northern reserve bore the name of the reserve and, therefore, was a member of one of the prominent families with a large kin group. She was accepted for training but was unable to join the team at the beginning of the first quarter and collected data on her home reserve for two households only. In subsequent quarters she was hired as a means of entry to the reserve and as a
guide for the location of homes. These two roles she played willingly and with competence. The involving of the community health worker in the study proved to be most advantageous. The researcher, who four years ago had trained the worker at a three-month training programme, knew her leadership skills, her reliability and her recognition of the importance of timing. The training had emphasized skills in leadership, communication, the art of listening, and in organization in order to assist the community in filling felt needs. Between the researcher and the community health worker, there was a bond of mutual respect and trust that had been built up during the programme and had been renewed in periodic contacts through the years. Without her assistance the field work would have been much more difficult. The community health worker was a bridge to the communities and the interviewers and played her role of interviewer-supervisor efficiently.

B. Training

The time spent by the community health worker studying the questionnaire and the interviewers' manual proved to be sound preparation for the three days spent with the researcher in planning for the training period. Although the community health worker's role as part-time supervisor was identified during the interviewers' training course, she carried out all the same field assignments as the interviewer. This experience prepared her for her dual role.

The strategy developed during the training proved wise. After discussion on the purpose of the project and other background
information, the manual for interviewers was studied and the questionnaires reviewed one by one. The first questionnaire reviewed was the one for adults. The interviewers could identify with the questions and took turns role-playing both interviewers and respondents. Discussions afterwards helped to indicate where respondents might have problems of recall, where and what probes could be used, what emotional barriers might be met and what strategies might be used in overcoming them. This exercise also identified some questions that would create problems. (After the first quarter of interviewing some of the questions relating to yearly income and insurance were dropped). Practice interviews were arranged using the adult questionnaire. The respondents were drawn from the hospital staff who were later questioned on their opinion of the interview. This feedback was both valuable and encouraging.

The children's questionnaire was then reviewed and the same procedure used for the adults' questionnaire was followed. Again two practice sessions were arranged--one with the Indian respondents, some of whom were patients in the hospital. They were asked to concentrate on one of their own children in order that there would be a sense of validity about their answers. These exercises and the review and discussion following were most helpful in pin-pointing needs both in further knowledge of the manual and practice of certain skills. Emphasis was placed on the need to know the objectives of each section, always to be alert to what the respondent had said earlier in order to check for inconsistencies, and to be aware of any biases the interviewer might
introduce by way of verbal or non-verbal action. The review of the household list was left until the second week. It appeared to be the most complex. The trainees later said, "If we had been presented with this at the beginning, we would have quit, but we have conquered the other two, now we can conquer this."

During the training, counselling sessions were held with each interviewer during which time questions could be asked, fears expressed and guidance and encouragement given. During the training sessions the researcher and interviewers had accommodation in the same place thus enabling a rapport and comradeship to be built up within the group. This served as a solid foundation when later working as a field team.

To sum up the experience in interviewers' selection and training, it was felt that the pool of potential candidates was too small. It was difficult to identify persons who were competent in English and Cree and who were available for employment and willing to accept the responsibility. This situation could have been serious had more than one of those selected dropped out. The initial training time seemed adequate but the retraining period between quarters should have been longer. The frequent conferences during the data collection helped to compensate for the short retraining period.

C. Data Collection

The team approach in data collection was a much more demanding experience for the interviewers than working alone, but it did have
its advantages. In the team work the researcher played the roles of chauffeur, cook and dishwasher as well as team captain. These extremes of roles created some ambivalence on the part of the interviewers at first as the servant role was not one usually played by the non-Indian in situations that brought the two groups together.

Malinowski's summing up of a social system would describe the group: "A definite system of division of functions and a rigid system of mutual obligation, into which a sense of duty and the recognition of the need of cooperation enter side by side with a realization of self interest, prestige and benefit."

The first few days were the hardest as the interviewers adjusted to the work. There were complaints of headaches and fatigue but these soon subsided as the interviewers found themselves accepted. They became more relaxed and seemed to enjoy the experience. The checking and double checking of the questionnaires before leaving the respondents was tedious but the interviewers learned that if this were not done more time was spent on return visits. Return visits were kept to a minimum. On occasion a team member was absent to attend to personal business but interviewers were conscientious and reliable and returned as soon as they could to rejoin the team. On a few occasions language posed some difficulties as there are differences between Cree spoken on the reserve in the southern and northern parts of the study area. All but one interviewer who worked only part time were from the southern reserves. However, the supervisor was able to cope with the dialect
and did the interviewing if problems were anticipated. On one reserve where Saulteaux was the main language, if translation were necessary (for a few older people) the difficulty was overcome by using a member of the family as interpreter.

Observations on the performance of the interviewers were done in several ways. On some occasions the researcher sat in for part of an interview in the home. Sometimes the researcher arrived early to pick up the interviewer and the voices could be heard when the doors and windows were open. Of course, if the interview was in Cree this was of little value as far as wording was concerned but a general feeling of relationship of respondent to interviewer was a clue as to how the interview was going. The interviewers took their work seriously. They identified well with the study and their feelings of responsibility to it were reflected in the continued willingness of respondents to be interviewed. The response rate was a hundred per cent for the first two quarters and an overall response rate of 99.4 per cent. Another factor contributing to the high response rate was the ingenuity of the interviewers in locating members of the households who were not home at the time of the first visit or on subsequent visits.

Most of the interview problems were overcome by the individual interviewers but on one or two occasions the supervisor acted as the trouble shooter. One family could never be found at home. The supervisor met the couple coming out of hiding in the bushes. This
instance made one realize that all human actions could be understood if the facts behind them are known. The couple were afraid of being cut off welfare. Added to this was the fact that a year before two of their grandsons who had been living with them had committed suicide and a younger one attempted it later. After this their other children had been taken from them for a time. When their fears were calmed they consented to an interview. Interviewing had its lighter moments mixed with human tragedy. The elderly hereditary chief and his wife, from the smallest reserve were in the selected sample. Neither was considered particularly well but the team was advised to contact the couple before the ten o'clock opening of the hotel. Fortunately they were met enroute to the store and expressed a willingness to be interviewed in the Council Hall. While the chief was being interviewed the old lady slipped away and when relocated in the afternoon was in no condition to be interviewed. The next morning the team spotted a bent old lady making her way across the field towards town. The supervisor decided to intercept her. The meeting was observed from a distance. After a brief conversation the supervisor turned over an old pail and using this as a seat interviewed the old lady who squatted on the ground. The interview was reported later as a pleasant experience. At first the old lady had smiled, stamped her stick on the ground as if to say, "I'm caught again", but then relaxed. After the interview the chief's wife continued her journey to the hotel where she was joined by her husband. There, in a warm and comfortable place they could talk with their old
friends and later through alcohol could forget the past and blot out the present where they could find no place or meaning for themselves.

On occasion, appointments for interviews were made (after working hours) for women who worked in the fields at the market gardens. The owners transported them by truck at an early hour and returned them late in the same day. There was less difficulty on the two reserves near the market gardens in finding the men and children at home while the women were at work.

Two of the interviewers who came from the same reserve in the south expressed fear of going to the reserve adjacent to their own. They were literally afraid of the people whose image was that of being rowdy and irresponsible. The reserve was considered by the informants giving a background on the reserves as one of the most disorganized of the eight in the study. After one or two interviews their fears vanished.

The field exercise was a learning experience for all. The interviewers confessed that they now knew how 'the other half of the Indians lived'. The researcher learned much from the interviewers about the thinking of the Indians and their attitude towards the non-Indians and their institutions as well as their own native institutions.

As the interviewers became more experienced they felt that they were more aware of incorrect or incomplete answers from the respondents. When asked how they handled the situation they responded that they just waited a few seconds then with a 'poker face' quietly repeated the question. Often they reported finding a difference in the appearance
of the home between their first and second visit especially if the homes were ill-kept or dirty. Between visits scrubbing had been done and they were welcomed back.

A decision was made to do a validation study on some of the responses using the records at the Indian hospital. Studies had been done before to assess the accuracy of respondents' reporting of hospitalization and their attendance at other outpatient departments. The findings were that ninety three per cent of the sample reported accurately. Over reporting especially in terms of numbers of incidents exceeded under reporting. In the United States National Study, fifteen to twenty per cent of low status persons measured by income, ethnic minority and education had under reported hospitalization as compared with ten per cent by higher status groups. This particular study did not take into consideration over reporting.

For the first three quarters of the Indian Study the questionnaires for all households with records at the Indian Hospital were checked against the records. Nineteen were discovered to have discrepancies in reporting the number of incidents but had under reported days and nine had under reported both incidents and days. Most of the latter under reporting was done by three households with an overage of ten persons per household (mostly young children and where a grandmother or a young adult of the household had been the respondent). The nineteen households with discrepancies constituted eighteen per cent of the households in the first three quarters. This result compared favourably with the findings of the United States study already mentioned.
Chapter VI
FINDINGS OF THE UTILIZATION SURVEY

The data in this chapter are presented in two main sections. In the first section the patterns of utilization of medical care of the Indians and non-Indians are compared in some detail by age and sex groups. The second section examines the data on the Indian population and compares them according to three different criteria: 1) the sociological status indices developed for this study; 2) the geographical location of reserves; and 3) the organizational structure within the reserves.

The data are presented in tabular form with the rates per thousand population calculated for the dependent variable of utilization when comparing the pattern of the Indian and the non-Indian population. Percentages are shown in all other tables. Selected tests of significance are also indicated. Variables in each of the three components of the conceptual model (Fig. I) are examined in turn and inter-relationships established.

A. Comparison of the Patterns of Medical Care Utilization by Indians and Non-Indians.

Hospital services in the study area are provided mainly by small hospitals ranging from seven to thirty-one beds, with the exception of those in North Battleford and Saskatoon (see Figure II). The hospitals in the smaller towns appear to play a dominant role in rural
Saskatchewan, since they are the base of medical practitioners. The hospitals are seen as providing a ready and convenient health service to a population scattered over a large area.¹

To ascertain how persons in the study area viewed the availability of doctors four questions were asked (see appendix C-1) from which an availability index was calculated. Only twenty-four or 6 per cent of the Indians as compared with 106 or 21 per cent of the non-Indians perceived the doctors as readily accessible. In other words doctors are not perceived by either group as being easy to reach but 15 per cent more non-Indians perceived the care as more readily available.

Table 13 indicates that 49 per cent more non-Indians than Indians reported having a particular doctor from whom they would seek care. The care is more available to the non-Indians when judged by the time it takes to reach the doctor. The actual distance may or may not be very different but the modes of transportation may differ as well as the perception of time required. Even though travel time to the nearest doctor may differ, a relatively high degree of satisfaction was expressed by both groups in the accessibility of location and hours.
Table 13

SELECTED CHARACTERISTICS OF DOCTOR'S CARE AS PERCEIVED BY INDIANS AND NON-INDIANS

Percentages are calculated on the number of Indians and Non-Indians in the sample population. The results of tests for significant differences are shown for each group.

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Indians N=909</th>
<th>Non-Indians N=615</th>
<th>Test Chi Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons with particular doctor</td>
<td>392 (43)</td>
<td>569 (92)</td>
<td>370.3*</td>
</tr>
<tr>
<td>Office or place within 30 minute travel time</td>
<td>243 (28)</td>
<td>414 (67)</td>
<td>246.35*</td>
</tr>
<tr>
<td>Location considered convenient</td>
<td>800 (88)</td>
<td>567 (92)</td>
<td>6.90*</td>
</tr>
<tr>
<td>Hours considered convenient</td>
<td>809 (89)</td>
<td>567 (92)</td>
<td>4.27*</td>
</tr>
<tr>
<td>Persons with one or more doctor's consultation within a two week period</td>
<td>100 (9)</td>
<td>87 (14)</td>
<td>3.37</td>
</tr>
<tr>
<td>Number and percentage of doctor's visits that were hospital based</td>
<td>42 (42)</td>
<td>10 (12)</td>
<td>21.57*</td>
</tr>
</tbody>
</table>

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence

* significant test

† percentage calculated on the number of doctor's visits for each group.
1. Utilization

The first hypothesis states that the Indians will utilize the services at a lower rate than the non-Indians. In Table 13 the data show that only 9 per cent of the Indians had one or more doctors consultations within two-week period as compared with 14 per cent of the non-Indians. These data indicate that perception of the availability of doctors may have a direct bearing on their use. It is also interesting to note that 30 per cent more of the doctor's visits reported by Indians were hospital based. This would be expected, as significantly fewer Indians reported having a particular doctor.

Questions were asked as to when the respondents had last visited a doctor. Table 14 indicates the percentages of persons in each age group reporting visits to a doctor within a twelve month period. Except for the male respondents among the Indians in the age group 0-15 years and the non-Indian men over 64 years the highest rates are found among the women in the two populations. Indian women between the ages 15-44 (the child bearing years) have the highest rate with 530 per thousand. Among the non-Indian women, the highest rates are found among those 45-64 years of age. Table 14 indicates the percentage contribution per age group to the total visits. The Indian children 0-14 years had 44 per cent of all doctor visits. (The children make up 55 per cent of the Indian sample population). The non-Indian children contributed 28 per cent of all visits made to doctors within a twelve month period by the non-Indians. (Their children make up 33 per cent of the non-Indian sample population). The 't' test of 4.6 indicates a significant difference
Table 14

INDIANS AND NON-INDIANS WITH ONE OR MORE DOCTORS' VISITS WITHIN A TWELVE MONTH PERIOD AND CONTRIBUTION PER AGE GROUP TO TOTAL VISITS

In A. comparisons are according to sex and selected age groups and are indicated both the number and the rates per 1000. Bracketed quantities indicate the number of persons per age group. In B. percentages are calculated on the total number of persons with one or more doctors visits.

A. Persons with one or more doctors visits

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Male No.</th>
<th>Male Rate</th>
<th>Female No.</th>
<th>Female Rate</th>
<th>Male No.</th>
<th>Male Rate</th>
<th>Female No.</th>
<th>Female Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14 yrs.</td>
<td>61(260)</td>
<td>230</td>
<td>53(262)</td>
<td>200</td>
<td>35(100)</td>
<td>350</td>
<td>42(102)</td>
<td>410</td>
</tr>
<tr>
<td>15-44 yrs.</td>
<td>26(108)</td>
<td>240</td>
<td>69(131)</td>
<td>530</td>
<td>40(109)</td>
<td>370</td>
<td>56(109)</td>
<td>510</td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>16(53)</td>
<td>300</td>
<td>19(42)</td>
<td>450</td>
<td>29(73)</td>
<td>400</td>
<td>35(57)</td>
<td>610</td>
</tr>
<tr>
<td>&gt; 64 yrs.</td>
<td>6(24)</td>
<td>250</td>
<td>10(29)</td>
<td>340</td>
<td>21(33)</td>
<td>640</td>
<td>15(32)</td>
<td>470</td>
</tr>
<tr>
<td>TOTALS</td>
<td>109(445)</td>
<td>240</td>
<td>151(464)</td>
<td>230</td>
<td>125(315)</td>
<td>400</td>
<td>148(300)</td>
<td>490</td>
</tr>
</tbody>
</table>

B. Contribution of doctor's visits per age group

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian Male &amp; Female No.</th>
<th>Indian Male &amp; Female %</th>
<th>Indian Male &amp; Female 't' test</th>
<th>Non-Indian Male &amp; Female No.</th>
<th>Non-Indian Male &amp; Female %</th>
<th>Non-Indian Male &amp; Female 't' test</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14 yrs.</td>
<td>114</td>
<td>44</td>
<td></td>
<td>77</td>
<td>28</td>
<td>4.6*</td>
</tr>
<tr>
<td>15-44 yrs.</td>
<td>95</td>
<td>37</td>
<td></td>
<td>96</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>35</td>
<td>13</td>
<td></td>
<td>64</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>&gt; 64 yrs.</td>
<td>16</td>
<td>6</td>
<td></td>
<td>36</td>
<td>13</td>
<td>3.4*</td>
</tr>
<tr>
<td>TOTAL PERSONS WITH DOCTORS VISITS</td>
<td>260</td>
<td>100</td>
<td>273</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

't' with 2 df requires 1.960 for significance at the .05 level of confidence. *significant test

Respondents among the non-Indians both male and female show higher rates of doctors visits within a twelve month period than do the Indian male and female respondents.
Table 15
INDIANS AND NON-INDIANS WITH ONE OR MORE DENTIST'S VISITS WITHIN A TWELVE MONTH PERIOD

In A comparisons are according to sex and selected age groups and are indicated both by the number and the rates per 1000. Bracketed quantities indicate the number of persons per age group. In B percentages are calculated on the total number of persons with one or more dentists visits.

A. Persons with one or more dentists visits

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian Male N=909</th>
<th>Indian Female</th>
<th>Non-Indians Male N=615</th>
<th>Non-Indians Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Rate</td>
<td>No.</td>
<td>Rate</td>
</tr>
<tr>
<td>0-14 yrs.</td>
<td>63(260)</td>
<td>240</td>
<td>61(262)</td>
<td>230</td>
</tr>
<tr>
<td>15-44 yrs.</td>
<td>18(108)</td>
<td>170</td>
<td>30(131)</td>
<td>230</td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>5(53)</td>
<td>90</td>
<td>8(42)</td>
<td>190</td>
</tr>
<tr>
<td>&gt; 64 yrs</td>
<td>1(24)</td>
<td>40</td>
<td>9(29)</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>87(445)</td>
<td>190</td>
<td>99(464)</td>
<td>210</td>
</tr>
</tbody>
</table>

B. Contribution of dentists visits per age group

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian</th>
<th>Non-Indian</th>
<th>Ind. &amp; Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male &amp; Female</td>
<td>Male &amp; Female</td>
<td>Male &amp; Female</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>0-14 yrs.</td>
<td>124</td>
<td>67</td>
<td>95</td>
</tr>
<tr>
<td>15-44 yrs.</td>
<td>48</td>
<td>26</td>
<td>97</td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>13</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>&gt; 64 yrs</td>
<td>1</td>
<td>0.5</td>
<td>11</td>
</tr>
</tbody>
</table>

Total persons with dentist's visits: 186 100 241 100

't' with α=df requires 1.960 for significance at the 5% level of confidence

* significant tests

Respondents among the non-Indians both male and female show a higher rate of dentist's visits with a twelve month period than do the Indian male and female respondents.
in the utilization of doctors by Indian and non-Indian children. The only significant 't' test for the other age and sex groups was for those over 64 years. The non-Indians in this group made 7 per cent more visits to the doctor than the Indians.

In reporting dental visits within a twelve month period, the data in Table 15 indicates that the highest rates are found among the non-Indian female respondents in the two age groups 0-14 and 15-44 years. The pattern differs among the Indians with the male respondents under 15 years exceeding the rates of the females in both age groups of under 15 and 15-44 years by a slight margin of 10 per thousand. In all age and sex groups the rates of dentist's visits are higher for the non-Indians. In comparing the percentages of the contributions by age groups Table 15 B shows that 67 per cent of the Indians visiting a dentist within a year were under 15 years of age as compared with 39 per cent of non-Indians. The low rates for the Indians over 15 years and the non-Indian over 45 years indicate that respondents in these groups either do not need care or are a neglected group. Data on the need for replacement of lost teeth (Table 27 in the section on morbidity) indicate that the Indians over 45 are a disadvantaged group.

Tests for vision also indicate the use of medical care. For the adult study population these are set forth in Table 16. Here again the non-Indian makes a greater use of services, as shown by higher rates for visits within a twelve month period. The pattern for the Indian is one of inverse relationship with age. Whereas with the non-Indian, the
TABLE 16

INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH ONE OR MORE TESTS FOR VISION WITHIN A TWELVE MONTH PERIOD

Comparisons are according to sex and selected age groups and are indicated both by the number and the rates per 1000 for each age group. The results of tests for significant differences for comparable groups are also shown.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Indian N=387</th>
<th>Non-Indian N=413</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male Female</td>
<td>Male Female</td>
<td>Chi square</td>
</tr>
<tr>
<td></td>
<td>No. Rate</td>
<td>No. Rate</td>
<td>No. Rate No. Rate</td>
</tr>
<tr>
<td>15-44yrs.</td>
<td>17(108) 160</td>
<td>26(109) 240</td>
<td>M 2.25 F 5.47*</td>
</tr>
<tr>
<td>45-64yrs.</td>
<td>7 (53) 130</td>
<td>18 (73) 250</td>
<td>M 2.53 F 5.77*</td>
</tr>
<tr>
<td>&gt; 64yrs.</td>
<td>0 (24) 0</td>
<td>9 (33) 270</td>
<td>M -- F 8.44*</td>
</tr>
<tr>
<td>Totals</td>
<td>24(185) 130</td>
<td>53(215) 250</td>
<td>M 8.72* F 14.92*</td>
</tr>
</tbody>
</table>

Chi square with 1df requires 3.84 for significance at the 5% level of confidence.

* significant test.

These data indicate that the non-Indians have a significantly higher rate of tests for vision than Indians. The pattern for the Indian men and women is one of inverse relationship with age whereas the opposite is true for the non-Indian men. The non-Indian women between the years 15-44 have more visits than the non-Indian women 45-64 years.
opposite is true for the men but not for the women. Chi square tests indicate that the most significant differences are found between Indian and non-Indian women in all age groups. The questions could be raised here as to whether the Indian women have fewer vision problems or are the most neglected of the four groups. Among the Indians 45 years and over all could be considered neglected as far as tests for vision are concerned. The data presented in Tables 13-15 covering the utilization of doctors and dentists support hypothesis one in relation to a higher utilization of services by the non-Indians.

In examining the data with respect to hospital care, that is, care persons receive as an inmate of a hospital, every fourth person among the Indians as compared to every fifth among the non-Indians was hospitalized during a twelve month period. Tables 17-20 present the cumulative data for children under 15 years (excluding the new born) and for adults 15 years and over for both populations. This detailed information is presented here as it facilitates comparisons between these data and data presented in a similar manner in the Saskatchewan Provincial reports on hospitalization 1968-69. The data show that 126 Indian children account for 1,866 hospital days or 14.8 days per child hospitalized as compared with twenty-six non-Indian children with 158 days or 6.07 days per child. The cumulative data on the number of persons by the length of stay indicated that approximately 50 per cent of both Indian children and adults were released after 9 days. This pattern is not the same for the non-Indians as 50 per cent of the adults and
## TABLE 17.

PERSONS REPORTING ONE OR MORE HOSPITAL ADMISSIONS - by length of stay, number and per cent for Indians 0 - 14 years.

<table>
<thead>
<tr>
<th>Length of stay in days</th>
<th>Number of persons</th>
<th>Cumulative number of days</th>
<th>Number per cent</th>
<th>Cumulative number per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>126</td>
<td>1866</td>
<td>100.00</td>
<td>100.0</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>10</td>
<td>14</td>
<td>3.9</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>12</td>
<td>26</td>
<td>3.2</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>56</td>
<td>82</td>
<td>11.1</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>30</td>
<td>112</td>
<td>4.7</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>18</td>
<td>130</td>
<td>2.4</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
<td>140</td>
<td>270</td>
<td>15.8</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>24</td>
<td>294</td>
<td>2.4</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>36</td>
<td>330</td>
<td>3.2</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>60</td>
<td>390</td>
<td>4.8</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>22</td>
<td>412</td>
<td>1.6</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
<td>48</td>
<td>460</td>
<td>3.2</td>
</tr>
<tr>
<td>13</td>
<td>2</td>
<td>26</td>
<td>77</td>
<td>1.6</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>196</td>
<td>682</td>
<td>11.1</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>15</td>
<td>92</td>
<td>0.8</td>
</tr>
<tr>
<td>16</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>17</td>
<td>93</td>
<td>0.8</td>
</tr>
<tr>
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</tr>
<tr>
<td>19</td>
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<td>0</td>
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<td>--</td>
</tr>
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<td>20</td>
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<td>60</td>
<td>97</td>
<td>2.4</td>
</tr>
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<td>897</td>
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</tr>
<tr>
<td>22-29</td>
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<td>213</td>
<td>110</td>
<td>6.4</td>
</tr>
<tr>
<td>30-59</td>
<td>15</td>
<td>625</td>
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<td>11.9</td>
</tr>
<tr>
<td>60-89</td>
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<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>90+</td>
<td>1</td>
<td>131</td>
<td>126</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1866</td>
<td>100.0</td>
</tr>
</tbody>
</table>

TOTAL: 126 persons, 1866 days
TABLE 18

PERSONS REPORTING ONE OR MORE HOSPITAL ADMISSIONS
- by length of stay, number and per cent
for non-Indians 0 - 14 years

<table>
<thead>
<tr>
<th>Length of stay in days</th>
<th>Number</th>
<th>Cumulative number</th>
<th>per cent</th>
<th>Cumulative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>persons</td>
<td>days persons</td>
<td>days persons</td>
<td>days persons</td>
</tr>
<tr>
<td>TOTAL</td>
<td>26</td>
<td>158</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>20</td>
<td>12</td>
<td>38.4</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>6</td>
<td>14</td>
<td>7.7</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>4</td>
<td>15</td>
<td>3.8</td>
</tr>
<tr>
<td>5</td>
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<td>10</td>
<td>17</td>
<td>7.7</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>21</td>
<td>20</td>
<td>11.5</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>8</td>
<td>21</td>
<td>3.9</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>10</td>
<td>22</td>
<td>3.9</td>
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<td>3.9</td>
</tr>
<tr>
<td>15</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>16</td>
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<td>--</td>
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<tr>
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<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>21</td>
<td>3</td>
<td>63</td>
<td>26</td>
<td>11.5</td>
</tr>
<tr>
<td>22-29</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>30-59</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
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<td>60-89</td>
<td>0</td>
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</tr>
<tr>
<td>90+</td>
<td>0</td>
<td>0</td>
<td>26</td>
<td>0</td>
</tr>
</tbody>
</table>

99.
### TABLE 19

PERSONS REPORTING ONE OR MORE HOSPITAL ADMISSIONS
- by length of stay, number and per cent
for Indians 15 years and over.

<table>
<thead>
<tr>
<th>Length of stay in days</th>
<th>Number</th>
<th>Cumulative number</th>
<th>per cent</th>
<th>Cumulative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>persons days</td>
<td>persons days</td>
<td>persons days</td>
<td>days</td>
</tr>
<tr>
<td>TOTAL</td>
<td>116</td>
<td>1749</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2.6</td>
<td>4.3</td>
<td>0.3</td>
<td>4.3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>8</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>2.6</td>
<td>5.2</td>
<td>0.5</td>
<td>5.7</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>21</td>
<td>60</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>8.6</td>
<td>17.2</td>
<td>2.3</td>
<td>19.5</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>30</td>
<td>59</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>4.3</td>
<td>21.5</td>
<td>1.7</td>
<td>23.2</td>
</tr>
<tr>
<td>5</td>
<td>14</td>
<td>98</td>
<td>50</td>
<td>238</td>
</tr>
<tr>
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<td>6.4</td>
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<td>59</td>
<td>315</td>
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<td>4.3</td>
<td>8.9</td>
<td>2.6</td>
<td>11.5</td>
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<td>20</td>
<td>61</td>
<td>335</td>
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<td>9</td>
<td>99</td>
<td>70</td>
<td>434</td>
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<td>10.6</td>
<td>5.7</td>
<td>16.3</td>
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<td>3</td>
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<td>73</td>
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<td>2.1</td>
<td>5.3</td>
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<td>76</td>
<td>509</td>
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<td>5.8</td>
<td>2.2</td>
<td>8.0</td>
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<td>9</td>
<td>126</td>
<td>85</td>
<td>635</td>
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<td>13.6</td>
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<td>20.8</td>
</tr>
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<td>0</td>
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<td>--</td>
</tr>
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<td>14</td>
<td>2</td>
<td>32</td>
<td>87</td>
<td>667</td>
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<td>1.8</td>
<td>1.8</td>
<td>3.6</td>
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<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
<td>54</td>
<td>90</td>
<td>721</td>
</tr>
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<td>2.6</td>
<td>3.1</td>
<td>3.1</td>
<td>6.2</td>
</tr>
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<td>17</td>
<td>1</td>
<td>19</td>
<td>91</td>
<td>740</td>
</tr>
<tr>
<td></td>
<td>0.9</td>
<td>1.8</td>
<td>1.1</td>
<td>2.9</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>40</td>
<td>93</td>
<td>780</td>
</tr>
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<td></td>
<td>1.7</td>
<td>2.5</td>
<td>2.3</td>
<td>4.8</td>
</tr>
<tr>
<td>19</td>
<td>5</td>
<td>105</td>
<td>98</td>
<td>885</td>
</tr>
<tr>
<td></td>
<td>4.3</td>
<td>6.8</td>
<td>6.0</td>
<td>12.8</td>
</tr>
<tr>
<td>20</td>
<td>6</td>
<td>159</td>
<td>104</td>
<td>1044</td>
</tr>
<tr>
<td></td>
<td>5.2</td>
<td>12.0</td>
<td>9.1</td>
<td>21.1</td>
</tr>
<tr>
<td>21</td>
<td>8</td>
<td>331</td>
<td>112</td>
<td>1375</td>
</tr>
<tr>
<td></td>
<td>6.9</td>
<td>18.9</td>
<td>18.9</td>
<td>37.8</td>
</tr>
<tr>
<td>22-29</td>
<td>2</td>
<td>137</td>
<td>114</td>
<td>1512</td>
</tr>
<tr>
<td></td>
<td>1.7</td>
<td>2.8</td>
<td>7.8</td>
<td>9.6</td>
</tr>
<tr>
<td>23-29</td>
<td>5</td>
<td>237</td>
<td>116</td>
<td>1749</td>
</tr>
<tr>
<td></td>
<td>1.7</td>
<td>3.5</td>
<td>13.5</td>
<td>16.0</td>
</tr>
</tbody>
</table>

*Note: Cumulative numbers and per cents may not add exactly due to rounding.*
### TABLE 20

**PERSONS REPORTING ONE OR MORE HOSPITAL ADMISSIONS**

- by length of stay, number and per cent

for non-Indians 15 years and over

<table>
<thead>
<tr>
<th>Length of stay in days</th>
<th>Number</th>
<th>Cumulative number</th>
<th>per cent</th>
<th>Cumulative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>98</td>
<td>1211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11.2</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>16</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>24</td>
<td>27</td>
<td>51</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>28</td>
<td>34</td>
<td>79</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>20</td>
<td>38</td>
<td>99</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>36</td>
<td>44</td>
<td>135</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>42</td>
<td>50</td>
<td>177</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>48</td>
<td>56</td>
<td>225</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>18</td>
<td>58</td>
<td>243</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>90</td>
<td>67</td>
<td>333</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>11</td>
<td>68</td>
<td>344</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>24</td>
<td>70</td>
<td>368</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>13</td>
<td>71</td>
<td>381</td>
</tr>
<tr>
<td>14</td>
<td>5</td>
<td>70</td>
<td>76</td>
<td>451</td>
</tr>
<tr>
<td>15</td>
<td>-</td>
<td>--</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>16</td>
<td>77</td>
<td>467</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>17</td>
<td>78</td>
<td>484</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>36</td>
<td>80</td>
<td>520</td>
</tr>
<tr>
<td>19</td>
<td>-</td>
<td>--</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>60</td>
<td>83</td>
<td>580</td>
</tr>
<tr>
<td>21</td>
<td>2</td>
<td>42</td>
<td>85</td>
<td>622</td>
</tr>
<tr>
<td>22-29</td>
<td>2</td>
<td>55</td>
<td>87</td>
<td>677</td>
</tr>
<tr>
<td>30-59</td>
<td>8</td>
<td>309</td>
<td>95</td>
<td>986</td>
</tr>
<tr>
<td>60-89</td>
<td>3</td>
<td>225</td>
<td>98</td>
<td>1211</td>
</tr>
<tr>
<td>90+</td>
<td>-</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
children were released within 3 days. It is interesting to note that 100 per cent of the non-Indians were released within 21 days as compared with 85 per cent of the Indians.

Tables 21 and 22 present the data on the utilization of hospitals from another point of view.

Table 21

NUMBER OF HOSPITAL ADMISSIONS, DAYS, MEAN LENGTH OF STAY AND DAYS PER CAPITA FOR INDIANS AND NON-INDIANS WITHIN A TWELVE MONTH PERIOD BY SEX

<table>
<thead>
<tr>
<th></th>
<th>Indian</th>
<th></th>
<th>Non-Indian</th>
<th></th>
<th>Indian</th>
<th></th>
<th>Non-Indian</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>N=445</td>
<td></td>
<td>Male</td>
<td>N=315</td>
<td>Female</td>
<td>N=300</td>
<td>M.&amp;F.</td>
<td>N=909</td>
</tr>
<tr>
<td>Female</td>
<td>N=464</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admissions</td>
<td>155</td>
<td>232</td>
<td>87</td>
<td>84</td>
<td>387</td>
<td>171</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital Days</td>
<td>1,536</td>
<td>2,076</td>
<td>640</td>
<td>719</td>
<td>3,615</td>
<td>1,369</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean length of stay</td>
<td>10</td>
<td>9</td>
<td>7</td>
<td>9</td>
<td>9</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days per capita</td>
<td>3.45</td>
<td>4.48</td>
<td>2.03</td>
<td>2.43</td>
<td>3.98</td>
<td>2.21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 21 indicates that the Indian female respondents have both the highest number of admissions and the longest stay as measured by days per capita.
In viewing the age sex specific rates (Table 22) there is a significant difference between Indians and non-Indians in the age groups 0-14 years both male and female, and female 15-44 years in their use of hospitals as measured by one or more hospital admission within a twelve month period. With the exception of non-Indian men over 65, the Indian boys in the under 15 age group are the highest contributor in the male group. Except for the under 15 years age group all non-Indian males have a higher rate than the Indian males. The picture is different for female respondents. All Indian female respondents use the hospital at higher rates than the non-Indian females with the highest rate in the 15-44 or child bearing years with 500 per thousand population. Hypothesis one is not supported completely by the data on the utilization of hospitals. Some support is given by the data on the non-Indian men over 15 years of age. Men in this age group use hospitals at a higher rate than all Indian men. They also use the hospitals at a higher rate than Indian women in the over 64 age group.

