UTILIZATION OF COTTAGE HOSPITALS AND HEALTH SERVICE NEEDS IN TWO DEFINED DISTRICTS

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by

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ABSTRACT

Since the role of the cottage hospitals in the health care delivery system is being questioned by health planners and health professionals, this descriptive study examines the extent to which the cottage hospital system continues to meet the health needs of the people in two rural health districts. The study examines the utilization of the cottage hospitals in a 10-year time frame. Factors which the population report as influencing their use or non-use of the cottage hospital and their perceived needs for health care are examined. In addition, opinions of health professional personnel in relation to the present status of health care services in rural areas and their perceived health service needs for the future are explored.

The health districts were chosen by selected criteria. A random sample of the population in both districts and all health professional personnel working in the districts were included in the study.

Data on the utilization of the cottage hospitals were obtained from the Department of Health. Data were collected from the population sample and from the health professional personnel by means of semi-structured interview guides designed by the investigator. Frequencies were determined for all data, and compared between the two districts. The results show a drastic decrease in the utilization of the important services of the cottage hospitals in both districts, the highest utilization rates being for individuals in the 0-14 and

65 years plus age groups, and obstetrical patients. The utilization of the Out-Patient department has decreased where there are private physicians in practice, but increased where this service was not available.

Common factors emerging from the data were the extent to which the views and perspectives of the providers and the consumers of health care in both districts were congruent in their suggestions and comments regarding health care in the areas. Data from both groups suggest that neither group view the cottage hospital as an acute care hospital but rather as a primary care facility offering Out-Patient care, diagnostic, emergency, obstetrical and basic pediatric services with appropriate referrals, and with emphasis on the need for public health education and community out-reach programs.

This descriptive study has gathered baseline data and examined the continuing functions of cottage hospitals. It has explored opinions on health care and of the perceived health care service needs of the population and of the health professionals in two defined health districts and has provided direction for future study.

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CHAPTER I

INTRODUCTION

The cottage hospital system in Newfoundland was established in 1934 and it has had a history of meeting the health needs of the population living in the sparsely populated areas of the province. At the present time these hospitals continue in an attempt to meet the health needs of the population in more modernized rural communities. Clearly, the cottage hospital system has served us well and its past performance is not at issue. The central issue is: Where do we go from here? (Morley & Mussells, 1979).

Statement of Problem

The cottage hospital system has recently been criticized for failing to meet the needs of the population it was originally established to serve. Health care professionals and health care planners as well as the general public are questioning whether or not the system has kept pace with the changes occurring in the communities which it serves.

Many social changes have taken place in most rural communities over the past 50 years which have brought new demands on the health system. Greatly improved facilities for transportation and communication are among the factors affecting social change. People are expecting more and better services--services which they have been led to expect and which they have been told they have a right to receive.

These factors have resulted in increasing needs and demands for health services that are readily available and accessible when they need them. In addition to the demands placed on the system by social change, increased expenditures coupled with monetary restraints have been forcing all publicly funded service systems to re-evaluate their aims and objectives and to ultimately decide whether specific services are more or less needed than others. Health resources--manpower-facilities and dollars--must be employed in a more efficient, effective and economical manner, and at the same time provide the services necessary to meet the health needs of the public.

Examining the existing literature, it appears that little or no local studies or surveys have been done that are geared to the health needs or the services provided to the beneficiaries of the population served by any specific cottage hospital. The central issues to be addressed in this study are: the services offered by the cottage hospitals, the utilization of the services offered by the cottage hospitals and the factors which influence the people's use or non-use of these services.

Purpose of the Study

Since the role of the cottage hospitals in the health care delivery system is being questioned by health planners and health professionals, this study examines the extent to which the cottage hospital system continues to meet the health needs of the people in two rural health districts. The study also attempts to determine how social changes and other factors contribute to changes in the perceived health needs of the people. In addition, this study examines the factors which the population report as influencing their use or non-use of the cottage

hospitals. Opinions of health professional personnel in relation to the present status of health care services in rural areas and their perceived health service needs for the future are also explored.

Significance of the Study

It has been suggested that the cottage hospitals must be improved or changed to meet the health needs of the rural communities. However, operational costs, as well as construction and renovations for these hospitals, may become less feasible in light of the cost involved. A systematic study of the health needs of rural communities and of the utilization of existing health facilities in the cottage hospitals will therefore provide important information for future policy makers and planners to keep the health care deficit as low as possible and at the same time provide the services necessary to meet the health care needs of the rural communities in Newfoundland.

The cottage hospital system and the rural communities which it serves are not fixed entities. Each operates within a social, political and economic structure which is constantly changing. Some of these changes are the result of internal conditions of the hospital system and of the communities while others are the result of conditions which are external. The cottage hospitals and the community constantly interact with the environment in attempting to adapt to change. In order to adapt to these changes effectively and efficiently systematic information is needed from both the communities and the cottage hospitals.

The principal incentive in undertaking this study stems from the promise it affords to raise and to re-examine a number of

challenging problems, about the nature and functions of a rural health system in relation to the cottage hospitals in Newfoundland, and to gather baseline data to examine more accurately the continuing functions and utilization of the cottage hospitals. It is expected that this study will lay a basis for further studies in the estimation of the need for health services to a defined population group and in the determination of whether specific health services are more or less needed than others.

Research Plan

This study is basically descriptive and exploratory. The intention is to present an historical review of the cottage hospital system in Newfoundland, to report on the services available from two cottage hospitals and the utilization of these services within a 10-year time frame. Demographic data from the health districts served by these cottage hospitals will be examined, and an attempt made to identify how social and other changes affect the perceived health needs of the people. Factors that the population report as influencing their use or non-use of the services available to them will be described. Opinions of health professional personnel regarding rural health care will be reported.

Research Questions

The following questions were formulated to guide the investigation of these issues:

1. Is the utilization of the cottage hospitals affected by the demographic characteristics of the population, such as age, sex, education, employment and income?

2. Is the cottage hospital model in its present form providing the services necessary to meet the health needs as perceived by the population it serves?
3. Does the cottage hospital model need modification to the services it provides to meet the health needs of the people it serves?
4. Is the cottage hospital providing
   (a) primary care?
   (b) relatively uncomplicated obstetrics services?
   (c) emergency services?
5. What factors influence the people in their use or non-use of the services provided by the cottage hospitals?

The two health districts included in this study are those served by the Burgeo cottage hospital (22 beds) and the Placentia cottage hospital (40 beds). The criteria used in the selection of those two areas will be described in Chapter III.

The community demographic data, used in the study (age and sex distribution, education, occupation and income) were obtained from Statistics Canada. Data on the utilization of services of the cottage hospitals, 1972, 1980-81, were obtained from the Department of Health. In addition, two interview survey questionnaires were formulated. All health professional personnel in each area were interviewed and a random sample of the population in each district was interviewed. All the data have been tabulated and discussed in relation to the above stated questions.

Definition of Terms

The following definition of terms were accepted for this study:

Cottage Hospitals: Small hospitals providing medical services to the people living in coastline communities, patterned from the Scottish system. The nomenclature also came from Scotland.

Health Districts: Those geographical areas served by cottage hospitals.

Population Group: The group of people who make their home in the geographic area served by the specific cottage hospitals.

Professional Personnel: Physicians who practice in the specific cottage hospital and those who practice within the area serviced by the hospital; public health nurses who practice in the areas serviced by the specific hospitals; administrators of the specific cottage hospital; and charge nurses of the specific cottage hospital.

Separations: The number of persons who have left the hospital; discharged to the community after complete treatment, transferred to other institutions or expired.

Influencing Factors: Social and environmental factors which support, facilitate, hinder, block, or discourage people in the use of health services, such as communication and transportation.

Demographic Data: Pertains to population characteristics such as age, sex, education, employment and income.

Primary Care: Services of the initially contacted health professional.

Limitations of the Study

There were several limitations to this study. The latest community demographic data available were from six years ago, making it impossible to identify recent changes. The Out-Patient records at the hospitals gave limited information, as to services utilized and distances travelled.

The investigator had to depend on the respondents' answers to identify influencing factors. Individuals do not always accurately reveal factual or perceptual information on questionnaires or during interviews. The inability to validate all responses prevents assuring authenticity of the answers (Simon, 1969, p. 104). The general public became aware of the official closure of two cottage hospitals just prior to the time of these interviews. It is reasonable to assume that this information may have caused some bias in the answers of the respondents.

Furthermore, the lack of information on the cottage hospital system regarding its aims and objectives, and changes to the system, limited the degree to which generalizations were able to be made.

Summary

This chapter has described the problem, the purpose and the significance of the study. The problem questions whether or not the cottage hospital system has been able to keep pace with the social and other factors placing demands on the system, and continue to meet the health needs of the population. The purpose of the study is to examine the extent to which the cottage hospital system continues to meet the health needs of the people and the factors that influence the people's

use or non-use of the cottage hospitals. The significance of the study is to provide information for future policy makers and planners of health care services by gathering baseline data, as a basis for future studies in the estimation of the need for health services. In addition the research plan including the research questions, definition of terms and the limitations of the study are also presented.

CHAPTER II

REVIEW OF LITERATURE

This study is based on the assumption that social change is a significant factor in the alteration of social structure, and that these factors are recognized as causing a significant change in the health care needs of the people. The review of literature pertinent to the study includes: an historical review of the cottage hospital system in Newfoundland, social change factors affecting utilization of health services, and the future of small hospitals in the health care delivery system.

Historical Review of the Cottage Hospitals in Newfoundland

The cottage hospital program in Newfoundland has its roots in the nineteenth century when many private physicians provided medical services to families who prepaid their care with a fixed annual payment to the doctor. This was known as the "book" system. Construction of the hospitals that gave the program its name, in the "outports" or fishing communities scattered around the long coastline, was commenced in the 1930's (Miller, 1964).

The first consideration given to the establishment of the cottage hospital system in Newfoundland was contained in "The Royal Commission on Health and Public Charities 1930." This Commission utilized the findings of the Dewar Report of 1912, dealing with health services in the Highlands and Islands of Scotland, and the

supplementary report by the Scottish Board of Health of 1927 dealing with developments since the original report had been issued.

In studying these reports the Commission found that the overall conditions in these areas of Scotland were parallel to those in Newfoundland.

> The similarity of the Scotch settler's condition to our own goes even further than that which can be shown as between the nature of the territory covered and of distribution of population . . . the people whose interests were studied lived under conditions closely approximating those that are to be found in many parts of Newfoundland. There is the same story abduced of isolation and remoteness from medical services, of very poor land communication facilities, or of their total absence, . . . communication between settlements mostly by boats. . . . Furthermore, the economic conditions in this Scottish territory are similar to our own, the people obtaining employment at the fishery or at any other occupations, being frequently out of employment, securing returns for their labour mostly on the barter system. (Royal Commission on Health and Public Charities, 1930, p. 10)

In order to alleviate their health service problems the Scottish Department of Health constructed cottage hospitals at various convenient centres, and although the Newfoundland Commission agreed that the conclusions and recommendations of the Scottish study were applicable to their own problems, they did not see the construction of cottage hospitals as a priority, and stated:

> It is important, too, to discover to what extent the corporation hospitals at Grand Falls, Buchans, Deer Lake and Corner Brook can be made to fit into the general scheme of hospitalization of our people. The facts having been ascertained in these connections, the Commission will be in a position to recommend to what extent it will be necessary in Newfoundland to make provisions for cottage hospitals of a type and with a scope similar to those provided in Scotland. (Royal Commission on Health and Public Charities, 1930, p. 22)

In 1933, the Newfoundland Royal Commission, chaired by Amulree reported:

> Patients who are certified by a doctor to require hospital treatment are conveyed to the nearest hospital often one

> hundred to two hundred miles. . . . The twelve hospitals in the island, of which six are in St. John's, are generally well equipped and managed, but in view of the distance which patients have to travel there is room for the establishment of small hospitals of the cottage hospital type. Much useful work could also be done by means of travelling clinics. (p. 26)

It was this Commission which also recommended that the government be changed from a Responsible government to one of a Commission. In 1934 Newfoundland's constitution, providing Responsible government, was suspended and a Commission government was established. One of the six government departments was the Department of Public Health and Welfare. The Honourable (later Sir) John Puddester was named as Commissioner and Dr. H.M. Mosdell, secretary. Dr. Leonard Miller was appointed medical health officer.

The next reference to be found in the literature regarding the cottage hospitals is a correspondence from Government House, St. John's, February 11, 1935, to the Right Honourable J.H. Thomas, M.P., Secretary of State for Dominion Affairs. This stated that a survey of the health conditions in the outports had been done by a group of private citizens of St. John's who reported the same defects in the public health services of the island as the Royal Commission.

> The Commission of Government desire to emphasize the urgent need for taking immediate and drastic action towards remedying these defects. . . . The most urgent needs are the provision of cottage hospitals and a nursing service in the outports at a cost of $96,000 and a travelling clinic which will cost $10,000 to serve principally the long stretch of the Southwest Coast where for two hundred miles there is not a single doctor. (Newfoundland Archives S6-5)

On April 18, 1935, the Honourable Commissioner for Public Health and Welfare received the following telegram from the Secretary of State for Dominion Affairs:

> Your dispatch of the eleventh of February matter fully discussed with Treasury, where view is that as colonial development act expressly provides for promotion of Public Health as one of the purposes of the Colonial Development, fund proposal for
>
> (1) Provision of cottage hospitals $96,000
> (2) Travelling clinics $10,000
>
> has been approved. (Newfoundland Archives S6-5)

The Department of Public Health and Welfare, formulated the cottage hospital plan in 1935, and in 1936 established the first five cottage hospitals. The first cottage hospital was officially opened at Old Perlican, January, 1936, with a bed capacity of 34. The other hospitals opened that year were at Burgeo, Harbour Breton, Come by Chance and Burin.