Table 23 presents the rates per 1000 for persons taking one or more prescribed or non-prescribed drugs within a two day period. The use of prescribed drugs would indicate consultations with a doctor. The data indicate no significant difference in their use between the Indian and the non-Indian.
Table 22

INDIANS AND NON-INDIANS WITH ONE OR MORE HOSPITAL ADMISSIONS WITHIN A TWELVE MONTH PERIOD

Comparisons are according to sex and selected age groups and are indicated both by the numbers and the rates per 1000. The results of tests for significant differences in the use for comparable groups are also shown.

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Male No.</th>
<th>Rate</th>
<th>Female No.</th>
<th>Rate</th>
<th>Male No.</th>
<th>Rate</th>
<th>Female No.</th>
<th>Rate</th>
<th>M.&amp;F. No.</th>
<th>Rate</th>
<th>M.&amp;F. No.</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14 yrs.</td>
<td>68(260)</td>
<td>260</td>
<td>58(262)</td>
<td>220</td>
<td>15(100)</td>
<td>150</td>
<td>11(102)</td>
<td>110</td>
<td>126(522)</td>
<td>240</td>
<td>26(202)</td>
<td>130</td>
</tr>
<tr>
<td>15-44 yrs.</td>
<td>11(108)</td>
<td>100</td>
<td>65(131)</td>
<td>500</td>
<td>19(109)</td>
<td>170</td>
<td>25(109)</td>
<td>230</td>
<td>76(239)</td>
<td>320</td>
<td>44(218)</td>
<td>340</td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>9 (53)</td>
<td>170</td>
<td>15 (42)</td>
<td>360</td>
<td>17 (73)</td>
<td>230</td>
<td>14 (57)</td>
<td>250</td>
<td>24 (57)</td>
<td>250</td>
<td>31(130)</td>
<td>240</td>
</tr>
<tr>
<td>&gt; 64 yrs.</td>
<td>5 (24)</td>
<td>210</td>
<td>11 (29)</td>
<td>380</td>
<td>13 (33)</td>
<td>390</td>
<td>9 (32)</td>
<td>280</td>
<td>16 (32)</td>
<td>300</td>
<td>21 (65)</td>
<td>320</td>
</tr>
<tr>
<td>Totals</td>
<td>93(445)</td>
<td>210</td>
<td>149(464)</td>
<td>320</td>
<td>64(315)</td>
<td>210</td>
<td>59(300)</td>
<td>200</td>
<td>242(909)</td>
<td>270</td>
<td>122(615)</td>
<td>200</td>
</tr>
</tbody>
</table>

't' tests were calculated on the totals of male and female, Indian and non-Indian for each age specific group. The only significant tests were for age groups 0-14 years both male and female and female 15-44 years.

't' with df requires 1.960 for significance at the 5% level of confidence.

The Indians with an overall hospital admission rate of 270 per 1000 population indicate a higher rate than the non-Indians (200 per 1000 population). The highest age-specific rate is found among the Indian women 15-44 years of age.
Table 23

INDIANS AND NON-INDIANS 15 YEARS AND OVER TAKING ONE OR MORE PRESCRIBED OR NON-PRESCRIBED DRUG WITHIN A TWO DAY PERIOD

The rates per 1000 are calculated for the total population in each group taking respectively one or more prescribed and non-prescribed drugs;

<table>
<thead>
<tr>
<th></th>
<th>(a) Prescribed Drugs</th>
<th>(b) Non-Prescribed Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indian</td>
<td>Non-Indian</td>
</tr>
<tr>
<td>N=387</td>
<td>No.</td>
<td>Rate</td>
</tr>
<tr>
<td></td>
<td>95</td>
<td>250</td>
</tr>
<tr>
<td>No. of persons</td>
<td>74</td>
<td>190</td>
</tr>
<tr>
<td>taking one or more</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi square (a) 2.29
(b) 30.06*

Chi square requires 3.84 for significance at the 5 per cent level of confidence

*significant test

The chi square of 30.06 does indicate a significantly higher rate of utilization of non-prescribed drugs by the non-Indian. Table 24 gives the age-sex rates for the users of non-prescribed drugs.
Table 24

INDIANS AND NON-INDIANS 15 YEARS AND OVER TAKING ONE OR MORE NON-PRESCRIBED DRUGS WITHIN A TWO DAY PERIOD BY AGE AND SEX

Comparisons are according to sex and selected age group and are indicated both by the number and the rates per 1000. Bracketed quantities indicate the number of persons per age group. The results of tests for significant differences in the use in comparable groups are also shown.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Indian Male</th>
<th>Female</th>
<th>Non-Indian Male</th>
<th>Female</th>
<th>Test Chi square</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-44 yrs.</td>
<td>14(108) 130</td>
<td>30(131) 220</td>
<td>35(109) 320</td>
<td>38(109) 350</td>
<td>M 11.4*</td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>9(53) 170</td>
<td>11(42) 260</td>
<td>35(73) 320</td>
<td>30(57) 530</td>
<td>M 3.4</td>
</tr>
<tr>
<td>&gt; 64 yrs.</td>
<td>4(24) 170</td>
<td>6(29) 200</td>
<td>23(33) 450</td>
<td>10(32) 310</td>
<td>M 5.2*</td>
</tr>
<tr>
<td>Total</td>
<td>27(185) 47(203)</td>
<td>113(215) 78(198)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence.

* significant test

The highest users of the non-prescribed drugs are found among the non-Indian women in the 45-64 years age group. A high rate is also indicated for non-Indian men over 64 years of age. It is interesting to note that non-Indians, who reported the highest rate of utilization of doctors also report the highest use of self-medication as measured by use of non-prescribed drugs.
2. Morbidity

The second part of hypothesis one states that the Indians need for medical care will be greater than the non-Indians as measured by the patterns of morbidity.

Measurement of overall morbidity in any population is not easy, whether it be done by household surveys, physical examinations, screening tests or doctors' records. The term morbidity is considered a general term describing illness, disease and their severity. Gerson and Skipper present a complicated model of health action as a process where disease, illness and sickness are three dimensions. The three terms are often used interchangeably. In this study, there is an attempt to use several indirect internally consistent measures, as it was felt that these would be as valid as one or two direct measures that are subject to wide observer variations. The illness or morbidity level is measured by bed days and restricted activity days out of hospital, as well as reported chronic illnesses and impairment which affect usual activities. It is recognized that interpretation of conditions will vary, thus giving rise to uncertainties. However, in comparing rates it is not important whether the true morbidity is higher or lower than that reported by the population, but it is the perception of morbidity that is important. Figures on morbidity measured by sick days within a two week period are presented in Table 25. These data reveal that as far as bed days are concerned the only significant differences are between Indian and non-Indian men aged 45-64 and between Indian and non-Indian women
Table 25

PERCEIVED MORBIDITY BY INDIANS AND NON-INDIANS WITHIN A TWO WEEK PERIOD

Percentages enclosed in brackets are calculated according to sex and selected age groups.

<table>
<thead>
<tr>
<th>Persons reporting</th>
<th>0-14 yrs.</th>
<th>15-44 yrs.</th>
<th>45-64 yrs.</th>
<th>&gt; 64 yrs.</th>
<th>All Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>A. Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=260</td>
<td>N=100</td>
<td>N=108</td>
<td>N=73</td>
<td>N=24</td>
</tr>
<tr>
<td>-one or more bed days</td>
<td>31 (12)</td>
<td>19 (19)</td>
<td>9 (8)</td>
<td>7 (6)</td>
<td>16 (30)</td>
</tr>
<tr>
<td>-activity limitation</td>
<td>3 (1)</td>
<td>5 (5)*</td>
<td>2 (2)</td>
<td>4 (4)</td>
<td>3 (6)</td>
</tr>
<tr>
<td>-other health problems</td>
<td>9 (3)</td>
<td>4 (4)</td>
<td>7 (6)</td>
<td>16 (15)*</td>
<td>4 (18)</td>
</tr>
<tr>
<td>B. Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=262</td>
<td>N=102</td>
<td>N=109</td>
<td>N=42</td>
<td>N=57</td>
</tr>
<tr>
<td>-one or more bed days</td>
<td>36 (14)</td>
<td>17 (18)</td>
<td>33 (25)</td>
<td>18 (17)</td>
<td>10 (23)</td>
</tr>
<tr>
<td>-activity limitations</td>
<td>5 (2)</td>
<td>5 (5)</td>
<td>5 (4)</td>
<td>10 (9)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>-other health problems</td>
<td>5 (2)</td>
<td>12 (12)*</td>
<td>10 (8)</td>
<td>18 (7)</td>
<td>6 (20)</td>
</tr>
</tbody>
</table>

Chi square tests were calculated for each age sex specific group. An * placed beside the group indicates a significant test.

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence.

In many of the age-sex specific groups the numbers are too small for adequate comparisons. The data indicates significant differences between Indian and non-Indian males and females in activity limitations with the non-Indian having the highest percentage. The non-Indian women between 45-64 years have the highest rate of "other problem".
over 65. In both these groups the Indians have the highest rates.
For activity limitations the significant differences are found among
both males and females respondents with the non-Indians having the
highest rate. The non-Indian female respondents also report a
higher rate of other health problems. The only significant dif-
ference for males with regard to other health problems is in the 15-44
age group. Indian men indicate a higher rate than non-Indian men.

Table 26 presents additional data on morbidity as measured
by persons over 15 years of age reporting chronic illness and physical
impairment or handicap. Part C of the table indicates persons whose
ability to carry on regular duties is affected. The data reveal no
significant differences between the two sample populations in re-
ported chronic illness or physical impairment or handicap. Both
Indian men and women report lower rates of chronic illness than non-
Indian men and women. Women in both sample populations report a
higher rate than men in each age-sex group. For physical impair-
ment and handicap the men report the highest rates with the exception
of persons over 64 years in the Indian population. The women in this
age group have the higher percentage of 37 as compared with 16 per
cent for men. Higher percentages of physical impairment and handicap
were reported by both Indian men and women. The Indian men had 18
per cent as compared with 15 per cent of non-Indian men, and the Indian
women with 12 per cent as compared with 7 per cent of the non-Indian
women.

Visual impairment can be considered as an indication of dis-
ability that is relatively stable and not too influenced by cultural
**Table 26**  

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian</th>
<th></th>
<th>Non-Ind.</th>
<th></th>
<th>Indian</th>
<th></th>
<th>Non-Ind.</th>
<th></th>
<th>Indian</th>
<th></th>
<th>Non-Ind.</th>
<th></th>
<th>Indian</th>
<th></th>
<th>Non-Ind.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=387</td>
<td></td>
<td>N=413</td>
<td></td>
<td>N=239</td>
<td></td>
<td>N=218</td>
<td></td>
<td>N=95</td>
<td></td>
<td>N=130</td>
<td></td>
<td>N=53</td>
<td></td>
<td>N=65</td>
<td></td>
</tr>
<tr>
<td>15 years and over</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=185</td>
<td>202</td>
<td></td>
<td>215</td>
<td>198</td>
<td>108</td>
<td>131</td>
<td>109</td>
<td>109</td>
<td>53</td>
<td>42</td>
<td>73</td>
<td>57</td>
<td>24</td>
<td>29</td>
<td>33</td>
<td>32</td>
</tr>
</tbody>
</table>

A. Persons reporting one or more chronic illness

29(16) 41(20) 42(20) 55(29) 5(5) 16(12) 9(8) 21(19) 17(32) 14(33) 27(29) 18(32) 7(29) 11(40) 12(36) 16(50)

B. Persons reporting one or more physical impairment or handicap

33(18) 25(12) 33(15) 14(7) 14(13) 8(6) 12(11) 5(5) 15(28) 6(14) 13(16) 5(9) 4(16) 11(37) 8(24) 4(13)

C. Persons reporting some effects on health

20(11) 20(10) 3(1) 4(2) 9(8) 6(5) 4(4) 3(3) 8(15) 4(10) 5(7) 0(-) 3(13) 10(34) 4(12) 1(3)

Chi square tests for significant differences were calculated for each age-sex specific group in A., B. and C. categories, where the totals permitted. Significant differences were indicated in 'C' Persons reporting some effects on health. The numbers among the non-Indians are small - the calculation between totals of Indian and non-Indian females yielded a Chi square of 11.67 which is significant at the 5% level of confidence.
factors. It is used here as another indicator in the potential demand for medical care. The measurements for adults were obtained by data collected from the answers to questions relating to problems of seeing ordinary newsprint and recognizing a friend on the other side of the street.

Table 27

INDIANS AND NON-INDIANS 15 YEARS AND OVER REPORTING VISUAL IMPAIRMENT

Comparisons are according to sex and selected age groups and are indicated both by the number and percentage. Bracketed quantities show number of persons per age group. The results of test of significant differences for comparable groups are shown.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Indian Male</th>
<th>Female</th>
<th>Non-Indian Male</th>
<th>Female</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-44 yrs.</td>
<td>26(108) 24%</td>
<td>69(131) 63%</td>
<td>29(109) 27%</td>
<td>42(109) 39%</td>
<td>M 0.18 F 4.78*</td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>31(53) 59%</td>
<td>31(42) 58%</td>
<td>69(73) 82%</td>
<td>50(57) 87%</td>
<td>M 8.60* F 3.15</td>
</tr>
<tr>
<td>&gt; 64 yrs.</td>
<td>18(24) 75%</td>
<td>21(29) 88%</td>
<td>27(33) 82%</td>
<td>26(32) 81%</td>
<td>M 0.39 F 0.67</td>
</tr>
<tr>
<td>Totals</td>
<td>75(185) 40%</td>
<td>121(202) 60%</td>
<td>116(215) 54%</td>
<td>118(198) 60%</td>
<td>M 7.17* F 0.0038</td>
</tr>
</tbody>
</table>

Chi square with 1df requires 3.84 for significance at the 5% level of confidence.

* significant test
Table 27 shows that non-Indian men report a higher rate of visual impairment than the Indian men, especially in the age group 45-64. Indian women in the 15-44 age group show a significantly higher rate of impairment than non-Indian women. The general pattern for the Indian male seems to be the increase of visual impairment with age as would be expected, but this is not the case for Indian women where a higher percentage is reported by persons in the 15-44 age group than persons between 45-64 years. This sudden increase in visual impairment for the non-Indian is between ages 15-44 and 45-64 for both men and women. The non-Indian men show more visual impairment than Indian men.

There seems to be empirical evidence that oral health benefits the total well being of individuals. There has been considerable interest within the past few years in the preventive rather than the curative aspect of dental health and many questions are being raised. Dental treatment needs were measured for the two study populations by the number of missing and replaced teeth. In the overall rates both Indian and non-Indian men and women appear to lose their teeth at approximately the same rate but the difference in rates of replacement are highly significant.

In Table 28 data on the partially indentulous adults are presented. The Indian men in all age groups have the greatest need for replacement of teeth. The dental care need for non-Indian women is remarkably low in comparison with all other age groups. This would be expected as the highest rates for dental visits within a year were reported by the non-Indian women. It might be well to mention here that one of the recommendations of the Royal Commission on Health Services in Canada stated that a policy imposing part payment for
Table 28

INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH HALF THEIR TEETH MISSING AND NO FALSE TEETH

Comparisons are according to sex and selected age groups and are indicated both by numbers and percentages. The bracketed quantities are the number of persons with half their teeth missing and are the bases for the percentages. The results of tests of significant differences are shown for each group.

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male N=185</td>
<td>Female N=202</td>
<td>Male N=215</td>
<td>Female N=198</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 44</td>
<td>16 (17)</td>
<td>28 (42)</td>
<td>67</td>
<td>9 (20)</td>
<td>45</td>
<td>26 (32)</td>
<td>8</td>
<td>M 1.95</td>
<td>F 11.08*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-64</td>
<td>26 (32)</td>
<td>81</td>
<td>24 (38)</td>
<td>63</td>
<td>26 (36)</td>
<td>81</td>
<td>2 (41)</td>
<td>5</td>
<td>M 4.49*</td>
<td>F 15.81*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 64</td>
<td>18 (20)</td>
<td>90</td>
<td>21 (27)</td>
<td>78</td>
<td>21 (29)</td>
<td>78</td>
<td>1 (28)</td>
<td>4</td>
<td>M 7.54*</td>
<td>F 14.39*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>60 (69)</td>
<td>87</td>
<td>73 (107)</td>
<td>68</td>
<td>27 (85)</td>
<td>32</td>
<td>6 (101)</td>
<td>6</td>
<td>M 13.05*</td>
<td>F 41.09*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence.

* Significant test.

any services would simply deter the poor and have no effect on the unnecessary demands of those in middle and high income brackets. During the survey one Indian woman respondent age 44 years told how she and several other women in the area over a period of time had been admitted to hospital by the dentist in the town near the reserve to have teeth extracted and had awakened to discover that all their teeth had been removed. The dentist in private practice is no longer there but several of the women have not been able to afford to replace their teeth. Medical Services require the Indians to pay part of the cost of false teeth*.

* Medical Services policy is that no Indians will be allowed to suffer for need of medical care. In the case of replacement of teeth or correction of visual impairment (provision of glasses) individuals are requested to make a payment commensurate with their ability to pay.
3. Attitudes and Other Enabling Factors

Factors other than perceived morbidity and need, as measured by the specific variables already reviewed, affect the use or non-use of medical care. Among these factors are the attitudes of the users towards the dispensers of care and the care itself. These attitudes stem from the many experiences within the lives of the people in their own environment. It has been reported in a Canadian study\(^9\) that on the whole in rural Canada doctors are held in higher regard. On the other hand, many in the health profession find it difficult to relate to persons whose race, religion or social attitudes differ from their own. The stereotyping of people of unfamiliar race is believed to contribute more than anything else to a lack of communication, and therefore to the satisfaction of the individual seeking care.

Social scientists recognize that the measurement of attitudes and perceptions presents difficult problems. The attitude towards doctors was ascertained for this study by asking questions which measured a general satisfaction dimension focused on commonly expressed complaints pertaining to doctors' services*. Table 29 indicates the level of confidence in medical doctors as measured by the low score on the index. The Indian men 15-44 years with 16 per cent and the Indian women over 44 years with 15 per cent are the groups with the lowest scepticism towards doctors.

* For questions see Appendix C-1.
Table 29

INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH A LOW TENDENCY\(^1\) TO SHOW SCEPTICISM TOWARDS MEDICAL DOCTORS

Percentages are calculated according to sex and selected age groups. Bracketed quantities show number of persons per age group.

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian (N=387)</th>
<th>Non-Indian (N=413)</th>
<th>Ind.&amp;Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>15-44 yrs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17(108)</td>
<td>16</td>
<td>14(131)</td>
</tr>
<tr>
<td>&gt; 44 yrs.</td>
<td>5(77)</td>
<td>6</td>
<td>11(71)</td>
</tr>
<tr>
<td>Totals</td>
<td>22(185)</td>
<td>12</td>
<td>25(202)</td>
</tr>
</tbody>
</table>

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence.

* Significant test

\(^1\) for indices see appendix C-1

The low percentages for all categories indicate a high scepticism towards medical doctors.

This is not the case in the attitude towards medicine (Table 30). The high score here represents a lower scepticism towards medicine. Again the Indians have a significantly lower scepticism than the non-Indians.
Table 30
INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH A LOW<sup>†</sup>TENDENCY TO SHOW
SCEPTICISM TOWARDS MEDICINE

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Indian N=387</th>
<th></th>
<th></th>
<th>Non-Indian N=413</th>
<th></th>
<th></th>
<th>Ind.&amp;Non-Ind</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male No.</td>
<td>Male %</td>
<td>Female No.</td>
<td>Female %</td>
<td>Male No.</td>
<td>Male %</td>
<td>Female No.</td>
</tr>
<tr>
<td>15-44yrs.</td>
<td>72 (108) 67</td>
<td>74 (131) 57</td>
<td>44 (109) 40</td>
<td>40 (109) 37</td>
<td>M 15.08*</td>
<td>F 9.35*</td>
<td></td>
</tr>
<tr>
<td>45-64yrs.</td>
<td>35 (53) 66</td>
<td>28 (42) 67</td>
<td>36 (73) 42</td>
<td>20 (57) 35</td>
<td>M 3.49*</td>
<td>F 9.65*</td>
<td></td>
</tr>
<tr>
<td>&gt;64yrs.</td>
<td>13 (24) 54</td>
<td>14 (29) 48</td>
<td>14 (33) 42</td>
<td>12 (32) 37</td>
<td>M 0.77</td>
<td>F 0.72</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>120 (185) 65</td>
<td>116 (202) 57</td>
<td>94 (215) 44</td>
<td>72 (198) 36</td>
<td>M 17.86*</td>
<td>F 17.80*</td>
<td></td>
</tr>
</tbody>
</table>

Chi square with 1df requires 3.84 for significance at the 5% level of significance

* significant test
† for index see appendix C-1

In all the age specific groups except one (women over 64 years) the percentages of Indians with a low tendency to show scepticism towards medicine are over 50. For the non-Indian all percentages are below 50 indicating that the Indians have a lower tendency to show scepticism towards medicine than the non-Indian.

It is interesting to note that the Indian men have a lower tendency to show scepticism towards medicine than the Indian women, 65 per cent compared to 57 per cent. The same is true for the non-Indian men. It appears that medicine is more accepted than medical doctors by both the Indians and non-Indians.
During the data collection persons who reported bed days and had not consulted doctors were asked to give their reasons for non-consultation. A higher percentage of Indians (especially the women) than non-Indians said that they had wanted to consult doctors. The main reason given for non-consultations included lack of time and lack of finances for transportation. One can speculate from the data in Table 29 that scepticism towards doctors may also have been a deterrent.

Some investigations have indicated that the stress of life is an important and causal agent of disease in society. To obtain a measure of stress questions about themselves and their reactions to particular situations were asked of each respondent. A measure of anxiety was developed as was a measure of dependency on illness. The results are shown in Table 31 and 32.

The higher the percentages indicated in Table 31 the lower is the anxiety. The men in both samples have a lower rate of anxiety than the women. Indian men have 39 per cent with low anxiety as compared with 32 per cent of women; the non-Indian men have 63 per cent as compared with 41 per cent for women. A point of interest is the lower rates of anxiety for both the non-Indian men and women compared with Indians. The lowest anxiety rate for the Indian men is in the 15-44 age group; the highest rates are among Indian men over 64 years and Indian women over 45 years. The Chi square test indicates a more significant difference between men than women. One would expect that Indians who appear to have a slower pace of life on reserves to manifest less anxiety than the non-Indians. The non-Indians in this study represent the Western achievement oriented society. Striving for achievement within the Indian society
TABLE 31

INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH A LOW TENDENCY† TO MANIFEST ANXIETY

Percentages are calculated according to sex and selected age groups. Bracketed quantities show number of persons per age group.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Indian N=387</th>
<th></th>
<th></th>
<th>Non-Indian N=413</th>
<th></th>
<th></th>
<th>Ind. &amp; Non-Ind.</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Chi square</td>
<td>Chi square</td>
</tr>
<tr>
<td>15 - 44</td>
<td>52(108) 48</td>
<td>46(131) 35</td>
<td>66(109) 61</td>
<td>49(109) 45</td>
<td>M 3.36</td>
<td>F 1.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 - 64</td>
<td>16 (53) 30</td>
<td>10 (42) 23</td>
<td>49 (73) 67</td>
<td>22 (57) 59</td>
<td>M 16.77*</td>
<td>F 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 64</td>
<td>5 (24) 21</td>
<td>7 (29) 24</td>
<td>20 (33) 61</td>
<td>10 (32) 31</td>
<td>M 8.93*</td>
<td>F 0.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>73(185) 39</td>
<td>64(202) 32</td>
<td>135(215) 63</td>
<td>81(198) 41</td>
<td>M 23.14*</td>
<td>F -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† for index see Appendix C-1
Chi square requires 3.84 for significance with 1 df at the 5% level of confidence.
* significant test

on the reserve may be more covert than overt or, the anxiety may be due to other stressful situations, or just more time to think of themselves. On the other hand, in the rural areas of Saskatchewan from which the non-Indian sample was drawn, the pace of life may be slower than in the cities and more populous areas and the people more content with their positions in society than the Indians are with theirs.

Table 32 indicates the adults in both the Indian and the non-Indian population with a low tendency to manifest a dependency on illness.
Table 32

INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH A LOW\textsuperscript{3} TENDENCY TO MANIFEST DEPENDENCY ON ILLNESS

Percentages are calculated according to sex and selected age groups. Bracketed quantities show number of persons per age group.

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Chi square</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-44 yrs.</td>
<td>33(108)</td>
<td>29(131)</td>
<td>47(109)</td>
<td>43</td>
<td>36(109)</td>
</tr>
<tr>
<td></td>
<td>F 17.73*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>16 (53)</td>
<td>13 (42)</td>
<td>29 (73)</td>
<td>40</td>
<td>23 (57)</td>
</tr>
<tr>
<td></td>
<td>F 10.64*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 64 yrs.</td>
<td>5 (24)</td>
<td>6 (29)</td>
<td>19 (33)</td>
<td>58</td>
<td>13 (32)</td>
</tr>
<tr>
<td></td>
<td>F 10.09*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>54(185)</td>
<td>48(202)</td>
<td>95(215)</td>
<td>44</td>
<td>72(198)</td>
</tr>
<tr>
<td></td>
<td>F 35.52*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{3}For index see appendix C-1

Chi square requires 3.00 for significance with 2df at the 5% level of confidence.

* significant test

** chi squares were calculated on three levels of low, medium and high for the index.

The Indians both male and female show a significantly higher rate of dependency on illness than the non-Indians. In the overall totals the men show a lower rate of dependency on illness than the women in both the Indian and non-Indian populations. There are differences within the age specific groups. Among the Indians the lowest dependency is found in the men 44 and under and the women in the 45-64 age groups. Among the
non-Indians the group with the highest percentage with a low-tendency to manifest dependency on illness are women in the age group 45-64 and the men over 64 years of age. From the data in Tables 31 and 32 the Indians show a higher tendency to manifest anxiety and a higher tendency to manifest a dependency on illness. Dependency on illness measures a tendency to play or enjoy playing the sick role. Anxiety and playing the sick role are related tendencies.

Further measures of a person's predisposition to take problems to medical personnel are given in Tables 33 and 34. The highest scores on the indices have been selected as the bases for comparing the rates with which Indians and non-Indians would seek care for somatic and psycho-social problems.

Table 33

INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH A HIGH TENDENCY\(^1\) TO USE SERVICES FOR SOMATIC PROBLEMS

Percentages are calculated according to sex and selected age groups. Bracketed quantities show number of persons per age group.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-44 yrs.</td>
<td>53(108)</td>
<td>62(131)</td>
<td>36(109)</td>
<td>28(109)</td>
<td>M 5.77*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F 11.89*</td>
</tr>
<tr>
<td>45-64 yrs.</td>
<td>37 (53)</td>
<td>27 (42)</td>
<td>23 (73)</td>
<td>20 (57)</td>
<td>M 18.06*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F 5.43*</td>
</tr>
<tr>
<td>&gt; 64 yrs.</td>
<td>15 (24)</td>
<td>13 (29)</td>
<td>10 (33)</td>
<td>10 (32)</td>
<td>M 5.85*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F 1.19</td>
</tr>
<tr>
<td>Totals</td>
<td>105(185)</td>
<td>102(202)</td>
<td>69(215)</td>
<td>58(198)</td>
<td>M 24.61*</td>
</tr>
</tbody>
</table>

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence
*significant score
\(^1\)for index see Appendix C-1
The data in Table 33 indicates higher rates for both Indian men and women in the tendency to use services for somatic problems. All rates for Indians in the age-sex groups are over 47 per cent but are under 35 per cent for the non-Indians.

In the age-sex groups for non-Indians rates are very much the same with a range of only 7 per cent. Among the Indians the range is 23 per cent with the highest rate being among the men 45-64 years and the lowest among the women 15-44 years of age. The reported tendencies to seek medical care for somatic problems do not correlate with the actual use of doctors as reported in Tables 13 and 14. The Indians used services at a lower rate than the non-Indians. The data in Table 33 may reflect a tendency on the part of the Indians to give a positive answer to the questions asked. On the other hand, they may not suffer frequently from the symptoms referred to in the questions and when they do they are inclined to seek medical care.

The Chi square tests reveal no significant differences between the rates for Indians and non-Indians seeking care for psycho-social problems (Table 34). They are higher for both the Indian men and women as compared with the non-Indian men and women. The age-sex pattern differ for the two samples. Among the non-Indians the highest rate is found among the women between 45-64, but for the Indians it is the women in the age group 15-44 that show the highest rate, although their rate is only 2 per cent higher than the men in the 45-64 groups. Persons over 64 among both Indian and non-Indians apparently seek care at a lower rate for psycho-social problems than for psycho-somatic. This may be due to the fact that they are
Table 34

INDIANS AND NON-INDIANS 15 YEARS AND OVER WITH A HIGH TENDENCY\(^\dagger\) TO USE SERVICES FOR PSYCHO-SOCIAL PROBLEMS

Percentages are calculated according to sex and selected age groups.
Bracketed quantities show number of persons per age group.

<table>
<thead>
<tr>
<th>Age Group years</th>
<th>Male No.</th>
<th>% Male</th>
<th>Female No.</th>
<th>% Female</th>
<th>Male No.</th>
<th>% Male</th>
<th>Female No.</th>
<th>% Female</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-44</td>
<td>31(108)</td>
<td>29</td>
<td>42(131)</td>
<td>32</td>
<td>23(109)</td>
<td>21</td>
<td>24(109)</td>
<td>22</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F 3.01</td>
</tr>
<tr>
<td>45-64</td>
<td>16 (53)</td>
<td>30</td>
<td>11 (42)</td>
<td>26</td>
<td>15 (73)</td>
<td>21</td>
<td>16 (57)</td>
<td>28</td>
<td>M 1.54</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F 0.04</td>
</tr>
<tr>
<td>&gt; 64</td>
<td>3 (24)</td>
<td>13</td>
<td>8 (29)</td>
<td>28</td>
<td>4 (33)</td>
<td>12</td>
<td>3 (32)</td>
<td>9</td>
<td>M</td>
</tr>
<tr>
<td>Totals</td>
<td>50(185)</td>
<td>27</td>
<td>61(202)</td>
<td>30</td>
<td>42(215)</td>
<td>20</td>
<td>43(198)</td>
<td>22</td>
<td>M 2.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F 3.74</td>
</tr>
</tbody>
</table>

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence.
* significant score
\(^\dagger\) for index see Appendix C-1

more withdrawn from the social group or that they are more ignored.

Both Indians and non-Indians in all age-sex groups show a higher rate of concern over their aches and pains than their ability to get on well with others, although one may be the result of the other. There is also a possibility that psycho-social problems are not seen as medical problems—and therefore, for the symptoms used in the questions respondents would see no need for seeking medical care. On the other hand the respondents may not suffer from the problems used as examples and if and when they suffered from them they would seek care.
The data in Table 35 indicate that the Indians would seek care for the children at a higher rate than non-Indians. The ratio is approximately 4:1. There is a positive correlation between the Indians reporting a high tendency to seek services for children and hospital admissions but not in relation to taking children to the doctors.

Table 35
INDIANS AND NON-INDIANS WITH A HIGH TENDENCY to use services for children 0-14 YEARS and the reported utilization of services within a TWELVE MONTH PERIOD

Percentages enclosed in bracket are calculated on the number of Indian and non-Indian children.

<table>
<thead>
<tr>
<th></th>
<th>Indian N=522</th>
<th>Non-Indian N=202</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons with a high tendency to use services for children</td>
<td>215 (41)</td>
<td>22 (11)</td>
<td>62.95*</td>
</tr>
<tr>
<td>Reported utilization for children within a twelve month period</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children with one or more - physical examination</td>
<td>78 (15)</td>
<td>57 (28)</td>
<td>16.92*</td>
</tr>
<tr>
<td></td>
<td>126 (24)</td>
<td>26 (13)</td>
<td>11.15*</td>
</tr>
</tbody>
</table>

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence.

* significant score

\textsuperscript{3} for index see Appendix C-1

Tendency to use services for children was measured by asking the person responding whether they would seek care for the children if certain symptoms were present. From the yes or no answers, an index
was developed. The results are shown in Table 35, along with the reported use of medical care for children. There are discrepancies between the reported tendency to use services and the actual use. One may speculate that in this area of questioning there could be a tendency for the adult to portray the image of a 'good' mother or a concerned guardian of the children.

To further assess the reaction of adults to health problems a series of questions were asked as to the action taken if a health problem was recognized. The answers to these hypothetical questions are given in Table 36. Approximately 50 per cent of the Indians and the non-Indians reported that they would seek a doctor's care first; more non-Indians than Indians would consult neighbours, family or some one else other than a health worker. Over 50 per cent more Indians than non-Indians said they would give self medication.

In comparing these data with the responses given in answer to specific questions on actual utilization there are also discrepancies. Although both Indians and non-Indians reported that they would seek a doctor's help at approximately the same rates (Table 36), non-Indians had the higher rate of visits to doctors (Table 13 and 14). The non-Indians also reported a higher use of non-prescribed drugs (Table 23). Data in Table 36 do not correspond with the reported tendency to seek care for psycho-somatic problems (Table 33). These data indicate a higher tendency for Indians to seek care than non-Indians. This discrepancy in the data may be a result of the type of questions asked. Answers to questions requesting information on specific actions may be more reliable than answers to hypothetical questions appear to be. Answers to hypothetical questions
appear to be more reliable when the questions are specific rather than general.

Table 36

HYPOTHETICAL BEHAVIOUR\(^3\) OF INDIANS AND NON-INDIANS 15 YEARS AND OVER FOR HEALTH PROBLEMS ANSWERS TO GENERAL, NOT SPECIFIC QUESTIONS

Percentages enclosed in brackets are calculated on the total for sex group.

<table>
<thead>
<tr>
<th></th>
<th>Indian</th>
<th>Non-Indian</th>
<th>Indian &amp; Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male N=185</td>
<td>Male N=215</td>
<td>M. &amp; F. N=387</td>
</tr>
<tr>
<td></td>
<td>Female N=202</td>
<td>Female N=198</td>
<td>N=415</td>
</tr>
<tr>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Persons who would</td>
<td>91 (49)</td>
<td>100 (49)</td>
<td>112 (52)</td>
</tr>
<tr>
<td>-seek doctor's help</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-consult informal</td>
<td>3 (2)</td>
<td>6 (3)</td>
<td>26 (12)</td>
</tr>
<tr>
<td>health system</td>
<td></td>
<td></td>
<td>22 (11)</td>
</tr>
<tr>
<td>-give self medica-</td>
<td>51 (28)</td>
<td>56 (28)</td>
<td>23 (11)</td>
</tr>
<tr>
<td>tion</td>
<td></td>
<td></td>
<td>22 (11)</td>
</tr>
<tr>
<td>-wait for develop-</td>
<td>32 (17)</td>
<td>32 (16)</td>
<td>49 (23)</td>
</tr>
<tr>
<td>ment or recovery</td>
<td></td>
<td></td>
<td>52 (26)</td>
</tr>
<tr>
<td>-other</td>
<td>8 (4)</td>
<td>8 (4)</td>
<td>5 (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 (2)</td>
</tr>
</tbody>
</table>

Chi square tests were calculated for the data in each category of behaviour for the Indian and non-Indian male and female groups. All tests were significant beyond the 5 per cent level of confidence except for "seeking doctor's care" and the 'other' categories.\(^4\) for questions on which table is based see Appendix F-6 numbers (5) and (6)

Current research has established a positive correlation between smoking and health, although controversies still exist as to how
smoking contributes to specific diseases.\textsuperscript{12,13} It is generally believed by many health workers that the Indians are heavy smokers.

Table 37

SMOKING HABITS OF INDIANS AND NON-INDIANS 15 YEARS AND OVER

Percentages enclosed in brackets are calculated according to the numbers in each sex group.

1. Non-Smokers

<table>
<thead>
<tr>
<th></th>
<th>Indian</th>
<th>Non-Indian</th>
<th>Indian</th>
<th>Non-Indian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>N</td>
<td>185</td>
<td>202</td>
<td>215</td>
<td>198</td>
</tr>
<tr>
<td>Persons who</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-never smoked</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>regularly</td>
<td>32</td>
<td>[17]</td>
<td>77</td>
<td>[36]</td>
</tr>
</tbody>
</table>

2. Smokers

<table>
<thead>
<tr>
<th></th>
<th>Indian</th>
<th>Non-Indian</th>
<th>Indian</th>
<th>Non-Indian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>No.</td>
<td>133</td>
<td>144</td>
<td>76</td>
<td>59</td>
</tr>
<tr>
<td>Persons who</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-smoke one or more cigarettes per day</td>
<td>(72)</td>
<td>(56)</td>
<td>(35)</td>
<td>(30)</td>
</tr>
<tr>
<td></td>
<td>247</td>
<td>135</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi square test - Indian and Non-Indian $M=12.05*$

Chi square with 1 df requires 3.84 for significance at the 5% level of confidence.

* Significant test.

Table 37 indicates that there is a significantly higher percentage of non-smokers among the non-Indian population than among the Indians.

Sixty-one per cent of the non-Indian women had never smoked regularly. Two per cent of the non-Indian men had given up smoking as compared to 9 per
cent of the women. The highest percentage of smokers is found among
the Indian men.

Table 38

INDIANS AND NONINDIANS 15 YEARS AND OVER WHO SMOKE, AND NUMBER OF CIGARETTES
SMOKED PER DAY

Percentages enclosed in brackets are calculated on the number of persons
who smoke one or more cigarettes per day.

<table>
<thead>
<tr>
<th></th>
<th>Indian</th>
<th>Non-Indian</th>
<th>Indian</th>
<th>Non-Indian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Persons who</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>smoke one or</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>more per day</td>
<td>N=133</td>
<td>N=144</td>
<td>N=76</td>
<td>N=59</td>
</tr>
<tr>
<td>No. %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persons who smoke</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) 1-14 cigarettes</td>
<td>108(81)</td>
<td>105(92)</td>
<td>37(49)</td>
<td>26(61)</td>
</tr>
<tr>
<td>per day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) 15 or more</td>
<td>25(19)</td>
<td>9(08)</td>
<td>39(51)</td>
<td>23(39)</td>
</tr>
<tr>
<td>cigarettes per</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi square (1) and (2) M= 24.07  F= 24.92*

Chi square with 1 df requires 3.84 for significance at the 5% level of
confidence.
* Significant test.

The evidence indicates that, although the per cent of Indians
reporting smoking one or more cigarettes per day is higher than for
non-Indians, the non-Indians have a higher rate of heavy smokers
especially on the part of the men when measured by those who smoke
more than 15 cigarettes per day (Table 38). The inadequate lower
income rates for Indians (Table 39) may be a deterrent. Although
more Indians than non-Indians smoke one or more cigarettes per day
a significantly higher percentage of heavy smokers is found among the non-Indians both male and female. Fourteen per cent of the Indians as compared with 46 per cent of the non-Indians smoke 15 or more cigarettes per day.

Tables 39 and 40 set forth the data on two socio-economic variables. These are the adequacy of income as measured by the perception of "enough to meet expenses" and the language spoken in the home as an indicator of the level of integration on the part of the Indians into the dominant society.

Table 39

INDIANS AND NON-INDIANS 15 YEARS AND OVER BY PERCEPTION OF ADEQUACY OF INCOME

Percentages enclosed in brackets are calculated according to numbers in each age group.

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian N=239</th>
<th>Non-Indian N=218</th>
<th>Indian N=145</th>
<th>Non-Indian N=195</th>
<th>Indian N=389</th>
<th>Non-Indian N=413</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 - 44 yrs</td>
<td>70(29)</td>
<td>144(60)</td>
<td>42(28)</td>
<td>153(78)</td>
<td>112(29)</td>
<td>302(73)</td>
</tr>
</tbody>
</table>

Table 39 indicates that a significantly higher percentage of Indians than non-Indians consider their income as inadequate to meet expenses. Forty-four per cent more of the non-Indians feel that their income is adequate.

To what intent are the Indians integrated into the non-Indian society? If it were measured by the rate of English only spoken in the homes (Table 40), the answer from the data would be on the negative side.
Table 40

LANGUAGE SPOKEN IN THE HOME BY INDIANS AND NON-INDIANS 15 YEARS AND OVER

Percentage enclosed in brackets are calculated according to numbers in each age group.

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Indian</th>
<th>Non-Indian</th>
<th>Indian</th>
<th>Non-Indian</th>
<th>Indian</th>
<th>Non-Indian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>15 - 44 years</td>
<td>5(02)</td>
<td>191(88)</td>
<td>2(01)</td>
<td>160(82)</td>
<td>7(02)</td>
<td>351(85)</td>
</tr>
<tr>
<td>&gt; 44 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 years and over</td>
<td>88(37)</td>
<td>1(0.5)</td>
<td>85(59)</td>
<td>7(04)</td>
<td>173(45)</td>
<td>8(02)</td>
</tr>
</tbody>
</table>

In the 15-44 age group only 39 per cent speak English or Indian in the home. The other 61 per cent speak both English and Indian. This indicates the influence of the education system.

The patterns of medical utilization of the Indians and non-Indians and factors contributing to their use or non-use have been examined in some detail. The first hypothesis stated that the Indians utilize services at a lower rate than the non-Indians but that their need is greater as measured by their patterns of morbidity. Tables 41 to 43 present a comparison in summary form between Indians and non-Indians of elements included in the study of the patterns of medical care.

The comparisons are presented as a percentage and although the data are not of a nature for which a sign test can be applied the direction of the difference between the percentages are useful.
indicators for support or non-support of hypothesis one and are employed later in this study in the testing of hypothesis two and four.

Table 41

COMPARISON BETWEEN INDIANS AND NON-INDIANS OF REPORTED UTILIZATION OF MEDICAL SERVICES

Percentages are calculated on total sample populations. The direction of the differences between the two percentages is indicated.

<table>
<thead>
<tr>
<th>Percentage reporting</th>
<th>Indian N=909</th>
<th>Non-Indian N=615</th>
<th>Direction of Difference of Percentages Ind.--Non. Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td>-having particular doctor</td>
<td>43%</td>
<td>92%*</td>
<td>+</td>
</tr>
<tr>
<td>-one or more doctors visits within a twelve month period</td>
<td>29%</td>
<td>36%*</td>
<td>+</td>
</tr>
<tr>
<td>-one or more dentists visits within a twelve month period</td>
<td>20%</td>
<td>39%*</td>
<td>+</td>
</tr>
<tr>
<td>-one or more hospital admission within a twelve month period</td>
<td>27%</td>
<td>20%*</td>
<td>-</td>
</tr>
<tr>
<td>-a test for vision within a twelve month period</td>
<td>18%</td>
<td>30%*</td>
<td>+</td>
</tr>
<tr>
<td>-taking one or more prescribed drug within a two day period</td>
<td>25%</td>
<td>30%</td>
<td>+</td>
</tr>
</tbody>
</table>

* Chi square or 't' tests calculated for differences and shown on the table presenting details of utilization are significant at the 5% level of confidence.
Table 42

COMPARISON BETWEEN INDIANS AND NON-INDIANS
OF REPORTED MORBIDITY

Percentages are calculated on totals indicated in table. The direction of the differences between the two percentages is indicated.

<table>
<thead>
<tr>
<th></th>
<th>Indians N=909</th>
<th>Non-Indians N=615</th>
<th>Direction of Differences of Percentages Ind. and Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of all persons reporting one or more sick days within a two week period</td>
<td>17%</td>
<td>15%</td>
<td>-</td>
</tr>
<tr>
<td>Activity limitations within a two week period</td>
<td>2%</td>
<td>6%</td>
<td>+</td>
</tr>
<tr>
<td>Other health problems within a two week period</td>
<td>5%</td>
<td>15%</td>
<td>+</td>
</tr>
<tr>
<td>Percentage of persons 15 years and over reporting</td>
<td>N=387</td>
<td>N=413</td>
<td></td>
</tr>
<tr>
<td>-Chronic illness</td>
<td>18%</td>
<td>23%</td>
<td>+</td>
</tr>
<tr>
<td>-Physical impairment or handicap</td>
<td>15%</td>
<td>11%</td>
<td>-</td>
</tr>
<tr>
<td>-Unable to carry on regular duties because of physical impairment</td>
<td>10%</td>
<td>1%*</td>
<td>-</td>
</tr>
<tr>
<td>-Visual impairment</td>
<td>51%</td>
<td>60%</td>
<td>+</td>
</tr>
<tr>
<td>-Half teeth missing and no false teeth</td>
<td>34%</td>
<td>8%*</td>
<td>-</td>
</tr>
</tbody>
</table>

* Chi square or t' tests calculated for differences and shown on the table presenting the details of the morbidity are significant at the 5% level of confidence.
For the data in Table 41 on utilization of medical services to support the first part of hypothesis one, all the tests for differences would need to be significant at the 5 per cent level and all the signs indicating the direction of differences, positive. The one negative sign for hospital admissions, indicates that the percentage of utilization by the Indians was higher than that for non-Indians. The difference is a significant one. Although the test of differences between the two populations in utilization of prescribed drugs was not significant the direction of the difference is positive.

Table 42 presents the comparison of morbidity between the Indians and non-Indians. For the data in Table 42 to support the second part of hypothesis one, that the Indians will have a greater need for services as measured by morbidity, the tests for the differences would need to be significant and all the signs negative. The signs indicate that the hypothesis is supported by only 50 per cent of the measurements of morbidity. Two of these are supported by significant tests.

The high rates of hospital admissions and longer stay indicate a higher rate of morbidity for Indians. Tendency to play the sick role as measured by a high dependency on illness (Table 43) can be considered as an indicator of a state of mental malaise. The Indians had a higher percentage reporting dependency on illness.

Although all the data in Tables 41 and 42 do not give full support to the hypothesis, there is sufficient evidence showing that it should not be rejected. The data in Table 43, although not directly concerned in the support of hypothesis one, are presented
here as supportive information and also for testing of other hypothesis later in the chapter.

Table 43

COMPARISON BETWEEN INDIANS AND NON-INDIANS 15 YEARS AND OVER BY ATTITUDES

Percentages are calculated on the totals of adults in each sample population. The direction of the differences between the percentages are indicated.

<table>
<thead>
<tr>
<th>Percentage of persons who manifest</th>
<th>Indians</th>
<th>Non-Indians</th>
<th>Direction of Differences Ind. and Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a low scepticism towards medicine</td>
<td>60%</td>
<td>40%*</td>
<td>-</td>
</tr>
<tr>
<td>a low scepticism towards medical doctors</td>
<td>12%</td>
<td>6%*</td>
<td>-</td>
</tr>
<tr>
<td>a low anxiety</td>
<td>35%</td>
<td>52%*</td>
<td>+</td>
</tr>
<tr>
<td>a low dependence on illness</td>
<td>36%</td>
<td>40%*</td>
<td>+</td>
</tr>
<tr>
<td>a high tendency to use services for somatic problems</td>
<td>53%</td>
<td>31%*</td>
<td>-</td>
</tr>
<tr>
<td>a high tendency to use services for psycho-social problems</td>
<td>29%</td>
<td>21%</td>
<td>-</td>
</tr>
</tbody>
</table>

*Chi square tests calculated for differences and shown on the table presenting the details of attitudes are significant at the 5% level of confidence.
One feature of utilization of medical care among the non-Indians is worthy of note. This is the higher rate of utilization of doctors by the women between 45 and 64 years of age. This group also reported a higher rate of "other health" problems and were the highest user of non-prescribed drugs. The actions of the non-Indian women in this group parallel the 'average' American woman who is portrayed in literature as having considerably more days of disability and use the physician's services at a higher rate than men.

The findings that the Indians manifest different patterns of utilization from the non-Indians, even though they have access to all services open to the non-Indian confirms the impression that there are forces involved in utilization other than availability of conventional services.

The Indians' pattern of utilization of health services parallels in most respects that portrayed in literature as belonging to the disadvantaged - the lower socioeconomic non-white minorities. Among the similar patterns are a higher rate of doctor's visits that are hospital based, a higher utilization of hospital services, and a lower rate of utilization of doctors and dentists. Similar too are the attitudes towards the purveyors of health care and towards themselves and their own morbidity. They perceive similar barriers between themselves and the availability of the services even though in the eyes of the producers of health care, all barriers have been removed.

Two features in the comparison of patterns of utilization stand out clearly, one is the higher utilization of hospital services by
the Indians as measured by their contributions to hospital days and a greater tendency for the Indian to play the sick role. These are not unexpected findings but both require comment.

One factor contributing to the high rate of hospitalization of the Indian children may be the rate of rapid increase of the Indian population. The heavy responsibility placed on the mother, the fatigue of child bearing and the pressure of caring for many small children often lead to discouragement and therefore neglect. Social statistics suggest that this happens all too frequently on the reserves. An extreme case of family disintegration is portrayed in a letter to the editor of the Native Voice - "Opinion No Other Choice" (see Appendix E2). This is one side of Indian life as seen through the eyes of an Indian woman. During the data collection evidences of abandoned children were seen and in some homes, a large family of small children was left in the care of a teenager or grandparents, usually the grandmother. Another factor that may be influencing hospitalization is the availability of a hospital in the area for the exclusive use of Indians. The data on the use of the Indian and the non-Indian hospitals over a period of three months (see Table 4) indicate that 33 per cent of the admissions were to the Indian hospital in North Battleford. The University Hospital in Saskatoon was not included in the non-Indian hospitals from which the data were collected, but many Indians are referred to the University Hospital. This is a teaching hospital or a hospital in which medical students are trained.

The report of the Royal Commission on The Health Services in referring to the training of health personnel stated that the train-
ing of doctors depend on a low income indigent group to provide the essential experience in public wards and in out-patient clinics. Indian patients may be providing this experience and influencing the length of stay.

The higher tendency for Indians to play the sick role as manifested by data on the dependency on illness, may be a result of their prolonged state of dependency on the Federal Government for many of their needs, and their social isolation on reserves. Playing the sick role exempts a person from what might be considered normal obligations and to a large measure for his own conditions. The sick role in Western achievement-oriented society is defined as undesirable but may be more acceptable and even motivationally contagious in a group such as Indians who are in a state of dependency. Unwittingly health professionals may be contributing to the dependency of the Indian and thus reinforcing their tendency to play the sick role. This in turn may have an effect on the length of hospital stay.

The financial situation may influence the seeking of health care by the Indians for certain conditions. The low level of income of the people on the reserve (see Appendix B1-8) and the higher percentage of persons viewing their income as "less than," or "much less than enough to meet expenses" (Table 39) place the Indians at a greater financial disadvantage than the non-Indians. The four areas in which finances play a part in the health care of Indians are replacement of teeth, provision of glasses, prescribed drugs and the provision of transportation to the source of health care. The latter can be expensive for them if it is only paying a neighbour for gas
for his car. Some bands are provided with a grant for transportation of persons with doctors' or dentists' appointments, in case of emergencies and other illnesses. For those who want to see the doctor and do not have appointments, who defines the person as ill and needing transportation? It is agreed that the health of the poor, and this includes Indians, cannot be improved initially until their incomes are made adequate or elevated above the poverty line. Health care is not a commodity high on the priority list of the Indians for spending part of the small income they have. In spite of the fact that the Indians' answers to the hypothetical questions indicate that they would seek medical care for health problems, their actual utilization is not as high as the non-Indians. A higher percentage of non-Indians saw the services as more readily available and had a higher utilization of both doctors and dentists.

B. Comparison Of Patterns Of Medical Care Utilization Among Indians

In this section data from the Indian sample are examined according to three categories a) sociological status, b) the geographical location of the reserve and c) the organizational structure within the reserve. Not all the variables viewed in Section A are used here, but it is believed that the data presented will be sufficient to determine any influence of the measure being studied, in the pattern of medical care.

a. Comparison of Patterns of Medical Care Utilization According to Sociological Status

There is a tendency on the part of many people to class Indians as one homogeneous group, all manifesting the same attitudes and actions. From data presented in this study confirmation is given
that one of the variances within the Indian population can be identified as a status differential. Table 44 presents the percentage distribution in each of the nine status levels.

Table 44
PERCENTAGE DISTRIBUTION OF THE INDIAN SAMPLE POPULATION ACCORDING TO THE SOCIOLOGICAL STATUS INDEX DEVELOPED FOR THIS STUDY BASED ON THE ASCRIBED AND ACHIEVED STATUS OF THE HEAD OF THE HOUSEHOLD
The nine status levels are shown in the upper right hand corner of each cell. The percentages are calculated with the total sample population.

<table>
<thead>
<tr>
<th>Ascribed Status</th>
<th>Low</th>
<th>Med.</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>15%</td>
<td>14%</td>
<td>3%</td>
</tr>
<tr>
<td>Med.</td>
<td>8%</td>
<td>33%</td>
<td>10%</td>
</tr>
<tr>
<td>High</td>
<td>0</td>
<td>10%</td>
<td>7%</td>
</tr>
</tbody>
</table>

In noting the characteristics of the status structure (Table 44) 15 per cent of the population is in level one and only 7 per cent in level nine. These are the two extremes. Level one are those who are
of low ascribed status in the community and by Western achievement oriented standards are low achievers. Level nine are those with highly ascribed position of prestige and leadership and are high achievers within their own society. Level five are those who are classed as medium in both ascribed and achieved statuses. This level constitutes 33 per cent of the total population. These three levels of one, nine and five are congruent levels—or non-conflict levels. There are two groups of conflict or incongruent status levels. One group is composed of levels two, four, six and eight where each level is a combination of medium in one status and high or low in the other. These make up 42% of the population. The other incongruent group is made up of the two levels of dissonance, using the term to mean a departure from the expected levels three and seven. No persons fell into the level three, the low ascribed and the high achieved, but 3 per cent are found in level seven. These are members of families that have achieved a high measure of material success and have not or are not participating in the leadership in the community in the traditional manner within the kin group or within the existing community organizations.

In examining the population status structure from another view, that of low, medium and high within the achieved and ascribed categories, the low achieved (levels one, two and three) constitute 23 per cent, the medium achieved (four, five and six) with 57 per cent and the high achieved (seven, eight and nine), 20 per cent. The percentage distribution of the population in the two extremes differ by only 3 per cent. The structure of the ascribed status gives a
slightly different picture. The low ascribed status levels (one, four and nine) constitute 32 per cent of the population, the medium levels (two, five and eight) 51 per cent, and the high levels (three, six and nine) 17 per cent. The percentage distribution of the population in the two extremes in the ascribed structure differ by 15 per cent. It would appear that those who do strive and reach beyond the low achieved level are recognized within the society as playing some part in either the leadership from the traditional point of view or in the organizations within the community.

The question now is do these structural differences affect the utilization of health services and factors contributing to their use or non use. Tables 45-50 present the data according to sociological status.

1. Utilization of Health Services

The first part of hypothesis two states that the social position a person holds within the society influences the utilization of medical care. Table 45 sets forth the utilization of health services according to the ascribed status of the head of the household. The data indicated that the ascribed status does have an influence on whether or not persons selected a particular doctor from whom they would seek care. Only 36 per cent of those in the low category reported having a particular doctor as compared with 46 per cent in the medium and 48 per cent in the high categories.

The use of doctors services follows a similar pattern although the medium ascribed group has the highest rate and exceed the low category by 6 per cent and the high by one per cent. The medium category has
Table 45

utilization of health services by indians

according to the ascribed status

of the head of the household

Percentages are calculated on the numbers in each of the categories

of ascribed status.

<table>
<thead>
<tr>
<th>Status Levels</th>
<th>Low N=290</th>
<th>Med. N=465</th>
<th>High N=153</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.7</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Percentage of persons reporting

- Having a particular doctor 36% 46% 48%
- One or more doctor's visits within a two week period 7% 13% 12%
- Dentist's visits within a month 3% 2% 4%
- Hospital admission within twelve months 23% 29% 25%
- Average no. of hospital days per admission 3.5 4.4 3.6

the lowest per cent of dentist's visits within a month. The persons

with medium ascribed status made a greater contribution to hospital admissions by 6 per cent over the low and 4 per cent over the persons in high ascribed status. A similar result is seen in the average-number of hospital days per admission. In an over-view of the
utilization of health services according to the ascribed status of the head of the household two levels seem to predominate, the division being between the low and medium levels.

Table 46 compares the utilization of health services by persons divided according to the achieved status of the head of the household.

Table 46

UTILIZATION OF HEALTH SERVICES BY INDIANS ACCORDING TO THE ACHIEVED STATUS OF HEAD OF THE HOUSEHOLD

Percentages are calculated on the number of persons in each category of achieved status.

<table>
<thead>
<tr>
<th>ACHIEVED STATUS OF HEAD OF HOUSEHOLD</th>
<th>Low</th>
<th>Med.</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=909</td>
<td>N=218</td>
<td>N=514</td>
<td>N=187</td>
</tr>
<tr>
<td>Status Levels</td>
<td>1.2.3</td>
<td>4.5.6</td>
<td>7.8.9</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Persons reporting

- Having a particular doctor 19% 49% 53%
- One or more doctor's visits within a two week period 8% 11% 13%
- Dentist's visits within a month 4% 2% 4%
- Hospital admission within a twelve month period 25% 27% 28%
- Average number of hospital days per person 4.7 3.7 4.0

In Table 46, the data indicate that 53 per cent of persons in the high achieved status group reported having a particular doctor as compared with 19 per cent of the low. Doctor's visits within a two-week period follow a similar pattern, but the differences in the percentages are
not so marked. Persons with medium achieved status visited dentists within a month's period at a lower rate than persons in either the low or the high levels. This is a similar pattern to that noted in the ascribed status. The rates of hospital admission increase slightly with an increase in status. There are 2 per cent difference between low and medium and 1 per cent between medium and high status levels. The low status persons have the highest average number of hospital days within a twelve month period. In utilization of health services according to the achieved status of the head of the household, the beginning of three distinct divisions are indicated as noted in the utilization of doctors and in hospital admissions. In two of the variables listed, persons having a particular doctor, and hospital admissions, persons in the high achieved status had significantly higher rates than those in the other two levels.

2. Morbidity

Tables 47 and 48 present morbidity patterns of the Indians using two criteria, sick days within a two-week period and missing and replaced teeth, and are according to the achieved and ascribed status of the head of the household. There is a marked similarity in the way in which morbidity is reported by persons in the two status divisions.
Table 47

MORBIDITY OF INDIANS AS MEASURED BY SICK DAYS WITHIN A TWO WEEK PERIOD, AND NEED FOR DENTAL CARE AS MEASURED BY MISSING AND REPLACED TEETH ACCORDING TO ASCRIBED STATUS OF HEAD OF THE HOUSEHOLD.

Percentages are calculated on the number of persons in each of the levels of ascribed status.

Ascribed Status of Head of Household

<table>
<thead>
<tr>
<th>Status Levels</th>
<th>Low</th>
<th>Med.</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Persons N=906</td>
<td>1.4.7</td>
<td>2.5.8</td>
<td>3.6.9</td>
</tr>
<tr>
<td>N=290</td>
<td>N=465</td>
<td>N=153</td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Persons reporting

-One or more sick days within a two week period

<table>
<thead>
<tr>
<th>Adults only N=387</th>
<th>N=117</th>
<th>N=209</th>
<th>N=61</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Percentage of persons with half their teeth missing and no false teeth

<table>
<thead>
<tr>
<th></th>
<th>47%</th>
<th>30%</th>
<th>25%</th>
</tr>
</thead>
</table>

The influence of status is minimal as measured by sick days within the last two weeks. Persons in the medium status group have one per cent more sick days than those in the low category and 5 per cent more than those in the high group. A greater influence is seen in the rate for adults with need for replacement of teeth. The percentage of persons not having teeth replaced decreases as status increases.
Table 48

MORBIDITY OF INDIANS AS MEASURED BY SICK DAYS WITHIN A TWO WEEK PERIOD AND NEED FOR DENTAL CARE AS MEASURED BY MISSING AND REPLACED TEETH ACCORDING TO ACHIEVED STATUS OF HEAD OF THE HOUSEHOLD

Percentages are calculated on the number of persons in each of the levels of achieved status.

<table>
<thead>
<tr>
<th>ACHIEVED STATUS OF HEAD OF HOUSEHOLD</th>
<th>Low</th>
<th>Med.</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Levels</td>
<td>1.2.3</td>
<td>4.5.6</td>
<td>7.8.9</td>
</tr>
<tr>
<td>All Persons N=909</td>
<td>N=208</td>
<td>N=514</td>
<td>N=187</td>
</tr>
<tr>
<td>Persons reporting one or more sick</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>days within a two week period</td>
<td>18%</td>
<td>19%</td>
<td>17%</td>
</tr>
<tr>
<td>Adults only N=387</td>
<td>N=82</td>
<td>N=222</td>
<td>N=83</td>
</tr>
<tr>
<td>Percentage of persons with half</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>their teeth missing and no false</td>
<td>51%</td>
<td>31%</td>
<td>25%</td>
</tr>
<tr>
<td>teeth</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 48 indicates that the achieved status has much the same influence on morbidity as the ascribed status.
Table 49

ATTITUDES OF INDIANS TOWARDS HEALTH CARE ACCORDING TO ASCRIBED STATUS OF
HEAD OF THE HOUSEHOLD

Percentages are calculated on the numbers in each of the ascribed status
categories.

<table>
<thead>
<tr>
<th>Status Levels</th>
<th>Low</th>
<th>Med.</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults only N=387</td>
<td>1.4.7</td>
<td>2.5.8</td>
<td>3.6.9</td>
</tr>
<tr>
<td></td>
<td>N=117</td>
<td>N=209</td>
<td>N=61</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Percentage of persons manifesting
-A high* dependency on illness 30% 31% 15%
-A high* tendency to use services for psycho-social problems 26% 32% 23%
-A low* scepticism towards medicine 15% 9% 8%

| Children only N=522 | N=126 | N=292 | N=104 |
|                     | 100%  | 100%  | 100%  |

-A high* tendency to use services for children 43% 47% 25%

* For indices see Appendix C-1

Where the head of the household had a high ascribed status only 15 per cent manifested a high dependency on illness, as compared with 31 per cent of the medium and 30 per cent of the lower status levels. In other words those in the high ascribed status levels showed a lower tendency to play the sick role. A similar pattern appears to exist in the use of services for children. The group which demonstrates the
highest tendency to play the sick role also tends to make a higher use of services for children. The high ascribed status group also showed a lower tendency to use services for psycho-social problems. The differences are not as marked as in dependency on illness. The medium ascribed status group appears to use services for psycho-social problems more than both the low or high status groups. Only 8 per cent of the high ascribed status group manifest a low scepticism as compared with 15 per cent in the low status group. It appears that the higher the ascribed status the lower the scepticism.

Table 50

ATTITUDES OF INDIANS TOWARDS HEALTH CARE ACCORDING TO ACHIEVED STATUS OF HEAD OF THE HOUSEHOLD.

Percentages are calculated on the number in each of the achieved status categories.

<table>
<thead>
<tr>
<th>Achieved Status of Head of Household</th>
<th>Low</th>
<th>Med.</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults only N=387</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status Levels</td>
<td>1.2.3</td>
<td>4.5.6</td>
<td>7.8.9</td>
</tr>
<tr>
<td>N=82</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Percentage manifesting
-A high dependency* on illness
30% 30% 20%

-A high tendency* to use service for psycho-social problems
32% 28% 27%

-A low scepticism* towards medicine
11% 11% 7%

Children only N=522
N=126 N=292 N=104
100% 100% 100%

-High tendency* to use services for children
44% 41% 38%

* For indices see Appendix C-1
Achieved status (Table 50) has very much the same influence on attitudes as ascribed status. Persons in the high achieved categories (as in the ascribed) have a lower tendency to play the sick role. This raises a provocative question. Can the satisfaction of a high ascribed status or high achievement remove the need or desire to play the sick role? Both high status groups relate to leadership role. Other means of gaining attention are not then required. This influence of achieved status on the tendency to seek services for children approximates the influence on the tendency to play the sick role. Are higher status people less concerned about their children, or do they feel more capable of coping with illness of the children in the home? Those in the higher achievement categories have better homes and a higher education. Since there is much overlapping in the two categories, those in the high ascribed categories should also be better equipped to look after their children. The effect of ascribed status on the utilization of health services was not always clear. Two divisions apparently predominate. In the achieved status there was the beginning of three divisions which were clear for some but not for others. Ambivalence is evident in several of the status categories. This is to be expected as the Indians are a group in transition. They are in conflict between two value systems and this is known to create a high degree of personal and group anxiety. For some, anxiety creates a physical or psychological breakdown; for others, it may mean erratic behaviour, and over stressing one value system at the expense of the other.

Data would indicate that the high risk group as far as physical, mental and social health is concerned is to be found mostly among the low ascribed and achieved categories. As mentioned earlier, there are some high achievers
(status level 7) among the low ascribed group. Only five families fell into this group. Among them were found the descendents of Metis who at one time were accepted into the Band but not into the leadership structure. When collecting data on the head of one of these households one Indian informant said "But he's not an Indian." When asked if he were a member of the band, the reply was "Yes, but he's Metis." These people in spite of lack of acceptance by the community had stayed on the reserve and achieved material success. (See letter to the editor of The NATIVE PEOPLE - "The Drunken Indian" Appendix E-2, for an example of community pressure.) The data were also examined for differences in use of medical care between congruent and incongruent status groups. No differences worthy of noting here were discovered.

Hypothesis two (status influences the way in which people seek medical care) was tested by comparisons between the lowest and highest status levels (See Tables 51 to 53). Level one where the head of the household has a low ascribed and a low achieved status is contrasted with level nine where the head of the household has a high status in both achieved and ascribed indices. Hypothesis two more specifically states that the higher the status, the more the patterns of medical care will resemble those of the population in the surrounding area. In order to test the hypothesis (when stated in these terms) the direction of the differences between status level one and nine is shown beside the direction of difference between Indians and non-Indians.

In Table 51 contrasting status levels one and nine, the 't' scores of 6.50 shows a highly significant difference between the percentage of persons having a particular doctor. There is no significant difference between status levels one and nine in the way in which they visited the doctors or the dentists, but a higher use is indicated for level nine. The direction
of the difference between status levels one and nine for the first three measures of utilization of medical care are the same as those for the difference between the Indians and the non-Indians. In the utilization of hospitals as measured by persons with one or more admissions, the 't' score of 1.95 indicates a significant difference. Indians in status level nine are higher users of the hospital than those in level one.