From the beginning, the cottage hospital plan reflected British experience and practice. Even the nomenclature came from the cottage hospitals of Scotland.

Although the principal purpose for establishing the cottage hospital was to provide medical care to people in rural areas, from a report by the secretary for Public Health and Welfare in 1937, it is obvious the role played by the hospitals at that time was much broader than the provision of medical care. It was at this time he suggested the construction of three more cottage hospitals and stated:

> These institutions ensure services of vital importance to scattered and isolated populations, and provide headquarters for health and welfare undertakings that meet outstanding needs. They house district nursing staff in comfort and provide adequate facilities for professional activities. In them are conducted classes for training midwives, for teaching home nursing, and for instruction in weaving and other practical home handicrafts. They constitute community. (Newfoundland Archives S6-5)

No further mention was found in the literature of these types of activities being carried on in the cottage hospitals. In June,

1938, Dr. H.M. Mosdell reported on his recent visit to Scotland where he was able to learn at first hand a great deal about the working details of the cottage hospital scheme and learn of the progress made during the 10 years of operation in Scotland.

> At the Scottish Department of Health I was afforded every opportunity of studying details of administration, while the contacts I made with field executives enabled me to understand and appreciate the methods of application of the scheme in the various localities concerned. (Newfoundland Archives S6-5)

Although it is not documented in literature, it is reasonable to assume that the knowledge he acquired on this visit was applied to some extent to the administration of the cottage hospitals in Newfoundland, giving the system a stronger link to the Scottish system.

As the needs were identified by government and the funds were available, cottage hospitals continued to be constructed around the coastline in the following order:

Stephenville Crossing	1937
Bonavista	1940
Norris Point	1940
Grand Bank	1941
Placentia	1942
Brookfield	1944
Gander (originally RCAF)	1946
Botwood (originally RCAF)	1946
Channel	1952
Fogo	1952
Springdale	1952
St. Lawrence (transferred from United States government)	1954

The Walter Templeman Hospital on Bell Island was taken over giving a total of 18 hospitals, all of which were fully administered by the Department of Health in St. John's.

The hospitals were built by the Department of Public Works with the exception of St. Lawrence which was built by the United States government in 1952, in appreciation to the people of the area for their bravery and generosity during a naval disaster. The Department of Public Works is still responsible for the maintenance and upkeep of the cottage hospitals.

Fee Structure of the Cottage Hospitals

When the program first started, medical service was relatively inexpensive for the residents living in the cottage hospital districts. For $2.50 per year, a family would receive all the medical services and facilities available. This included hospitalization and any surgical procedures required. In addition, costs incurred by being transferred to a larger hospital, either in St. John's or outside the country, were absorbed by the government.

The events that led to subsequent changes in the fee structure are not clearly defined in the literature. However, all rules and regulations governing cottage hospitals were set and approved by the Department of Public Health and Welfare. One doctor who supported a raise in fees in 1938, stated, "such a measure would eradicate in large measure the grave psychological blunder of giving something for nothing. People feel better, he said, if they contribute" (Newfoundland Archives S6-5).

The next reference found in the literature regarding fees was in 1943, when the family fee was increased to $10.00 per annum. This

was done because of the increase in cost of hospital maintenance and supplies. The fee was payable in cash if possible; if this was not possible the fee would be accepted in kind. It was also stated that only families who had paid or had made arrangements for payment of the annual fee would be treated in the hospital or by the doctor or the district nurse, until they had paid an extra charge in the form of a late joining fee. All persons on the permanent poor list (that is, those who were unable to work and were supported by government--"the dole") would be treated free of charge (Rules and Regulations for Cottage Hospitals, 1943). This plan was not self-supporting but was heavily subsidized through the Provincial Health Department Budget, and changed very little during the ensuing years.

The family fee remained at $10.00 per annum except in three economically better areas where the annual premium was raised to $16.00 to $24.00 per family. A fee was also introduced for single working people. This fee was half that of the family. Additional charges could be made for private rooms, maternity care, dental extractions, out-patient drugs and appliances at modest rates specified by the Department.

All transportation had to be paid by the patient unless he held a certificate of inability to pay from the local welfare officer. This included transportation of the patient to hospital or of the doctors or nurses to the patient.

Hospitalization benefits included complete Public Ward Care. On referral by the local physician a patient was eligible for Public Ward Care in the General Hospital in St. John's. With the advent of the federal-provincial hospital insurance program in July, 1958, the

cottage hospital plan as such ceased to exist and was taken over by that plan (Miller, 1959).

Changing Roles of the Cottage Hospitals

There is little documentation on the role of the cottage hospitals during the years, except to say they provided the only medical services available to people living in rural and isolated areas. How the changes in the roles of the cottage hospitals evolved is not clearly defined. Much of the information respecting cottage hospitals available in the Department of Health offices, is the personal knowledge of key officers in the department. They know the hospitals and their senior staff well as a result of repeated visits to the hospitals, or conferences at the Department of Health, but most of this information is not recorded and many matters were settled by telephone, which could account for the fact that no written aims or objectives for the cottage hospitals are available. However, in the 1971 annual report of the Department of Health it was stated:

> The trend towards the use of the cottage hospitals for primary care, relatively uncomplicated obstetrics and emergency medical and surgical care continued in 1971. This was the result of:
>
> 1. The increasing use of more complicated, and more expensive equipment in routine hospital care (much of which could not be practically supplied or used in small institutions).
> 2. The grouping of special services and personnel in regional hospitals.
> 3. The paving of feeder roads from remote communities to the Trans-Canada Highway, resulting in improved access to medical specialists and regional centers.
> 4. Increasing difficulty in recruiting senior physicians with surgical experience for service in cottage hospitals. (Annual report - Government of Newfoundland and Labrador, Department of Health, 1971, p. 91)

No record could be found as to when the above stated trend had its beginning. However, through conversation with key personnel at the Department of Health, it appears that the functions and roles of each cottage hospital were determined by the capability of the senior medical officer at the time, and as stated earlier much of the planning was done by telephone only.

Administration of Cottage Hospitals

As earlier stated, there were 18 cottage hospitals all administered by the Department of Health. However, during the last 20 years, a trend has developed towards decentralization of health services, and of larger regional hospitals. Consequently, several cottage hospitals have been either placed under the jurisdiction of larger regional hospitals or local boards of management. However, the prime objective of providing health care services to rural and isolated areas of Newfoundland still remains.

In 1965, the cottage hospital at Gander was closed and replaced by the larger and more modern James Paton Memorial Hospital. It was no longer classified as a cottage hospital. In 1967, under a regionalization plan, Fogo and Brookfield hospitals were grouped together with Gander; also in 1967, Stephenville Crossing hospital was closed and replaced by the Sir Roddick Hospital under a local board. In 1972, the James Paton Memorial Hospital at Gander, Brookfield and Fogo hospitals were placed under a board of management. In 1973, Channel hospital was placed under a board. Springdale hospital was placed under a board in 1975. In 1981, Harbour Breton hospital was placed under the board of the Grand Falls hospital; and in April, 1982, Burgeo was placed under the board of management of Corner Brook, leaving 10 cottage hospitals

under the administration of the Cottage Hospital Division of the Department of Health in St. John's.

The cottage hospital system is a continuing program of the provincial government and is administered by the Department of Health through the Director of Government Hospital and Medical Services with a headquarters staff of 12. Local administration of each individual hospital is carried out by an administrative clerk in conjunction with the senior medical officer and the nurse-in-charge.

Social Change

Firth (1961) has supported the view that social change must be studied in order to understand its impact on social structure. He stated:

> Until units or subsystems are identified in their principal dimensions one does not become aware of what is changing or has changed. Until temporal and other dimensional specifications are made one may not be able to distinguish significant changes. (p. 43)

Significant social changes come about slowly, since, however, numbers of such changes may accumulate over time and be synthesized into an operational whole, the end product may appear to be a general advance over the past but is considered as the normal and integral part of things. For example, modern medicine is obviously more effective than it was a century ago. Qualitative changes in the use of elaborate medical technology as it exists today are a synthesis of a very large number of highly specific changes, no one of which was in itself a major change from that of the past. It is such qualitative changes that make the social system differ from a subsequent period. Of primary significance in social change, are these qualitative rather than quantitative changes.

The nature of the technology of a people is the key to an understanding of their entire society (Richard La Piere, 1965, p. 67).

Carr and Wolfe (1976) express their concerns about social arrangements. They stated: what really matters is whether social arrangements are such that people receive the services that are deemed necessary to deal appropriately with defined health problems:

> The gap between needed services and services actually received is "unmet need". The unmet need indicators are not the same as health status indicators, but they are related. (p. 45)

Provision of appropriate health services according to need is an intermediate outcome of a health system, whose ultimate goal is to improve the health status of the population.

Factors Affecting Utilization of Health Services

J.G. Anderson (1973) described four demographic factors affecting health services utilization. The factors he identified were: Income--persons from families with lower income had higher admission rates to hospitals than persons from families with incomes above the poverty line. This could be interpreted as a tendency for the poorer segment of the population not to seek medical help until their medical conditions advanced to the stage of needing hospitalization. It may also be due to the fact that other health care services are not so readily available to them. Unemployment was another factor, in areas with limited job opportunities--there is a high level of unemployment and therefore a lower per capita income. Fewer health services are generally available in areas experiencing severe unemployment problems. Education was found to be positively associated with both hospital admission rates and length of stay. This could be interpreted as indicative of increased awareness among the more highly educated

members of the population of the value and importance of seeking prompt medical treatment. Education is also associated with other variables such as income and employment opportunities. Age was also found to be an important predictor. Hospital admission rates and average length of stay were lowest with children, and rose with age in general, with a distinct rise in persons 55 years and over. The author concluded that age represented the third most important influence on the use of short-term general hospitals, only surpassed in importance by economic factors and a component reflecting sex and marital status. These factors provide major insights into the demographic process that affect the use of health services, and permit predictions as to future demands on the health care system that will result from changes in the composition of the population serviced.

Feldstein and German (1965) evaluated three approaches to predicting hospital utilization. The three approaches used were: (a) Predicting future patient/day population ratio by extrapolating past patient/day population; (b) predicting future patient/day population ratio by extrapolating past bed population ratios; (c) predicting future patient/day population ratios by estimating the demand relationship of the patient/day population ratio. The assumption underlying their approach is that variations in hospital utilization depend only on several socioeconomic variables, e.g., income, age, sex, and prepayment insurance. Estimates of future use are then derived by first determining estimates of these explanatory variables. They developed statistical models for testing all three approaches. However, because of the limited number of community variables used, Feldstein and German found their results quite inadequate in predicting future

utilization of hospital services and suggested that:

> Further investigation should consider which variables are likely to have the greatest effect on use. Also, subsequent analysis should be made with data representing a community and also by hospital services, e.g. obstetrics; and more attention should be paid to the effects of interactions and joint dependencies of the variables. (p. 35)

Vayda, Parsley, Baskin, Roberts and Anderson (1974) conducted a study in Hamilton, Ontario, in an attempt to define utilization patterns, attitudes, and perceived health care needs of people living in a hospital catchment area, and to obtain information which might serve as a basis for re-assessing health care programs at that hospital.

The questions investigated were:

1. Demographic characteristics of the residents in the catchment area (age, sex, socioeconomic status, language, size of family unit, etc.).
2. The use of medical care services by those living around the hospital.
3. Attitudes toward the hospital.
4. Use of family doctor.
   (a) How many persons have family doctors?
   (b) Utilization of, and satisfaction with, family physician services.
   (c) Factors that determine choice of family doctor.
5. Acceptability of nurse practitioners as primary care providers.
6. Attitudes toward group practice, health centres, and specifically, a health centre at the hospital.

The population surveyed were those residents living in the catchment area of an urban hospital located in the economically "least favourable" area of industrial Hamilton, Ontario. The study was

conducted by interview questionnaire, with the household the sampling unit, and only one interview was carried out per household.

The results of the study showed 92% of those interviewed had family doctors and 80% or more were satisfied with the ambulatory and hospital services which they received. More than half had favourable attitudes toward group practice and health centres. In the groups 50 years and older and with annual incomes in excess of $10,000, fewer were willing to see their physicians in a health centre than were those in the younger and less affluent groups. Those in the older age groups were also less willing to use nurse practitioners for medical care. Older people tend to have established relationships within the health care system and are more resistant to change (Vayda, 1974).

Vayda's study was confined to a small section of a large industrial city, which does not have many similarities to the coastline of Newfoundland, but it is of interest to note, that the questions investigated in Vayda's study are somewhat parallel to the data examined in this study.