Table 51

COMPARISONS OF UTILIZATION OF HEALTH SERVICES BY INDIANS ACCORDING TO STATUS LEVELS ONE AND NINE OF HEAD OF HOUSEHOLD

Percentages are calculated on the totals in each status level. The results of tests for significant differences are shown as well as a comparison of the direction of differences between the two reserves and the Indians and non-Indians.

<table>
<thead>
<tr>
<th>Status One</th>
<th>Status Nine</th>
<th>Direction of difference between status</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW in both</td>
<td>HIGH in both</td>
<td>Ind. &amp; Non-Ind.*</td>
</tr>
<tr>
<td>Low achieved and ascribed</td>
<td>High achieved and ascribed</td>
<td>(1 and 9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Persons reporting</th>
<th>N=135</th>
<th>N=64</th>
<th>'t' test</th>
</tr>
</thead>
<tbody>
<tr>
<td>+having a particular doctor</td>
<td>100%</td>
<td>100%</td>
<td>'t' test</td>
</tr>
<tr>
<td>-one or more doctor's visits within two weeks</td>
<td>20%</td>
<td>54%</td>
<td>6.50*</td>
</tr>
<tr>
<td>-one or more dentist's visits within a month</td>
<td>7%</td>
<td>11%</td>
<td>0.13</td>
</tr>
<tr>
<td>-one or more hospital admissions within a twelve month period</td>
<td>5%</td>
<td>6%</td>
<td>0.11</td>
</tr>
</tbody>
</table>

+ data taken from Table 41
't' with α df requires 1.960 for significance at the .05 level of confidence
* significant test

Indians in status level nine and non-Indians report a high percentage of persons having a particular doctor.
Table 52

COMPARISON OF MORBIDITY OF INDIANS AS MEASURED BY SICK DAYS WITHIN A TWO WEEK PERIOD AND NEED FOR DENTAL CARE AS MEASURED BY MISSING AND REPLACED TEETH ACCORDING TO STATUS LEVELS ONE AND NINE OF HEAD OF HOUSEHOLD.

Percentages are calculated on the total number in each status level. Tests for significant differences between the two status levels are shown as well as a comparison of the direction of the differences between the two status levels of the Indians and non-Indians.

<table>
<thead>
<tr>
<th>Status One</th>
<th>Status Nine</th>
<th>Comparison of the Direction of Differences of Percentages between Status (1 and 9) Ind. &amp; Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low in both achieved and ascribed</td>
<td>High in both achieved and ascribed</td>
<td>'t' test</td>
</tr>
<tr>
<td><strong>Adults and Children</strong></td>
<td>N=135</td>
<td>N=64</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Persons reporting -one or more sick days within two weeks</strong></td>
<td>20%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Adults only</strong></td>
<td>N=55</td>
<td>N=27</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Percentage reporting -more than half teeth missing and no false teeth</strong></td>
<td>30%</td>
<td>4%</td>
</tr>
</tbody>
</table>

+ signs taken from Table 42
't' with α df requires 1.960 for significance at the .05 level of confidence
* significant test

Table 52 gives a comparison between the two extreme levels of status according to morbidity patterns. Persons in status level nine had significantly lower morbidity as measured by one or more sick days in two weeks, and had a significantly lower per cent than those in status level one needing teeth replacement. In both measurements the morbidity...
patterns of status level nine resemble those of the non-Indians.

Table 53

COMPARISON OF ATTITUDES OF INDIANS 15 YEARS AND OVER INFLUENCING UTILIZATION OF HEALTH SERVICES ACCORDING TO STATUS LEVELS ONE AND NINE OF HEAD OF HOUSEHOLD

Percentages are calculated on the number of persons in each status level.

<table>
<thead>
<tr>
<th>Status One</th>
<th>Status Nine</th>
<th>Direction of Difference Between Status (1 and 9) Ind. &amp; Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low in both achieved and ascribed</td>
<td>High in both achieved and ascribed</td>
<td>'t' test</td>
</tr>
<tr>
<td>N=55</td>
<td>N=27</td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Persons reporting
- a high** tendency to manifest dependency on illness
  27% | 11% | 1.98* |
- a high tendency to use services for psycho-social problems
  13% | 5% | 0.36 |
- a low** tendency to manifest scepticism towards medicine
  20% | 8% | 0.54 |

't' Test with α df requires 1.960 for significance at the 5% level of confidence
* significant test
** for indices see Appendix C-1
+ In Table 43 this sign is shown as a plus but the measurement in this Table (53) is on the high indices and not the low for dependency on illness Status nine and the non-Indians both show a lower dependency on illness and are alike in this respect.

Status level nine has only 11 per cent with a high tendency to manifest a dependency on illness as compared with 27 per cent in status level one. A tendency to play the sick role is not indicated for level nine.
nor did the data indicate this for the non-Indians. The data show no significant differences between status levels one and nine in this scepticism towards medicine nor in their seeking care for psycho-social problems. The differences between percentages are in the same direction as the differences between the Indians and the non-Indians.

Although all the evidence does not support the hypothesis, there is sufficient evidence to accept the statement that status as measured by the sociological index developed for this study has an effect on the medical care patterns of the Indians in the sample population and, although the persons in level nine do not parallel the medical care profile of non-Indians exactly, they indicate more 'like' characteristics than unlike.

It was not expected that the Indians in the highest status level would share all the attitudes and actions of the non-Indians as the Indians are still isolated from the mainstream of the outside world by life on the reserve. What is confirmed is that there are differences in the Indian population and that the status both achieved and ascribed tend to separate people within the social structure.

In the comparisons between levels nine and non-Indians the non-Indians are classed as one homogeneous group. It is recognized that in the non-Indian population there will also be a status differential. The assumption in the hypothesis is that the communication is better between the Indians in the high status levels and the non-Indians. Through this contact the high status group have integrated into their own thinking some of the attitudes and values of the larger society.
(b) Comparisons of Utilization of Medical Care by Reserves According to Geographical Location.

Community factors influencing health action is an area of common interest to sociologists and public health workers. Some studies have stressed the importance of the social organization and the leadership structure of the community as an influence in the action taken for health problems both individually and collectively.14,15

In order to examine the data from the Indian sample and relate these to the community factors of geographic location and organization, the data are divided according to reserves and presented in Tables 54 to 58. A description of each reserve will be found in Appendix Bi-8.

1. Utilization

Hypothesis three states that the reserves geographically clustered tend to manifest similar patterns of utilization of health services and attitudes towards medical care. In order to test this hypothesis, comparisons were made between three pairs of reserves adjacent to each other, namely: one and two, five and six, and seven and eight. (See Figure IV, Chapter IV) The data for reserves three and four, although presented here, are not included in the comparisons as they are geographically isolated.

The data in Table 54 indicate that there are significant differences between reserves one and two in the perception of time to reach the nearest doctor. These differences may be due to the modes of transportation available to each household or to which doctors they consider to be the
TABLE 54

COMPARISONS OF PERCEPTION OF AVAILABILITY OF MEDICAL CARE FOR THREE PAIRS OF RESERVES ADJACENT TO EACH OTHER

Percentages are calculated on the number of persons on each reserve. The results of tests for significance are shown for each pair of reserves adjacent to each other.  

<table>
<thead>
<tr>
<th>Segments</th>
<th>1 N=107</th>
<th>2 N=167</th>
<th>test</th>
<th>3 N=83</th>
<th>4 N=153</th>
<th>test</th>
<th>5 N=124</th>
<th>6 N=37</th>
<th>test</th>
<th>7 N=135</th>
<th>8 N=83</th>
<th>test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to nearest doctor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-within 15 minutes</td>
<td>25 8</td>
<td>3.53*</td>
<td>24 27</td>
<td>13 18</td>
<td>1.22</td>
<td>17 15</td>
<td>0.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-more than 1 hour</td>
<td>26 43</td>
<td>2.28*</td>
<td>14 10</td>
<td>5 5</td>
<td>24 46</td>
<td>5.00*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place convenient</td>
<td>86 91</td>
<td>1.14</td>
<td>66 85</td>
<td>87 91</td>
<td>1.34</td>
<td>98 96</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours convenient</td>
<td>86 92</td>
<td>1.71</td>
<td>61 97</td>
<td>82 93</td>
<td>3.05*</td>
<td>96 96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

't' with α df requires 1.960 for significance at the .05 level of confidence
* significant test

† for location of reserves see figure IV

There are significant differences between reserves one and two in their perception of time to reach the nearest doctor.
TABLE 55

COMPARISON OF MORBIDITY AND UTILIZATION OF HEALTH SERVICES OF THREE PAIRS OF RESERVES
ADJACENT TO EACH OTHER

Percentages are calculated on the total number of persons on each reserve. The results of tests for significant differences are shown for each pair of reserves adjacent to each other.

<table>
<thead>
<tr>
<th>Reserve</th>
<th>Pair 1</th>
<th>Pair 2</th>
<th>&quot;t&quot;</th>
<th>Pair 3</th>
<th>Pair 4</th>
<th>&quot;t&quot;</th>
<th>Pair 5</th>
<th>Pair 6</th>
<th>&quot;t&quot;</th>
<th>Pair 7</th>
<th>Pair 8</th>
<th>&quot;t&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=906</td>
<td>N=107</td>
<td>N=167</td>
<td></td>
<td>N=80</td>
<td>N=57</td>
<td></td>
<td>N=124</td>
<td>N=57</td>
<td></td>
<td>N=135</td>
<td>N=83</td>
<td></td>
</tr>
<tr>
<td>Persons reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- one or more sick or restricted day within a two week period</td>
<td>22</td>
<td>20</td>
<td>0.46</td>
<td>26</td>
<td>20</td>
<td>18</td>
<td>16</td>
<td>0.14</td>
<td>23</td>
<td>13</td>
<td>2.86*</td>
<td></td>
</tr>
<tr>
<td>- one or more doctor's visits within a two week period</td>
<td>18</td>
<td>13</td>
<td>1.14</td>
<td>22</td>
<td>12</td>
<td>10</td>
<td>0</td>
<td>5.62*</td>
<td>10</td>
<td>2</td>
<td>3.72*</td>
<td></td>
</tr>
<tr>
<td>- one or more dentist's visits within a twelve month period</td>
<td>20</td>
<td>13</td>
<td>1.38</td>
<td>19</td>
<td>18</td>
<td>26</td>
<td>21</td>
<td>0.90</td>
<td>30</td>
<td>24</td>
<td>1.41</td>
<td></td>
</tr>
<tr>
<td>- one or more hospital admission within a twelve month period</td>
<td>19</td>
<td>22</td>
<td>0.57</td>
<td>31</td>
<td>36</td>
<td>31</td>
<td>29</td>
<td>0.37</td>
<td>21</td>
<td>22</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>- a test for vision within a twelve month period</td>
<td>8</td>
<td>27</td>
<td>4.10*</td>
<td>16</td>
<td>14</td>
<td>26</td>
<td>26</td>
<td>-</td>
<td>21</td>
<td>12</td>
<td>2.71*</td>
<td></td>
</tr>
<tr>
<td>- taking one or more prescribed drugs within a two day period</td>
<td>14</td>
<td>22</td>
<td>1.71*</td>
<td>23</td>
<td>17</td>
<td>9</td>
<td>0</td>
<td>4.72*</td>
<td>13</td>
<td>10</td>
<td>2.00*</td>
<td></td>
</tr>
<tr>
<td>- immunization within a year</td>
<td>22</td>
<td>40</td>
<td>4.22*</td>
<td>29</td>
<td>57</td>
<td>13</td>
<td>13</td>
<td>-</td>
<td>19</td>
<td>32</td>
<td>2.86*</td>
<td></td>
</tr>
</tbody>
</table>

't' with < df requires 1.960 for significance at the 5% level of confidence
* significant test
† for location of reserves see Figure IV

Not all the pairs of reserves being compared utilize health services at the same rate as evidenced by the significant 't' scores. The greatest number of significant differences are between reserves seven and eight.
'nearest'. Some families seek care at the Indian hospital or at the
doctors' clinic in North Battleford, others at Cutknife which is the
nearest town where a doctor resides. On the other hand, the reserves
are large and the population scattered. Some of the respondents lived
in the bush some distance from the main roads in the reserve. Their
perception of time to reach a doctor may differ but other variables
will have influenced the responses. Significant 't' scores were
found on comparing reserves seven and eight, and the same explanation
could be valid. With respect to convenience of time and place the
lowest percentage of persons giving positive answers is found on
reserve three. The people in this reserve are disgruntled, because
their nearest hospital is small and the doctor and the hospital
accommodate Indians only in case of emergencies and then transfer the
patients to North Battleford. Their low percentages of 66 and 61 per
cent for convenience of place and hours project their attitudes.
Although the 82 per cent score for reserve eight is not low it is
sufficiently lower than the 93 per cent of reserve seven to yield a
't' score of 3.05. The roads on this reserve are at times impassible.
Again some of the Indians like to combine a visit to the doctor with
a trip to town to do other business. The latter often takes priority.
Therefore when they are prepared to seek a doctor's care, the office
or clinic is closed except for emergencies.

The data in Table 55 yielded more significant 't' scores between
reserves than expected. The two reserves that show the least similarity
in patterns of utilization of health services are reserves seven and eight. For each service with the exception of hospitals the people on reserve number seven show the higher utilization.

None of the comparison show any significant differences in patterns of utilization of hospitals. The highest percentages were from reserves four with 36 per cent and three and five each with 31 per cent. It is worthy of note that the highest percentage of doctors' visits were made by reserve number three. This reserve showed the least satisfaction in the place and hours of doctor's services (Table 54). The data for reserve three also indicates a higher percentage of sick or restricted days. The lowest percentages of persons having doctors visits within a two week period are on reserves eight with two per cent and six with no doctor's visits.

The significant 't' scores for the differences in percentage of persons receiving immunization within a year are unexpected as each pair of reserves has the same field nurse who is the main source of supply of this service. Only two reserves being contrasted (five and six) had the same public health nurse during the data collection period. The other reserves were either without a nurse or had a change of nurses. The attitude to a new nurse and her attitude towards the people (which may differ between reserves) influence the size of clinics. Another contributing factor may be the number of families receiving immunization in the homes. On the other hand the difference may be due to the school children receiving immunization in the provincial schools that they attend. The differences in the test for vision between reserves one and two
and seven and eight may be due to the fact that the children who are in grades higher than Grade VII do not all attend the same provincial schools. In comparing the use of services by households (Table 56) the data for reserve six are worthy of note. No household had either a doctor's visit within a two week period or a dentist's visit within a month but every household had had one or more members admitted to a hospital. This reserve more than any other parallels the image of the lower socio-economic or the minority groups portrayed in literature. Characteristics of patterns of medical care for these groups were a low utilization of doctor's and dentist's services and high utilization of hospitals. Why should this be? One can only speculate. The Saulteaux are a different linguistic group. Not until they signed a treaty in 1954 did they have any schools on the reserve, and for some time sent back the welfare cheques. (See Appendix B-6). Their present hereditary chief is old and ill and has abandoned leadership. At the time of the data collection there was no effective leadership on the reserve. Any one of these or all could be contributing factors.

2) Morbidity

Morbidity as measured by the percentage of persons reporting one or more sick or restricted days within a two week period is shown as the first item in Table 55. The reserve with the lowest percentage is reserve eight, and the difference between the 23 per cent on reserve seven and the 13 per cent reported for reserve eight is significant with a 't' score of 2.86.
TABLE 56

INDIANS ON RESERVES IN THE STUDY AREA AND COMPARISONS OF THE UTILIZATION
OF HEALTH SERVICES OF HOUSEHOLDS BY THREE PAIRS OF RESERVES
ADJACENT TO EACH OTHER

Percentages are calculated on the total number of households on each reserve. The results of tests for significant differences are shown for each pair of reserves adjacent to each other.†

<table>
<thead>
<tr>
<th>Reserves</th>
<th>1</th>
<th>2</th>
<th>test</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>test</th>
<th>7</th>
<th>8</th>
<th>test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=19</td>
<td>N=23</td>
<td></td>
<td>N=17</td>
<td>N=22</td>
<td></td>
<td></td>
<td></td>
<td>N=15</td>
<td>N=15</td>
<td></td>
</tr>
<tr>
<td>Households reporting one or more</td>
<td>%</td>
<td>%</td>
<td>'t'</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>'t'</td>
<td>%</td>
<td>%</td>
<td>'t'</td>
</tr>
<tr>
<td>-doctor's visits within two weeks</td>
<td>42</td>
<td>61</td>
<td>1.22</td>
<td>47</td>
<td>63</td>
<td></td>
<td></td>
<td>4.76*</td>
<td>50</td>
<td>13</td>
<td>2.58*</td>
</tr>
<tr>
<td>-dentist's visits within a month</td>
<td>5</td>
<td>4</td>
<td>0.54</td>
<td>6</td>
<td>9</td>
<td></td>
<td></td>
<td>0.73</td>
<td>30</td>
<td>13</td>
<td>1.26</td>
</tr>
<tr>
<td>-hospital admissions within a year</td>
<td>68</td>
<td>65</td>
<td>0.18</td>
<td>76</td>
<td>81</td>
<td></td>
<td></td>
<td>1.74</td>
<td>85</td>
<td>80</td>
<td>0.34</td>
</tr>
</tbody>
</table>

't' with ≤df requires 1.960 for significance at the .05 level of confidence

* significant 't' score

† for location of reserves see Figure IV

Reserve six had no households with a visit to a doctor within a two week period or to a dentist within a month.
3. Attitude and Enabling Factors

What about attitude between adjacent reserves? Are they shared? One would expect to find few if any significant differences. Between reserves one and two (Table 57) the only significant difference is in the use of services for psycho-social problems. Indians in reserve one show a higher use by 8 per cent. Between these two reserves one could say most attitudes are shared. Reserve six indicates a significantly higher tendency to use services for somatic problems than reserve number five. These data do not correlate with the reported use of doctor's services (See Table 56). For reserve five, 10 per cent reported doctor's visits within a two-week period and reserve six reported no visits. In the tendency to manifest anxiety, reserve eight shows a significantly higher percentage than reserve seven. Although the 't' score of 1.60 is not significant, it does indicate a higher tendency for dependency in illness. In other words, a higher percentage of persons on reserve eight than on reserve seven would be inclined to play the sick role. Persons on reserve eight also have a lower scepticism towards medicine. The highest scepticism towards doctors is found on reserve seven. Some studies have indicated that there is correlation between education and scepticism towards doctors. Could education be an influencing factor here? If so, we would expect to find a significant difference in the rates of education between the two reserves. This is not the case as noted in Table 58 where data on grades completed are compared.
**TABLE 57**  
**COMPARISON OF ATTITUDES OF INDIANS 15 YEARS AND OVER FOR THREE PAIR OF RESERVES ADJACENT TO EACH OTHER**

Percentages are calculated on the number of adults on each reserve. The results of tests for significance are shown for each pair of reserves adjacent to each other.

<table>
<thead>
<tr>
<th>Reserves</th>
<th>1</th>
<th>2</th>
<th>test</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>test</th>
<th>7</th>
<th>8</th>
<th>test</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=384</td>
<td>N=52</td>
<td>N=69</td>
<td>'t'</td>
<td>N=38</td>
<td>N=65</td>
<td>N=45</td>
<td>N=25</td>
<td>'t'</td>
<td>N=58</td>
<td>N=32</td>
<td>'t'</td>
</tr>
<tr>
<td>Percentage of persons manifesting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a low* dependency on illness</td>
<td>29</td>
<td>20</td>
<td>1.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a low anxiety</td>
<td>42</td>
<td>39</td>
<td>0.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a low scepticism towards medicine</td>
<td>54</td>
<td>48</td>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a low* scepticism towards doctors</td>
<td>13</td>
<td>13</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a high* tendency to use services for somatic problems</td>
<td>38</td>
<td>45</td>
<td>0.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a high* tendency to use services for psycho social problems</td>
<td>25</td>
<td>17</td>
<td>1.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

'T' with α df requires 1.960 for significance at the 5% level of confidence  
* significant test  
† for location of reserves see Figure IV

Attitudes are shared between reserves one and two to a greater extent than between the two other pairs of reserves being compared.
TABLE 58

INDIANS 15 YEARS AND OVER ON RESERVES IN THE STUDY AREA AND COMPARISON OF GRADES COMPLETED IN SCHOOL AND LANGUAGE SPOKEN IN THE HOME BY INDIANS ON THREE PAIR OF RESERVES ADJACENT TO EACH OTHER

Percentages are calculated on the number of adults on each reserve. The results of tests for significance are shown for each pair of reserves adjacent to each other.†

<table>
<thead>
<tr>
<th>Reserves</th>
<th>1</th>
<th>2</th>
<th>test</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>test</th>
<th>7</th>
<th>8</th>
<th>test</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=384</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>N=52</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=69</td>
<td>%</td>
<td>%</td>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>N=38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=45</td>
<td>%</td>
<td>%</td>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>N=25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=58</td>
<td>%</td>
<td>%</td>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>N=32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Percentage of persons who
- have completed grade seven or more
  52  50  0.02
  36  38  38  20  1.71*
  37  30  0.70

- speak only English in home
  0   2  1.39
  3   2  0   0    -
  7   0  2.43*

- speak only Indian in home
  58  29  3.23*
  53  39  44  73  2.39*
  33  66  3.13*

't' with αdf requires 1.960 for significance at the 5% level of confidence
* significant test
† for location of reserves see Figure IV
The use of non-prescribed drugs can be a factor contributing to the non-use of medical care. The data are not shown here. Although no significant differences were indicated between reserves the differences that do exist are curious. The lowest percentages of person utilizing non-prescribed drugs were found among reserves where there are known to be active herb brewers. Perhaps these medications are not considered non-prescribed drugs. The prices paid to the brewers (usually older women) are high, much higher than many of the prescribed drugs which Indians feel they cannot afford. Apropos to the herb brewing which is part of the Indian medicine, a concentrated activity of the medicine man occurred during the period of data collection. An old woman on one of the reserves suffering from a nervous twitching of the face accompanied by intense pain was convinced that this was the recurrence of a spell cast on her by another woman years ago. Her face was scratched during a love triangle struggle. The other woman had recently returned to the reserve and was one of the respondents in the sample population. After exhausting the resources of the white man's medicine and the skills of the herbalist with no results, the medicine men who came from within and north of the study area tried their skills. The woman was eventually relieved of her pain, the informant about the activity reported, but no one had learned which medicine or medicine man was responsible.

Using integration of English into the language spoken in the homes as a measure of acculturation, reserve two, four and seven are more
acculturated than the other five reserves. They have the lowest percentages 29, 39 and 33 respectively where 'Indian' only is spoken in the home. With the exception of reserve two, these same reserves have the highest percentage of persons with an education of grade seven or higher.

Hypothesis three states that the reserves geographically clustered tend to manifest similar patterns of utilization of health services and attitudes towards medical care. All the data do not support this hypothesis.* The data indicates that there is a marked difference in some attitudes and action between Indians living only a few miles away from each other.

(c) Comparison of Utilization of Medical Care by Reserves According to Organizational Structure within the Reserves.

Hypothesis four states that the higher the level of organization for community action as measured by committees, strong leadership and developed services within the reserve, the more the pattern of utilization will resemble those of the population in the surrounding area (the non-Indian). In order to test this hypothesis data from reserves eight and four are compared.** Data contrasting the two reserves are presented in Tables 59 to 61. As well as indicating significant differences, the direction of the differences between percentages for reserves eight and four are compared with the direction of the differences between the data for the Indians and non-Indians.

* This may be inconclusive because of the small numbers in the sample. **For the rationale for selecting the reserves see Chapter IV 2.
1. Utilization

Table 59 presents the comparison of the utilization of medical care.

**TABLE 59**

**COMPARISON OF UTILIZATION OF HEALTH SERVICES BY INDIANS**

**ON RESERVES EIGHT AND FOUR**

Percentages are calculated on the total number of persons on each reserve. The results of tests for significant differences are shown as well as the comparison of the direction of differences between the reserves and the Indians and non-Indians.

<table>
<thead>
<tr>
<th></th>
<th>Eight Least-organized</th>
<th>Four Most-organized**test</th>
<th>Direction of difference between Reserves No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage reporting one or more</td>
<td>N=83</td>
<td>N=153</td>
<td>B and 4 Ind. &amp; Non-Ind.</td>
</tr>
<tr>
<td>- doctor's visits within a two week period</td>
<td>2%</td>
<td>12%</td>
<td>+</td>
</tr>
<tr>
<td>- dentist's visits within a twelve month period</td>
<td>24%</td>
<td>18%</td>
<td>4.35*</td>
</tr>
<tr>
<td>- hospital admission within a twelve month period</td>
<td>22%</td>
<td>36%</td>
<td>+</td>
</tr>
<tr>
<td>- prescribed drug within a two day period</td>
<td>10%</td>
<td>17%</td>
<td>1.84*</td>
</tr>
</tbody>
</table>

't' with <df requires 1.960 for significance at the 5% level of confidence

* significant test

** for rationale of measurement of organization see Chapter IV

't' scores taken from Table 5

In doctor's visits and in utilization of prescribed drugs reserve four resembles the non-Indians. Significant 't' scores indicate that the two reserves use services at different rates.
2. Morbidity

In comparing morbidity between the two reserves a significant difference is indicated.

**TABLE 60**

**COMPARISON OF MORBIDITY OF INDIANS AS MEASURED BY ONE OR MORE SICK OR RESTRICTED DAYS WITHIN A TWO WEEK PERIOD ON RESERVES EIGHT AND FOUR**

Percentages are calculated on the total number of persons on each reserve.

<table>
<thead>
<tr>
<th>Reserves</th>
<th>Eight Least-Organized</th>
<th>Four Well-Organized</th>
<th>'t'</th>
<th>Direction of differences between Reserves 8 and 4 Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of persons reporting one or more restricted days within a two week period</td>
<td>20%</td>
<td>13%</td>
<td>1.74*</td>
<td>-</td>
</tr>
</tbody>
</table>

't' with df requires 1.960 for significance at the 5% level of confidence.

* significant test

† for rational of measurement of organization see Chapter IV

Reserve number four has 7 per cent fewer people with one or more sick days or restricted days within a two week period. The direction of the differences when making a comparisons between the two reserves and the Indian and non-Indian are the same.

3. Attitudes and Enabling Factors

In comparing attitudes (Table 61) a different pattern is in evidence between the two reserves.
TABLE 61

COMPARISON OF ATTITUDES INFLUENCING UTILIZATION OF HEALTH SERVICES OF INDIANS

15 YEARS AND OVER ON RESERVES FOUR AND EIGHT

<table>
<thead>
<tr>
<th>Reserves</th>
<th>Eight</th>
<th>Four</th>
<th>'t' test</th>
<th>Direction of difference between Reserves 8 &amp; 4</th>
<th>Ind. &amp; Non-Ind.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=32</td>
<td>N=65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of persons reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a low tendency to manifest dependency on illness</td>
<td>12%</td>
<td>40%</td>
<td>2.99</td>
<td>+</td>
<td>*</td>
</tr>
<tr>
<td>- a low tendency to manifest anxiety</td>
<td>12%</td>
<td>46%</td>
<td>3.59</td>
<td>+</td>
<td>*</td>
</tr>
<tr>
<td>- a low scepticism towards medicine</td>
<td>66%</td>
<td>58%</td>
<td>0.85</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>- a low scepticism towards medical doctors</td>
<td>13%</td>
<td>17%</td>
<td>0.26</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>- high tendency to use services for somatic problems</td>
<td>63%</td>
<td>54%</td>
<td>0.78</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- high tendency to use services for psycho-social problems</td>
<td>44%</td>
<td>29%</td>
<td>1.17</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

't' with 1.960 for significance at the 5% level of confidence
* significant test
† for rational of measurement of organization see page
‡ for indices see Appendix C-1
Only two of the 't' scores are significant; those in tendency to show dependency on illness (2.99) and anxiety (3.59). The higher tendency to play the sick role is found on reserve eight with only 12 per cent having a low score on the index as compared to 40 per cent. These data do not correspond with the data as reported on morbidity or on doctors visits (Table 54). Reserve eight had the lowest percentage of persons with sick or restricted days in a two day period and the second lowest percentage of doctor's visits. This inconsistency was observed in the data for both the Indian and the non-Indian samples in Section A. In comparing the direction of the signs of the difference between the two reserves and between Indian and non-Indian they agree with one exception, reserve four has an 8 per cent higher scepticism towards medicine than reserve eight. The non-Indians also indicated higher scepticism than the Indians.

In reviewing the data for the support of hypothesis four that the level of organization will affect the utilization of medical care, not all the evidence supports this hypothesis. A positive relationship exists in some of the indices but not in others. The data indicate a trend towards similarity to the non-Indians by the people in the more highly organized reserve.

In comparing the patterns of medical care among the Indians by reserves and examining the data from the point of view of geographic proximity, there was evidence that although the groups shared a certain geographical location they did not always share the same perceptions, attitudes or actions with regard to health care. In fact,
in some instances there would appear to be more similarity between persons occupying the same status level than those occupying the same geographical location. All reserves except one (6) are of the Plain's Cree cultural group and, although this sets them apart from other groups, disintegration of cultural traditions of leadership and sharing within the Bands is evident. Their adaptive strategy, as the non-Indian values encroach on the traditional, has become on most reserves more of an individual strategy than a collective one.

In comparing the two reserves that occupy the two extremes of community organizational structure, there is evidence that where a community has been able to work together to rebuild an organization that replaces the traditional leadership by utilizing some of the cultural values of the larger society, communications between the two groups are facilitated and perceptions, attitudes and actions are shared to a greater extent than in areas where this organization has not taken place.

The data in this portion of the study also indicate that there are conflicts of values and attitudes on reserves as well as between reserves. Proximity has not maintained conformity. This is not surprising, although it does go contrary to the hypothesis, as the Indians have been moving within the last few years at a much greater pace towards self-determination. Young aggressive leaders everywhere are replacing older more traditional ones. Among the young are a few outstanding ones whose voices are being heard. But these young leaders are in conflict both within themselves
(conflict of values) and within their own society. Many of them were educated in residential schools or in the integrated schools where their education helped to prepare them for leadership roles in their complex and rapidly changing societies. Many of the young leaders come from households within the study area where the heads of the households have been ascribed a high station as well as having achieved a high status within their own communities and in many cases outside them. As their communication with the non-Indian society increased so has the skepticism of the white man's institutions. The data confirm that the more the Indians resemble the non-Indians in medical care utilization, the more skeptical they are of the 'white mans' medicine.
CHAPTER VII
IMPLICATIONS AND CONCLUSIONS

The implications of the study are presented from three points of view: 1) Methodology, 2) Health Services' Needs, and 3) Further Research.

1. Methodology

One of the objectives was to assess the feasibility of using native interviewers to apply a complex questionnaire to a population not accustomed to answering the questions of a survey of this type. It was found that with training and encouragement the women interviewers were able to apply the questionnaires in an efficient manner and obtain approximately one hundred per cent response from the sample population.

Although testing the feasibility of using the questionnaires prepared for the international cross-cultural study was not an objective of this study, the questions did have implications with respect to the interview situation and comments on them follow. Certain questions were found to be unsuitable for the population on the reserves. Questions relating to money matters, such as income, health insurance and cost of prescribed drugs, proved to be threatening especially at a time when there was talk of a reduction in services and a court decision pending on the extent of the responsibility of the federal government in the health care of the Indians. There was fear that these questions were preliminary to a reduction in the payment of Medicare premiums, a reduction in family allowance or in welfare support. When these questions were removed from the questionnaire, the interviewers were relieved. The questionnaires
were considered long and at times the application tedious. There were also problems of recall for mothers or guardians who had to answer for several children. This became evident when the replies on hospitalization were validated. However, the percentage of discrepancies was no higher than for other studies of this nature. The questions on households also gave trouble. Households in Indian communities are often composed of several families and the sorting out of family relationship was difficult. The interviewers in the Indian communities were faced with many more decisions than interviewers in a non-Indian community. Only native interviewers could have resolved difficulties of this type. From the experience gained through this study, it is felt that native interviewers should be used when studies of this nature are undertaken.*

2. Health Services Needs

Although this is a study of relationships there was no attempt to do an exhaustive study of relationships between all the variables for which information was collected. The major emphasis was on the collecting of data on the Indian reserves, the determination of patterns of utilization of medical care and discussions about the differing patterns of utilization within the Indian population and between the Indians and the non-Indians.

*Shortly after the data collection was completed the same interviewers were hired for another study funded by an eastern university.
An outstanding difference between the Indians and the non-Indians was in the longer hospital stay by the Indians. They also made less use of the services of doctors and dentists. The Indians perceived the care as less available because of distance of travel and the lack of money for transportation. The study showed that availability of care is not enough to assure that the care will be used when, in the estimation of the health profession, a person has the need for professional care. It was believed by the providers of health care that the economic barrier had been removed. In the eyes of the consumer economic barriers still existed especially in the areas of dental costs and transportation.

Both Indians and non-Indians indicated that they would seek care for specific health problems at a higher rate than the reported actual use. The difference was more pronounced in the Indian population. The questions asked dealt with acute illnesses as well as symptoms of chronic diseases. Implied in this finding is that both populations know the expectations of the dispensers of medical care (mainly based on middle class values and professional biases) that persons with certain symptoms of illness should seek medical care and strive to overcome the illness. Undoubtedly this knowledge prompted answers favourable to the utilization of medical care. One could conclude that knowledge of this type is the first step towards positive action in medical care utilization. The intervening steps between knowledge and action are changes of
attitudes towards their own health, towards the dispensers of care and to the care itself, and motivation to act, as action even in acute illnesses is not always self-initiated and less so in the case of symptoms of chronic illness.

The research indicated that persons who are involved in community leadership (persons in high ascribed and high achieved status levels) reported less anxiety and a lower dependency on illness. They also reported significantly fewer sick days within a two week period. A higher percentage of persons in status level nine reported having a particular doctor, thus ensuring more continuity of care. Persons in the community considered the most highly organized reported a significantly higher rate of use of doctors' care than persons in the least organized community.

Medical care involves social relationships and where communication is convenient and values similar, many of the barriers to the use of medical care are removed. The higher users of medical care among the Indians were those whose social position would put them in closer contact with the non-Indian population. The dispensers of medical care are drawn from the non-Indian population and the whole hub of the health system is found in the interplay between the dispensers of care and the seekers of care. This implies the need for better communications between the two.

Brief references to attempts to improve communications on health matters between the dispensers of health care and the Indian population appear desirable. Since 1961 Medical Services (Indian Health) has attempted to bridge the gap between the dispensers of care and the Indians by the use of indigenous community health workers. These
workers are members of the local health team and work both with health professionals and with organizations (whether health-oriented or not) within their own communities and also in the larger community. In addition to this, Medical Services in 1968, initiated an Indian health-liaison officer program. A grant to the provincial Indian organizations provided for the appointment of Indian men and women who would be liaison officers between the reserves in their areas, the professional health workers and the administrators of both Medical Services (Indian Health) and the Indian organizations. These two programs are attempts to bring the health services more in line with the felt needs of the communities. In addition to this, Indians have received federal grants to set up education programs on their own which would focus on certain aspects of health. The present trend is a positive one but the findings of this study imply that there is a need for more internal organization and health education in the Indian communities.

Health services are mainly geared to a one-to-one basis and are traditionally geared to respond to acute illnesses. The data collected from the producers of medical care indicate that the five leading causes of death among Indians are accidents and acute illnesses mainly of short duration. These illnesses need the hospital-based medical knowledge and technology. Heart disease was listed as the third cause of death. In the non-Indian population the first three causes of death are not acute diseases but chronic. As mentioned earlier deaths do not tell the whole story. In the Indian population infectious diseases have been reduced.
An inescapable legacy of improved health is the increased prevalence of disabling diseases in middle and later life.

The data for this study indicated that the Indians and the non-Indians suffered from chronic illnesses and physical impairment at approximately the same rates, but the Indians appeared to suffer more from the results of physical impairment and handicap. Could this mean that the Indians do not present themselves for early care or are their symptoms not recognized when they do? In the case of chronic illness the patient must take the initiative to see the doctor. Having more doctors or more treatment services will not fill the need if the sick do not seek care. Often by the time a person with chronic illness presents himself for treatment it is late in the progress of the disease and prolonged care is often necessary. This trend toward chronic illness would indicate a need for a shift in emphasis in medical care.

In contrasting the data from the Indian sample by reserves, geographic proximity indicated to some degree conformity in attitudes towards health care. Between reserves where attitudes are shared, there is a sound basis within the community for planning changes. Indians need to be helped to identify their own problems within the family, the community and the neighborhood. This requires a unified approach by all services (e.g. treatment, preventive measures, welfare and economic development). If this ideal of team work could be attained, services would be developed cooperatively that could better meet the needs of the community. When members of a community or local groups help to develop
a program as opposed to the total effort belonging to an outside group or change agent, they appear more inclined to take the responsibility for directing and maintaining it. Including more people in the planning and development of a program could necessitate a temporary slow down in some services or a change in emphasis, but these may not be too great a sacrifice.

Data in the study indicated that the following activities should be given consideration:

(a) A concerted effort of Medical Services (Indian Health) of the Department of National Health and Welfare to provide more comprehensive orientation programs for their Indian Health Services staff. These should lead to broadly based knowledge of the Indian population, including demographic characteristics, environmental factors, economic factors, and behavioral patterns.

(b) Increased health education of the communities by the earliest possible implementation of the recommendations of the Task Force Report on Community Health Auxiliaries.*

(c) Where feasible, consideration of the development of community health centres where the people to be served are involved in the planning stage, the development and the delivery of

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*The Task Force Report makes recommendations for career development within the present health auxiliary program and methods of bringing more Indian people into the health professions. Copies of this report are available from Medical Services Department of National Health and Welfare, Ottawa.
health care (e.g. the Stony Health Centre, Morley Reserve, Alberta). A centre such as this may serve two communities.

d) A more comprehensive program of patient education in hospitals. Where large groups of Indians are treated, consideration should be given to the employment of a native health worker to participate in orientation of staff as well as patient education.

e) A plan whereby the community health workers, liaison officers as well as Indian Health Services' staff, may become acquainted with local medical personnel in order to exchange information and thus help to solve problems that arise.

Involvement of the Indian in as many positive ways as possible would not only help change the stereo-type image of the Indian as having everything done for him, but would also help change the Indian's own self-image. The data in the study have indicated that where the people were involved in community activities they were less likely to play the sick role and had a higher rate of utilization of medical care. In other words, they were more involved in the maintenance of their own health.

3. Implications For Further Research

This study indicates several areas worthy of further investigation. One of these areas is the family or household structure. Data on the roles played by particular members of the family in the seeking of health care and in the execution
of the decision especially in relation to the children would assist health workers in their education programs. Another study related to the family would be the relationship between hospitalization and the family structure. Studies in other populations suggest that often only a few families in a community provide most of the admissions. The status of the family may play a role here.

Another area for research, as indicated by this study, is with respect to the longer stay in hospital by the Indians. Is the longer stay due to more serious illness or are Indians being kept longer for other reasons? Is there need for provision for home care services and how best could these be provided? Data on reasons for hospital admissions were collected as part of this study and could provide some answers.

The question as to why so many adult Indians are suffering from dental needs is another one suggested for investigation. Is there a need (among others) for a change of policy in financing dentures for adults?

The extent of chronic illnesses and symptoms of chronic illnesses among Indians need investigation, especially in areas such as the one in which this study was undertaken, where infectious diseases have been to a high degree kept under control. In areas such as these, the distinction between health and illness is much less clear. Questions needing answers are: what kind of reception is given to an Indian suffering from symptoms of a chronic illness if he presents himself to
the medical profession for care? In a community where infectious diseases are not the main problem, what level of health maintenance needs to be sought and what resources are needed to maintain them? What are the acceptable benchmark marks for analysing and evaluating a program?

It also appears that more research needs to be done about the structural organization within the Indian society, especially as it is now experiencing rapid changes. To what extent are the changing patterns of living breaking down traditional cultural values and what effects have these changes on the physical, mental and social well being of the population? Answers to these questions should assist both Indians and non-Indians in the planning of and execution of programs better suited to the health needs of the Indian population.

In summary, the overall collective patterns of medical care utilization as indicated by the descriptive data presented in this study only suggest relationships between the variables set forth in the conceptual model. As was indicated earlier, this study was undertaken at a time of considerable change within the health services system and within the Indian leadership. The changes may have made the results of this study less definitive. Nevertheless the study has provided some insights into the problems of health care delivery in the Indian communities.

It would be advisable to restate the hypothesis if further research of this type were undertaken.
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CHAPTER III


CHAPTER IV


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APPENDIX A-1

Population Characteristics

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<tr>
<th></th>
<th>All Saskatchewan</th>
<th>Study Area</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ages</td>
<td>Totals</td>
<td>Indians</td>
</tr>
<tr>
<td></td>
<td>T.</td>
<td>%</td>
<td>T.</td>
</tr>
<tr>
<td>0-4</td>
<td>107,515 (11)</td>
<td>6,709 (21)</td>
<td>711 (21)</td>
</tr>
<tr>
<td>5-14</td>
<td>213,434 (22)</td>
<td>10,102 (32)</td>
<td>1,078 (32)</td>
</tr>
<tr>
<td>15-24</td>
<td>150,562 (16)</td>
<td>5,783 (18)</td>
<td>620 (18)</td>
</tr>
<tr>
<td>25-44</td>
<td>215,064 (23)</td>
<td>5,630 (18)</td>
<td>571 (17)</td>
</tr>
<tr>
<td>45-64</td>
<td>179,887 (19)</td>
<td>2,553 (8)</td>
<td>292 (9)</td>
</tr>
<tr>
<td>65</td>
<td>88,882 (9)</td>
<td>1,117 (3)</td>
<td>137 (4)</td>
</tr>
<tr>
<td>Total</td>
<td>955,344 (100)</td>
<td>31,894 (100)</td>
<td>3,409 (100)</td>
</tr>
</tbody>
</table>

MALE POPULATION

|        | 0-4 | 54,979 (11) | 3,369 (21) | 361 (20) | * (11) | 97 (22) | 19 (6) |
|        | 5-14| 109,170 (22) | 5,112 (31) | 549 (31) | (22) | 163 (37) | 81 (26) |
|        | 15-24| 76,337 (16) | 2,906 (18) | 314 (18) | (17) | 51 (11) | 48 (15) |
|        | 25-44| 109,307 (22) | 3,005 (18) | 299 (17) | (24) | 57 (13) | 61 (19) |
|        | 45-64| 92,642 (19) | 1,384 (8)  | 170 (10) | (17) | 53 (12) | 73 (23) |
|        | 65   | 46,605 (10) | 597 (4)   | 71 (4)  | (9)  | 24 (5) | 33 (11) |
| Total  | 489,040 (100) | 16,373 (100) | 1,764 (100) | 11,147 (100) | 445 (100) | 315 (100) |

FEMALE POPULATION

|        | 0-4 | 52,536 (12) | 3,340 (21) | 350 (21) | * (11) | 95 (21) | 26 (9) |
|        | 5-14| 104,294 (23) | 4,990 (32) | 529 (32) | (21) | 167 (36) | 76 (25) |
|        | 15-24| 74,225 (16) | 2,877 (19) | 306 (19) | (18) | 69 (15) | 38 (12) |
|        | 25-44| 105,757 (23) | 2,625 (17) | 272 (17) | (24) | 62 (13) | 71 (24) |
|        | 45-64| 88,245 (19) | 1,169 (8)  | 122 (7)  | (17) | 42 (9) | 57 (19) |
|        | 65   | 32,277 (7)  | 520 (3)   | 66 (4)  | (9)  | 29 (6) | 32 (11) |
| Total  | 456,304 (100) | 15,521 (100) | 1,645 (100) | 10,152 (100) | 464 (100) | 300 (100) |

Source: 1 Saskatchewan Vital Statistics, 1968; 2 Indian Affairs - Census 1968;
3 Saskatchewan Medical Care Insurance Commission; 4 WHO/MCU Saskatchewan 1968

* Age - sex figures not available
Appendix A-2

Additional Public Health Indices

Another index of public health is that of illegitimate births. The Saskatchewan Vital Statistics report states that in 1967 there were 17,933 live births of which 1,916 or about 10.7 per cent were illegitimate. Indians accounted for 8.1 per cent of the live births of which about 44 per cent were illegitimate. The non-Indians accounted for about 92 per cent of the births of which 7.7 per cent were illegitimate. The rate of illegitimacy for Indians in the North Battleford area was 56.4 per cent*. Several explanations may be offered for the high rate of illegitimacy among Indians. Common-law relationships, many of which are long lasting, are as much a part of the way of life of the Indians as they are of other lower socio-economic groups. Many marriages do not end in divorce. Even if the couples wanted one, the proceedings would be too costly for them. Many Indians now, as they become more acculturated, are adopting the middle class

*This figure includes one reserve, Onion Lake, not included in the Study Area.
attitudes towards common-law marriages. This attitude was noticeable among the interviewers. Promiscuity for some Indian women is also a way of life. Legassé, in his study in Manitoba, stated that the only part of this that seemed to be particularly "Indian" is the fact that they stay with men for the enjoyment of the relationship or for accommodation rather than for financial remuneration. This willingness to have relationships make some Indian women easy prey for Caucasian men interested in sex rather than mutual respect and companionship. Pregnancies occur because birth control methods are not understood or they may be too costly. Often alcohol or the immediacy of the social situation makes acquiring the prevention measure unfeasible, or when Caucasian men are involved, many do not consider pregnancies of Indian girls of any consequence to them.

The incidence of venereal diseases as reported by the province in 1967 showed a slight decrease over the 1966 figures. For syphilis in all stages, the rate per 100,000 population was 10.4 for both years. In the primary and second stages, the rate had dropped from 5.3 to 4.4 per cent and for gonorrhoea from 235.9 to 231.0 per 100,000. The record of venereal disease cases for the Indians in the study area were obtained for the month of June 1968, and these were as follows:

<table>
<thead>
<tr>
<th>Reserves</th>
<th>#1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>14</td>
<td>18</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>69</td>
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</table>

* North Battleford Indian Hospital Records.
Appendix A-2(Cont'd.)

Of the sixty-five cases, three quarters were women with between ten to fifteen per cent being repeaters. There were no cases reported for the month of July. A summer resort town is on the edge of number five reserve which no doubt would account for the high number of cases, as population wise this is one of the smaller reserves. (Records of venereal disease for all populations must be viewed with a certain amount of scepticism as many cases go unreported.)
Appendix A-2 (Cont'd.)

Percent Level of Immunization of Indians on Reserves
In The Study Area

<table>
<thead>
<tr>
<th></th>
<th>D.P.T.</th>
<th>Smallpox</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completely immunized</td>
<td>33.6</td>
<td>37.4</td>
</tr>
<tr>
<td>Partially immunized</td>
<td>28.0</td>
<td>0.0</td>
</tr>
<tr>
<td>NOT immunized</td>
<td>38.4</td>
<td>62.6</td>
</tr>
</tbody>
</table>

|                |        |          |
| **Preschoolers**|        |          |
| Completely immunized | 80.4   | 73.0     |
| Partially immunized  | 11.5   | 0.0      |
| NOT immunized       | 8.1    | 27.0     |

Reports of nurses:
North Battleford Health Unit.
Indian Health, January 1, 1969

Dentists Serving Indians of Battlefords Agency, Saskatchewan, 1968-69

1. Dr. J. Andrus & A. Harder Clinic, North Battleford, Sask.
   Dr. A. Jamieson, Turtleford, Sask.
   These dentists provide:
   a) A field service using Department Mobile Equipment
   b) Make available specified office time for examination of school children from Reserves. i.e. half day in a week as required.
   These services provided on a "Fee for Service" basis within limits of available funds.
   Note: Dr. Jamieson vacated his practice in August on emigrating to Australia. No replacement to date.

2. Dr. D. Didow, Elk Point, Alberta
   Dr. H. Cowburn, Saskatoon, Sask.
   a) These dentists have provided emergency attention to resident or itinerant Battleford Indians on a "Fee for Service" basis.

3. Dr. R. Fraser, North Battleford, Sask.
   Dr. Haiden, Biggar, Sask.
   Dr. Sauder, North Battleford, Sask.
   Dr. R.W. Hall, North Battleford, Sask.
   a) These dentists have provided emergency attention to Battleford Indians on a "Fee for Service" basis.

4. Dr. V. Petro, Regina, Sask.
   Dr. H. Cowburn, Saskatoon, Sask.
   a) These dentists have provided attention to Indians attending Vocational Schools, and emergency treatment to itinerant or resident Indians.
Appendix A-3 (Cont'd.)

Ophthalmologists and Optometrists serving Indians of Battlefords Agency
Saskatchewan. 1968-69

1. Dr. J. Bradley, Ophthalmologist, North Battleford, Sask.
   Referred refractions by appointment

2. Dr. J. Cloarec, Optometrist, Camrose, Alberta.
   Provides attention to itinerant or resident Indians of the
   Battlefords Agency.

3. Dr. V. McAfee, Optometrist, North Battleford, Sask.
   Dr. C. Hutton, Optometrist, North Battleford, Sask.
   Referred refractions by appointment.
   Note: Dr. C. Hutton has now refused to accept Indian referrals on the
   present rate structure being paid by the Department of National
   Health and Welfare.

4. Dr. R. DeShield, Regina, Sask. Optometrist
   Dr. H. Hay, Saskatoon, Sask. Optometrist
   Dr. J. Sugarman, Saskatoon, Sask. Optometrist
   Provide attention to Battleford Indians Attending Vocational
   Training Schools, Sanatorium patients. Itinerants and residents.
   Note: Complete service provided for Students.
   Refractions only to Adults.
   Repairs and replacements provided through National Health and
   Welfare resources and charged back to Indian Affairs and
   Northern Development.
### Supplementary Data — Used to Prepare Map, Figure No. III

*Approx. Location

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Area km²*</th>
<th>Total Pop. **</th>
<th>People/ km²</th>
<th>Approx. Location Indian Reserve</th>
<th>Area km²</th>
<th>Total @ Pop.</th>
<th>People/ km²</th>
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<tr>
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<td>845</td>
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<td>303</td>
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<tr>
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<td>646</td>
<td>0.9</td>
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<td>1,285.0</td>
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</tr>
</tbody>
</table>

*...1 Square kilometre equals 247 acres

**...1966 Census

@...1968 Census

Data Source
- WHO/ICS-MCU
- Department of Indian Affairs and Northern Development
Appendix A-5

B. Economic and Geo-political Background of the Area

1. In Chapter One it was stated that economic and political factors also influenced the utilization of the health care system. A background review of the study area will be given in order to establish how these factors in the Indian population differ from those in the surrounding area.

Under Treaty number six, signed in 1876, the Indians were settled on the reserves in the North Battleford area and thus segregated geographically, politically, economically, and socially from the other 'settlers'. Some of the reserves perpetuate the names of the great chiefs whose signatures appear on the treaties. The original political organization of the reserves differed from tribe to tribe. Currently they are under the Indian Act* but are subject to Federal, Provincial and Municipal laws in the same manner as the other citizens. They do not pay income tax and their real and personal property on the reserve is exempt from taxation and is also exempt from seizure except on a suit by another Indian.

The Indians are governed on the reserves by chiefs and councillors who correspond to elected officers in the municipalities. Two of the reserves in the study adhered to the tribal system of hereditary chiefs and appointed councillors but these exercise the same powers as an elected council. One of the reserves, Poundmaker, was in the transition of changing from the hereditary to the elective appointment of their chief and council. The councils are concerned with local conditions

*The Indian Act is a Statute designed to regulate all of the institutionalized behaviour of the native people of Canada coincident with their indigenous status as recognized by treaties.
affecting members of the band and work closely with the Indian agency superintendents in North Battleford. They may make by-laws with regard to matters of local nature and are also taking over more responsibility with regard to management of band funds; the surrender or lease of reserve lands; land allotment and band memberships as well as other responsibilities such as management of welfare assistance and school administration. The political structure on the reserves in comparison with that in the surrounding municipalities does produce a dichotomy: Indians possess a form of self-government that is severely reduced in power by the Indian agency superintendent acting in accord with the tenets of the Indian Act.

The city of North Battleford (pop. 12,000) is the major urban centre. The reserves in the study all fall within a seventy-five mile radius of the city. The only other towns of over six hundred population near the reserves are the towns of Battleford (population 1,765) located across the river from North Battleford, and Wilkie (population 1,600) located southwest of the city. (See Figures III and IV).

The economy of the area is almost exclusively based on agriculture with the production of wheat, coarse grain (chiefly barley and oats) beef cattle and hogs being the main activities. The villages and towns of the area perform a service-centred function as collection points for agriculture products and as distribution points for farm production, imports and consumer goods and services. The city of North Battleford plays a dominant role in this as its present economy is highly dependent upon the performances of the service-centred function. The manufacturing section is small and produces only for the local consumers market.
The area is bisected by the North Saskatchewan River with five of the reserves located to the south (see Figure IV). The Battle River, a tributary of the North Saskatchewan bisects the Little Pine Reserve (population 578)* and forms the northern boundary for Poundmaker (population 454). These two adjacent reserves are located to the west and slightly north of the city where the terrain is undulating with sections of moderately rolling lands suitable for growing of wheat or coarse grain, mainly barley and oats. The terrain of the other three reserves, Sweetgrass (population 384), south of the Saskatchewan is rolling, with prairie grasses and groves of trees, where the land also is suitable for farming and agriculture. Saulteaux (population 327) and Moosomin (population 403), two of the smaller reserves north of the river and twenty-five miles due north of the city of North Battleford, are located on the edges of Jackfish and Murray Lakes. The surrounding land is strongly rolling, relatively unsuitable for farming. Two large market gardens border the reserves and the town of Cochin situated between the reserves is a thriving summer resort area.

The eighth and largest reserve, Thunderchild (population 663), situated near Turtleford, sixty-five miles northwest of North Battleford, has a predominantly rolling terrain with forest coverage. Portions of the reserve are used for grazing; well established farms surround the reserve. (For detailed information on reserves see Appendix B 1-8).

Economic development has largely by-passed the Indians. Seasonal jobs have been provided by the nearby farms, or market gardens. There

* Population figures quoted for reserves are taken from Total Band Listing. The "on reserve" population would be somewhat less.
is employment in fishing or guiding in the summer resort areas and there are always the seasonal trips (spring and fall) to the beet fields of Alberta. Much of the land suitable for agriculture on the reserves has been rented to nearby white farmers who hire the Indians as farm hands. According to a survey conducted by the Department of Indian Affairs and Indian Development in 1967-68, out of a total of 1,620 adult-reserve population only 158 or 9.75 per cent were permanently employed.

Recently several Indians have been encouraged by means of loans and financial help to farm their own land. On Sweetgrass reserve there is a pre-fab house manufacturing co-operative, which not only offers employment but also supplies the houses for the nearby reserve. Some bands have common herds of cattle as a source of revenue. The Department of Indian Affairs did a land resource inventory in 1969. It is interesting to note the number of families presently living on the reserves and the number the survey indicated the reserves could support. Figure III indicates the population density of the Indian reserves and the surrounding area. With the exception of number three (Sweetgrass), the population density on all the reserves is greater than that of their surrounding communities.

Electric power was supplied to the reserves in 1967-68. Added to the desire for cars, radios, and new clothes, are desires for television sets and electrical labour saving devices. While the consumption of goods and services has expanded both in quantity and variety, the living standards have not always kept pace. All but two of the families in the
sample received some social aid or welfare during the year. It is this money or the family allowance that often buys the liquor and cigarettes and pays the traffic violation fines, the latter often being the result of driving old cars.
DESCRIPTION OF RESERVES INCLUDED IN STUDY

POUNDMAKER

SIZE - 19,137 acres with a registered band population of 454. This includes members living off the reserve of whom there were 79 in 1968.

LAND USE -

Present - 36.0% of area or 5,279 acres are in cropland. 51.0% or 9,665 acres is suitable for pasture and hay land.

Another 40% could be cleared for cropland but the cost of development is estimated at $150,000.00. 397 acres or 3% is under water.

Development - Potential is there for gas, potash and oil but exploitation in near future seems unlikely. Tourism, fishing and market gardening are a possibility. According to an Indian Affairs land survey inventory done in 1969, the reserve could accommodate ten farms, three ranches and therefore, support 13 families or 19% of the 67 families now living on the reserve.

HOUSING - There are 59 houses on the reserve, all frame, except three log houses. 24 or 40.7% are in good repair. In 1968, 30 families required new houses with an estimated cost of $210,000.00 and repairs to others would cost $42,000.00. This would be financed almost entirely by public funds.

In 1968 Saskatchewan power line was connected to the reserve and 49 or 83% of the homes were supplied with electricity.

Sanitation - Houses have no running water, indoor toilet or bath and no homes have septic tanks. Water is carried to the homes by individuals. Only 6 homes have sinks with only one having a pipe outlet. There are 11 wells on the reserve; 3 are community wells with electric pumps and are considered good. However, some people live 2 or 3 miles from the wells. About half of the 8 private wells are considered good. Most of the homes have outdoor privies. Sanitation in the school was considered good except for the privies.

Garbage Disposal - There is a designated garbage area, but there is no garbage pick-up and at present no community effort is being made to improve conditions. Some people burn garbage. There is a yearly cleanup campaign and a yearly cleanup of the cemetery which takes a form of a day long community gathering. Activity is accompanied by prayers said by the elders and other religious ceremonies. The overall assessment by the environmental health officer re sanitation on the reserve was "not too bad".

Administration - in 1968 the band was administered by a hereditary chief and three councillors but there was a move to change to the elective band system. The capital of the reserve is listed as
$8,283.20 with an expected revenue of $1,100.00. The estimated budget for 1968 was $2,344.00, out of which $200.00 would go to councillors salaries, $200.00 for funeral and wake expenses and $50.00 towards sanitation.

ECONOMICS

Labour Force - Potential labour force on the reserve is 28 people of whom 19 or 67.9% are permanently employed. Opportunities for employment are farming, cattle raising and bus driving. Only 8 families or 11.9% have an annual income of over $2,000.00.

Welfare - approximately 79% of the families live on welfare and almost every family receive some welfare during the year. The welfare costs in 1964 were $61,000.00 or an average of $247.23 per person or $1,150.00 per family.

COMMUNICATIONS

With reference to North Battleford, Poundmaker is situated 32 miles west on highway number 5, ten miles south on a grid road. The highway is good and the grid road good except in heavy rain and snow. The reserve roads are all season roads but there are transportation problems in the winter and in wet weather. The nearest telephone is at Paynton, nine miles away. Messages are transmitted through daily radio bulletin from North Battleford.

EDUCATION

There is one classroom on the reserve with 29 pupils. Nine are in residential school, 75 attend an integrated or joint school and 10 attend trade school or university.

SERVICES

Medical - The nearest hospital is the Cutknife Union Hospital, 13 miles away, which will take Indians only in emergencies. They are encouraged by the doctor at Cutknife to go to the North Battleford Hospital, 45 miles away. There is a clinic cabin on the reserve with adequate facilities and the nurse visits the reserve for approximately one week per month. There is a community health worker residing on the reserve and the environmental health officer from the North Battleford Indian Health Services Unit visits one week per month. There are no regular visits from a doctor and a dentist visit is reported once per year. Up to 1968 Medical Services supplied a yearly tuberculosis survey but in 1969 the Tuberculosis League of Saskatchewan took over. The community has had an active health committee which was re-organized in 1968 and ready to begin meetings and activity. There were 19 live births and one infant death in 1968.

Recreation - facilities include a sports ground and a skating rink. In the summer of 1968 the community health worker and the nurse organized a swimming class. Instruction was supplied by the Red Cross.
APPENDIX B-2

LITTLE PINE

SIZE - 16,000 acres with reported band population of 578 including 37 living off the reserve.

LAND USE - 6.6% or 1,037 acres are in cropland with 62% or 9,666 acres in natural range, hay and pastureland. 120 acres or .8% is underwater. 36% of the land is suitable for cropland but the cost of developing would be $250,000.00.

Potential - The land is limited for trapping, fishing and forestry but according to the Indian Affairs land-resource inventory the number of economic units the land would accommodate is 14 - nine farms and five ranches, 16% of the present number of the 90 families living on the reserve.

HOUSING - of the 79 houses on the reserve, 9 are log and 26 or 32.9% are considered in good repair. 34 new housing units are required at approximately $238,000 and another 15 are expected to need major repairs at a cost of $52,500.00.

In 1968 Saskatchewan power line was connected to the reserve. Out of the 79 houses 66 or 83.5% are supplied with electricity. Houses have no running water, indoor toilets or baths and none have septic tanks. No homes have sinks and none have cesspools for waste water. Seven new families were formed in 1969.

Sanitation - The water is supplied through ten wells - two are community wells with electric pumps but many homes are a long distance from wells. Only one of the 7 private wells is considered good. The other source of water is the slough. No wells are chlorinated. Not every home has an outdoor privy and the condition of most is poor. There is no garbage collection and no assigned dump. The individual disposal of garbage is poor. Sanitation in the school is considered good. The yearly budget for health and sanitation is only $600.00. There is a yearly cleanup campaign and the overall assessment by the environmental health officer for the reserve is "poor".

ADMINISTRATION - The band is administered by an elected chief and five councillors. The leadership provided is considered effective. The band has a capital fund of $13,350.13 with an estimated revenue of $3,767.00. From an estimated budget of $5,325.00 some selected items show $400.00 for wake and funeral expenses, $1,000.00 for recreation. No money was allocated for housing, for well repair or maintenance.

Economics - Potential Labour Force is 26 people of whom 17 or 65.4% are employed. Main type of employment is farming, bus driving, teaching and cattle raising. Only 16 or 17.8% of 90 family heads earn more than $2,000.00 per year.
LITTLE PINE

Welfare - Of the 90 families on the reserve 65 or 72% received some welfare assistance. The 65 families included 145 persons or 26.2% of the population. Welfare costs during 1964 were $84,000.00. The average income for a family head was $1,600.00.

EDUCATION - Little Pine has a school committee. There are two classrooms on the reserve attended by 60 students. 20 students are in residential schools, 113 students go to joint schools and 40 attend trade school or university.

COMMUNICATIONS - With reference to North Battleford, Little Pine is situated 32 miles west on #5 highway and 10 miles south and 8 miles west on a grid road. It is adjacent to Poundmaker Reserve. Grid roads are hazardous in winter, therefore, transportation in winter is problematic. As in the case of Poundmaker the nearest telephone available to residence is at Paynton, 13 miles from the reserve. Messages are transmitted through a daily radio bulletin from North Battleford.

Services - Medical - Clinic space is a classroom or in a private home. Neither is considered adequate. The public health nurse visits for one week each month and the environmental health officer pays a monthly visit. No doctor travels regularly to the reserve and a visit from a dentist is reported once a year. The Tuberculosis survey until 1968 was done by Medical Services. Since then it has been done by the Saskatchewan Tuberculosis League. A health committee is organized but was not functioning effectively. The nearest hospital is Cutknife Union Hospital, 17 miles away but as in the case of the people from Poundmaker, the doctor at Cutknife encourages the people to go to the North Battleford Indian Hospital.

Other Services - Nearest shopping centre is at Paynton, 13 miles away, and Cutknife, 17 miles.

Recreation - They have an allocated sports ground and soccer and baseball club sponsored by the band.
APPENDIX B-3

SWEETGRASS

SIZE - 38,400 acres with a population of 497 of whom 431 live on the reserve.

LAND USE - 10.9% of the total area or 4,100 acres are in cropland; another 54.5% or 20,865 acres is natural range, hayland and pasture. Suited for cropland are a further 8,960 acres or 23.3% of the total land. The cost of developing this would be $800,000.00. 1.5% of the land or 550 acres is under water.

Potential - There is potential for gas, oil and potash but these are not likely to be exploited in the near future. Fishing, tourism and market gardening are possibilities. According to an Indian Affairs land survey inventory made in 1968, the reserve could accommodate 36 farms and 4 ranches with 200 cattle. This means 40 families or 43.6% of the 71 families on the reserve could be supported.

HOUSING - Of the 65 houses on the reserve 30 or 46.8% are considered in good repair. 22 new housing units were required in 1968 at a cost of $54,000.00. Houses have no running water, indoor toilet, indoor baths, and none have septic tanks. In 1968 Saskatchewan Power connected the reserve to their power line and 56 or 81% of the 65 housing units are supplied with electricity.

Sanitation - There are seven wells on the reserve. One is a community well which has a concrete top and is considered good. There is a tap at the school which is open to the public. Six private wells are considered poor and the only other source of water is the creek. Most homes have a privy; most of them are considered good. (No septic tank exists.) Two homes have a sink and two have cesspools for collecting water, but no house has a pipe outlet for the sink.

Garbage - There is no designated area for garbage disposal, no collecting system and individual garbage disposal is considered poor. Sanitation in the school is poor as far as privies are concerned. There is no yearly clean-up campaign and the overall assessment by environmental health officer of the reserve is "poor to fair".

ADMINISTRATION - The reserve is administered by an elected chief and 4 councillors and the leadership appears to be effective. The capital is $18,581.92 with an estimated revenue of $8,783.00. The estimated budget was $18,800.00 for 1968. Selected items: councillors salaries $480.00, wake and funeral expenses $1,000.00, food and heat for the destitute $1,200.00, housing repairs $1,502.00, transportation of patients $1,000.00.

Housing was financed in 1968 by personal sums $1,115.00, public funds $91,411.00.
Economics - Labour Force - The potential labour force is 56 people of whom 54 or 91.5% are permanently employed. Opportunities for employment are farming, cattle, pre-fab plant, and some people work in the Indian Hospital in North Battleford.

The average income per head of family was $2,500.00. Only 9 or 12.7% of heads of households earn more than $2,000.00 per year.

Welfare - Of the 71 families living on the reserve 45 or 63% are living on welfare assistance. This means 229 or 53% of the 431 people on the reserve receive social assistance. In 1964 the welfare costs were $47,000.00.

EDUCATION - The reserve has a school committee. There are two classrooms on the reserve with 57 students. In addition, 14 go to residential school, 53 to joint school and 37 to a trade school.

COMMUNICATIONS - With reference to North Battleford, Sweetgrass is 31 miles west on highway #40. Roads are fair to good. There are some cars on the reserve and few transportation problems in winter. There is a daily bus service on highway #40. Mail service is at Bishop's store in Gallivan 5 miles away. Messages are received by daily radio bulletin from North Battleford.

Services - Medical facilities - The nearest hospital is at Cutknife 12 miles away but most people on the reserve use North Battleford hospital a distance of 30 miles. Clinic space is in a cabin and considered adequate. The public health nurse visits one week per month and the community health worker also visits one week a month. The community health worker lives on Poundmaker. The environmental health officer visits once per month. No doctor visits the reserve but it is reported that a dentist visits the reserve once a year. Until 1968 the Tuberculosis surveys were carried out yearly by Medical Services. There is no health committee on the reserve but a group is considering forming a health committee. There were 20 live births and 2 infant deaths in 1968.