Wirick (1966) studied health care in terms of the demand on the service. He stated that most health services are sought only because the person is ill. He described illness as a random event because it is entirely unpredictable. There are certain characteristics of individuals and their environment that will imply a lesser or greater average incidence. He identified five fundamental factors or forces to be considered as having an effect on the demand for health care services. The first is need. A person suffers from a condition requiring medical attention, or he has some other reasons for seeking the supplies or services classified as medical care. There must also be realization

of the need. Either the individual or someone acting on his behalf must know that the need exists. In the realization of the need the persons must be aware of the existence and availability of medical skill and of the benefit likely to be gained through help. Other factors affecting realization are the hopes, fears, and beliefs of the individual, as well as his previous experiences, customs, and religion. A person with a strong religious conviction opposing medical treatment, though having the same understanding of the consequences of the disease and implications of the treatment, may still have a different interpretation of the need for care from that of persons who do not have this religious conviction. Third, financial resources must be available. This may take many forms including income and assets possessed by the individual or his family, insurance coverage, cost of travel to receive care. An individual's resources for medical care may be different from those for other items in his budget, and indeed may differ from one component of medical care to another. Resources may also include negative components in the form of commitments of income or assets, making them unavailable for medical care expenditures. Fourth, there must be a specific motivation to obtain the needed care. Even with the other forces present--need, realization, and resources--something must initiate the action. Going to a doctor with an acute condition involving pain or bleeding is occasioned by the condition itself, but motivation is less clear with respect to other components that entail an active move, such as exposure to an infectious disease, regular checks for high blood pressure, or visits to a dentist. Fifth, is availability of the service. The first three forces are characteristics of the patient, while the fifth is a characteristic of his environment. The

fourth force is somewhat indistinct and may be characteristic of either or both (Wirick, 1966).

Reinke and Baker (1967) supported the conclusions of Anderson and others on the effects of demographic variables on health service utilization. They stated:

> To predict future demands for health services in a dynamic society, health planners must be able to measure the impact of demographic change. Illness patterns, hospital and physician utilization rates usually vary according to such demographic factors as age, economic status, and other factors. As these factors change, so will the total demand for medical care. (p. 61)

An understanding of basic determinants is vital for health planning in a dynamic society. Knowledge of the overall population growth rate is not sufficient to predict trends in the annual number of physicians' visits. One must also identify the demographic components important in determining major differences in physician utilization rates. As the important components of the total population change in size, so will the overall ratio of physician utlization and the projection of total services demanded.

Small Hospitals

Spitzer (1970) reported on studies that had been conducted on "The Small General Hospital--Problems and Solutions." He stated: the problems of small general hospitals can be presented succinctly in the form of a diagnosis. The quality of services delivered in or by a small community hospital is below the standard that the present state of knowledge affords. However, whatever inefficiency exists in the delivery of services in any hospital is aggravated in the small community hospital. "Quality of Medical Care," "Quality of Hospital Care," "Quality of Health Services," are glittering ingredients for

slogans, but difficult parameters to evaluate with measures that have validity and reliability. The results of the studies he reported have a bearing on the proposition about quality.

The first of the studies reported by Spitzer was conducted as part of a Michigan study and enabled the investigators to reach important conclusions about community hospitals. Fitzpatrick, Riedil, and Payne (1962) studied the appropriateness of admission and length of stay in that state. Their study was based on an evaluation of performance in a sample of hospitals in which they compared the management of patients in 18 diagnostic categories with pre-established criteria. Hospital effectiveness was evaluated in part by measuring understay as well as overstay patients admitted for treatment of problems that fell within one or more of the selected diagnostic criteria. It was pointed out by this investigation that the extent of understay is more valid in the assessment of the quality of hospital care than is the extent of overstay because "it indicated the incidence of patients who did not receive at least as much care as their minimal needs required" (McNerney, 1962).

The second study reported by Spitzer was conducted by Skinner (1962) who examined the extent hospitals of various sizes in Michigan received accreditation. He found a sharp demarcation line between the proportion of facilities accredited when such units have less than 100 beds. Only 25% of the beds in hospitals with 25 to 49 beds and only 67% of beds in units with 50 to 99 beds are accredited. On the other hand, virtually 100% of all beds in all hospitals with over 100 beds are accredited. The hospitals studied numbered 108. Of these, 97 hospitals fell below minimum standard level. Nearly all the hospitals that were not accredited and had not been assessed up to that time

failed to meet the standards.

The third study reported by Spitzer was conducted by the Commission on Professional and Hospital Activities, Ann Arbour, Michigan. They analyzed data from a random sample of their participating hospitals to find the proportion of patients discharged who had a bacterial antibiotic sensitivity test (antibiogram), performed as a percentage of all patients discharged who had antibiotics administered. The data were broken down to show the experience in various sizes of hospitals. They found the practice in all hospitals left much room for improvement, but smaller hospitals discharging less than 5,000 patients yearly (corresponding on the average to a size under 125 beds) were much inferior to medium-large and large hospitals. In the small hospitals the ratio of patients discharged who had received antibiotic sensitivity tests to patients discharged who had been given antibiotics was 10% compared to 30% in medium-large and large hospitals. Acceptable usage of antibiotics usually implies culture and sensitivity studies of the offending organism prior to initiation of treatment.

Spitzer also reported on six studies of efficiency that were conducted in three different countries and operated within the constraints of three different systems. The systems were the United Kingdom, Universal Health Service; Canada, Universal Provincial Hospital Insurance; and the United States. These systems cannot be described as being homogeneous. Notwithstanding the different approaches with which the studies were undertaken and considerable variation in the manner in which the analytical tools were applied. All the studies showed remarkable agreement about the existence of economies of scale for hospitals up to 200 beds. The econometric

analysis summarized allow these conclusions.

1. Economics of scale have been shown to be effective in all hospitals up to 190 beds; it is unequivocal that facilities of less than 100 beds are operating inefficiently.
2. The smaller the size of the hospital, the less efficient it is.
3. In small hospitals the greater spectrum of services offered, the less efficient the institution will be.

The conclusion to these studies is that the small hospitals of less than 100 beds have been shown to exhibit serious shortcomings in the quality of professional services it delivers and in the efficiency with which these services are rendered. These problems have been shown to be associated with size. Size affects the structure of a hospital sufficiently that some of the problems may not be overcome without: (a) Increasing the size; (b) drastically altering the comprehensions of service capability of the health care delivery system; (c) changing its relations to other components of the health care delivery system; (d) closer relations and greater interdependence among different kinds of hospitals in a region.

A survey of small hospital laboratories was also conducted, but because the hospitals were included in the survey by self-selection and because one can reasonably expect only the better hospitals to volunteer for such evaluation, inferences made about the total aggregate of small hospitals from such a small random sample are inappropriate (Spitzer, 1970).

Reilly and Legge (1980), in their paper "Saving the Rural Community Hospital: An Endangered Species," recognize the problem of the rural hospitals as documented by Spitzer, and express grave

concerns for the future of these hospitals. Their thesis is that the rural hospital must amplify those services which cannot be provided by the more distant larger hospitals and make their availability known to these local communities. In some cases the urban hospital will be able to provide ambulatory care to rural areas through satellites. To survive, the rural community hospital must redefine itself as the centre of a network of community health and medical care. The question of survival intimately is related to the hospital's potential for leadership in the most utilitarian fashion to the user population--namely, as a source of ambulatory as well as in-patient care. They suggest that the services of the rural hospital should be considered in terms of the already significant investments made in them, their service to the community's medical needs, and their potential for continued operation in providing primary and secondary needs for medical care.

The continued existence of the rural community hospital in its present form is questionable. Despite experiments which attempt to pool the resources of several small hospitals, administrative and demographic problems remain. However, Reilly and Legge postulate that the centrality of the rural hospital for medical care should be recognized and developed. After all, the community has an asset in the facility itself, one which already possesses the medical services management, and experience necessary for extending into ambulatory types of care. It can generate by its new multiple functions, a support system that will make it the centre of medical activity.

Rather than misconceptions that health care agencies are a threat to the small rural hospital, they can present these institutions

with a challenge to create a true system of community health. From primary care and home health care to preventive medicine and health education, the rural community hospital can be transformed into a medical and health centre, the matrix of health and medical care delivery of a community (Reilly & Legge, 1980).

Johnson (1978) agreed with Reilly and Legge in their postulation of necessary redefinition of the rural hospitals, and his thesis is that rural hospitals face change for a brighter future. He stated a rural hospital belongs to its community. Its employees are friends and neighbours of all residents in the area. The hospital often is the principal employer and the economic mainstay in the community. The daily newspaper lists admissions and discharges, and visitors are always "abusing" official visiting hours. In the urban hospital visiting hours may be strictly enforced, but the public image of the rural will immediately suffer from any attempt to do so. The urban hospital is impersonal, like the fire department, it is there when needed, but it is not considered part of daily life. The community's goodwill toward the rural hospital will be the hospital's greatest strength in the coming years of adversity and is an asset that every rural hospital administrator appreciates.

Roemer (1959) reported a study of surgical practice in the 163 general hospitals of Saskatchewan. For a four month period a record of the physician in attendance and the type of anesthetic used was kept for all hospitals. Deviance from the provincial regulation was observed in a high proportion of the small hospitals, when surgical operations were performed with general anesthesia, theoretically requiring three physicians in attendance, the standard was met for

hysterectomies in 45.5% of the cases; for cholecystectomies in 25.0%, for herniatomies in 23.0% and for appendectomies in only 15.2% of the cases. An evaluation of end results is necessary to establish whether such conditions of work in small hospitals are associated, in fact, with poorer results for patients than in larger institutions.

Roemer chose to study an undeniable objective of end results: mortality. He studied the number of post-operative deaths in conjunction with related case characteristics over a four-year period for five common, but important operations. His conclusions are that for herniatomies and hysterectomies, it is difficult to draw any assumed conclusion on the comparative safety of different sized hospitals. For appendectomies, cholecystectomies and prostatectomies, the evidence seems clear that larger hospitals are safer than places that are small. In his study, hospitals with less than 100 beds are designated as small.

Guntner (1963), in his paper "What Services Should Smaller Hospitals Offer," stated:

> When smaller hospitals consider offering new services, such decisions must be based on sound criteria which include, the hospital's goals, the type of medicine practiced in the community, local needs and other essentials. (p. 59)

He questioned if sound criteria is used to establish hospital services for the community or if those responsible for planning the services are likely to bow to pressures of community pride and competition.

In determining the needs for facilities he suggested that first the needs of the community must be measured. It may be discovered that citizens who require skilled nursing care outside of the acute hospital may have a long way to travel from their homes and family to get the service desired. Then the goals of the hospital operators must be considered. Do they believe that provision of long-term care

facilities is within their province? Once the responsibility is established the extent of services can be determined.

The Committee on the Costs of Health Services in Canada was appointed by the Minister of National Health and Welfare in 1968. This committee established seven task forces in 1969 to examine particular determinants of health costs (utilization, operational efficiency, salaries and wages, beds and facilities, methods of delivering medical care, the price of medical care and the cost of public health services). The recommendations from these task forces were published in three volumes. The recommendations from the task force included: that "a full range of out-patients' diagnostic and treatment services should be ensured in every province." It is suggested that with such facilities patients could be discharged from hospital earlier than might be otherwise possible and would return less frequently for in-patient care. "Home care programs should be expanded to become a significant component of the health care system"; such services should be recognized by the physician as a matter of practice, and work in close co-operation with the hospital. "The level of support offered to the physician outside the hospital should be developed so that he will be encouraged to use such services where medically appropriate and where no additional work load for himself or cost to the patient is involved." It was suggested that the patient and his family be educated to understand the benefits of such services outside the hospital and that the physician be involved in planning such facilities (Task Force Report on the Cost of Health Care in Canada, Vol. 1).

The Community Health Centre Project (Hastings Report) was established in June, 1971, by the Canadian Minister of National Health and Welfare, because of the continuing concern about the accelerating rate of spending on health services. The project was headed by Dr. John Hastings and the report was submitted in 1972. This committee studied the concepts of community health centres and how they had functioned in Canada and in selected countries. Their terms were broad but their principal mandate was to make specific recommendations on the provision of health services through community health centres and the possible role which government and others might play in their development. This committee defined a community health centre as a "facility or intimately linked group of facilities, enabling individuals and families to obtain initial and continuing health care of high quality. Such care must be provided in an acceptable manner through a team of health professionals and other personnel working in an accessible and well managed setting--the health services must be closely and effectively co-ordinated with the social and related services to help individuals, families and communities deal with the many-sided problems of living" (The Community Health Centre (Hastings Report), Vol. 1, 1972).

The committee suggested community health centres as a way of controlling costs, and introducing new patterns of care. They believed that the current health system needs reorganization.

Summary

The literature gives support to the concept that social changes are recognized as a significant factor in determining the health care

needs of a population. Researchers have chosen different aspects of health care for their studies, but they have used common diagnostic variables. Anderson (1973) used the same common demographic variables for his study of hospitalization as did Reinke (1967) in his demonstration of the changing demands for physicians. Feldstein and German (1965), in their study of hospital utilization, used demographic data but recommended that future studies should use community data in conjunction with hospital service data. Vayda et al. (1974), in his study to define utlization patterns, attitudes and perceived health care needs of people living in a defined area of Hamilton, Ontario, investigated demographic data, the use of existing service, and attitudes of the people toward the service.

Spitzer (1970) reported studies on small general hospitals and their problems. These studies demonstrated how, because of social changes, the small hospital now exhibits shortcomings in the quality of professional services they deliver and in the efficiency with which these services are rendered. The Task Force on the costs of health services in Canada (1969) examined determinants of health costs, their chief concern was with the development of health service that would cut down on acute care hospital services. The Community Health Centre Project (Hastings Report, 1970) postulated that the current health system needs reorganization and suggested the development of community health centres, as a way of introducing new patterns of care.

In spite of the shortcomings identified in small hospitals, Reilly and Legge (1980) rally to the defence of their usefulness. Their study stated that because social changes have changed the needs for these hospitals as they now exist, it is essential that the

hospitals be redefined and transformed into a medical and health centre, the matrix of health and medical care delivery of a community.

The literature supports the purpose of a study such as this which examines the demographic characteristics of a defined population, and the health care services provided to them by the cottage hospital system. This study also examines the factors which the population has reported as influencing their use or non-use of the cottage hospitals. In addition, the opinions of health professionals as to quality and quantity of health care in rural areas and their perceived needs for further health services are explored. The research questions guiding this study were formulated to provide a data base on which future decisions can be made.

CHAPTER III

METHODOLOGY

This chapter gives an overview of the research methodology of the study. It describes criteria used in choosing the health districts and in selecting the sample population. It elaborates upon the research design, the research questions, the data collection procedure, and describes the data interpretation.

Health District Selection

The health districts selected for the study were those served by the Burgeo Cottage Hospital (22 beds) and the Placentia Cottage Hospital (40 beds). The following criteria were used in the selection of health districts for the study:

1. That one would have a small hospital and the area would be comprised of outports or fishing villages and the other a larger hospital in a more industrial area to determine what influence, if any, size might have on utilization;
2. that the means of transportation to the cottage hospitals differ in each district;
3. that the districts be located so as to have some significant differences in distance or availability to a metropolitan area.

Both districts are located on the coastline. The health district served by the Burgeo hospital has a population of 4,140 people.

The population of the Placentia district is 10,845 (Census Canada, 1976). The community of Burgeo, where the cottage hospital is located, was connected by access road to the main highway (Trans Canada) in 1981, however the other communities in the district are accessible only by boat or plane. The nearest metropolitan area to the town of Burgeo is 185 miles with 92 miles of unpaved road. This differs from the Placentia area where all but one community has access by road to Placentia where the cottage hospital is located and to the Trans Canada Highway. The town of Placentia is 78 miles from a metropolitan area by paved roads.

Sample Selection

In the Placentia district 99 families were selected in the sample; these families included a total of 390 individuals, with an average family size of four members. In the Burgeo district 34 families were selected and included 154 individuals, with an average family size of five members.

A sample of the population was selected from all the communities in the districts served by each of the cottage hospitals in the study. These communities all hug the coastline and have a population range from 55 to 2,000 persons; five of them are accessible only by boat or plane, and the chief industry is fishing.

All the communities were visited and the population of each was obtained from Census Canada, 1976. The number of households was then selected based on an estimated average family size of six members (Appendix C).

The houses in these communities are not numbered and do not have any specific identifying markings. This made it necessary to do

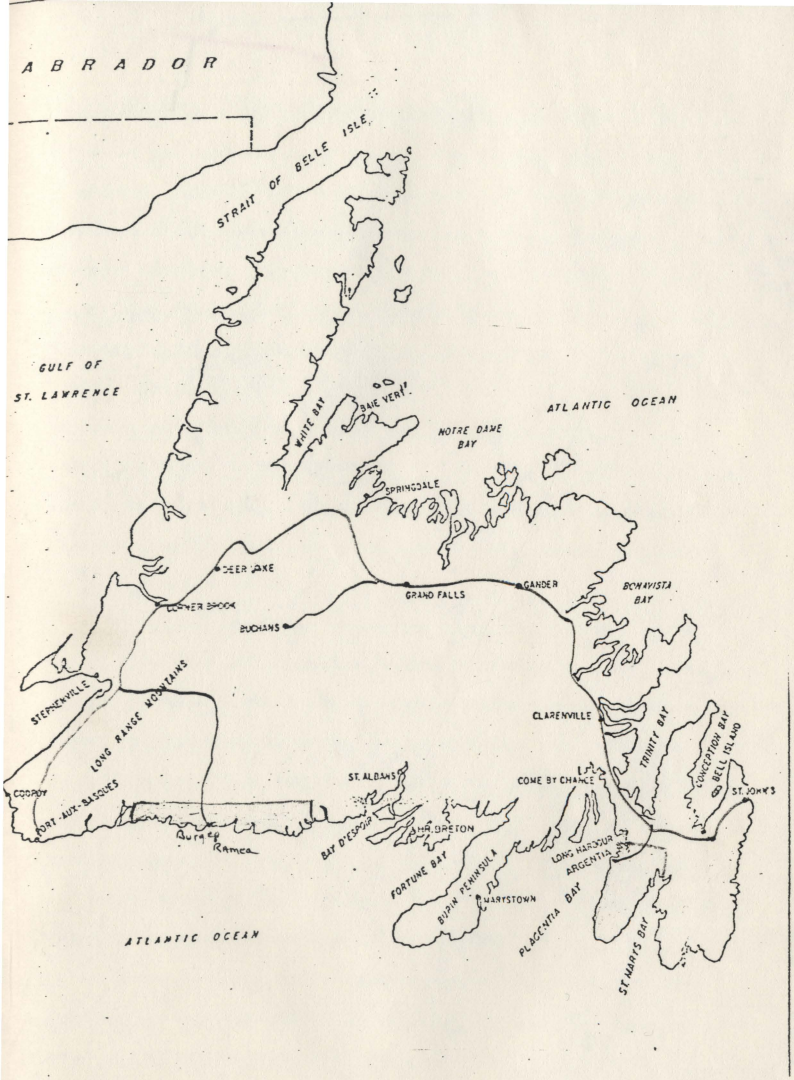

Figure 1. Map of Newfoundland showing Placentia and Burgeo health districts.

random sampling; every tenth house was selected and visited. The nature of the study was explained to the individuals who met the stipulated criteria. Following verbal consent the interviews were conducted by the investigator with the assistance of a trained research assistant. One person in each of the selected households was interviewed; when possible, this was the female head of the household. When this was not possible a substitute was selected by the interviewer. The female head of the household was chosen to be interviewed because traditionally she assumes most of the responsibility for the health care needs of the family. All interviews were conducted within the respondent's home, where she would feel most comfortable and most relaxed in talking with a stranger. No attempt was made to conduct the interviews in private.

Fifteen health professional personnel were included in the study. They were all physicians working in cottage hospitals or in private practice in the areas, all public health nurses working in the areas, the charge nurses in the cottage hospitals and the hospital administrators in both districts. This group included seven physicians, six nurses and two hospital administrators. The health professional personnel were chosen because of their knowledge in the health field and because they are the deliverers of health services, their opinion could differ greatly from those of the consumers.

Because of the small number of health professionals in the sample, they were contacted individually, the survey was explained to them, and appointments arranged for interviews. They decided that the time allotment of 20 to 30 minutes for each interview was not sufficient and they requested more time in which to contemplate

their responses. The interview guide was left with them for the period of 24 hours, and all interviews were conducted in their offices.

Research Design

The following questions served as criteria for the construction of the interview guides for the population and health care professional surveys (see Appendices A and B).

1. Is the utilization of the cottage hospitals affected by the the demographic characteristics of the population, such as age, sex, education, employment and income?
2. Is the cottage hospital in its present form providing the services necessary to meet health needs as perceived by the population it serves?
3. Does the cottage hospital model need modification to the services it provides to meet the health needs of the people it serves?
4. Is the cottage hospital providing:
   (a) primary care?
   (b) relatively uncomplicated obstetrics services?
   (c) emergency services?
5. What factors influence the people in their use or non-use of the services provided by the cottage hospitals?

The methodology selected to address the research questions utilized already existing data from the two health districts. This data includes hospital utilization as to age and sex distribution, patient diagnosis, number of separations and length of stay (Department of Health Statistics, 1971 and 1980-81). Other existing data used are the community profiles of each health district, age and sex

distribution, education, occupation and family income (Census Canada, 1971 and 1976). As no comprehensive overview of individual cottage hospitals has been done, broad research questions were deliberately chosen to include a large number of variables.

According to Simon (1969), descriptive surveys provide "quantitative descriptions of aspects of a universe or people" (p. 244). Support of descriptive research comes from Van Dalen (1973):

> Before much progress can be made in solving problems, man must possess descriptions of the phenomena with which they work . . . investigators ask the question: what exists--what is the present status of these phenomena? Determining the nature of prevailing conditions, practice, and attitudes--seeking accurate descriptions of activities, objects, processes, and persons . . . is [the] objective. (p. 193)

Questioning was the chief method used for obtaining the data for answering the questions of this study. For descriptive studies, the questioning method of seeking information allows data to be collected that are of direct interest and concern to the investigator. Fox (1969) emphasized:

> For descriptive survey, it [the questioning method] is the most appropriate method for obtaining specific information about the research situations or the respondents who function in them. (p. 525)

Aspects of the questioning method used for this study were face to face interviews. Interviews hold more favour among researchers than the mail questionnaire. Mailed questionnaire may be lost, response rates are usually low. If short answers, or no answer is given to a question the respondent cannot be probed for more detail. Personal interviews allow for factual data gathering, as well as probing the respondent for additional information and to amplify, clarify, and/or verify previous statements. Woodward, Chambers and Smith (1982) support the face to face interview in that it is a flexible means of

data collection with a generally high response rate, and interviewers can clarify ambiguous answers.

> There is a control over who is the respondent. The interviewer can ask for a particular respondent and interview that person--unlike a mail-out questionnaire where the respondent may delegate a proxy (spouse or secretary) to fill out the questionnaire. (p. 34)

This survey was aimed at presenting preliminary data, without identifying or exploring for relationships suggesting cause and affect, or making predictions about a population from the two specific health districts.

Research Instrument

A purpose of the investigation was to identify factors influencing the people's use or non-use of the cottage hospital services available to them, and to obtain information from health professionals as to their opinions of the quality and availability of health care in rural areas. No suitable research instruments were found for this purpose; therefore, two questionnaire guides for face to face interviews were developed, one for the population interviews and one for the health professionals interviews. In an attempt to enhance the face and content validity, the initial draft of these interview guides were reviewed by members of the supervisory committee and a research specialist. The professional interviewer guide was field tested by public health nurses who had worked in areas served by cottage hospitals, the health population interview was field tested by lay people who have lived in areas served by cottage hospitals. Both interview guides were edited according to the feedback received. The semi-structured nature of the interview guides was intended to

reduce interviewer bias, increase objectivity and help promote data reliability. The interviewer guides are found in Appendices A and B. The questions did not call for investigation of dynamic processes dealing with change over time, rather they required attention to existing data obtainable within one time frame.

Instrument Content

The population interviewer guide was constructed to obtain the following information (see Appendix A):

Personal Characteristics

Age, sex, education, occupation and family income.

Hospitalization

Experiences related to admissions to cottage hospitals. Referrals or admissions to larger hospitals. Opinions about larger hospitals, likes and dislikes of cottage hospitals and probable use of cottage hospitals.

Cost

Personal cost involved in receiving services from the cottage hospitals, in terms of money or time lost from work; opinions as to whether cost is fair or unfair and suggestions to lessen costs.

The health professional interviewer guide was constructed to obtain the following information (see Appendix B).

Personal Data

Age, sex, occupation and length of time in present position. This information provided a profile of the health professionals working in the cottage hospital districts.

Opinions Related to Quality of Health Care

Problems unique to rural versus urban populations in obtaining health care, quality of medical care in rural areas, access to health care in terms of transportation, availability of health care in terms of services offered, and suggestions for improvements.

Cost

Personal cost factors for people coming to the cottage hospitals, whether or not these are considered fair or unfair, and suggestions to lessen the personal cost to these people.

In view of the fact that the Department of Health has accepted and initiated a level of regionalization by placing some of the cottage hospitals under the jurisdiction of larger regional hospitals or boards of management and, especially, since one of the hospitals in the study was being placed under the board of a larger hospital at the time of the study, it was felt useful to explore the feelings of the health professionals as to relationships between cottage hospitals and larger hospitals. These questions were addressed under the following headings: consultation visits by an administrator of a larger hospital; supervision of laboratory and X-ray departments, medical supervision; complete administration by a larger hospital; or, a combined board of directors.

Health Services

Information was sought on what kinds of health services the respondents felt should be offered by the cottage hospitals.

Both questionnaire interview guides allowed for extra comments or suggestions from the interviewee.

Data Analysis

Data derived from the interview responses were analyzed and reported by frequency counts and percentages. To further clarify the interview responses, narrative summaries were made as it was felt important that the analysis reflect what people were saying in their own words.

Data from the community profiles and from the hospitals in the health districts are also reported in percentages to reflect trends occurring in the 10-year time frame being examined.

Summary

In this chapter an overview of the research methodology of the study is presented. The criteria used for the selection of the health districts are described, and methods used for selection of the population sample are discussed. The research questions are presented and the research design is elaborated, with a description of the instrument used, and the contents of the instrument explained. The data collection procedure and data interpretation have been described.

CHAPTER IV

RESULTS OF COMMUNITY SURVEY

This chapter deals with factors influencing the use of cottage hospital services, as reported by community participants in the study, their attitudes towards having to travel to larger centres for health care, the personal cost involved and their perceived needs for health care services in their area. It also deals with the attitudes of health professionals in each area regarding the present status of health care delivery, and needs for health services as they perceive them. It also explores their attitudes regarding different aspects of small hospitals being under the administration of larger ones.

These data were collected by means of a personal interview with a responsible member of each of the families selected. Each interview demanded 20-30 minutes of the respondent's time and was conducted at the family residence. The health professional personnel were interviewed at their respective offices.

Direct quotations from the interviews are included because it was felt important that the analysis reflect what people were saying in their own words.

The health districts were identified by all communities served by each cottage hospital. The families were selected randomly to obtain the views and attitudes of a cross section of the population. All health professional personnel practicing in the area were included in the study.

Questions 3, 4a and 4b of the interview guide are not addressed in this chapter. This information was used simply to describe the sample population in Chapter III.

Characteristics of Families Interviewed

The characteristics of the families interviewed are shown in Table 1. The majority of the respondents interviewed in both districts were wives. It is of interest to note that 9.5% more husbands were interviewed in the Placentia district than in the Burgeo district. The majority interviewed in both areas were over 35 years of age.