Recreation - The reserve has a rodeo area and a sports ground and has a hockey and baseball team.
APPENDIX B - 4

THUNDERCHILD

SIZE - 16,367 acres of land with 663 registered band members of whom 514 live on the reserve. There are 860 acres or 5.2% of the total area in cropland. 62.7% of the area of 10,880 acres is under natural range, hayland and pasture. An additional 10,880 acres are suited for cropland but developing costs would be $280,000.00. 1.2% or 200 acres is under water.

Potential - Potential resources on the reserve are logging, fence post cutting and treatment, fishing and trapping. According to the land use inventory the reserve could accommodate 12 farms, 2 ranches, therefore support 14 of the present 84 families on the reserve.

HOUSING - There are 78 houses on the reserve of which 30 or 38.5% are considered in good repair. Eleven houses are empty. Thirty-two housing units were required in 1968 at a cost of $224,000.00. Eleven needed major repairs at a cost of $38,500.00.

Sanitation - Houses on the reserve have no running water, indoor toilets, indoor baths or septic tanks. There are nine wells on the reserve, three wells with electric pumps which are occasionally abused and are some distance away for many people. There are six private wells, two of which are open and four with pumps. The latter are considered fairly good. An additional source of water is the creek on the flats. There is no chlorination done on the wells on the reserve. All but 2 houses have privies and the conditions are considered fairly good. In the water disposals there are approximately 6 sinks and 6 people have cesspools for waste water. None of the sinks have pipe outlets. There is a designated area for garbage and for some time there was a garbage disposal pickup but it was not functioning in 1968. The garbage disposal was individual. Some burn, other bury garbage. The sanitation of the school was considered fairly good. There is a yearly cleanup campaign and during this time a garbage pickup is usually arranged. The overall assessment by the environmental health officer was that sanitation was well organized and fairly good.

ADMINISTRATION - The reserve is administered by an elected chief and six councillors and the leadership appears to be effective. The capital of the band is listed as $38,135.12. Selected items show the following for the budget 1969 to 1970, $2,000.00 towards councillors salaries, $500.00 for wakes and funeral expenses, $1,004.00 for housing and repair.

Housing was financed by the following: In 1968 personal funds were $775.00, band funds nil, public funds $114,259 for a total fund of $115,034.00.
ECONOMICS
Labor Force - Potential labour force is 74 and 28 or 38.7% are steadily employed. Opportunities for employment are limited to farming and ranching, labourers and in the local stores. Average income per family was not available but only 4 out of 84 households earn more than $2,000.

Welfare - Of the 84 families living on the reserve 67 or 80% receive assistance. The 67 families contained 367 people, which means that of 514 people who live on the reserve, 70% are living on welfare. The total welfare cost in 1964 was $80,000.00.

EDUCATION - The reserve has an active school committee. There are no classrooms on the reserve but the school building is utilized for a kindergarten and a community centre. Twelve students go to residential school and 78 attend a joint school. 22 are either at trade school or attend a university.

COMMUNICATIONS - With reference to North Battleford, Thunderchild is 60 miles north on highway 26 and 8 miles east from Turtleford on a grid road. Reserve roads are fair with some transportation in winter. A daily bus runs to Turtleford. The closest telephone and post office is at the Marshall's Community store at the edge of the reserve. The reserve also received the daily radio bulletin through North Battleford radio station.

Services Medical - The nearest hospital is at Turtleford, eight miles away and North Battleford Indian Hospital is 60 miles away. The clinic space is in the community centre or in private homes and is considered to be adequate. A public health nurse visits one week per month, and a community health worker lives on the reserve. (He is now working for the Brotherhood in an Alcohol Programme at Meadow Lake.) The public health inspector visits once a month. There are no doctor's visits to the reserve and a dentist travels once a year to the reserves. The Tuberculosis survey done by Medical Services until 1968 is now done by Saskatchewan Tuberculosis Association. A health committee is formed and functions effectively. In 1968 there were 35 live births, one stillbirth and three infant deaths. Two new cases of tuberculosis were admitted to the sanatoriums.

Shopping - The nearest shopping centre is Turtleford 8 miles away, but the nearest store is Marshall's at the edge of the reserve.

Recreation Facilities - The school is used as the community centre where films are shown weekly. There is a pool hall with other recreational facilities, band sponsored soccer team and a ladies club.
MOOSOMIN

SIZE - 17,341 acres with a population of 435 of whom 403 live on the reserve. 6% or 1,040 acres are in cropland; another 69.3% of the area is natural range, hay or pasture areas (12,375 acres.) Further, 45.4% of the total land or 7,040 acres could be developed into cropland at a cost of $30,000.00. 2.2% or 386 acres are under water.

Potential - There is a potential for tourism, market gardens and fishing. According to Indian Affairs' inventory (1968) the reserve could accommodate 8 farms, three ranches and 7 families, that is, 18 families or 23% of those 78 living on the reserve. 5 new families were formed last year.

HOUSING - There are 51 houses on the reserve of which 30 or 58.8% are in good repair. 16 new houses are needed at a cost of $214,165.00 and 2 others needing major repairs would cost $14,000. In 1968 the Saskatchewan Electric Power connected the reserve to their power line and 39 or 72% of the houses now have electricity.

Sanitation - Houses have no running water, inside toilets, indoor bathrooms or septic tanks. There are eight wells on the reserve of which three are community wells and these have electric pumps and are working. Approximately 50% of the people use the community wells. The five private wells are poor and an additional source of water is the creek. The wells are tested regularly and the community wells are good but the private wells are poor. No wells on the reserve are chlorinated. All homes have a privy - and the conditions are considered fair. For water disposal, 2 homes have sinks but neither have a pipe outlet. In 1968 there was $100.00 in the budget to improve wells.

Garbage - There is a designated dump area but very few people use it. There is no collective garbage disposal system and the individual garbage disposal is poor. There is no cleanup campaign. Sanitation in the schools is considered good. The overall assessment by the environmental health officer is "fair".

ADMINISTRATION - The reserve is administered by an elected chief and 3 councillors and the leadership appears to be fairly effective. The band capital is $59,349.30, with an estimated revenue of $18,445.00. Housing is financed -

Personal funds $625.00
Band funds $9,726.00
Total funds $69,619.00

$79,970.00
Selected items from the budget are $1,200 towards salaries, funeral expenses and wake $600.00, cemetery and upkeep $500.00, fuel and heat or food for the destitute $600.00, housing repairs $3,000.00, maintenance of wells $2,000.00 and recreation grant $400.00.

ECONOMICS - Potential labour force. The potential labour force is 13 of whom 3 or 23% are permanently employed. Opportunities for permanent and part-time employment are market gardening, labour, farm labour, sale of hay, fence pickets, sugar beet work, school janitor, store clerk and bus driver.

Income - The average income of households is $1,000.00. No household had an income of over $2,000.00.

Welfare - 46 or 59% of the 78 families receive assistance which means that 208 people or 69% of the reserve people live on welfare. The total welfare cost for 1964 was $84,000.00.

EDUCATION - The reserve has a school committee. On the reserve are four classrooms with 112 students. 12 go to residential school and 6 to a joint school and 9 to vocational school or upgrading courses.

COMMUNICATIONS - Moosomin is situated 21 miles north of North Battleford on highway #7 and 1 mile east of Cochin. Off the reserve roads are fair to good and on the reserve roads are poor. A daily bus collects the children for the reserve school. There is no mail service provided for but messages are received by a daily radio bulletin from North Battleford.

Shopping centre - The nearest shopping centre and telephone are Cochin one mile away.

Recreation - Cochin is a resort area and these facilities are available to them. There is a band hall for community use, and a skating rink.

SERVICES - Medical - The nearest hospital is Rabbit Union Hospital 21 miles north away and North Battleford also 21 miles away. The clinic space is a school cloakroom or else a private home and neither is considered adequate. A public health nurse visits each month for one week. No community health worker visits the area but an environmental health officer usually visits once a month. There are no regular visits by the doctor but a dentist visit is reported once a year. The annual Tuberculosis survey was supplied until 1968 by Medical Services. There was no health committee in 1968 but a group had been formed and were preparing to elect a health committee. They had live births and no maternal or child deaths in 1968.
APPENDIX B-6
SAULTEAUX

SIZE - 14,341 acres, the smallest of the 8 communities studied. The band population is 327 with 303 living on the reserve. 1.4% or 190 acres of the total is in cropland with 37% or 5,300 acres in natural range, hay and pasture. There is an estimated 49% of the land or 7,648 acres which could be developed as cropland with a cost of the development of $400,000. 32% of the total area or 4,360 acres is under water.

Potential Labour Resources - These are limited to trapping, fishing and forestry. According to an Indian Affairs inventory (1968) the reserve could support 10 mixed farms and 7 other families. In other words, 17 families out of the 25 now living on the reserve or 68% could be supported on the reserve.

HOUSING - There are 28 houses on the reserve of which 15 or 53.5% are considered in good repair. There are no empty houses. 10 housing units will be needed in the near future or would have to be replaced at a cost of $17,350.00: 2 need major repairs at an additional cost of $14,000. Power was supplied in 1968 by the Saskatchewan Power Corporation and 21 out of the 25 houses or 84% are connected with electricity. No new family units were created last year. Houses have no running water, indoor toilets or baths and no house has a septic tank.

Sanitation - There is one electric community pump and it is out of commission. There are 2 or 3 open sandpipes and 5 open private wells, all considered in poor condition. All houses have privies which are in fairly good condition. There are no sinks for waste water disposal and no cesspools. There is no assigned garbage pit or dump, no collective garbage system and individual garbage disposal consists of throwing the garbage in the bush. In 1968, they did have a budget of $800.00 for sanitation. Sanitation in the school is considered poor and there is no yearly cleanup campaign. The overall assessment by the environmental health officer is "poor".

ADMINISTRATION - The reserve is administered by a hereditary chief and councillors. The leadership is considered not effective. The estimated revenue was $2,400.00. No budget breakdown was available. The Saulteaux Band did not sign a treaty until August of 1954 and the band council was re-organized at that time.

Potential Labour Force - They have a potential labour force of 13 and there is one or 7.7% permanently employed. The opportunities for employment are school janitor, market garden, labour, farm labour, and summer employment in Provincial parks.

INCOME - The average income of families was $800.00. Not one family had a yearly income over $2,000.00

Welfare - Of the 25 families living on the reserve, 100% have received assistance (welfare costs in 1964 amounted to $64,000). Prior to
signing the treaty in 1954 the band for some time sent back the family allowance cheques. They wanted to be independent and not take any welfare from the government.

EDUCATION - Prior to the signing of the treaty in 1954, there were no schools on the reserve. At the present they have the highest attendance record of any. As Indian Affairs put it, "when they did get an opportunity for education, the took it seriously". There is a school committee on the reserve and a school of 2 classrooms and an attendance of 47 students. One student goes to a residential school and 15 attend integrated school. There are no students at trade schools or university.

COMMUNICATIONS - Saulteaux is situated 3 miles north of Cochin. Off the reserve roads are good but roads on the reserve are poor to impassable. There are few cars on the reserve and transportation is mainly by horse or on foot. The nearest telephone and mail service is Cochin 3 miles away. Messages are received by a radio bulletin. There is bus service into North Battleford from Cochin daily (except Sunday.)

SERVICES - Medical Services - The nearest hospital is North Battleford, 20 miles away or the Lady Minto Hospital at Evan, 40 miles away. The clinic space for the public health nurse is in the furnace room at the school and is not considered adequate. The public health nurse visits one week per month. There is no community health worker. Environmental health officer visits once a month. Neither a physician or dentist travels to the reserve. Medical Services supplied the Tuberculosis survey until 1968. There is not a health committee on the reserve. (In 1968, there were 18 live births and 2 preschool deaths).

Recreation - There are no facilities on the reserve but they are close to other communities with facilities. (Cochin is a summer resort area). The closest shopping centre is Cochin, 3 miles from the reserve.
APPENDIX B - 7

RED PHEASANT

SIZE - 24,323 acres with a band population of 516.

LAND USE - 1.094 acres or 2.2% of the area is used as cropland. 70.7% of the area is in natural range, hay land and pasture. 55.3% of the land is suitable for cropland, that is an acreage of 13,440, but the developing costs would be $14,000.00. 2.6% of the area is under water.

Potential - Gas, potash and oil are not likely to be exploited in the near future, but there is a possibility for fishing and tourism. According to the Indian Affairs survey, the reserve could accommodate 15 economic farms and 5 ranches for a total of 20 families. Living on the reserve in 1968 were 79 families. This indicates that only 25% of the present number of families could be supported by the reserve.

HOUSING - There are 70 houses on the reserve of which 55.8% are considered in good repair. Three houses are empty because the present council could not come to terms with the former owners. Two new houses will be needed in the future at a cost of $14,270 and 6 more need major repairs at a cost of $24,000.00. Electric power was supplied in 1968 by the Saskatchewan Power Corporation. Out of the 70 houses 51.5% are supplied with electricity.

Sanitation - House on the reserve have no running water, indoor toilets or baths and none have septic tanks. There are 3 community wells operating and in fairly good condition. Two electric pumps were to be installed. There are several private wells but many of them were poor. Another source of water is the slough and it was being used because some people lived long distances from the wells. 2% of the homes do not have privies and the conditions of the privies is poor. 2 families have sinks and none have a pipe outlet. For garbage disposal there is no designated area, no organized disposal and no pits. Some individuals burn garbage. There is no yearly cleanup campaign. The sanitation in the schools is considered poor. The overall assessment of the environmental health officer is "poor".

ADMINISTRATION - The reserve is administered by one elected chief and four councillors and the leadership appears to be effective. The capital is $5,215.23 and there is an estimated revenue of $8,993.00. In financing housing costs of $85,922.00, $870.00 would come from personal funds and $85,052.00 from public funds. No band funds were available. Selected items from a budget of $10,320.00 (1969-70), for salaries $900.00, wake and funeral expenses $300.00, cemetery repairs and upkeep $100.00.
B-7 (Cont'd)

food or fuel for destitute $2,000.00, maintenance of wells $1,000.00, recreation grant $200.00 and transportation of patients $200.00.

ECONOMICS - The potential labour force is 21 people with 20 persons permanently employed. Opportunity for employment is farm labour, sale of hay, or treatment and sale of fence pickets, the provincial and federal government agencies and some local industry.

Income - No families on the reserve had an income of over $2,000.00 and only 5 had an income of $1,000.00 to $2,000.00 in 1968.

Welfare - Of the 79 families living on the reserve 64 or 81% are living on assistance. The total welfare cost in 1964 was $8,200.00. There are 8 families in residence on the reserve who are not members of the Red Pheasant Band. These people are considered Metis or outsiders by the rest of the band.

EDUCATION - The reserve has a school committee. On the reserve is one classroom with 70 students; seven students go to residential schools and 68 attend joint schools. There are no band members at trade school. One attends university.

COMMUNICATIONS - Red Pheasant is situated 36 miles south of North Battleford and 6 miles north of Cando. The roads off the reserve are good, on the reserve are poor. There is a daily bus service on the main highway 6 miles away. There are few cars and most of the transportation is by horse or on foot. There is one telephone call box at a private home. The other telephones are situated at Red Pheasant and Cando 6 miles away. There is a daily mail to Cando and to Red Pheasant. Messages are received by the daily radio bulletin.

SERVICES - The nearest hospital is at Wilkie, twenty-four miles away and next is North Battleford, 35 miles away. There is clinic space in the homes only and is not considered adequate. A clinic cabin was moved to the reserve in 1969. A public health nurse visits twice a week. There is no community health worker and the environmental health officer visits once a month. It is reported that a doctor visits only occasionally and there are no dentist visits. Until 1968 the Tuberculosis survey was done by Medical Services. It is now being done by the Saskatchewan Tuberculosis League. In 1968 there was no health committee but there was one in formation. There were 22 live births and a pre-school death in 1968.

Recreation - A recreational director was resident on the reserve in 1968-69.
APPENDIX B-8

MOSQUITO

SIZE - Mosquito has 31,541 acres and a total band population of 384 with 369 living on the reserve. The land presently used as cropland is 520 acres or 1.7% of the total; another 69% is in natural range, hay and pasture. Further land suitable for cropland is 9,200 acres or 34% of the area of which the developing cost would be $700,000. 2.2% of the area is under water.

Potential - There are resources of gas, oil, potash but exploitation is unlikely in the near future. There is a potential for fishing and tourism. According to the 1968 Indian Affairs survey the reserve could accommodate 15 farms and 8 ranches; 23 families or 34% of the present 70 families now living on the reserve.

HOUSING - There are 51 houses on the reserve of which 58.9% or 30 are considered in good repair. New housing units required are 6 at a cost of $42,000.00 and 4 need major repairs at a cost of $2,400.00. Mosquito received power in 1968 and out of the 51 houses 44 or 81.3% are connected to the power line. Five new families were created last year.

Sanitation - No houses on the reserve have running water, indoor toilets or indoor baths and no houses have a septic tank. There were 3 electric pump wells on the reserve in fair condition and all 3 private wells were considered poor. Some people get the water supplies from a slough. Most houses have privies though conditions of all are considered very poor. For water disposal there were no sinks and no cesspools. There is no designated area for garbage and most is usually thrown in the bushes. There is no organization for a yearly cleanup campaign. The overall assessment of the reserve by the environmental health officer was "very, very, poor".

ADMINISTRATION - The reserve is administered by an elected chief and three councillors. The leadership appeared to be effective. The capital of the reserve is $23,759.41 and the estimated revenue $12,500.00. In financing housing costs of $69,335.00, $475.00 could come from personal funds; $5,128.00 from band funds and $63,752.00 from public funds. Selected items from the budget of $13,710.00 (1969-70) show salaries, $1,000.00; wake and funeral expenses $150.00; cemetery repairs and upkeep $500.00; food and fuel for destitutes $1,500.00. Housing repairs $3,300.00, recreation $100.00 and transportation of patients $600.00.

ECONOMICS - The potential labour force is 21 out of which 6 or 28.6% are permanently employed. Opportunities for employment are sale of hay, local industrial or farm labour.

Welfare - Of the 70 families living on the reserve 64 or 91.5% are
living on assistance. This makes 325 people or 88% of the total population of 369 living on welfare. The total welfare costs during 1964 were $75,600.00

EDUCATION - The reserve has a school committee. There are 96 students at school on the reserve in a school of 2 classrooms. 2 children go to residential school, 11 to a joint school and 2 to a trade school or university.

COMMUNICATIONS - Mosquito Reserve is situated 32 miles south of North Battleford and 6 miles south of Cando. The roads on the reserve are poor. There is a bus from Cando. 2 telephone call boxes for outgoing calls were placed on the reserve. These were damaged, repaired and again destroyed. The telephone company refused to repair them again. There is a telephone at Cando 6 miles away, and Red Pheasant store, 2 miles away and daily mail service at both places. Messages are received by daily mail service.

SERVICES - Medical -- The nearest hospital is at Wilkie, 20 miles away. North Battleford Indian Hospital is 33 miles away. The clinic space is the empty teacherage and was considered adequate. The public health nurse visits twice weekly and the environmental health officer once a month. There are no visits from a physician and dentist and the Tuberculosis survey was done yearly by Medical Services until 1968. There was no health committee and none in formation. There were 15 live births on the reserve and no infant deaths in 1968.

Other - The closest stores are at Red Pheasant 2 miles away and Cando 6 miles away.

Recreation - There are no recreational facilities on the reserve.
Appendix C-1
Indices Used in Study

Indices developed from special instructions included in a Manual prepared for the International Study were used for the manipulation of raw data to create new scores for certain variables. Following are the new scores created and the questions from which the raw data were used to create the scores.

1. Skepticism Towards Medicine
   Scores: 0 - low
   1-2 - intermediate
   10 - high

   The score was formed by counting the number of codes 0-8 in questions 237, 238 and 243 in the adult questionnaire.

2. Skepticism Towards Medical Doctors
   Scores: 0 - low
   1-2 - intermediate
   3 - high

   Scores were formed by counting the number of codes 1 in questions 236, 240 and 244 in the adult questionnaire.

3. Tendency to Use Services for Somatic Problems
   Scores: 0 - low
   1-3 - intermediate
   4 - highest

   Scores formed by counting the number of codes 1 in questions 247, 252 and 254 in the adult questionnaire.
4. Tendency to Use Services for Psycho-social Problems

Scores:  
- 0 - low  
- 1 - intermediate  
- 2 - high

Scores were formed by counting the number of codes 1 in questions 248 and 252 in the adult questionnaire.

5. Tendency to Use Services For Children

Scores:  
- 0 - low  
- 1-6 - intermediate  
- 7 - high

Scores were formed by counting the number of codes 1 in questions 194 and 201 in the child questionnaire.

6. Perceived Availability of Care

Scores:  
- 0 - low  
- 1-3 - intermediate  
- 4 - high

Scores were formed by counting the number of codes 1 in questions 233, 235 and 243 in the adult questionnaire.

7. Anxiety Index

Scores:  
- 00 - low  
- 01-09 - intermediate  
- 10 - high

A two digit code was created by counting the number of codes 1 in the following questions 255-264 in the adult questionnaire.
8. Dependency on Illness

Scores: 0 - low

1 - intermediate

2 - high

The scores were formed by counting the number of codes 1 in questions 245 and 246 in the adult questionnaire.
Components for the three categories and assigned scores for each component.

**Questionnaires**

**and question number for each component**

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**Highest possible score for Location in Family Leadership Structure**

\[ \text{Highest possible score} = 17 \quad \text{Lowest} = 0 \]

* Key - FQ Family Questionnaire (Indian Study)
  HQ Household List (Int.Study)
  AQ Adult Questionnaire (Int. Study)
  SQ Supplementary Questionnaire - Adult (Sask. Int. Study only)
2. Location in Community Leadership Structure

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<th>FQ</th>
<th>Attendance at Band Meetings</th>
<th>Speaking up at Band Meetings</th>
<th>People value their opinions</th>
<th>Member of immediate family served on Band Council within the last 5 years</th>
<th>Active in groups clubs or association</th>
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</tr>
<tr>
<td></td>
<td>About Half time 2</td>
<td>About half time 2</td>
<td>Sometimes 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sometimes 1</td>
<td>Sometimes 1</td>
<td>No usually 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Never 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Highest possible score in Location in Community Leadership Structure = 14  Lowest = 0

3. Access to Success Goals

<table>
<thead>
<tr>
<th>AQ 280</th>
<th>Grade of school completed by head of the household</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>5 - 8</td>
</tr>
<tr>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AQ SectionQ</th>
<th>Work of head of household</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self employed, eg. small farmer 3</td>
</tr>
<tr>
<td></td>
<td>Presently employed 2</td>
</tr>
<tr>
<td></td>
<td>Not presently employed but worked previously 1</td>
</tr>
<tr>
<td></td>
<td>Never worked 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FQ 12</th>
<th>Car or Truck in good working order 1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FQ 11</th>
<th>Type of home</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frame 2</td>
</tr>
<tr>
<td></td>
<td>Log 1</td>
</tr>
</tbody>
</table>
FQ 11(a)  Conditions of home
- Inside
  Well kept  2
  Clean but untidy  1
  Dirty  0

HL 26  Room/person ratio
  1 or more  3
  .9-.5  2
  .5 - .25  1
  .25  0

FQ 14  Television in the Home  1

Highest possible score in access to success goals = 17
Appendix C-3

SOCIOLOGICAL STATUS INDICES BY AGE GROUPS AND SEX

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>0-14 M</th>
<th>0-14 F</th>
<th>15-44 M</th>
<th>15-44 F</th>
<th>45-64 M</th>
<th>45-64 F</th>
<th>&gt; 64 M</th>
<th>&gt; 64 F</th>
<th>All Ages M</th>
<th>All Ages F</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Indices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>4</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>5</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N = 909</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Children 0-15  N = 522

Adults 15  N = 387
Appendix C-4

CHILDREN AND ADULTS ON EACH OF THE EIGHT RESERVES IN THE SAMPLE POPULATION

BY SEX

Percentages in brackets are calculated on the number of persons on each reserve.

<table>
<thead>
<tr>
<th>Reserves</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=</td>
<td>107</td>
<td>167</td>
<td>80</td>
<td>153</td>
<td>124</td>
<td>57</td>
<td>135</td>
<td>83</td>
<td>906</td>
</tr>
</tbody>
</table>

(a) Children 0-14 years

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>25</td>
<td>52</td>
<td>18</td>
<td>49</td>
<td>44</td>
<td>14</td>
<td>37</td>
<td>21</td>
<td>260</td>
</tr>
<tr>
<td>Females</td>
<td>30</td>
<td>46</td>
<td>24</td>
<td>39</td>
<td>35</td>
<td>18</td>
<td>40</td>
<td>30</td>
<td>262</td>
</tr>
</tbody>
</table>

Total Children 55 98 42 88 79 32 77 51 522

per cent (51) (59) (53) (58) (64) (56) (57) (61) (53)

(b) Adults 15 years

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>24</td>
<td>33</td>
<td>19</td>
<td>29</td>
<td>19</td>
<td>12</td>
<td>30</td>
<td>18</td>
<td>184</td>
</tr>
<tr>
<td>Females</td>
<td>28</td>
<td>36</td>
<td>19</td>
<td>36</td>
<td>26</td>
<td>13</td>
<td>28</td>
<td>14</td>
<td>200</td>
</tr>
</tbody>
</table>

Total Adults 52 69 38 65 45 25 58 32 384

per cent (48) (41) (47) (42) (36) (44) (43) (39) (42)
Appendix D

EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT
1972, 32, 715-721.

NOMOGRAPHS FOR THE SIGNIFICANCE OF THE
DIFFERENCE BETWEEN PERCENTAGES

M. REEB
Bar-Ilan University, Israel

Lawshe and Baker (1950) present a nomograph for the significance of the difference between uncorrelated percentages, based on the "development of a statistic which is a function of \( p \) and which has a constant standard error dependent only on the size of the sample." This nomograph, Figure 1 in the present paper, is convenient to use in that it provides, directly from \( p_1 \) and \( p_2 \), values for the statistic \( \omega \) (omega) for substitution in

\[
\frac{t}{\omega} = \sqrt{\frac{2N_1N_2}{N_1 + N_2} - 1},
\]

the calculation being completed arithmetically. The first part of this paper suggests the use of a companion nomograph providing directly that part of (1) which is a function of \( N_1 \) and \( N_2 \). This function, defined as \( \nu \) (nu), gives rise to

\[
t = \omega \nu,
\]

which is more easily calculated than (1).

The nomograph is based on the geometric property that in a right-angled triangle of lesser sides \( N_1 \) and \( N_2 \), if a line be drawn

---

1 The publication of this material has been assisted by a grant from the Research Fund of Bar-Ilan University.
2 Thanks are expressed to Prof. C. H. Lawshe for permission to use the nomograph. In order to increase accuracy, each \( \frac{1}{4} \) division on the \( \omega \) scale has been sub-divided into 5 parts, each of \( \frac{1}{50} \).
3 Appel (1952) has presented a set of nomographs to derive \( t \) for the same case. Almost no computation at all is required, but their use involves more steps and is more complex than in the present procedure.
bisecting the right angle to meet the hypotenuse and its length is \( d \), then

\[
d = \sqrt{\frac{N_1N_2}{N_1 + N_2}}
\]  

(3)

\( \nu \) having been defined as \( \sqrt{\frac{2N_1N_2}{(N_1 + N_2)}} \), (3) gives

\[
\nu = \sqrt{\frac{\nu^2}{d}}
\]  

(4)

A nomograph can now be drawn with \( N_1 \) and \( N_2 \) as intercepts on the vertical and horizontal axes respectively, and the required value of \( \nu \) will be a simple function of \( d \), the length of the intercept on the diagonal bisecting the right angle. In practice, the \( \nu \) scale in Figure 2 was calibrated by taking the special case \( N_1 = N_2 = N \) for which \( \nu = \sqrt{N} \) and \( d = N/\sqrt{2} \).

**Use of the Nomographs to Obtain \( t \)**

Set a straight-edge, preferably transparent, in Figure 1 at the appropriate values of \( p_1 \) and \( p_2 \), and read \( \omega \). Similarly, in Figure 2, from the values of \( N_1 \) and \( N_2 \) read \( \nu \); the upper sides of the \( N_1, N_2 \) and \( \nu \) scales are calibrated for \( N_1, N_2 = 0 \rightarrow 100 \), and the lower for \( N_1, N_2 = 0 \rightarrow 1000 \). (These two sets of scales are to be used separately, i.e., values of \( N \) less than 100 from one set and greater than 100 from the other may not be used together.) Multiply \( \omega \) by \( \nu \) to obtain \( t \). If \( \omega \) is very small, or \( t \) is close to the required significance level (either below or above it), it is probably better to calculate \( t \) by the usual formula.

**Nomographs for Critical Omegas**

A possible extension of this device is suggested by two circumstances. Firstly, as \( d \)'s increase, the values of \( t \) required for significance at given probability levels tend rapidly towards asymptotes, as shown by the typical values in Table 1.

Consequently, where \( t \) changes very little, it becomes possible with small loss to calibrate the diagonal in Figure 2 not only as

---

4 One of the steps in the Appel (op cit) procedure involves the derivation of \( N \), defined as \( 1/N_1 + 1/N_2 \), from scales for \( N_1 \) and \( N_2 \); this might have been modified to derive \( \nu \) as defined above. However all these scales narrow very rapidly indeed as \( N \) increases, and it is thought that Figure 2 of this paper is preferable.
previously in \( v \), but directly in critical minimum values of \( \omega \), given by

\[
\omega_{\text{min}} = \frac{f}{v}
\]
Figure 2.
TABLE 1

Values of $t$ Significant (two-tailed) at .05 and .01 for Various $df$'s

<table>
<thead>
<tr>
<th>$df$'s</th>
<th>25</th>
<th>50</th>
<th>100</th>
<th>400</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>2.060</td>
<td>2.008</td>
<td>1.981</td>
<td>1.966</td>
<td>1.962</td>
</tr>
<tr>
<td>.01</td>
<td>2.737</td>
<td>2.675</td>
<td>2.626</td>
<td>2.588</td>
<td>2.581</td>
</tr>
</tbody>
</table>

$t$ being taken at its highest value for a selected range of $df$'s at a given significance level.

Secondly, even when $t$ changes more rapidly, advantage can be taken of the fact that in using Figure 2, some information on the number of cases, $N_1 + N_2$, and therefore on the number of $df$'s, $N_1 + N_2 - 2$, for a given comparison has become available. The intercept on the diagonal corresponds to a certain minimum number of $df$'s, represented by the case $N_1 = N_2$ at that particular intercept. Consequently again as in (5), but separately for each point on the diagonal, critical minimum values of $\omega$, corresponding to the appropriate minimum value of $t$ required for significance divided by the fixed value of $\nu$ at that point, can be calculated. Some loss of power is entailed by this procedure, growing less as $N_1$ and $N_2$ tend to equality and as $df$'s increase, in accordance with, for example, the values of $t$ in Table 1.

Evaluation of Loss of Power

The loss of $df$'s due to the inequality of $N_1$ and $N_2$ can be evaluated in the following way. For a given intercept on the diagonal the minimum sample size corresponds to the case $N_1 = N_2 = d/\cos 45^\circ = \sqrt{2} d$, $d$ being defined as previously. Substituting in this the value of $d$ given by (3) above, and doubling, the effective minimum sum of $N_1$ and $N_2$ is, therefore, given by $4(N_1N_2/N_1 + N_2)$. Since the actual sum is, of course, $N_1 + N_2$, the relative utilization of $df$'s by this procedure is $4[N_1N_2/(N_1 + N_2)]$ (neglecting the 2 degrees of freedom lost in both numerator and denominator). Denoting $N_1/N_2$ by $r$, we have this conveniently expressed by $4r/(1 + r)^3$, which is evaluated for various values of $r$ in Table 2.

Bearing in mind the nature of the variation in $t$, it emerges that critical values of $\omega$ are not very seriously affected even for small and quite unequal numbers of cases in the two samples. For example, $t = N_1 = 10, N_2 = 40$, there are 48 $df$'s, which for $p = .05$ requires
TABLE 2
Relative Utilization of df's for Various Values of \( \nu \)

<table>
<thead>
<tr>
<th>( \nu )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rel. Utilization</td>
<td>1.00</td>
<td>.89</td>
<td>.75</td>
<td>.64</td>
<td>.49</td>
<td>.33</td>
<td>.40</td>
<td>.33</td>
</tr>
</tbody>
</table>

A \( t \) of 2.010. For the intercept on the diagonal, the number of effective \( df \)'s is given by \( 4N_1N_2/N_1 + N_2 - 2 = 30 \), for which the required \( t \) is 2.042. From (5), and \( \nu \) being uniquely determined at each point because of the geometrical properties of the nomographs, the required minimum value of \( \omega \) (or \( t \)) has increased by .032/2.010 or 1.6% only. For .01 significance, the increase is \((2.750 - 2.681)/2.681\) or 2.6%. Similarly for \( N_2 \) of 20 and 100, \( \omega_{\text{min}} \) increases by .8% and 1.1% for .05 and .01 significance respectively, for 50 and 150 by .2% and .3%, and for 200 and 500 by about .1%.

It must be emphasized that the error introduced is always of Type II, i.e., in the conservative direction, accepting the null hypothesis when it should be rejected.

Calibration

As before, the nomographs were calibrated by using the special case of \( N_1 = N_2 = N \) for which \( \nu = \sqrt{N} \) and \( d = N/\sqrt{2} \).