Table 1

Characteristics of Families Interviewed in Two Health Districts

	Burgeo Area %	Placentia Area %
Position of respondent in family		
Wife	76.5	64.6
Husband	14.7	23.2
Son or daughter	8.8	6.1
Other	-	6.1
Age of respondent		
Under 25	11.8	9.1
25 - 34	11.8	22.2
35 - 44	32.3	12.1
45 - 64	41.2	36.4
65 and over	2.9	20.2
100% =	34	99

The occupational and educational status of the heads of the families interviewed is shown in Tables 2 and 3. There were 9.3% more professionals in the Placentia district than in the Burgeo district

and 6.2% more university graduates. The overall educational status in the Placentia district is higher than in the Burgeo area, but Burgeo has a higher number of people in managerial (own business). This may be due to the fact that there are more fishermen in the Burgeo area who own their boats and hire other people, which is considered a personal business, but not necessarily linked with education. However, the large number of unskilled labourers in the Burgeo district may be linked to the overall lower educational status.

Table 2

Occupational Status of Heads of Families Interviewed in Two Health Districts

Occupational Status of Heads of Families	Burgeo Area %	Placentia Area %
Professional	5.9	15.2
Managerial (own business)	26.5	12.1
Clerical	0	5.1
Fisherman	14.7	13.1
Unskilled Labour	38.2	24.2
Retired or Unemployed	14.7	30.3
Occupation Not Ascertained		
Number of Families		
100% =	34	99

Table 3

Educational Status of Heads of Families Interviewed in Two Health Districts

Educational Status of Heads of Families	Burgeo Area %	Placentia Area %
Grade Eight or Less	47.1	20.2
Some High School	32.3	31.3
Graduated From High School	11.8	21.2
Some University	2.9	10.1
Graduated From University	5.9	13.1
Business or Trade School, or Other	0	4.1
100% =	34	99

The annual income in both districts is shown in Table 4. It is interesting to note that in the Placentia district the overall educational status is higher than Burgeo. There are also more professionals and university graduates in the Placentia district, but higher overall income level was reported in the Burgeo area.

Table 4

Annual Income of Families Interviewed in Two Health Areas

Annual Family Income	Burgeo Area %	Placentia Area %
Under $8,000	2.9	25.3
$8,000 - $15,000	58.9	40.4
$15,000 - Over	38.2	34.3
100% =	34	99

The distribution of family members is shown in Table 5. In the Burgeo area there is a larger number of families with 10 and more children, but the average family in the Placentia district is four individuals and the average family size in the Burgeo district is five individuals.

Table 5

Number of Individuals per Family Unit in Two Health Districts

Individuals Per Family Unit	Burgeo Area %	Placentia Area %
Total		
1	3	6.1
2	11	21.2
3	29	15.15
4	10	22.2
5	15	15.15
6	15	8.1
7	11	8.1
8	0	3.0
10+	6	7.0
No. of Families (n)	34	99
Average Size of Family (T/n)	5	4
No. of Individuals (T)	154	394

Hospitalization and Hospital Care

All respondents were asked if they or any member of their family had been a patient at the cottage hospital within the past 10 years. Twenty-four families in Burgeo and 82 families in the Placentia area had experienced admission by some member of their families. The majority of those who received treatment were for childhood diseases or obstetrics. The referrals were very varied and were not tabulated.

All respondents who had experienced hospitalization in a larger hospital were asked their opinions about having to go to a larger hospital for medical care. There were 18 families in the Burgeo area and 65 families in the Placentia area who had this experience--the responses are shown in Table 6. In the Burgeo district 72.2% and in the Placentia district 58.5% agreed it was a good idea. In the Burgeo district 16.7% and in the Placentia district 21.5% said it was a poor idea.

Table 6

Opinions of Referral to Hospitals Larger than the Cottage Hospital

Responses	Burgeo Area %	Placentia Area %
Good Idea	72.2	58.5
Poor Idea	16.7	21.5
No Opinion	11.1	20
Number of Families Who Had Experienced Referrals 100% =	18	65

The majority of people in both districts agreed it was a good idea. The following comments are typical for respondents in this category:

"Some things like surgery--they can't do in our hospital."

"The medical attention is not good here--the doctors are not experienced."

"Specialized doctors and nurses are in bigger hospitals. It would be impossible for them to be in every small hospital."

"Small hospitals do not attract qualified personnel, and they have no back up."

Comments such as "the doctors are not experienced" could stem from the fact that the doctors may be young and in areas where there is a large turnover of doctors, people do not get to know them, which gives them a feeling of insecurity. The awareness and the need felt for specialized doctors and nurses is an interesting point, and worthy of note. Some of the factors that may account for this is the rise in the educational levels of the population which is evidenced in Statistics Canada (1976) (Appendix D). More mobility, especially in areas where road conditions have been improved and more people have their own transportation, may also be a factor. Most people now have their own telephone, and therefore have more personal contact with people outside their own community. The majority of people also have television which could be a contributing factor in raising awareness of health care needs as compared to what is available in larger areas.

Most of the people who thought it was a poor idea to go to a larger hospital for medical care, felt that the cottage hospital should have the facilities and services to handle any need which might arise. The following comments are typical:

"The cottage hospital looks after emergency cases; if we had surgery here we wouldn't have to go away at all."

"Because you would rather get the care you need close to home."

"It's convenient and when you're sick you don't like to travel."

"It's inconvenient, expensive, and time consuming. You lose too much time from work, especially for visiting relatives."

"Mostly because of inconvenience. In our own hospital you have a better chance for visitors, and your family can see the type of care you're getting."

Those who had no opinion--11.1% in Burgeo and 20% in Placentia--simply stated, "I'd rather not say anything." Inconvenience, travel expense, and an underlying fear of losing the cottage hospital seemed to be behind most of the negative attitudes toward having to go to a larger hospital for medical care. On the other hand it is possible some people may have had a poor experience in a larger hospital but were not willing to talk about it.

Each respondent was asked if, in their opinion, a larger hospital gave better care than the cottage hospital. The distribution of responses is contained in Table 7--45.8% in the Burgeo area, and 51.2% in the Placentia area thought the larger hospitals gave better care; 25% in the Burgeo area and 29.3% in the Placentia area thought the large hospitals and the cottage hospitals were about the same in the quality of care they provided. A small percentage--8.4% in the Burgeo area and 12.2% in the Placentia area--felt the cottage hospitals gave better care than larger hospitals. A proportion of respondents--20.8% in the Burgeo area and 7.3% in the Placentia area--gave no opinion: "I don't know," "I don't know what to say."

It is interesting to note the frame of reference used by some respondents in making this evaluation. Larger hospitals were rated as providing better care because of the wider range of services available, or because, "They have more specialized doctors who can give advice

to other doctors," "Feel safer in a larger hospital." Those who favoured the cottage hospitals based their evaluation on the fact that the nurses were friendlier at the cottage hospitals, or they got more attention there. One man said, "The cottage hospital gives better care because it isn't too big and they have more time to spend on you."

Table 7

Quality of Care Comparison Between Cottage Hospitals and Larger Hospitals by Respondents Who had Experienced Admissions

Quality of Care Comparison	Burgeo Area %	Placentia Area %
Larger hospital -		
A great deal better	37.5	37.8
A little better	8.3	13.4
About the same	25	29.3
A little less than	4.2	8.5
A great deal less than	4.2	3.7
Don't know	20.8	7.3
Number of families 100% =	24	82

Those who mentioned nursing care said it was good in both hospitals but less personal and friendly in the larger hospitals. It is interesting to note that the percentage of people in the Placentia area who felt they received better care in the larger hospitals corresponds with the percentage of people who felt it was good idea to be referred to the larger hospital. This is not true in the Burgeo area, but the reasons were not explored.

All respondents were asked if there was anything they particularly liked or disliked about the cottage hospitals. This was asked in an open ended question, the answers were categorized and are presented in Tables 8 and 9. Among those who experienced an admission to

the cottage hospital most cited the personal attention they received, the friendliness of the personnel, and the convenience of having a hospital close to family and friends. "It is convenient in case of emergency." Those who stated dislike emphasized shortage of equipment and facilities, inadequate X-ray equipment, long waits in Out-Patients; not able to have minor surgery--examples cited were tonsillectomy, D & C and cast removal. Some mentioned the frequent turnover of medical staff, as a factor contributing to poor care. A few mentioned the lack of acute emergency service. One lady said she "felt unsafe about the hospital mainly due to lack of facilities and the ability of staff to cope with complications." In the Burgeo area 50% and in the Placentia area 78.7% did not identify any particular dislike of the cottage hospital.

Table 8

Percent of Families Who Experienced an Admission to the Cottage Hospital by the Most Desirable Characteristics of the Hospital Mentioned by the Respondent

Characteristic of the Cottage Hospital Liked Most	Burgeo Area %	Placentia Area %
Total	24	88
1. Convenient for visitors	33.3	21.2
2. Friendliness of staff	20.8	21.2
3. Nothing particular	33.3	18.8
4. More personal attention	4.2	17.5
5. Convenient in case of emergency	8.4	16.3
6. Good nursing care		3.8
7. Good doctors		1.2
100% =	24	80

Table 9

Percent of Families Who Experienced an Admission to the Cottage Hospital by the Most Undesirable Characteristic of the Cottage Hospital Mentioned by the Respondent

Characteristic of Cottage Hospital Disliked Most	Burgeo Area %	Placentia Area %
1. Shortage of equipment and facilities	29.2	7.5
2. Unable to have minor surgery performed	0	5.0
3. Turnover of medical staff	0	5.0
4. Lacking acute emergency service	0	3.8
5. Nothing particular	50.0	78.7
6. Shortage of medical staff	12.5	0
7. Inadequate Out-Patients	8.3	0
100% =	24	80

It should be realized that in view of recent events (an announcement to close two cottage hospitals), these questions posed some difficulty, and because many of the respondents had expressed deep concern that they might lose their hospital in the near future, therefore, they were not probed for further clarification of their concerns.

Respondents were asked what services they would use the cottage hospitals for and were given the following list of services:

Emergency

Maternity

Children's illness

Health problems of the aged

Out-Patients

Surgery

Others (specify)

The responses were tabulated under age, occupation, education and income status. The distribution for Burgeo hospital is found in Table 10, and for Placentia hospital in Table 11. The distributions are discussed under the stated headings.

Burgeo Cottage Hospital

Probable Utilization of Burgeo Cottage Hospital by Age

In the Burgeo area among those interviewed in the under 25 years of age group, 100% stated they would use the hospital for emergency care, 50% would use it for children's care and Out-Patients and 25% would use it for maternity and care of the aged. In the age group 25-34 years, 100% would use the hospital for emergency and Out-Patient services, 75% would use it for maternity and children's health. No one in this age group suggested use of the cottage hospital for care of the aged. In the age group 35-44 years, 91% would use it for emergency service, 81% said they would use it for Out-Patients, 68% suggested they would use it for children's health, 45% said they would use it for maternity care, 18% said they would use it for health care of the aged. In the age group 45-64 years, 100% would use it for emergency care, 93% would use it for Out-Patients, 50% would use it for health care of the aged, 43% would use the hospital for children's illness, 14% for maternity. In the age group 65 and over, the one respondent said they would use the hospital for all services discussed. Of the 34 respondents no one suggested the use of the cottage hospital for surgery. Emergency services and Out-Patient services were identified as a priority by all age groups. Approximately 50% of the respondents in each of the age groups suggested they would use the

cottage hospital for treatment of children's illness; of the respondents in the child-bearing age under 45 years, 47% said they would use the hospital for maternity services. In the age group 45 and over, 54% of the respondents said they would use the hospital for care of the aged, but only 15% of those under 45 years suggested use of the hospital for care of the aged. Apart from this discrepancy the probable utilization of services were fairly evenly distributed among the age groups.

Probable Utilization of Burgeo Cottage Hospital by Occupation of Respondents

There were only two respondents whose occupation was listed as professional; both stated they would use the hospital for emergency, Out-Patients, maternity and children, while only one would use it for care of the aged. Of the respondents whose occupation was listed as managerial, or self-employed 100% stated they would use the hospital for emergency, 89% for Out-Patients' services, 67% for children's illness, 55% for maternity care and only 11% for care of the aged. Of those whose occupation was listed as fisherman, all stated they would use emergency services, 80% said they would use Out-Patient services and 40% stated they would use the hospital for maternity services and children's illnesses. None stated they would use the hospital for care of the aged. In the group whose occupation was listed to be in the unskilled category, 92% stated they would use the hospital for emergency services, 77% said they would use it for Out-Patients, 38% stated they would use the hospital for children's illness and care of the aged, 31% said they would use the hospital for maternity care. Of those who were retired or unemployed all said they would use the hospital for

emergency services and Out-Patients, 80% said they would use it for care of the aged, and 60% for children's illnesses. No one said they would use it for maternity care. Occupation appears to make little or no difference in the utilization of the hospital for emergency and Out-Patient services. Those whose occupation was listed as unskilled, fisherman and managerial stated they would have little or no use of the hospital for care of the aged.

Probable Utilization of Burgeo Cottage Hospital by Education

Ninety-six percent of those who stated their educational status to be below high school graduation, said they would use the hospital for emergency services, 48% for Out-Patients, 37% said they would use it for children's illnesses and 33% would use it for maternity services and care of the aged. Of those with high school and more education, 100% stated they would use the emergency and Out-Patient services, 86% would use it for children's illnesses, 71% for maternity and 29% said they would use the hospital for care of the aged. There is little difference in educational status and the use of emergency services and care of the aged, but the differences are notable in the stated use of other services, with those in the higher educational status, reporting more than twice the probable use.

Probable Utilization of Burgeo Cottage Hospital by Income

Only one person stated their income as less than $8,000 per annum, and stated they would use all the services listed. Twenty respondents stated their annual income as being between $8,000 and $15,000 per annum. Of these, 95% said they would use the hospital

Table 10

Probable Utilization of Service at the Burgeo Cottage Hospital by Age, Education, Occupation and Income of Head of the Household, as Stated by the Respondent

	Total Responses	Emerg.	Maternity	Child.'s Health	Health of Aged	Out-Pts.	Surgery	Other	Not At All	Total Respondents
Age										
Under 25 years	10	4	1	2	1	2	0	0	0	4
25-34 years	14	4	3	3	0	4	0	0	0	4
35-44 years	33	10	5	7	2	9	0	0	0	11
45-64 years	42	14	2	6	7	13	0	0	0	14
65+	5	1	1	1	1	1	0	0	0	1
	104	33	12	19	11	29	0	0	0	34
Occupation										
Professional	9	2	2	2	1	2	0	0	0	2
Managerial or Self-Empl.	29	9	5	6	1	8	0	0	0	9
Clerical	0	0	0	0	0	0	0	0	0	0
Fisherman	13	5	2	2	0	4	0	0	0	5
Unskilled	*36*	*12*	*4*	*5*	*5*	*10*	*0*	*0*	*0*	*13*
Retired or Unemployed	17	5	0	3	4	5	0	0	0	5
Occupation not Ascertained	0	0	0	0	0	0	0	0	0	0
	104	33	13	18	11	29	0	0	0	34

Table 10 (Continued)

	Total Responses	Emerg.	Maternity	Child.'s Health	Health of Aged	Out-Pts.	Surgery	Other	Not At All	Total Respondents
Educational Status										
Less than Grade 8	44	16	5	4	5	0	0	0	0	16
Some High School	33	10	4	6	4	9	0	0	0	11
Graduated from High School	14	4	2	3	1	4	0	0	0	4
Some University	4	1	1	1	0	1	0	0	0	1
Graduated from University	9	2	2	2	1	2	0	0	0	2
Business or Trades	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
	104	33	14	16	11	30	0	0	0	34
Income Status										
Under $8,000	5	1	1	1	1	1	0	0	0	1
$8,000-$15,000	59	19	9	9	4	18	0	0	0	20
$15,000+	40	13	5	6	4	12	0	0	0	13
	104	33	15	16	9	31	0	0	0	34

emergency services, 90% Out-Patient services, 45% said they would use the hospital for maternity and children's illnesses, and 20% for care of the aged. Of those who stated their income as over $15,000 per annum, 100% said they would use the hospital for emergency services, 92% said they would use it for Out-Patient services, 46% for children's illnesses, 38% said they would use the hospital for maternity care and 31% for care of the aged.

Except for the one with a stated income of less than $8,000 per annum, there appears to be little difference between income status and the probable utilization of the hospital services.

Placentia Hospital

Probable Utilization of Placentia Cottage Hospital by Age (see Table 11)

From those respondents who stated their age as under 25 years, 66% stated they would use the hospital for emergency services, 44% said they would use it for Out-Patient services and children's illnesses, 33% for maternity care and 22% said they would not use the cottage hospital for any services. In the age group 25 to 34 years of age, 91% stated they would use the hospital for emergency services, 59% said they would use it for Out-Patients, 41% for children's illnesses, 23% stated they would use the hospital for maternity services and 4% said they would use it for care of the aged, and 9% stated they would not use the hospital for any service. In the age group 35 to 44 years of age, 83% stated they would use the hospital for emergency services, 50% would use it for maternity and children's illnesses, 42% said they would use it for Out-Patient services, 25% for care of the aged and 8% said they would not use the hospital for any services. In the age

group 45 to 64 years of age, 83% stated they would use the hospital for emergency services, 72% said they would use it for Out-Patient services, 25% for care of the aged and 13% stated they would not use the cottage hospital at all. In the age group 65 years and over, 90% stated they would use the hospital for emergency services, 60% said they would use it for Out-Patients, 55% stated they would use the hospital for care of the aged and 10% said they would not use the cottage hospital for any services. Age did not appear to have much effect on the use of emergency services. Between one-half and three-quarters of the respondents said they would use the Out-Patients. The probable use of the hospital for care of the aged varied among the age groups, ranging from 0% in the under 25 age group to 55% in the 65 and over group. The percentage increased with the age of the respondent. The age group 45 years and over did not foresee utilization of the hospital for maternity services or for children's illnesses. Twice as many in the under 25 age group as compared to the over 25 age group stated they would not use the hospital for any service.

Probable Utilization of Placentia Cottage Hospital by Occupation

Of those whose occupation was stated as professional, 73% said they would use the hospital for emergency services, 53% would use Out-Patient services, 20% stated they would use the hospital for maternity services, 13% would use it for children's illnesses and care of the aged and 26% said they would not use the cottage hospital for any service. Among those whose occupation was stated as being managerial or self-employed, 66% stated they would use the hospital for emergency services, 50% would use the Out-Patient services, 15% said they would

use the hospital for children's illnesses, 8% would use it for maternity care and care of the aged, and 16% stated they would not use the cottage hospital at all. Of those whose occupation was listed as clerical, 60% stated they would use the hospital for emergency services, 20% for children's illnesses, and 40% said they would not use the cottage hospital for any services. Among those whose occupation was stated as fisherman, 92% said they would use the hospital for emergency services, 85% for Out-Patients, 77% said they would use the hospital for children's illnesses, 46% for maternity services, 38% said they would use it for care of the aged and no one stated that they would not use the cottage hospital. Among those whose occupation was stated as unskilled, 96% said they would use the hospital for emergency services, 58% for Out-Patients, 21% said they would use it for maternity, 17% stated they would use the hospital for children's illnesses and 4% said they would not use the cottage hospital for any services. Of those who stated they were retired or unemployed, 87% said they would use the hospital for emergency services and 60% for Out-Patient services, 55% said they would use it for care of the aged, 10% for children's illnesses, and 10% stated they would not use the cottage hospital for any services. Those who stated their occupation as clerical said they would use the hospital only for emergency and children's illnesses, with 40% stating they would not use the hospital for any services. Those whose occupation was listed as fisherman, show the highest rate of probable utilization of the hospital services. Among those in the other listed occupations the probable utilization of the hospital services does not show any definite trend.

Probable Utilization of Placentia Cottage Hospital by Education

Ninety-eight percent of those who stated their educational status to be below high school graduation, said they would use the hospital for emergency services, 69% said they would use the Out-Patient services, 25% stated they would use the hospital for children's illnesses, 22% for care of the aged, 18% said they would use it for maternity services and 3% stated they would not use the cottage hospital for any services. Among those who stated their education status to be high school graduates and above, 68% said they would use the hospital for emergency services, 48% for Out-Patient services, 25% said they would use the hospital for children's illnesses, 19% for care of the aged, 13% for maternity services and 23% stated they would not use the cottage hospital for any services. Those who stated their educational status as high school graduation or more, said they would use the hospital services less than those in the lower education group, except for children's illnesses which both groups stated they would use equally. Twenty-three percent in the higher educational group stated they would not use the cottage hospital for any services as compared to only 3% of those in the lower educational group.

Probable Utilization of Placentia Cottage Hospital by Income

Among those who reported their income to be less than $8,000 per annum, 100% stated they would use the hospital for emergency services, 79% would use Out-Patient services, 33% said they would use the hospital for care of the aged, 12% would use it for children's illnesses, 8% for maternity services, and all said they would use the services of the hospital.

Of those who reported their income to be between $8,000 and $15,000 per annum, 87% stated they would use the hospital for emergency services, 58% for Out-Patient services, 32% would use the hospital for children's illnesses, 25% for maternity care, 17% for care of the aged and 10% said they would not use the cottage hospital for any services. Among those who reported their annual income to be $15,000 and over, 66% stated they would use the hospital for emergency services, 43% for Out-Patient services, 28% would use it for maternity services, 23% would use the hospital for children's illnesses, 14% for care of the aged and 23% stated they would not use the cottage hospital for any service. As the annual income increases, the probable utilization of emergency, Out-Patient services and care of the aged is seen to decrease. However, three times as many people in the $15,000 and over income group stated they would use maternity services as compared to those whose annual income is reported as under $8,000 per annum. Twenty-three percent of those in the higher income group stated they would not use the cottage hospitals for any services, as compared to 10% in the median income group and none in the lower income group.

In the Burgeo district, 97% of the respondents identified emergency and 89% identified Out-Patients as priorities; whereas in the Placentia district 85% identified emergency and 60% identified Out-Patient services as priorities. Twelve percent of the respondents in Placentia stated they would not use the hospital at all. This did not happen in the Burgeo district as all respondents stated they would use the hospital services. In the Burgeo district those who were reported to be in the higher educational status, indicated they would use the hospital services more than those in the lower educational status.

Table 11

Probable Utilization of Services at the Placentia Cottage Hospital by Age, Education, Occupation and Income of the Head of the Household, as Stated by the Respondent

	Total Responses	Emerg.	Maternity	Child.'s Health	Health of Aged	Out-Pts.	Surgery	Other	Not At All	Total Respondents
Age										
Under 25 years	17	6	3	4	0	4	0	0	2	9
25-34 years	48	20	5	9	1	13	0	0	2	22
35-44 years	30	10	6	6	3	5	0	0	1	12
45-64 years	65	30	0	0	9	26	0	0	5	36
65+	41	18	0	0	11	12	0	0	2	20
	201	84	14	19	24	60	0	0	12	99
Occupation										
Professional	26	11	3	2	2	8	0	0	4	15
Managerial or Self-Empl.	18	8	1	2	1	6	0	0	2	12
Clerical	4	3	0	1	0	0	0	0	2	5
Fisherman	44	12	6	10	5	11	0	0	0	13
Unskilled	46	23	5	4	0	14	0	0	1	24
Retired or Unemployed	63	26	0	3	16	18	0	0	3	30
Occupation not Ascertained	0	0	0	0	0	0	0	0	0	0
	201	83	15	22	24	57	0	0	12	99

Table 11 (Continued)

	Total Responses	Emerg.	Maternity	Child.'s Health	Health of Aged	Out-Pts.	Surgery	Other	Not At All	Total Respondents
Educational Status										
Less than Grade 8	48	20	2	4	5	17	0	0	0	20
Some High School	70	30	7	9	6	18	0	0	1	31
Graduated from High School	37	15	2	4	6	10	0	0	3	21
Some University	17	7	2	2	0	6	0	0	2	10
Graduated from University	22	9	0	4	3	6	0	0	4	13
Business or Trades	7	2	2	2	0	1	0	0	2	4
Other	0	0	0	0	0	0	0	0	0	0
	201	83	15	25	20	58	0	0	12	99
Income Status										
Under $8,000	56	24	2	3	8	19	0	0	0	24
$8,000-$15,000	88	35	10	13	7	23	0	0	4	40
$15,000+	57	23	6	8	5	15	0	0	8	35
	201	82	18	24	20	57	0	0	12	99

However, in the Placentia district those who were reported to be in the higher educational status (high school and more) were less likely to use the hospital services, in fact, they stated they were less likely to use the hospital. This is also true of those in the top reported income bracket in the Placentia district. This trend was not seen in the Burgeo district. Demographic characteristics appear to have some effect on the utilization of hospital services in these areas although the trend is not consistent in the two areas.

Personal Cost to Patients Receiving Health Care

There have been some concerns expressed regarding out-of-pocket costs for individuals receiving health care in rural areas. Several questions were included to examine the people's feelings regarding the cost factor to them and if they felt cost to be fair or unfair. They were also asked for any suggestions they felt would lessen their personal cost. The responses to the cost factor are found in Table 12.

Table 12

Opinions Concerning Personal Cost Involvement to Individuals Receiving Health Care in the Health Districts

Cost			Burgeo %	Placentia %
Very fair			0	4.1
Unfair			8.9	24.2
Fair			29.4	22.2
Don't Know			29.4	16.2
No Cost Identified			32.3	33.3
Total Families	100%	=	34	99

In the Burgeo area 29.4% thought the cost was fair, 22.2% in the Placentia area expressed the same feelings. However, 26.2% in the Placentia area felt the cost was unfair, but only 8.9% in the Burgeo area felt the cost unfair. This could be due to the fact that in the Burgeo area they have to use boat transportation which is much cheaper than road transport. It is also of interest to note that 29.4% in the Burgeo area and only 16.2% in the Placentia area stated they did not know about cost.

There could be many implications in this last statement which are not explored in this study. For instance, barriers to access may be exaggerated by urban residents but might well be accepted as an integral part of life to rural residents. The people who were receiving social assistance said they had no idea of costs and only those who had the experience, had any idea of the cost of road or air ambulance services. The people who own their own vehicles were not inclined to identify an extra cost; the usual comment was: "We have our own car, so it doesn't cost us anything." There are also times (except for emergencies) when a trip to the hospital is combined with a shopping day so the cost is hidden.

The costs that were identified were in the following order. Loss of pay from work, transportation by taxi, drugs, baby sitters and meals. In terms of suggestions to lessen costs many people said they did not know because, "Wherever you are you have to pay for transportation." Three strong suggestions were:

"Cost could be lessened by travelling clinics."

"District nurse should have drugs to save long expensive trips."

"Drugs should cost less."

Drug stores are relatively new in these areas and they are located in the same community as the hospital; prior to this, drugs were dispensed by the district nurse or by the hospital at a minimum cost to the consumer. Combined with the cost of travel and the purchase of drugs at the drug store prices, medication supplies have become more of a financial burden for these people than ever before, especially those employed in the lower income bracket.