Consequently (5) becomes

\[
\omega_{\text{min}} = \frac{t}{\sqrt{N}} \tag{6}
\]

where \( t \) takes the appropriate value for \( 2N - 2 \) degrees of freedom. Values of \( t \) for \( p = .05 \) and .01 (two-tailed) were taken from Table V in Edwards (1968) (which is rather more detailed than most such tables) to three decimal places for \( N = 2 \to 200 \), corresponding to \( 2 \to 398 \) \( df \)'s, with graphical interpolation where necessary. For \( N \) more than 200, the variation in \( t \) does not discernibly affect the calibration, and appropriate maximum \( t \)'s were, therefore, taken as applicable for the rest of the range of the nomographs, up to \( N = 1000 \). For convenience, two nomographs were drawn, separately for ranges of \( N \) from 0 \( \to 100 \) (Figure 3) and 0 \( \to 1000 \) (Figure 4).

Use of the Critical Omega Nomographs

Use Figure 1 to determine, as previously, the value of \( \omega \) for \( p_1 \) and \( p_2 \). If \( N_1 \) and \( N_2 \) are less than 100, use Figure 3, if less than
Figure 3.
Figure 4.
1000 Figure 4, to determine the critical minimum value of \( \omega_{\text{min}} \) required for significance at \( p = .05 \) or .01 (two-tailed): it is given by the intercept of the diagonal of the line connecting the appropriate values of \( N_1 \) and \( N_2 \). If \( \omega \) exceeds \( \omega_{\text{min}} \), the difference in percentages is significant at the given level. If \( \omega \) is not much different from \( \omega_{\text{min}} \), it is probably better to use Figure 2 and obtain \( t \).

REFERENCES


APPENDIX E-I. Controversial Cases Over Responsibility of Medical Care of Indians.

In 1935 in the Exchequer Court an action was brought by George Drever et al of the Mistawasis Band in Saskatchewan. The Band funds had been used without consent of the Band by the Department of Indian Affairs, to pay for drugs and medical supplies. The judge concluded that this was contrary to the clause in Treaty six referring to the medicine chest and therefore all medicines, drugs or medical supplies which might be required by the Mistawasis Band were to be supplied free of charge. In the judgment known as the Mistawasis Judgement, no mention was made of medical or hospital care. In 1958 an action was started by Lewis Prosper who claimed damages done by a Peter Backman. The defense argued that the claim for medical and hospital expenses should be disallowed on the grounds that Prosper, a registered Indian was entitled to free care. The court rejected this argument.

In 1965 another legal case occurred in Saskatchewan when Walter Johnson, a treaty Indian who had lived off the reserve for more than twelve months, was alleged to have unlawfully failed to pay the Head Tax required for the Provincial Hospital Medical Care Insurance programme. The defense counsel invoked the medicine chest reference of Treaty six. The judge, on May 12, 1965 in North Battleford ruled that this clause was a general one and that all Medical Services including medicine, drugs, medical supplies and hospital care be free of charge. During the data collection period for this study, a similar judgement was upheld in the case of Andrew Swimmer, a treaty Indian who lived off the reserve for several years and was an employee of the North Battleford Indian Hospital. He had not paid his premium and had incurred large hospital bills. Again the Treaty six clause was invoked in his favour. On December, 7, 1970 Chief Justice Culliton of the Saskatchewan Appeal Court overruled Magistrate Pollicha of North Battleford, who found Andrew Swimmer not guilty of failing to pay his 1966 joint Hospital and Medical Care Tax. Chief Justice Culliton found the accused guilty and ordered that the case be referred back to the Magistrate for sentencing. The Chief Justice found there was nothing in Treaty six binding the Federal Government to provide free Medical Services including medicine, drugs, medical supplies and hospital care for Indians.
Appendix E-2

Letter to the Editor. The Native Voice.


OPINION - NO OTHER CHOICE

Recently I read a book called "Perceptives on the North American Indians" and I would like to quote a paragraph as follows;

"B is a man with no regular conduct, he will have relations with any woman at any time. He has several illegitimate children by several women. His wife does the same. She has had several affairs, her house is poor, and there is almost no furniture there. You can see what is strictly necessary to life there. Her husband does not look after her, he abandons her. One spring she was pregnant. It was very cold, she was sick, her children were crying, there was no food in the house but her husband didn't care, he was fooling around all the time" and on it went so I got tired of reading it and turned to the Journal. The first section I read was about the trial of an Indian woman who stabbed her common-law husband to death because of an intolerable life situation. To my great surprise I condoned her courage to do something about it. It was then I decided that I would write on the behalf of the Indian women. In my opinion, being an Indian woman is not the easiest position to be. First because we are women, secondly we are Indians. The Indian women are the most mistreated human beings on any Native community or in cities. How many times does a Native women give up in despair due to intolerable life situations? How many times does a Native woman become the sole supporter and parent to a great number of children she had borne through love? How many times does a Native woman leave her loved ones and choose to escape into the city of sordid life because of inhuman treatment at home? To the majority of society the Native woman is good for nothing but one thing - sex. I have spent most of my
Appendix E-2 Cont'd.
life on the reserve and moved into the white society to further my education and what I have seen, heard, and experienced is disgustingly frustrating.

To give a few examples: I moved into a middle class district with the help of Canative House Corporation and upon my arrival was met by three women of the neighbourhood who came to my house and informed me that I must live according to the neighbourhood or I would be petitioned off the neighbourhood; on the night before hallowe'en someone threw at least a dozen eggs at my house; another time a note saying "Go home, Indians" was left in my mailbox. These are only a few examples. How in the world does anyone expect me to go and try to better myself? I may as well end up on skid row, too, why not? Isn't this what is expected of me? If I condone the drinking, killing, and immoral irresponsible life of the Indian it isn't because I want to, but I am forced to. If I am coming on too strong it isn't because I haven't got the majority, society falling at my feet praising my efforts, but because I haven't been allowed the right to be accepted as a human being or given the right to live as an individual. As a single parent, I have faced more abuse than is necessary for any human being. As a Native woman, I would like to enjoy the rights every Canadian woman has. I would like to go shopping without having to deal with any discrimination. I would like to go out at nights to get away from everything without attracting a bunch of sneering white men who think that I will jump into bed with them on the first opportunity. I would like to get into my cozy nightgown at night and have a good night's sleep without having to run for my life through streets and alleys to a friend's house, only to find her in the same situation. It is hard to be a woman, worse yet to be a squaw.
Appendix E-2 (Cont'd)

Letter to the Editor. The Native Voice

THE DRUNKEN INDIANS

So often I see a small article in a magazine or hear talk over the air dragging the intoxicated Indians in the many city slums over the coals. The culprits are disowned and reviled by the whites as well as the Indian people. I think it's time someone dug into their story and the probable cause behind it.

There are those that have been raised from childhood among the white people and those that have spent more time in Residential Schools than on the reserve. In such cases it is little wonder that these few grew up thinking and acting very different. For all the advantages such as upbringing provides there are as many hard facts to face. Rather than making them accept their Indian status as secondary, such an upbringing seems to make them fanatically proud of their Indian blood, it's history and the heritage that's theirs.

Because they don't fit in on one side or the other, they must walk the "no man's land" between the two which is sometimes as touchy as TNT. They are very much on the defensive, ready to explore at the least demeaning word and as tempermental as any highstrung person. There's more to these complex personalities than the drunken stupor they show to the world, the "front" is so well put on I guess sometimes they lose themselves behind it.

At one time or another, they all try to find a place for themselves among their people. More often than not it just doesn't work. They're accused of being stuck-up, trying to be smart, acting better than anyone else, pretending not to know the language (when they really don't) "showing off" their
Appendix E-2 Cont'd.
ability to read, write and do arithmetic etc. They're accused of all sorts of childish behaviour and spite until they're finally driven away through such persecution. Then the word goes around that "he or she found reserve life too hard and not fancy enough," yet these people couldn't appreciate bannock, moose steaks, dry meat and geouoe as well or real-honest-to-god Indian made soup the way these outcasts do. It's sad to hear them talking and telling each other how long it has been since they ate bannock or dry meat. They're wishfully sighing and saying "I can never go back, I guess."

So they live in the city with bigotry, indifference, animosity, unemployment (because employees prefer white workers) and harrassment by the police because they're Indians. They're down on skid row because they won't be accepted as they are anywhere else, unconsciously they think "if they think I'm so good now, I'll show 'em" and naturally suiting their actions to the thought, a self-defeating philosophy that finally tops it all off.

From that moment on they're a contradictory mess of hard talk, felonies, arrests, jails, anger, remorse, drunken sprees, drug and in short reacting to all the emotional hurt by breaking the social rules. In this twilight world they meet people of all sorts in almost the same fix. Maybe for the first time they find a little understanding and perhaps acceptance too. At last they have found the supporting role they need. It's the wrong kind, of course, but what does it matter when at last there's someone on their side. These "drunken Indians in the city," who are "blackening the image" of the whole race aren't doing so because there's nothing better to do but because they have feeling like anyone else.

I see red when I read magazines and hear people talk as though these victims of circumstances are bucking the laws and rules of both races because they're just plain no good, malicious and inconsiderate. They cert-
Appendix E-2 Cont'd.

mainly born planning all this misery, shame and condemnation from their fellow man. I am not saying every story is the same but one should look deeper than the surface before calling anyone down. I am writing this because I am sick of hearing people talk as though they were paragons of perfection.

I won't be surprised if this draws more verbal fire than I need to cook up new ideas to muse on. Whatever the response I hope it helps throw a bit of light on the "drunken city Indians" skeleton in the closet. I would be more than happy to know how others feel in regards to this not often mentioned situations. The different viewpoints may help me in one of the subjects I am working on. Especially from the people who are in such a position, as no one would know better than themselves what it is really like.

Thank you for your time and for the space given to what I have written. I hope with time we shall know nationwide unity in our Indian heritage. I close with peace and greetings to everyone and also Chief Robert Smallboy's camp. ANCS is the voice of the people and a great help to those who don't know what I.A.A. is all about.

Sock it to 'em! and keep up the more than tremendous job.
Appendix F-1
Field Organization - Relationship between the two Studies

*World Health Organization International Collaborative Study of Medical Care Utilization, Saskatchewan Area.*
To Whom it May Concern:

the bearer of this letter is an official Interviewer from the University of Saskatchewan.

Until June 1, 1969 she is engaged in collecting information for an authentic, scientific, University sponsored study of Health Care. In this capacity, she is authorized to seek the co-operation of, and interview certain residents of this area. We can vouch for her integrity.

The University will be most grateful for any assistance you can give our Interviewer in this important study.

Yours sincerely,

V.L. Matthews, M.D., D.P.H.,
Project Director

VLM/jb
Dear

We would like to thank you and the members of your family for co-operating with our interviewer Mrs. who called on you some time ago and asked questions about your health and how you and your family used the medical services available.

This information along with the information collected in six other countries will help in making plans for better health care for all people.

We are pleased that you were willing to be interviewed and thank you again for your co-operation,

Yours sincerely,

V.L. Matthews, M.D., D.P.H.,
Project Director,
W.H.O. International Collaborative Study of Medical Care Utilization
STATEMENT OF CONFIDENTIALITY
OF
INFORMATION FROM INTERVIEWERS

Respondents in the WHO/ICS-MCU have the right to the expectation that all of the information they report during the interview will be kept in the utmost confidentiality. Your position as an interviewer on this survey entitles you to information normally accessible only to doctors and closest family; but it also obligates you to keep the confidence of the respondents. It is very important for you to understand that you must not divulge any of the data you obtain as an interviewer, regardless of how unimportant it may seem to you or what the circumstances may be.

Please read this carefully and sign the form showing that you have read and accept it.

Signature of Interviewer ______________________
Date ______________________

World Health Organization
International Collaborative Study
of Medical Care Utilization
SUPPLEMENTARY QUESTIONS (ADULT)

1. You have already been asked about doctor visits in the last two weeks. IN THE WEEK BEFORE THAT (Show Calendar), did you (talk with) (visit) a doctor about your health?
   00 □ No
   □ Yes→1a. How many times? ___ ___
   1b. (Record name and address of each doctor visited/talked with that week)

   (Use reverse side of sheet if necessary)

2. So far we have talked about your hospital or nursing home admissions in the past 12 months. Now, IN THE 6 MONTHS BEFORE THAT (Show Calendar) were you admitted to a hospital or nursing home for overnight or longer?
   00 □ No
   □ Yes→2a. How many times? ___ ___
   2b. Can you tell me the name and address of (each of) the hospital(s) you were admitted to in that period.

3. If you had to be admitted to a hospital for some reason, is there any particular hospital you would choose to go to?
   00 □ No (Go to 4)
   □ Yes→3a. Which hospital is that?
3b. If you couldn't be admitted to (first choice), would there be another hospital you would choose to go to?

  00 □ No (Go to 4)
  O Yes→3c. Which hospital is that?

4. Is there any particular hospital you would not want to go to?

  00 □ No (Go to 5)
  O Yes→4a. Can you tell me the name of that hospital?

4b. Would you like to tell me more about that?

5. When you first think you have some sort of health problem, what do you usually do?

5a. If that doesn't work, what do you do?

6. When you think there is something wrong with your health, would you say that you ...
try to see a doctor as soon as possible ........... 0 □ (Go to 7)
delay seeing him for a while, or .................. 1 □
put it off as long as possible? .................... 2 □

6a. Could you tell me why you do that? ____________________________________________

_________________________________________
7. (CHECK Page 16, Question 140. IF PARTICULAR DOCTOR OR DOCTORS LISTED, ASK)
You mentioned (a particular doctor)(doctors) you (talk with)(visit) about your health. How long have you been seeing this doctor (these doctors)?

<table>
<thead>
<tr>
<th></th>
<th>Less than one year</th>
<th>10 - 19 years (all respondent's life)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>1 - 4 years</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5 - 9 years</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>10 - 19 years</td>
<td></td>
</tr>
</tbody>
</table>

8. All told, how long have you lived in this community?

<table>
<thead>
<tr>
<th></th>
<th>Under one year</th>
<th>10 - 19 years (all respondent's life)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>1 - 4 years</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5 - 9 years</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>10 - 19 years</td>
<td></td>
</tr>
</tbody>
</table>

9. (ASK DIRECTLY IF RESPONDENT IS ROLE CODE 1; ASK ABOUT ROLE CODE 1 IF RESPONDENT IS ANYONE ELSE)
(Have you)(Has Role Code 1) been active in any groups, clubs, or organizations during the past year?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

10. Are you associated with an organized church or faith?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. (ASK DIRECTLY IF RESPONDENT IS ROLE CODE 1; ASK ABOUT ROLE CODE 1
IF RESPONDENT IS ANYONE ELSE)

How many generations has (your)(Head's) family lived in Canada? For example ....

(Were you) (Was Head) born outside Canada?
   ○ Yes  (Go to 11a)
   ○ No

Was (your) (Head's) father born outside Canada?
   ○ Yes  (Go to 11a)
   ○ No

Was (your) (Head's) grandfather born outside Canada?
   ○ Yes  } (Go to 11a)
   ○ No  }

11a. What country did (your) (Head's) family come from originally?

(From here on, answer is recorded on the back of the card)

12. What language or languages are usually spoken in your home?

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>English and French</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>French</td>
<td>English and Ukrainian</td>
</tr>
<tr>
<td>2</td>
<td>Ukrainian</td>
<td>English and German</td>
</tr>
<tr>
<td>2</td>
<td>German</td>
<td>English and Indian language</td>
</tr>
<tr>
<td>3</td>
<td>Indian language</td>
<td>English and other (specify)</td>
</tr>
<tr>
<td>4</td>
<td>Other single language (specify)</td>
<td>Other combination not including English</td>
</tr>
</tbody>
</table>
13. Would you say that your total family income last year was ... 
   more than enough to pay for what the family needed ... 0 □
   just about enough ........................................... 1 □
   a bit less than enough, or ................................... 2 □
   very much less than was needed? .......................... 3 □

14. During the past 2 weeks, did you or anyone in your immediate family 
   obtain any drugs prescribed by a doctor?
   0 □ No (Go to 15)
   □ Yes→14a. Where was the prescription obtained?
     □ Don't know (Go to 15)
     from a local drug store .......... 1 □
     from a hospital ................. 2 □
     from a doctor's office .......... 3 □
     from a mail order retail ....... 4 □
     from a government agency ....... 5 □
     from somewhere else .......... 6 □

14b. (ASK ONLY ONCE FOR EACH FAMILY. ASK IF 
   RESPONDENT IS EITHER ROLE CODE 1 OR 2) 
   How many prescribed items did your family 
   buy in the past 2 weeks? ___ ___

14c. How much would you estimate was spent on 
   (that item) (those items)?
   0 □ Less than 1.00  5 □ 10.00 - 14.99
   1 □ 1.00 - 1.99  6 □ 15.00 - 19.99
   2 □ 2.00 - 2.99  7 □ 20.00 - 24.99
   3 □ 3.00 - 3.99  8 □ 25.00 or more
   4 □ 4.00 - 9.99

Now I would like to ask you a few questions about how much of your medical 
   bill is paid for you by insurance plans, government programs, and the like.
15. How much of your bill is paid for you when you visit a doctor when you are not in a hospital? Is it ....
<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td>less than half</td>
<td>1</td>
</tr>
<tr>
<td>half or more than half, or</td>
<td>2</td>
</tr>
<tr>
<td>all?</td>
<td>3</td>
</tr>
<tr>
<td>Don't know</td>
<td>8</td>
</tr>
</tbody>
</table>

16. How much of your doctors' bills are paid for you while you are in a hospital? Is it ....
<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td>less than half</td>
<td>1</td>
</tr>
<tr>
<td>half or more than half, or</td>
<td>2</td>
</tr>
<tr>
<td>all?</td>
<td>3</td>
</tr>
<tr>
<td>Don't know</td>
<td>8</td>
</tr>
</tbody>
</table>

17. How much of your other hospital expenses are paid for you? Is it ....
<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td>less than half</td>
<td>1</td>
</tr>
<tr>
<td>half or more than half, or</td>
<td>2</td>
</tr>
<tr>
<td>all?</td>
<td>3</td>
</tr>
<tr>
<td>Don't know</td>
<td>8</td>
</tr>
</tbody>
</table>

18. How much of your bill is paid for you when you visit a dentist in his office? Is it ....
<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td>less than half</td>
<td>1</td>
</tr>
<tr>
<td>half or more than half, or</td>
<td>2</td>
</tr>
<tr>
<td>all?</td>
<td>3</td>
</tr>
<tr>
<td>Don't know</td>
<td>8</td>
</tr>
</tbody>
</table>
19. How much of the cost for your drugs and medicines are paid for you when you are not in a hospital? Is it ...

   none .......................................... 0
   less than half .............................. 1
   half or more than half, or .... 2
   all? .......................................... 3
   Don't know ................................. 8

20. How much of the cost for an ambulance is paid for you when you use this kind of service in an emergency? Is it ...

   none .......................................... 0
   less than half .............................. 1
   half or more than half, or .... 2
   all? .......................................... 3
   Don't know ................................. 8

21. Do you have any medical insurance other than through the provincial plan?

   0 □ No
   □ Yes ———> 21a. What is it called?

   __________________________________________
   __________________________________________

22. Are you presently receiving disability benefits?

   0 □ No
   □ Yes ———> 22a. Do they depend upon seeing a doctor from time to time?
   8 □ Don't know

   1 □ No
   2 □ Yes
   7 □ Don’t know

ADDITIONAL CODE AT END OF COMPLETED QUESTIONNAIRE:

Hospital located nearest to respondent's home address ...
Appendix F-11

Supplementary Questions for Indian Sample Only

1. Do you think the services usually given by Indian Health services have changed within the last two years?
   - 0 [ ] No.
   - 1 [ ] Yes.
   - 8 [ ] Don't know.

1A. Could you tell me how you think they have changed?

________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________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2. Are there any health services you think the people on the reserve should be getting and are not getting?  
   0 □ No.  
   1 □ Yes.  
   8 □ Don't know.  

Could you tell me more about this?

__________________________________________

__________________________________________

__________________________________________

__________________________________________

3. Who do you think should provide the health services for Indians?  
   1 □ Federal Government?  
   2 □ Provincial Government?  
   3 □ Some other Agency?  
   8 □ Don't know.  

(if 1, 2 or 3, ask)  
Could you tell me why you think this?

__________________________________________

__________________________________________

__________________________________________

__________________________________________

4. Do you know the names of the hospitals in North Battleford?  
   0 □ No.  
   1 □ Yes.  

Could you name them?
To be asked of three informants of each family in Sample.

1. Do any members of this household attend band meetings -
   - Regularly: 0
   - About half the time: 1
   - Sometimes: 2
   - Never?: 3

   Comments:

2. Do they speak up at meetings -
   - Regularly: 0
   - About half the time: 1
   - Sometimes: 2
   - Never?: 3

   Comments:

3. When they speak would you say people value their opinion -
   - Most of the time: 0
   - Sometimes: 2
   - Not usually?: 3

   Comments:

4. Would you say members of this family belong to:
   - One of the larger family groups on the reserve: 0
   - One of the smaller, or: 1
   - No group?: 2

5. Do people come to any members of this family for advice -
   - Regularly (visitors every day): 0
   - Fairly regularly (once or twice a week): 1
   - Sometimes: 2
   - Never?: 3

   Comments:
7. Would you say the children in this family are -
   Well behaved
   Sometimes get into mischief
   Sometimes get into trouble?

   Comments:

8. How about the family's contacts with non-Indians, would you say they have -
   Many
   Few
   None?

   Comments:

9. On the reserve would you say this family has -
   One of the highest standing
   Is a respectable family
   Is not respected?

10. Would you say they share what they have with others -
    Frequently
    Not very frequently
    Never?

   Comments:

11. Type of home -
    Log
    Frame

   (a) Conditions inside:
    Well kept
    Clean but untidy
    Dirty

   (b) Conditions outside:
    Well kept
    Clean but untidy
    Dirty

Additional questions to be answered, once for each household -

12. Does this family have a car or truck in good working order -
    Yes
    No

13. Do they use it to transport neighbours, etc. to town, hospital, doctor, etc.
    Regularly
    Fairly regularly (at least once/month)
    Sometimes
    Never

14. Do they have a T.V. -
    Yes
    No
The Questionnaire Manual for the World Health Organization International Collaborative Study, Medical Care Utilization, contains the following questionnaires used for this study:

a) Adult
b) Child's
c) Household List.

For further information contact Department of Social and Preventive Medicine, University of Saskatchewan.
WORLD HEALTH ORGANIZATION—
INTERNATIONAL COLLABORATIVE STUDY
OF
MEDICAL CARE UTILIZATION

Adult Questionnaire

University of Saskatchewan
College of Medicine
236 Medical Building

Not to be used without permission of the WHO/ICS—MCU
1. Do you think the services usually given by Indian Health services have changed within the last two years?

0 [ ] No.
1 [ ] Yes.
8 [ ] Don't know.

1A. Could you tell me how you think they have changed?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

1B. Why do you think this change has been made?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

1C. What do you think about this change?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
2. Are there any health services you think the people on the reserve should be getting and are not getting?
   - [ ] No.
   - [X] Yes.
   - [ ] Don't know.

Could you tell me more about this?

3. Who do you think should provide the health services for Indians?
   - [ ] Federal Government?
   - [ ] Provincial Government?
   - [ ] Some other Agency?
   - [ ] Don't know.

(if 1, 2 or 3, ask)
Could you tell me why you think this?

4. Do you know the names of the hospitals in North Battleford?
   - [ ] No.
   - [X] Yes.

Could you name them?
<table>
<thead>
<tr>
<th>AREA</th>
<th>141</th>
<th>142</th>
<th>143</th>
<th>144</th>
<th>145</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FN</td>
<td></td>
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**ADULT CODE SHEET**
**AIKUISTEN KOODI LOMAKE**
**SIFARNIK ZA ODRASLE**
**CODIGO PARA ADULTOS**

**G-CHART**

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I am from ___________. We are making a health survey in the area. Your home was chosen in our sample. We would like to talk with you about medical services, how you use them, and what you think about them.

I would like to ask you about some people whom you might have seen about your health.

A

Within the last two weeks [show calendar], did you (talk with) (consult) (visit) a doctor about your health at any of the following places?

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<th>No</th>
<th>Yes</th>
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<td>1.</td>
<td>A doctor's (private office) (surgery) (clinic)?</td>
<td>☐ ☐</td>
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<tr>
<td>2.</td>
<td>A hospital outpatient (department) (clinic)?</td>
<td>☐ ☐</td>
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<tr>
<td>3.</td>
<td>A work or an industrial clinic?</td>
<td>☐ ☐</td>
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<tr>
<td>4.</td>
<td>Any other clinic?</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>5.</td>
<td>A school?</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>6.</td>
<td>A hospital (emergency room) (casualty department) (first aid station)?</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>7.</td>
<td>Home?</td>
<td>☐ ☐</td>
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<tr>
<td>8.</td>
<td>Some other place, other than over the telephone?</td>
<td>☐ ☐</td>
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<td>10.</td>
<td>Over the telephone, except to make an appointment?</td>
<td>☐ ☐</td>
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[If no yeses, go to 13.  
If only one yes, go to 12.  
If more than one yes, go to 11.]

11. Which of these was the most recent?  
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

12. What is the name and address of the doctor you most recently (talked with) (consulted) (visited)? [If doctor's name or address is not known, record the name and address of the (hospital) (clinic).]

| Name |
| Street |
| City/Town/Village |

[Go to 14]
13. When was the most recent time you (talked with) (consulted) (visited) a doctor about your health? Was it...

within the last 12 months, ........................................ 1
more than 12 months ago, or ........................................ 2
never? ................................................................. 8

[Go to 14]

14. Now I would like to ask you about your most recent (talk) (consultation) (visit) with a doctor. Did you have an appointment for that (talk) (consultation) (visit)? ........................ 9

No 10 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't Know

15. After you decided to (talk with) (consult) (visit) a doctor, how long did it take until you (talked with) (consulted) (visited) the doctor? Was it...

within one day, ..................................................... 0
more than one day but within one week, ........................................ 1
more than one week but within two weeks, .................................... 2
more than two weeks but within one month, .................................. 3
more than one month but within three months, or .......................... 4
more than three months? ............................................... 6
Don't know ............................................................. 8

[Go to 17]

16. Was this longer than you wanted to wait? ........................................ 0

No 10 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't Know

17. Sometimes people (talk with) (consult) (visit) a doctor because they need to for work, school, insurance, or a license. Was this (talk) (consultation) (visit) for some reason like that? ........................................ 0

No 10 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't Know

18. Did anyone suggest that you have that (talk)(consultation) (visit)? ........................ 0

No [Go to 30] ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know [ Go to 30]

Was it any of the following people?

19. The doctor himself? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

20. Another doctor? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

21. A nurse at a doctor's (private office) (surgery) (clinic) or a hospital outpatient (department) (clinic)? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

22. A nurse at work? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

23. Any other nurse? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

24. A midwife? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

25. A member of the family or a relative? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

26. A friend or neighbor? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

27. Your boss or supervisor? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

28. A minister, priest, or rabbi? ........................................ 0

No 1 ................................. 1 ................................. 8
Yes 10 ................................. 8
Don't know

29. Did anyone else suggest it? ........................................ 0

[Go to 29A]

29A. Who was it?

.................................................................
30. Was the main reason for that (talk) (consultation) (visit) because of ... a sickness, illness, or injury, ... [Go to 30A]
   a certificate other than a prescription, 1 [Go to Section B]
   a checkup, or 2 [Go to Section B]
   for some other reason?  
   → 30A. What was the reason?

   [If 31-34 are appropriate, go to 31; otherwise, check here O, and go to Section B]

31. At that time, did this bother you a great deal, 0
   somewhat, 1
   hardly at all, or 2
   not at all? 3
   Don't know 8

32. At that time, did this hurt or pain you a great deal, 0
   somewhat, 1
   hardly at all, or 2
   not at all? 3
   Don't know 8

33. Were you concerned or worried about this a great deal, 0
   somewhat, 1
   hardly at all, or 2
   not at all? 3
   Don't know 8

34. Did this begin within the last two weeks, 0
   more than two weeks ago but within the last month, 1
   more than one month ago, but within the last three months, or 2
   more than three months ago? 3

B

At that (talk) (consultation) (visit) with the doctor, did anyone do any of the following? No [Yes
35. [If contact over telephone or through someone else, omit.] Give you a (shot) (injection) or vaccination? 0 1
36. Give you medicine or a prescription? 0 1
37. Prepare a certificate or make out forms, other than a prescription? 0 1
38. Suggest that you see another doctor? 0 1
39. Suggest that you return to see this doctor? 0 1
40. Arrange for you to be admitted to a hospital or (nursing home) (convalescent home)? 0 1
41. [If contact by home visit, telephone visit, or through someone else, omit.] At that (talk) (consultation) (visit) with the doctor, did you have to wait too long or not too long in the waiting room?

   Too long ................................ 6 
   Not too long ............................. 1 
   Don’t know ............................... 8 

42. In your opinion, did the doctor spend enough time or not enough time with you?

   Enough time .............................. 0 
   Not enough time .......................... 1 
   Don’t know ............................... 8 

43. Were you satisfied or dissatisfied with what happened at that (talk) (consultation) (visit)?

   Satisfied ................................. 0 
   Dissatisfied .............................. 1 
   Don’t know ............................... 8 

44. Do you now have an appointment to (talk with) (consult) (visit) a doctor within the next two weeks? ................................. 0  
   No  
   1  
   Yes  

Now could we talk about some other health workers with whom you might have discussed your health. Within the last two weeks, did you (talk with) (consult) (visit) any of the following people about your health?

45. A midwife? ................................. 0 

46. A nurse at a doctor's (private office) (surgery) (clinic) or a hospital outpatient (department) (clinic)? ................................. 0 

47. A nurse at school or work? ................................. 0 

48. Any other nurse? ............................. 0 

49. An (optometrist or) optician? ............................. 0 

50. A (podiatrist) (chiropodist) or foot doctor? ............................. 0 

51. A (pharmacist) (druggist) (chemist)? ............................. 0 

52. A social or welfare worker? ............................. 0 

53. (A chiropractor or naturopath)? ............................. 0 

54. A healer or herbalist? ............................. 0 

55. Any other health worker? ............................. 0 

56. Did you talk with your boss or supervisor about your health? ............................. 0 

57. Did you talk with a minister, priest, or rabbi about your health? ............................. 0
Now I would like to ask you about your health and how you have been feeling recently.

58. Within the last two weeks, did you stay in bed all or part of any day because you were not feeling well? [Include days in hospital or (nursing home) (convalescent home)]

00 □ No [Go to 65]

Yes

58A. How many days altogether? ___________ days

59. Could you tell me what the problem was?

__________________________

60. At its worst, did this bother you .... a great deal, .... 0 □

somewhat, .......... 1 □

hardly at all, or ...... 2 □

not at all? .......... 3 □

Don't know ....... 8 □

61. At its worst, did this hurt or pain you .... a great deal, .... 0 □

somewhat, .......... 1 □

hardly at all, or ...... 2 □

not at all? .......... 3 □

Don't know ....... 8 □

62. At its worst, were you concerned or worried about this .... a great deal, .... 0 □

somewhat, .......... 1 □

hardly at all, or ...... 2 □

not at all? .......... 3 □

Don't know ....... 8 □

63. Did you (talk with) (consult) (visit) a doctor about this within the last two weeks? .... 0 □ No

1 □ Yes

[Check page 1. If no ambulator recorded, complete sections A and B; then go to 65.]

64. Within the last two weeks, did you want to (talk with) (consult) (visit) a doctor about this? .... 0 □ No [Go to 65]

Yes

64A. Was the main reason you did not (talk with) (consult) (visit) a doctor because ....

you didn't have time to go; ...... 1 □

it was too much trouble to get to a doctor; .......... 2 □

it costs too much to get to a doctor; or .......... 3 □

for some other reason? ...... 8 □

[Go to 65]

64B. What was the main reason?

__________________________
65. (Apart from the days you stayed in bed), were there any (other) days within the last two weeks when you were not able to do your usual activities because you were not feeling well? □ No [Go to 72] □ Yes

66. Could you tell me what the problem was? Same as reason for bed days. □ No [Go to 72]

67. At its worst, did this bother you a great deal, somewhat, hardly at all, or not at all? Don't know

68. At its worst, did this hurt or pain you a great deal, somewhat, hardly at all, or not at all? Don't know

69. At its worst, were you concerned or worried about this a great deal, somewhat, hardly at all, or not at all? Don't know

70. Did you (talk with) (consult) (visit) a doctor about this within the last two weeks? □ No □ Yes

[Check page 1. If no visit recorded, complete Sections A and B; then go to 72.]
71. Within the last two weeks, did you want to (talk with) (consult) (visit) a doctor about this?  
   No [Go to 72]  
   Yes  

   71A. Was the main reason you did not (talk with) (consult) (visit) a doctor because...  
   1 □ you didn't have time to go;  
   2 □ it was too much trouble to get to a doctor;  
   3 □ it costs too much to get to a doctor; or  
   4 □ for some other reason?  

67B. What was the main reason?  