To provide respondents with the opportunity to contribute further information related to their health care services, respondents were asked at the end of each interview if they had further suggestions or comments about the health care in their area. Responses to this final interview question related mainly to suggestions for changes in the current health care services, as indicated in Table 13. Because of the small number and to protect the identity of the respondents, the comments from both districts were combined and tabulated.

No attempt was made to relate these responses to age and sex. However, the majority of respondents in both areas were female with a large percentage in the age range of 35 to 64 years.

Opinions of Health Professionals

Data are available from 15 professional personnel in the two health districts. The respondents selected were physicians in the cottage hospitals, physicians in private practice in the areas, public health nurses, charge nurses in the cottage hospitals and hospital administrators.

The respondents were interviewed using the interview guide entitled "Health Professionals." All respondents felt that the time allotment, 20 to 30 minutes, for each interview was not enough because

Table 13

Comments and Suggestions for Health Care Services

	Frequency
Doctors should hold more clinics in different areas.	65
Should have travelling clinics with specialists such as speech and dental.	64
Hospital should provide good screening service and diagnostic procedures.	60
Should be good maternity service to save travel.	60
More home visits from nurses.	54
It is good the way it is; cottage hospitals should be for emergency and check-up before going to a larger hospital for further treatment.	49
Should have home care program for people coming home from hospital.	44
Should have nursing home for the elderly.	30
Upgrading of lab and X-ray facilities.	29
Need some facilities for older people.	26
Doctors willing to stay longer and make house calls.	26
Hospital especially convenient for child care.	24
Roads should be upgraded.	20
The hospital should be upgraded and do minor surgery.	15
When referrals are necessary financial aid for transportation should be available.	13
Hospital is convenient for caring for older people.	12
Drugs should be subsidized.	12
Senior citizens should have regular visits at home by doctor or nurse.	8
Private doctors should do night call.	6
Hospital boat should be reinstated; boats can run when planes can't fly.	5
Private doctor in St. John's; do not use local service.	4
Nurses should be able to dispense drugs like in the old days.	4
Occupational health care needed because of fish plant.	2

they wanted to think more about their responses. They responded to the issues they felt more strongly about with long narrative answers, and the data obtained are reported in narrative summaries.

The respondents interviewed ranged in age from 25 to 57 years, for an average of 38 years. The length of time they had held their present positions in the community ranged from one month to 25 years.

All respondents were asked their views on problems associated with delivery of health care in rural areas. Transportation was the number one problem listed, especially in areas with poor roads which are impassable at various times of the year, and in areas with no road access and "inadequate boat service." Lack of community resources was emphasized, such as physiotherapy, community nurses, dental services and health educators in general. This leads to problems co-ordinating health care between the home and the cottage hospitals. People are reluctant to take their families the distance required for consultation for such things as visual problems and dental problems. This could be due to lack of understanding of the consequences or on the value system of people who do not see preventive care as a priority in their lives. Wirick (1966) identified this kind of behaviour as being due to lack of motivation.

In regards to the quality of medical and hospital care in the rural areas, most respondents agreed that primary care by nurses and doctors in the cottage hospitals is as good as in the urban areas. Reference was made to the "personalized, warm care" given at local institutions. It was especially mentioned that children and elderly people find it less traumatic to be hospitalized near home than to be sent to larger centres. It was also mentioned that the population

base is more stable in rural areas and the doctor gets to know more about his patient's health and social circumstances. Opposed to this statement is the lack of continuity of care caused by a rapid turnover of medical personnel.

With regard to access and availability of health care, it was emphasized that this is not a problem in the communities where hospitals are located. Community health nurses, social services are usually located in the same communities, but they have large caseloads and big catchment areas. Major problems listed were transportation and cost, combined with lack of community resources. The needs expressed were for more personnel at all levels, but especially district nurses or nurse practitioners. Better access to physiotherapy, teaching programs for patients in self-care especially those with diabetes, rehabilitation services at all levels. "People with geriatric or psychiatric problems could live better lives with improved community facilities based from the cottage hospitals."

With the availability of support systems it is strongly suggested that many people, especially the elderly people, could be cared for at home, and the need for hospitalization of all age groups would be greatly decreased.

Personal Cost to Patients Receiving Health Care

All respondents were asked their opinion on the out-of-pocket cost factor for people receiving health care in rural areas. They were asked if they thought the costs involved are fair or unfair to the patients. The distribution of responses are shown in Table 14. Because of the size of the sample the districts are combined in this reporting.

It is of interest to note that 60% of the professionals felt the cost to patients fair, and in the population survey 56.6% felt the cost to be fair, a difference of only 3.4% whereas there is a large discrepancy between the two groups who reported fair and did not know.

Table 14

Opinions Concerning Personal Cost to Patients as Expressed by Health Professionals

Cost	Response %
Very Fair	26.7
Unfair	13.3
Fair	33.3
Don't Know	26.7

The following are typical responses from those who felt the cost to be fair:

"People choose to live in remote areas because they value the quality of life there; it would seem reasonable they should pay something for their choice."

"People are prepared to pay for health care when they need it."

"Some people openly abuse transportation allowance system."

Among those who felt the cost to be unfair, the following comments were made:

"People generally should not be penalized financially for choosing to live in a distant community."

"High cost of transportation may result in the health of the distant community being less."

"The low income people are the ones most penalized by transportation costs."

The respondents were asked for suggestions to lessen cost to the patients. Because the answers to this question interfaced with the request for further suggestions or ideas regarding health care in rural Newfoundland, the two groups of responses are combined, tabulated by frequency, and are listed in Table 15.

Table 15

Comments and Suggestions for Health Care Services

	Frequency
A community based approach with health professionals holding clinics in outlying areas on a regular basis.	8
More community health nurses (curative program).	6
Subsidized bus service within districts served running on a regular basis.	3
Reducing drug costs to those with chronic diseases under 65 years.	2
Cottage hospitals upgraded in terms of physical structure.	3
More regional hospitals required.	2
More decentralized laboratory services.	1

It is of interest to note that number one in this group is the same as the number one response from the population survey. The only suggestion in this group not included in the responses from the population survey was "More regional hospitals required."

Suggested Services to be Provided by Cottage Hospitals

The respondents were asked what health services they felt should be provided by cottage hospitals. The high majority of respondents agreed that the cottage hospitals should be a primary care facility, staffed by family practice physicians and should provide:

1. General internal medical services (no highly technical medicine).
2. "Good" obstetrical service (no high risk).
3. Basic pediatric services.
4. Competent and comprehensive out-patient service.
5. "Quality" laboratory and X-ray investigations with up-to-date equipment.
6. Home care services.
7. Home visiting services.
8. Appropriate and efficient referral services.
9. No surgical procedures other than suturing should be performed.
10. In the absence of future provision of senior citizens' homes, expansion of services for people with chronic diseases of all ages should be considered.
11. Opportunities available for training and teaching family practice residents, interns and students.
12. Practitioners capable and interested in developing community based services, well baby and well women clinics, contraceptive/family planning clinics and self-health programs.

One physician disagreed with obstetrical services in the cottage hospital because of lack of experience; he could have been projecting his own personal experience rather than services to be offered by the hospital. Six people qualified any suggestion they made by saying the services offered would be limited to the expertise of the staff on hand. One person suggested that each hospital should be evaluated individually according to current circumstances. This is a highly recommended procedure to be built into any health care delivery program. On the whole the health professional personnel stressed the need for a

broad spectrum of community health care which could be based at the cottage hospital. This concept was stressed in the following statement made by one of the physicians:

> "Health care means more than hospitals with doctors and nurses working in a rather conventional and probably out-moded model."

It is interesting to note that the opinions of the health professionals paralleled with those of the population surveyed. The cottage hospitals are clearly not seen by either group as an acute care hospital, but rather a primary care facility offering out-patient care, diagnostic, emergency, obstetrical and basic pediatric services with appropriate referrals and with emphasis on the need for public health education and community out-reach programs.

Opinions of Health Professionals Regarding Working Relationships Between Cottage Hospitals and Large Hospitals

The provincial government has accepted in principle a concept of regionalization by placing a number of cottage hospitals under local boards or under the board of regional hospitals. It was felt important that this study explore the attitudes of the health professionals on different levels of supervision of the cottage hospitals by larger hospitals. The issues and responses are addressed under the following headings:

Regular Visits of the Administration of a Larger Hospital for Consultation

Eight of the respondents (53.3%) approved. Five (33.4%) disapproved and two (13%) had no comment.

Those who approved stated that:

"The experience of large hospital administrators could be tapped to improve cottage hospitals and improve staffing problems as well as streamlining cost."

"It would allow larger hospital administrators to see the problems unique to cottage hospitals, and how the facilities are used. Some benefit could be gained by both parties."

"In rural communities, it is easy to fall into a rut."

"This would benefit both ends since changes are made in health care delivery without acknowledgement of the effects it will have; this would probably provide a different perspective of what is available."

"Sharing of knowledge most valuable."

Those who disapproved stated:

"The administrators of cottage hospitals are qualified and would seek help if they needed it."

"Each hospital should be under a local board."

"Administrators of most large hospitals have never been exposed to the cottage hospital system. A lack of knowledge would impede any worthwhile effort."

"Administration supervision is done by the Department of Health. There is little enough autonomy as it is."

Supervision of the Laboratory and X-ray Departments of the Cottage Hospitals by a Larger Hospital

Seven of the respondents (46.6%) approved. Six (40%) disapproved and two (13.4%) had no comment.

Those who approved stated:

"Would help to expand services when necessary, provide in-service education, updating equipment and techniques."

"Quality control of laboratory procedures necessary."

"High standards are necessary in these facilities, regular supervision and monitoring of results necessary."

"Monitoring of procedures and results but not schedules and regulations."

Those who disapproved said they felt the personnel in the labs and X-ray departments were qualified to do their job and should be left on their own.

Medical Supervision by the Medical Staff of a Larger Hospital Over the Physicians at the Cottage Hospital

All respondents disapproved; some qualified their disapproval with the following statements:

"All physicians have their M.D. and are qualified for the work they are doing."

"Regular self-audit by hospital physicians would be beneficial, possibly with a senior physician to convene meeting."

"Could depend on the quality and qualifications of the cottage hospital physician. It could be essential in one set up and totally undesirable and obnoxious in another."

"Medical supervision is unnecessary but certainly close working between the two groups will benefit patients and doctors. Present system of referral and continuing education is adequate."

"Would appreciate help and supervision on request."

"Should have large regional hospital with resident specialists and there would be no need for medical superivsion."

Complete Administration by a Larger Hospital

All respondents disapproved with this suggestion. The following is typical of their qualifying statements:

"Not necessary. This would be an unheard-of situation."

"Would not provide good services; a larger hospital would not know of local needs."

"The smaller hospital would be lost, each hospital has separate needs and problems."

"Larger hospitals tend to use their smaller 'satellites' as a means to their own gains."

"There must be local input and local executive authority and responsibility."

"If the administrative staff on the spot are to develop their potential and have interest in their job, the hospital and continuing higher standards, they must be allowed to administer--being a rubber stamp go-between never developed anyone."

Combined Board of Directors

Fifty percent of respondents approved this idea; 50% disapproved.

From those who approved the following statements are typical:

"Long overdue; would certainly give some responsible people a direct say in their own hospital."

"There should be input from the community itself as well as larger centres."

"Input from both would lead to better insight for everyone."

"There should be some representation on the board from the local population, but the more broad view, less personally involved and detached understanding of the larger centre board members is essential, if the small hospital is to be fairly and professionally run."

"Local decision making by the community and local responsibility for the running of the hospital. The community would have easier access to staff."

From those who disapproved, the following statements are typical:

"Waste of money."

"Larger hospital tends to use the smaller ones for their own gain."

"Needs in terms of budget, staff, equipment, etc. vastly different in cottage hospital more than in larger areas."

Summary

This chapter has described the reactions of a random sample of the population in two health districts and of the health professional personnel working in these districts. An attempt was made to gauge the

opinions of the population on the desirable and undesirable features of the cottage hospitals and to obtain the opinions of the population and the health professionals as to the services they perceived being offered by the cottage hospitals.

The majority of the population sample felt referrals to larger hospitals was a good idea, and the care in larger hospitals better. A high awareness for the need of specialist care was expressed and an understanding that these highly skilled services could not be supplied in a small hospital. The health professionals and the population surveyed consider the cottage hospitals as primary care facilities offering out-patient, emergency, obstetrical and general medical services with an appropriate referral service. They emphasize the need for health education of the general public and community out-reach programs. It seems fair to state that the cottage hospitals are no longer envisioned as acute care hospitals, but as first level care facilities.

The majority of health professionals felt it would be beneficial for small hospitals to have a combined board of directors with regional hospitals and community input. They also felt benefits would be derived by visits of an administrator on a consultation basis as well as regular supervision of laboratory and X-ray departments.

CHAPTER V

UTILIZATION OF PLACENTIA AND BURGEO COTTAGE HOSPITALS

This chapter discusses the usage of the Placentia and Burgeo cottage hospitals. An attempt is made to characterize the changing patterns for the years 1972 and 1980-81. Numbers of people treated, the diagnostic categories and the length of stay are examined.

Tables concerning use of the hospitals was based on the total number of patients using them, the top 25 diagnoses of people treated and the top 25 surgical listings in the time frame being examined. The use of the Out-Patient departments was determined from the examination of the records of the particular hospitals involved.