72. (Apart from this) within the last two weeks, did you think there was anything (else) wrong with your health?  
   No [Go to 79]  
   Yes  

73. Could you tell me what the problem was?  

74. At its worst, did this bother you... a great deal,  
   somewhat,  
   hardly at all, or  
   not at all?  
   Don't know  

75. At its worst, did this hurt or pain you... a great deal,  
   somewhat,  
   hardly at all, or  
   not at all?  
   Don't know  

76. At its worst, were you concerned or worried about this... a great deal,  
   somewhat,  
   hardly at all, or  
   not at all?  
   Don't know  

77. Did you (talk with) (consult) (visit) a doctor about this within the last two weeks?  
   No  
   Yes  

[Check page 1. If no visit recorded, complete Sections A and B; then go to 79.]
78. Within the last two weeks, did you want to (talk with) (consult) (visit) a doctor about this? ............ Yes [Go to 78A]  
     No [Go to 79]  
     Don't know [Go to 79]

78A. Was the main reason you did not (talk with) (consult) (visit) a doctor because . . .
     you didn't have time to go; ............ No
     it was too much trouble to get to a doctor; .................. No
     it costs too much to get to a doctor; or .................... No

78B. What was the main reason? _______________________________  

79. Do you have any physical impairment or handicap? ................. No [Go to 82]  
     Yes  
     Don't know [Go to 82]

80. Could you tell me what it is? _______________________________  

81. Does it affect your ability to (do your usual work) (attend school)? ............ No  
     Yes  
     Don't know  

82. (Apart from this) do you have any long standing health problem or chronic illness? No [Go to Section E]  
     Yes  
     Don't know [Go to Section E]

83. Could you tell me what it is? _______________________________  

84. Does it affect your ability to (do your usual work) (attend school)? ............ No  
     Yes  
     Don't know
Now I'd like to talk with you about dental visits. Within the last month [show calendar], did you (talk with) (consult) (visit) a dentist about your teeth, gums, or mouth at any of the following places?

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<td>88A.</td>
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<td>90A.</td>
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<td>91A.</td>
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85. A dentist's (private office) (surgery) (clinic)?
86. A hospital dental clinic?
87. A work or an industrial clinic?
88. A school?
89. Some other place, other than over the telephone?
90. Through someone else?
91. Over the telephone, except to make an appointment?

If no yeses, go to 94.
If only one yes, go to 93.
If more than one yes, go to 92.

92. Which of these was the most recent?  
   0 ■ 85 1 ■ 86 2 ■ 87 3 ■ 88 4 ■ 89 5 ■ 90 6 ■ 91

93. What is the name and address of the dentist you most recently (talked with) (consulted) (visited)?
   [If dentist's name or address is not known, record the name and address of the (hospital) (clinic).]

   Name
   Street
   City/Town/Village

   [Go to 95]

94. When was the most recent time you (talked with) (consulted) (visited) a dentist?
   Was it
   within the last 12 months, 1 ■ [Go to Section F]
   more than 12 months ago, or 2 ■
   never? 3 ■

95. Now let's talk about your most recent (talk) (consultation) (visit) with a dentist. Did you have an appointment for that (talk) (consultation) (visit)?
   0 ■ No
   1 ■ Yes

96. Was the main reason for that (talk) (consultation) (visit) because of...
   trouble with teeth, gums, or dentures, 0 ■ [Go to 96A]
   a checkup or to clean your teeth, 1 ■ [Go to 100]
   to get a form or certificate other than a prescription, or 2 ■
   for some other reason? 3 ■

   96A. What was the reason?

   [If 97-99 are appropriate, go to 97; otherwise, check here 0 , and go to 100.]
97. At the time of this (talk) (consultation) (visit), did this bother you...

a great deal, ...................................................... 6 □
somewhat, .......................................................... 1 □
hardly at all, or .................................................... 3 □
not at all? ............................................................ 8 □
Don't know .......................................................... 8 □

98. When did you begin to be bothered by this? Was it...

within the last two weeks, ........................................ 0 □
more than two weeks ago but within the last month, ..... 1 □
more than one month ago but within the last three months, or 2 □
more than three months ago? ......................................... 3 □

99. Before this (talk) (consultation) (visit), did this hurt or pain you...

a great deal, ...................................................... 0 □
somewhat, .......................................................... 1 □
hardly at all, or .................................................... 2 □
not at all? ............................................................ 3 □
Don't know .......................................................... 8 □

100. At that time, did the dentist suggest that you have another (talk) (consultation) (visit)? .............. 0 □ No

□ Yes 8 □ Don't know

100A. Did he arrange an appointment? 1 □ No

2 □ Yes

7 □ Don't know

101. [If contact over the telephone or through someone else, omit.] At that (talk) (consultation) (visit) with the dentist, did you have to wait too long or not too long in the waiting room?

Too long ............................................................ 0 □
Not too long ....................................................... 1 □
Don't know .......................................................... 8 □

102. In your opinion, did the dentist spend enough time or not enough time with you?

Enough time ....................................................... 0 □
Not enough time .................................................. 1 □
Don't know .......................................................... 8 □

103. Were you satisfied or dissatisfied with what happened at that (talk) (consultation) (visit)?

Satisfied ........................................................... 0 □
Dissatisfied ....................................................... 1 □
Don't know .......................................................... 8 □
104. Within the last month, did you notice anything wrong with your teeth or gums?  
[Go to 112]  
   ✗ No  ☑ Yes  
   ![Diagram](image-url)  
   Was it any of the following?  
   ☑ No  ✗ Yes  
   105. A toothache?  
   106. A cavity?  
   107. Trouble with gums?  
   108. Bridge trouble or false teeth?  

109. At its worst, did (this) (any of these) bother you . . .  
   a great deal,  
   somewhat,  
   hardly at all, or  
   not at all?  
   Don't know  

110. At its worst, did (this) (any of these) hurt or pain you . . .  
   a great deal,  
   somewhat,  
   hardly at all, or  
   not at all?  
   Don't know  

111. Did you (talk with) (consult) (visit) a dentist about (this) (any of these) within the last month?  
[Complete Section E; then go to 112]  
   ✗ No  ☑ Yes  

112. Do you now have an appointment to see a dentist within the next month?  
   ✗ No  ☑ Yes
113. How many permanent teeth have you lost or had removed? Is it...

none, ........................................ 00 □ [Go to Section G]

fewer that half, .................. 113A. Do you have any false teeth, den-
tures, bridges, or plates at all? 01 □ No [Go to Section G]

half or more than half, or . . 02 □ Yes [Go to Section G]

all of them? .............. 113B. Do you have any false teeth, den-
tures, bridges, or plates at all? 03 □ No [Go to Section G]

Don't know ............ [Go to Section G]

113C. Do you have a full upper or lower plate? 04 □ No [Go to Section G]

113D. Do you have any false teeth, den-
tures, bridges, or plates at all? 05 □ Yes [Go to Section G]

113E. Do you have a full upper or lower plate? 06 □ No [Go to Section G]

113F. Do you have a complete set of upper and lower false teeth? 07 □ Yes [Go to Section G]

113G. Do you have any false teeth, den-
tures, bridges, or plates at all? 08 □ No [Go to Section G]

113H. Do you have a full upper or lower plate? 09 □ Yes [Go to Section G]

113B. Do you have any false teeth, den-
tures, bridges, or plates at all? 10 □ No [Go to Section G]

113F. Do you have a complete set of upper and lower false teeth? 11 □ Yes [Go to Section G]

113G. Do you have any false teeth, den-
tures, bridges, or plates at all? 12 □ No [Go to Section G]

113H. Do you have a full upper or lower plate? 13 □ Yes [Go to Section G]

G

Now I'd like to talk about your hospital or (nursing home) (convalescent home) admissions.

114. Within the last 12 months [show calendar], were you admitted to a hospital or (nursing home) (convalescent home) overnight or longer? 0 0 □ No [Go to 118]

114A. How many times? _______ times

115. the most recent admission? _______ nights

116. the time before that? _______ nights

117. the time before that? _______ nights

118. the time before that? _______ nights

119. the time before that? _______ nights

120. What was the date of the most recent admission?  

Month __  Day __   Year __

121. What is the name and address of the (hospital) (nursing home) (convalescent home) for that admission?

Name

Street

City/Town/Village
122. Was the main reason for the most recent admission because of...
   a sickness, illness, or injury, ........................................... 6 [Go to 122A]
   to have a checkup or tests done, or .................................... 1 [Go to 180]
   for some other reason? .................................................... 0 [Go to 187]

122A. What was the reason? ............................................. 122. To have a baby 2 [Go to 187]

[If 123-125 are appropriate, go to 123; otherwise, check here 0, and go to 126.]

123. At the time of admission, did this bother you ...
   a great deal, ................................................................. 0 0
   somewhat, ......................................................................... 1 0
   hardly at all, or .................................................................. 2 0
   not at all? ........................................................................... 3 0
   Don't know ......................................................................... 8 0

124. At the time of admission, did this hurt or pain you ...
   a great deal, ................................................................. 0 0
   somewhat, ......................................................................... 1 0
   hardly at all, or .................................................................. 2 0
   not at all? ........................................................................... 3 0
   Don't know ......................................................................... 8 0

125. At that time, were you concerned or worried about it ...
   a great deal, ................................................................. 0 0
   somewhat, ......................................................................... 1 0
   hardly at all, or .................................................................. 2 0
   not at all? ........................................................................... 3 0
   Don't know ......................................................................... 8 0

126. After arrangements were made for your hospitalization, how long did you wait
before going to the (hospital) (nursing home) (convalescent home)? Did you go ...
   within one day, .................................................. 0 0
   more than one day but within one week, ......................... 1 0
   more than one week but within two weeks, ...................... 3 0
   more than two weeks but within one month, ..................... 3 0
   more than one month but within three months, or ............ 4 0
   more than three months? ..................................................... 5 0
   Don't know ......................................................................... 8 0
127. Were you admitted from another hospital or (nursing home) (convalescent home)?
   - No
   - Yes

   What is the name and address of the (hospital) (nursing home) (convalescent home)?
   
   Name
   Street
   City/Town/Village

128. Within the same 12 months, were you admitted to a hospital or (nursing home) (convalescent home) for less than one day, that is, not overnight?
   - No [Go to Section H]
   - Yes → 128A. How many times? ___ times

129. What was the date of the most recent admission?
   Month Day Year

130. What is the name and address of the (hospital) (nursing home) (convalescent home) for that admission?
   
   Name
   Street
   City/Town/Village

131. Was the main reason for the most recent admission because of . . .
   - a sickness, illness, or injury, 0 [Go to 131A]
   - to have a checkup or tests done, or 1 [Go to 135]
   - for some other reason?  

   → 131A. What was the reason? To have a baby 2 [Go to 130]

132. At the time of admission, did this bother you . . .
   - a great deal, 0
   - somewhat, 1
   - hardly at all, or 2
   - not at all? 8
   - Don't know 8

133. At the time of admission, did this hurt or pain you . . .
   - a great deal, 0
   - somewhat, 1
   - hardly at all, or 2
   - not at all? 8
   - Don't know 8
134. At that time, were you concerned or worried about it . . .

- a great deal, ............................................. 0 □
- somewhat, .............................................. 1 □
- hardly at all, or ................................. 2 □
- not at all? .............................................. 3 □
- Don't know ............................................ 8 □

135. After arrangements were made for your hospitalization, how long did you wait before going to the (hospital) (nursing home) (convalescent home)? Did you go . . .

- within one day, ............................................. 0 □
- more than one day but within one week, .................. 1 □
- more than one week but within two weeks, .............. 2 □
- more than two weeks but within one month, ............ 3 □
- more than one month but within three months, or . . . 4 □
- more than three months? .................................. 5 □
- Don't know ............................................ 8 □

136. Were you admitted from another hospital or (nursing home) (convalescent home)?

- No 0 □
- Yes 1 □

What is the name and address of the (hospital) (nursing home) (convalescent home)?

<table>
<thead>
<tr>
<th>Name</th>
<th>Street</th>
<th>City/Town/Village</th>
</tr>
</thead>
</table>

137. Now about the way in which you usually get your medical care. Is there a particular doctor or doctors you (talk with) (consult) (visit) when you need help or want advice about your health? ........................................... 0 □

- No 0 □
- Yes [Go to 140] 1 □

137A. Is there a particular place where you go to (talk with) (consult) (visit) a doctor you need help or want advice about your health? ........................................... 2 □

- No 0 □
- Yes [Go to Section I] 1 □

138. What is the name and address of the place?

<table>
<thead>
<tr>
<th>Name</th>
<th>Street</th>
<th>City/Town/Village</th>
</tr>
</thead>
</table>

139. At that place, is there a particular doctor you (talk with) (consult) (visit) about your health? ........................................... 0 □

- No 0 □
- Yes [Go to 142] 1 □
140. Could you tell me the name(s) and address(es)?

A. ____________________________
   Name

   ____________________________
   Street

   ____________________________
   City/Town/Village

B. ____________________________
   Name

   ____________________________
   Street

   ____________________________
   City/Town/Village

[If only one particular doctor, go to 142]

141. Which one do you usually (talk with) (consult) (visit) about most of your health problems?

   A. above ................................................. 0 □
   B. above ................................................. 1 □
   Both ...................................................... 2 □
   Don't know ........................................... 8 □ [Go to Section I]

142. When was the most recent time you were (there) (at either doctor's)? Was it...

   within the last two weeks, ...................................... 6 □
   more than two weeks ago but within 12 months, ................. 1 □
   more than 12 months ago, or .................................. 2 □
   never? ..................................................... 8 □

143. How long does it usually take you to get to this (doctor) (place)? Is it...

   within 15 minutes, ........................................ 0 □
   more than 15 minutes but within half an hour, .................... 1 □
   more than half an hour but within one hour, or .................. 2 □
   more than one hour? ....................................... 3 □
   Don't know ................................................ 8 □

144. From your point of view, is the location convenient or inconvenient?

   Convenient ............................................... 0 □
   Inconvenient ............................................. 1 □
   Don't know ............................................... 8 □

145. Are the hours when you can be seen (by this doctor at his place of work) (at this place) convenient or inconvenient?

   Convenient ............................................... 0 □
   Inconvenient ............................................. 1 □
   Don't know ............................................... 8 □

Apart from this, I would like to ask you some additional questions about your health.

146. Do you usually bring up any phlegm from your chest the first thing on getting up on a winter morning? ................................................. 0 □ No

   1 □ Yes

147. Do you usually bring up any phlegm from your chest during the day or at night in the winter time? ................................................. 8 □ No [Go to 148]

   1 □ Yes
148. Do you bring up phlegm like this on most days or nights for as much as three months each year?  

☐ No [Go to 149]  
☐ Yes [Go to 149]

---

149. In the last three years have you had a period of (increased) cough and phlegm lasting for three weeks or more?  

☐ No [Go to 150]  
☐ Yes [Go to chart]

---

149A. In the last three years have you had a period of increased cough and phlegm lasting for three weeks or more?  

☐ No [Go to chart]  
☐ Yes [Go to chart]

---

150. Have you ever had any pain or discomfort in your chest?  

☐ No  
☐ Yes [Go to 151]

---

150A. Have you ever had any pressure or heaviness in your chest?  

☐ No [Go to 151]  
☐ Yes [Go to 151]

---

151. Do you get it when you walk uphill or hurry?  

[Record yes if either walking uphill or hurrying causes pain or discomfort.]  

☐ Yes → 151A. Do you get it when you walk at an ordinary pace on the level?  

☐ No [Go to 152]  
☐ Yes [Go to 152]

---

151B. Do you get it when you walk or nor walk uphill at an ordinary pace on the level?  

☐ No [Go to 155]  
☐ Yes [Go to 155]

---

152. What do you do if you get it while you are walking? [Record stop or slow down if subject carries on 'after taking nitroglycerin (trinitrin).']  

stop or slow down, or  

carry on  

☐ No [Go to 155]  
☐ Yes [Go to 155]

---

153. If you stand still, what happens to it?  

relieved, or  

not relieved  

☐ No [Go to 155]  
☐ Yes [Go to 155]

---

153A. How soon?  

10 minutes or less, or  

more than 10 minutes  

☐ No [Go to 155]  
☐ Yes [Go to 155]

---

154. Will you show me where it was?  

1. Sternum (upper or middle)  
2. Sternum (lower)  
3. Left anterior chest  
4. Left arm  
5. Other  

☐ No  
☐ Yes [Go to 155]

---

[For coders: Codes for combinations]

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>05-1,2</td>
<td>11-2,5</td>
</tr>
<tr>
<td>06-1,3</td>
<td>12-3,4</td>
</tr>
<tr>
<td>07-1,4</td>
<td>13-3,5</td>
</tr>
<tr>
<td>08-1,5</td>
<td>14-1,5</td>
</tr>
<tr>
<td>09-2,3</td>
<td>15-1,2,3</td>
</tr>
<tr>
<td>10-2,4</td>
<td>16-1,2,4</td>
</tr>
</tbody>
</table>
154A. Do you feel it anywhere else? .......................... No
  Yes

155. Have you had this (pain or discomfort) (pressure or heaviness) in your chest within the last three months? .......................... No
  Yes [Go to chart]

156. Have you ever had pain in any joints? .......................... No [Go to 157]
  Yes

156A. Have you had such pain within the last three months? .......................... No [Go to 157]
  Yes

157. Do you wake up with stiffness or aching in your joints or muscles? .......................... No [Go to 159]
  Yes

157A. Do you wake up with stiffness or aching in your joints or muscles? .......................... No [Go to 159A]
  Yes

158. How long does it last... ..........................
  less than 10 minutes, .......................... No [Go to 158A]
  10 minutes to less than
  30 minutes, or .......................... Yes
  30 minutes or more? ..........................

158A. How long does it last... ..........................
  less than 10 minutes, .......................... No [Go to 158A]
  10 minutes to less than
  30 minutes, or ..........................
  30 minutes or more? ..........................

159. Have you ever had arthritis or rheumatism, or any other disease of that type? ..........................
  No
  Yes

159A. Have you ever had arthritis or rheumatism, or any other disease of that type? ..........................
  No
  Yes

160. Have you ever had swelling in any joints? ..........................
  No
  Yes [Go to chart]

161. Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill? ..........................
  No [Go to Section J]
  Yes
  Disabled (other than heart or lung disease)

162. Do you get short of breath walking with other people of your own age on level ground? ..........................
  No [Go to 162]
  Yes

162A. Do you have to stop for breath when walking at your own pace on level ground? ..........................
  No
  Yes

163. Have you had this complaint within the last three months? ..........................
  No [Go to Section J]
  Yes [Go to chart]
### CHART

Now about the (phlegm) (chest pain, pressure) (joint pain) (shortness of breath) ...

<table>
<thead>
<tr>
<th></th>
<th>A: Phlegm</th>
<th>B: Chest (pain) (pressure)</th>
<th>C: Joint pain</th>
<th>D: Shortness of breath</th>
</tr>
</thead>
<tbody>
<tr>
<td>164. Within the last three months has this (phlegm) (chest pain, pressure) (joint pain) (shortness of breath) bothered you...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0) a great deal,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) somewhat,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) hardly at all, or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3) not at all?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4) Don't know</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

| 165. Within the same three months, were you concerned or worried about this... |
|   | (0) a great deal, |   |   |   |
|   | (1) somewhat, |   |   |   |
|   | (2) hardly at all, or |   |   |   |
|   | (3) not at all? |   |   |   |
|   | (4) Don't know |   |   |   |
|   | 0 | 0 | 0 | 0 |
|   | 1 | 1 | 1 | 1 |
|   | 2 | 2 | 2 | 2 |
|   | 3 | 3 | 3 | 3 |
|   | 8 | 8 | 8 | 8 |

| 166. Did you (talk with) (consult) (visit) a doctor about this? No | 166A. Did you want to (talk with) (consult) (visit) a doctor about this? (2) No | 167. Within the same three months, did you take or use anything at all to relieve this? (0) No | 167A. Was this (Were these) prescribed or suggested by a doctor? (1) No, none prescribed |
|   | (0) Yes | (1) Yes | (2) Yes, some prescribed | (3) Yes, all prescribed |
|   | 0 | 0 | 0 | 0 |
|   | 0 | 0 | 0 | 0 |
|   | 0 | 0 | 0 | 0 |
|   | 0 | 0 | 0 | 0 |
|   | 0 | 0 | 0 | 0 |
|   | 0 | 0 | 0 | 0 |

| 168. Within the same three months, how many days has this kept you in bed all or part of a day, including days you may have been in a hospital or (nursing home) (convalescent home)? | 169. Within the same three months, how many days altogether has this kept you from doing the things you usually do? |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
And now some questions about smoking.

188. Do you smoke cigarettes?

- [ ] No
- [ ] Yes

188A. Did you ever smoke regularly, that is, as much as one cigarette per day for as long as a year?

- [ ] No
- [ ] Yes

[Go to Section K]

188B. How many cigarettes do you usually smoke a day?

Is it...

- [ ] 1 to 4
- [ ] 5 to 14
- [ ] 15 to 24
- [ ] more than 25

[Go to Section K]

189. When did you most recently have a general medical or physical examination by a doctor when you were not sick (or pregnant)? Was it...

- [ ] within the last two weeks
- [ ] more than two weeks ago but within 12 months
- [ ] more than 12 months ago
- [ ] never
- [ ] Don't know

[Go to 191]

190. Was this general medical or physical examination given at...

- [ ] a doctor's (private office) (surgery) (clinic)
- [ ] a hospital outpatient (department) (clinic)
- [ ] a work or an industrial clinic
- [ ] some other clinic
- [ ] a school
- [ ] some other place?

[Go to 191]

191. Was this examination needed for work, school, insurance, a license, or some other reason like that?

- [ ] No
- [ ] Yes

192. When did you most recently have an immunization or vaccination or injection to prevent sickness or illness? Was it...

- [ ] within the last two weeks
- [ ] more than two weeks ago but within 12 months
- [ ] more than 12 months ago
- [ ] never
- [ ] Don't know

[Go to Section L]
193. Was this immunization, vaccination, or injection given at ...  
- a doctor's (private office) (surgery) (clinic), ................. 0 □ 
- a hospital outpatient (department) (clinic), ................. 1 □ 
- a work or an industrial clinic, ................................ 2 □ 
- some other clinic, ............................................. 3 □ 
- a school, or ..................................................... 4 □ 
- some other place? ............................................... 5 □ 

Now here are some questions about your eyesight.

194. When did you most recently have your eyes tested for vision? Was it ...  
- within the last two weeks, ...................................... 0 □ 
- more than two weeks ago but within 12 months, ........... 1 □ 
- more than 12 months ago, or .................................. 2 □ 
- never? .................................................................. 3 □ 

[Go to 195]

195. Was this test done at ...  
- a doctor's (private office) (surgery) (clinic), ................. 0 □ 
- an (optometrist's or) optician's office, ......................... 1 □ 
- a hospital outpatient (department) (clinic), ............... 2 □ 
- a work or an industrial clinic, .................................. 3 □ 
- some other clinic, ................................................ 4 □ 
- a school, or ........................................................ 5 □ 
- some other place? .................................................. 6 □ 

196. Do you have glasses or contact lenses to help you see better or to correct any defect? .................................................. 0 □ 
- No .................................................................. 1 □  
- Yes ................................................................ 2 □ 

[Go to 198]

196A. Were they first prescribed by a doctor? ...................... 0 □ 
- No ................................................................ 1 □  
- Yes .................................................................. 2 □ 

197. Do you have any trouble seeing when you wear the glasses or lenses? .......... 0 □ 
- No .................................................................. 1 □  
- Yes .................................................................. 2 □ 

198. Do you have any trouble seeing ordinary newsprint (without glasses)? ...... 0 □ 
- No ................................................................. 1 □ 
- Yes ............................................................... 2 □ 

[Go to 198B]

198A. Do you have any trouble recognizing a friend on the other side of the street (without glasses)? ................. 0 □ 
- No .................................................................. 1 □  
- Yes .................................................................. 2 □ 

[Go to 199]

198B. Do you have any trouble recognizing a friend on the other side of the street (without glasses)? ................. 0 □ 
- No .................................................................. 1 □  
- Yes .................................................................. 2 □ 

[Go to 199]
199. Within the last 12 months, has anyone suggested that you should (have glasses or contact lenses) (change your glasses or lenses)? ...................................................... 0 □ No [Go to Section M] 1 □ Yes

> Who suggested it? Was it any of the following?

200. The (doctor) (optometrist) who tested your vision? .......................... 0 □ 1 □
201. Another doctor (or optometrist)? .................................................. 0 □ 1 □
202. A nurse? ................................................................. 0 □ 1 □
203. Your (husband) (wife) or other relative? ...................................... 0 □ 1 □
204. A friend or neighbor? .......................................................... 0 □ 1 □
205. Did anyone else suggest it? ...................................................... 0 □ 1 □

M

206. In some families, one person takes more responsibility for the health of the rest of the family than anyone else. Is this so in your family? ...................................................... 0 □ No [Go to Section N] 1 □

206A. Who would that be? Is it ... 

yourself, ................................................................. 1 □
your (husband) (wife), .................................................. 2 □
some other relative, or ................................................. 0 □
someone else? .......................................................... 0 □

206B. Who is it?

Name

Street

City/Town/Village

N

Yesterday or the day before that, did you take or use any of the following medicines, pills, or ointments?

207. Pain relievers, such as aspirin? .................................................. 0 □
209. Cough medicines? .......................................................... 0 □
211. Any other medicines or remedies for colds? .............................. 0 □
213. Skin ointments or salves? .................................................. 0 □
215. Laxatives or any medicines or remedies for your stomach? ........ 0 □
217. Sleeping pills or medicines? .................................................. 0 □
219. Vitamins or tonics? .......................................................... 0 □
221. Tranquilizers or sedatives? .................................................. 0 □
223. Medicines for the heart or blood pressure? .............................. 0 □
225. [Women 18-50 years only] Birth control pills? ......................... 0 □
227.
229.
231. Within these same two days, that is, yesterday and the day before that, did you take or use any other kinds of medicines, pills, or ointments we have not talked about? ................................................................. ☐ No ☐ Yes

231A. How many different kinds did you take or use? ........................................................................... kinds

232. How many different kinds were prescribed or suggested by a doctor? .................................................. kinds

---

Now here is something a bit different. We are very interested in how you feel about health and health care. I will read some questions to you. Some people answer YES and others NO. Please tell me which one is your opinion.

233. If you need medical help at night, do you think it is easy to get a doctor to come to your home? ................................................................. 0 ☐ 1 ☐ 8 ☐

234. Would you say the drugs doctors prescribe are better than home remedies? ............................................. 0 ☐ 1 ☐ 8 ☐

235. Would you say you have to go through too much trouble in order to see a doctor? .................................................. 0 ☐ 1 ☐ 8 ☐

236. When you go to a doctor, do you believe you should be given the details of what he is doing to you? ................................................................. 0 ☐ 1 ☐ 8 ☐

237. Do you believe that if you follow a doctor's advice, you will have less illness in your lifetime? ................................................................. 0 ☐ 1 ☐ 8 ☐

238. Do you often doubt some of the things doctors say they can do? ................................................................. 0 ☐ 1 ☐ 8 ☐

239. When you go to see a doctor, would you say you usually have to wait too long to see him? ................................................................. 0 ☐ 1 ☐ 8 ☐

240. Is it best to try out different doctors to find the one who will give you the best care? ................................................................. 0 ☐ 1 ☐ 8 ☐

241. For most kinds of illnesses, do you believe it is the doctor who can help you the most? ................................................................. 0 ☐ 1 ☐ 8 ☐

242. Do you think it is easy for you to go to a doctor during the hours doctors are in their offices? ................................................................. 0 ☐ 1 ☐ 8 ☐

243. Do you believe doctors can prevent most serious diseases? ................................................................. 0 ☐ 1 ☐ 8 ☐

244. When you go to a doctor, do you think it is sometimes a good idea to suggest treatments different from those the doctor prescribes? ................................................................. 0 ☐ 1 ☐ 8 ☐

245. When you think you are getting sick, do you find it comforting to talk to someone about it? ................................................................. 0 ☐ 1 ☐ 8 ☐

246. When you start getting well, do you find it hard to give up having people do things for you? ................................................................. 0 ☐ 1 ☐ 8 ☐

If you had the following, would you (talk to) (visit) (consult) a doctor about them . . .

247. a mild headache for a week? ................................................................. 0 ☐ 1 ☐ 8 ☐

248. constant problems in getting along with people? ................................................................. 0 ☐ 1 ☐ 8 ☐

249. dizziness several times in a day? ................................................................. 0 ☐ 1 ☐ 8 ☐

250. nosebleeds for a day? ................................................................. 0 ☐ 1 ☐ 8 ☐

251. pains in the chest several times in a day? ................................................................. 0 ☐ 1 ☐ 8 ☐

252. worrying about things most people don't think are too important? ................................................................. 0 ☐ 1 ☐ 8 ☐

253. trouble sleeping for a week? ................................................................. 0 ☐ 1 ☐ 8 ☐

254. being tired for a week for no real reason? ................................................................. 0 ☐ 1 ☐ 8 ☐
Now some questions about yourself...

<table>
<thead>
<tr>
<th>Question</th>
<th>No</th>
<th>Yes</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>255. Do you wear yourself out worrying about your health?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>256. Are you often bothered by thumping of your heart?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>257. Does your heart often race like mad?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>258. Does pressure or pain in the head often make life miserable?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>259. Does your thinking get completely mixed up when you have to do things quickly?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>260. Do you often shake or tremble?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>261. Are you constantly keyed up and jittery?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>262. Do frightening thoughts keep coming back in your mind?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>263. Do you often get spells of complete exhaustion or fatigue?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>264. Do you usually feel unhappy or depressed?</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

[QUESTIONS 265 TO 279 ARE OPTIONAL INSURANCE QUESTIONS]
Now just a few questions about yourself . . .

280. How many years of schooling did you complete? ........................................ years

281. Are you presently working in a full or part-time job? ................................. 0 □ No

282. Are you on vacation or a sick leave from a job? ........................................... No □

282A. Are you either . . .

    retired from work, or ........................................ 1 □
    a student? ..................................................... 2 □
    Neither .......................................................... 3 □

283. Have you been working for wages within the past two weeks? ....................... 0 □ No

284. If a doctor says that you are unable to work because of illness, do you get pay

    an amount equal to . . .

    your full wages or salary, .................................. 0 □
    part of your wages or salary, or ........................... 1 □
    no wages or salary? ......................................... 2 □
    Don't know .................................................... 3 □

285. For how long do you get paid all or part of this amount? Is it . . .

    two weeks or less, ......................................... 1 □
    more than two weeks but less than one month, ............. 2 □
    more than one month but less than two months, .......... 3 □
    more than two months but less than three months, or .... 4 □
    more than three months? ................................... 5 □
    Don't know .................................................... 6 □

286. If you (talk with) (consult) (visit) a doctor during working hours, do you get . . .

    all of your pay, ............................................. 0 □
    some of your pay, or ....................................... 1 □
    none of your pay? ........................................... 2 □
    Don't know .................................................... 3 □

287. Have you ever worked, apart from summer or part-time jobs? ....................... 0 □ No
8. What kind of work (do) (did) you usually do?

Job title________________________________________________________

Type of place of work_____________________________________________

Describe work____________________________________________________

[If respondent is either role code 1 or 2 on the Interview Folder, ask the questions in this section; otherwise, go to Section S.]

29. Which of these income groups [show card] represents your total, combined family income for the past 12 months? That is, all the income of __________________________. Include all income from all sources, such as wages, salaries, (social security), (old-age) pensions, (family allowances), help from relatives, rents from property, and so forth.

☐ 0 A. 
☐ 1 B. 
☐ 2 C. 
☐ 3 D. 
☐ 4 E. 
☐ 5 F. 
☐ 6 G. 
☐ 7 Refusal 
☐ 8 Don’t know

290. If (your family) (you) had to meet within one week an unusual, non-medical expense of __________________________, would you or would you not be able to pay for it with money from any source?

Would be able to pay for it ...................................................... 6 ☐

Would not be able to pay for it .................................................. 1 ☐

Refusal ..................................................................................... 7 ☐

Don’t know ............................................................................... 8 ☐

[Go to 293]

291. Would you pay for it out of savings? .............................................. 6 ☐

☐ 0 No

☐ 1 Yes [Go to 293]

☐ 7 Refusal [Go to 293]

☐ 8 Don’t know

292. Would you be able to get the money some other way? ................. 6 ☐

☐ 0 No

☐ 1 Yes

☐ 7 Refusal

☐ 8 Don’t know
293. How would you or the others who live here be likely to get to the nearest doctor in an emergency occurring here? Would it be ...

- by having the doctor come here, or .................................................. 0 □ [Go to 294]
- by going to a doctor? ................................................................. 0

293A. How would you go to the doctor's office in this emergency? Would it be ...

- walking, ............................................................. 1 □
- private car, motorcycle, or truck, ........................................ 2 □
- ambulance, .......................................................... 3 □
- bus, taxi, (trolley car) (tram), or other public transportation, ......... 4 □
- (pedal)bicycle, .................................................. 5 □
- horse or other animal, or ............................................ 6 □
- any other means? ................................................ 7 □
- Don't know ......................................................... 8 □

294. About how long would it take to get to the nearest doctor. Would it be ...

- within 15 minutes, ............................................ 0 □
- more than 15 minutes but within half an hour, .................. 1 □
- more than half an hour but within one hour, or ............... 2 □
- more than one hour? ......................................... 8 □
- Don't know ......................................................... 8 □

[Go to 295]
298. Did anyone other than the respondent contribute information?  
  □ No  □ Yes

299. Were there any distractions during the interview?  
  □ No  □ Yes [Go to 301]

299A. Were these major distractions?  
  □ No  □ Yes

300. What were they?

301. Record your impressions of the interview.

302. Status of interview:
  Completed  □ 0 [Go to 304]
  Broken off  □ 1
  Refused  □ 2

303. Why?

304. Date interview completed:  
  Month  Day  Year

305. Was an interpretation used?  
  □ No  □ Yes

306. Interviewer's signature:

307. Respondent's Number:

Interviewer's code number.
Name and address of subject:

Name

Street

City/Town/Village