In-Patient Utilization of the Cottage Hospitals

The age distribution of admissions to each of the cottage hospitals are presented in Tables 16 and 17. It will be seen that the largest percentage of female admissions in both areas for 1972 are those in the child-bearing ages (15-44 years). In Burgeo the percentage of admissions for females in this age group decreased by 4.7% and in Placentia the decrease was 9.5% in 1980-81 as compared to the 1972 admissions. In Burgeo the highest percentage of male admissions in 1972 were in the age group 0-9 and 55-64 years. This was also true in 1981. In Placentia the highest percentage of male admissions in 1972 were in the age groups 0-9 and 55-64 years, but in 1981 the percentage of males admitted to Placentia hospital in the age group 5-9 dropped

by half that of 1972, with the age group 70 years and over having the most admissions followed by 0-4 years, 45-64. However, the percentage of admissions in the age group 0-14 years dropped from 35.6% of the total admissions in 1972 to 22.2% in 1980-81, a drop of 13%. In the Burgeo hospital the percentage of admissions in the same age group dropped from 29.8% of the total admissions in 1972 to 23.4% in 1980-81, a drop of 6.4%.

The percentage of admissions in the age group 15-64 years were relatively the same in both hospitals for the years 1971 and 1980-81. The admission to Burgeo cottage hospital for the age group 65 years and over in 1972 was 8.95% of the total admissions, but in 1980-81 this age group made up 21% of admissions, an increase of 12.5%. In the Placentia hospital in 1972, the admission in the age group of 65 years and over made up 12.1% of the total admissions, but in 1980-81 this age group made up 24.12%, an increase of 12%.

The total admissions at Burgeo hospital for 1972 were 581 individuals. In 1981 the total admissions were 198 individuals, a decrease of 65% as compared to the number of admissions in 1972. The total admission to Placentia hospital for 1972 were 1,712 individuals. In 1981 the total admissions were 1,140, a decrease of 33.4%. As compared to the number of admissions for 1972 approximately twice as many females as males were admitted to Burgeo hospital in 1972 and 1980-81, whereas just over 50% of the admissions to Placentia hospital were female in 1972 and in 1980-81. The large number of females admitted to the cottage hospitals reflect in part the obstetrical case load relative to the total population of admissions in both hospitals.

Table 16

Separations Reported from Cottage Hospitals by Age, Sex and Year

Age	Burgeo				Placentia			
	Male %		Female %		Male %		Female %	
	1972	1981	1972	1981	1972	1981	1972	1981
0 - 4	28.7	20.6	10.6	3.7	32.2	17.5	12.7	9.8
5 - 9	10.8	12.7	4.7	0	11.4	4.8	4.9	3.9
10-14	8.2	4.8	5.4	3.0	8.2	6.4	5.5	3.9
15-19	4.1	1.6	14.0	10.4	5.8	4.8	10.6	7.4
20-24	6.7	4.8	20.5	14.8	3.2	5.0	14.8	9.8
25-34	4.6	9.5	17.9	30.4	5.9	5.8	15.9	17.2
35-44	6.2	7.9	8.0	18.5	3.9	5.2	9.4	6.8
45-54	8.7	7.9	4.7	8.9	6.8	11.2	7.9	9.7
55-64	11.3	15.9	6.2	3.7	10.2	12.9	6.5	9.3
65-69	3.6	6.4	3.6	2.2	3.8	6.2	2.5	8.2
70 & Over	7.1	7.9	4.4	4.4	8.6	20.2	9.3	14.0
TOTAL	195	63	386	135	746	519	966	621

Note: 1972 Statistics as recorded for the Calendar Year.
1981 Statistics as recorded for the Fiscal Year 1980-81.

Table 17

Total Number of Separations Reported from Cottage Hospitals by Sex and Year

Sex of Patient	Burgeo		Placentia	
	1972 %	1981 %	1972 %	1981 %
Male	33.6	38.1	43.6	45.5
Female	66.4	68.2	56.4	54.5
Number of Separations	581	198	1,712	1,140

Note: Separation refers to termination of hospital stay.

Top Twenty-Five Diagnostic Distribution of Persons Treated at the Cottage Hospitals, 1972 and 1980-81

The top 25 diagnostic distribution of persons treated at the Placentia and Burgeo cottage hospitals for the years 1972 and 1980-81 are shown in Tables 18 to 21.

In the Placentia area, Acute upper respiratory infection except influenza, symptoms, senility and ill-defined conditions, Delivery without mention of complications, Other intestinal infections, Diabetes mellitus, Pneumonia, Bronchitis and Emphysema for a total of seven, remained among the top 15 diagnoses in 1971 and 1980-81 with Acute upper respiratory infections being the number one diagnosis for both time periods.

The total number of separations at the Placentia hospital for the year 1972 was 1,712 with a total number of days of 9,602 and an average length of stay of 5.61 days. The total number of separations for the year 1981-82 was 1,140 with a total length of stay of 5,150 days and an average length of stay of 4.52 days, showing a decrease of 572 persons and a decrease of 4,452 days.

The numbers of people treated at the Placentia hospital for the year 1980-81 showed a decrease of 572 from the numbers treated in 1972. The overall population of the community at the same time showed a slight increase (see Appendix D).

In the Burgeo area, the diagnosis of Delivery without mention of complications, Symptoms, senility and ill defined conditions, Acute upper respiratory infection, without influenza, Diabetes mellitus, Other intestinal infections, Other complications of pregnancy,

Laceration, open wounds, superficial injury, concussion and crushing within . . . , Other diseases of the intestines and peritoneum remained among the top 15 diagnoses, with delivery without complications being the number one diagnosis for both time periods.

The total number of separations for the Burgeo cottage hospital for the year 1972 was 581, the total days of stay were 3,891, with an average length of stay of 6.70 days. In 1982 the total number of separations were 428, the total days of stay were 4,096, with an average length of stay of 9.57 showing a decrease since 1972 of 153 persons, but an increase of 205 in length of stay.

It is of interest to note that although the number of persons treated at the cottage hospital for the year 1980-81 showed a considerable decrease in numbers from 1972, the overall population of the community during the period showed an increase of more than 1,000 people (see Appendix D).

In the Placentia hospital Upper respiratory infections except influenza was the number one diagnosis in both years discussed. The length of stay dropped from 4.63 days in 1972 to 2.99 days in 1980-81, while the Newfoundland length of stay dropped only from 5.06 days to 4.44 days in the same period. Those diagnosed with Pneumonia in 1972 had an understay of 4.72 days as compared to an understay in 1980-81 of 3.24 days. In 1972 understay was noted in all of the top 25 diagnoses treated except Hypertrophy of tonsils and adenoids which had an overstay of one day, and other cerebral vascular diseases which had an overstay of 9.62 days. In 1980-81 understay was noted in all top 25 diagnoses treated ranging from 0.78 for Other intestinal infections

Table 18

Top Twenty-Five Diagnoses Treated at Placentia Cottage Hospital, 1972 by C. List, Days, Average Length of Stay and Newfoundland Average Length of Stay

C.List	Diagnosis	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
92	Acute upper respiratory infection, except influenza	177	819	4.63	5.06	-0.43
187	Mature infant	161	635	3.94	4.67	-0.73
141	Delivery without mention of complication	149	638	4.28	5.62	-1.33
170	Symptoms, senility and ill-defined conditions	89	377	4.24	5.13	-0.90
94	Pneumonia	70	352	5.03	9.75	-4.72
95	Bronchitis and emphysema	68	465	6.84	9.38	-2.54
97	Hypertrophy of tonsils and adenoids	58	248	4.28	3.28	1.00
2	Other intestinal infections	51	248	4.86	5.33	-0.47
178	Laceration, open wound, superficial injury, contusion and crushing with...	36	124	3.44	6.29	-2.85
140	Abortion	31	89	2.87	4.05	-1.18
54	Affective psychoses	30	168	5.60	15.42	-9.82
146	Infections of the skin & subcutaneous tissue	30	136	4.53	8.44	-3.91
134	Disorders of menstruation	29	63	2.17	5.87	-3.70
110	Appendicitis	28	153	5.46	8.05	-2.58
44	Diabetes mellitus	23	252	10.96	13.24	-2.29

Table 18 (Continued)

C. List	Diagnosis	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
128	Redundant prepuce and phimosis	23	56	2.43	3.63	-1.19
137	Hemorrhage of pregnancy	22	119	5.41	5.44	-0.03
73	Otitis media without mention of mastoiditis	21	87	4.14	7.28	-3.14
80	Other ischemic heart disease	21	151	7.19	16.64	-9.44
84	Other cerebrovascular disease	21	751	35.76	26.14	9.62
139	Other complications of pregnancy	21	72	3.43	3.60	-0.17
151	Other arthritis & rheumatism	21	114	5.43	10.18	-4.75
81	Other forms of heart disease	20	138	6.90	14.90	-8.00
126	Other diseases of urinary system	20	96	4.80	9.08	-4.28
51	Other diseases of blood & blood forming organs	19	96	5.05	10.42	-5.36

Note: L.O.S. - Average Length of Stay in Days and C. List refers to Canadian diagnostic listing. The C. list is provided for inspection in Appendix C.

Table 19

Top Twenty-Five Diagnoses Treated at Placentia Cottage Hospital, 1980-81, by C. List, Hospital Days, Average Length of Stay and Newfoundland Length of Stay

C.List	Diagnosis	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
92	Acute upper respiratory infection, except influenza	97	290	2.99	4.44	-1.45
170	Symptoms, senility and ill-defined conditions	95	280	2.95	7.70	-4.75
103	Other diseases of respiratory system	55	327	5.95	9.76	-3.81
141	Delivery without mention of complication	52	210	4.04	5.65	-1.62
126	Other diseases of urinary system	44	171	3.89	7.47	-3.59
81	Other forms of heart disease	40	231	5.77	10.46	-4.68
2	Other intestinal infections	37	219	3.49	4.27	-0.78
96	Asthma	33	89	2.70	5.64	-2.95
44	Diabetes mellitus	30	208	6.93	11.87	-4.93
80	Other ischemic heart disease	25	125	5.00	9.26	-4.26
94	Pneumonia	24	122	5.08	8.32	-3.24
95	Bronchitis & emphysema	23	93	4.04	6.76	-2.71
56	Neuroses	22	75	3.41	12.16	-8.75
107	Ulcer of stomach, & peptic ulcer site unspecified	22	79	3.59	8.50	-4.91
84	Other cerebro-vascular disease	21	233	11.10	26.45	-15.35
146	Infections of skin & subcutaneous tissue	19	78	4.11	7.58	-3.48

Table 19 (Continued)

C. List	Diagnosis	Sep.	Days	Hosp.-Los	NF-Los.	Excess
147	Other inflammatory conditions of skin & subcutaneous tissue	19	113	5.95	11.21	-5.26
57	Alcoholism	18	81	4.50	11.65	-7.15
79	Acute myocardial infarction	18	158	8.78	13.29	-4.51
139	Other complication of pregnancy	16	23	1.44	4.07	-2.64
171	Fractures of the skull, & other intracranial injury	16	30	1.88	5.60	-3.72
73	Otitis media without mention of mastoiditis	15	49	3.27	5.64	-2.37
108	Gastritis & duodenitis	15	28	1.87	4.98	-3.11
154	Affective psychoses	14	69	4.93	24.93	-20.03
115	Other diseases of intestines & peritoneum	12	40	3.33	8.71	-5.38

Table 20

Top Twenty-Five Diagnoses Treated at Burgeo Cottage Hospital, 1972, by C. List, Hospital Days, and Average Length of Stay and Newfoundland Average Length of Stay

C.List	Diagnosis	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
141	Delivery without mention of complication	106	579	5.46	5.62	-0.15
187	Mature infant	100	462	4.62	4.67	-0.15
123	Infections of kidney	34	220	6.47	7.56	-1.09
92	Acute upper respiratory infection, except influenza	33	214	6.48	5.06	1.43
2	Other intestinal infections	31	146	4.71	5.33	-0.62
170	Symptoms, senility and ill-defined conditions	29	148	5.10	5.13	-0.03
44	Diabetes mellitus	22	279	12.68	13.24	-0.56
178	Laceration, open wound, superficial injury, contusion and crushing with in	17	104	6.12	6.29	-0.17
139	Other complication of pregnancy	16	37	2.31	3.60	-1.28
94	Pneumonia	15	202	13.47	9.75	3.72
138	Toxemias of pregnancy and the puerperium	15	80	5.33	5.92	-0.58
173	Fracture of upper limb	13	35	2.69	5.92	-3.23
93	Influenza	12	91	7.58	5.50	2.08
115	Other diseases of intestines & peritoneum	12	40	3.33	11.18	-7.84
140	Abortion	12	56	4.67	4.05	0.61

Table 20 (Continued)

C.List	Diagnosis	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
124	Calculus of urinary system	9	60	6.67	7.52	-0.85
126	Other diseases of urinary system	9	68	7.56	9.08	-1.52
137	Hemorrhage of pregnancy	9	50	5.56	5.44	0.11
56	Neuroses	8	35	4.38	12.83	-8.46
10	Other infections & parasitic diseases	6	26	4.33	10.98	-6.64
46	Avitaminoses and other nutritional deficiency	6	49	8.17	30.29	-22.13
73	Otitis media without mention of mastoiditis	6	51	8.50	7.28	1.22
78	Hypertensive disease	6	63	10.50	9.70	0.80
84	Other cerebro-vascular disease	6	95	15.83	26.14	-10.31
110	Appendicitis	6	48	8.00	8.05	-0.05

Table 21

Top Twenty-Five Diagnoses Treated at Burgeo Cottage Hospital, 1980-81, by C. List, Hospital Days and Average Length of Stay and Newfoundland Average Length of Stay

C.List	Diagnosis	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
141	Delivery without mention of complication	35	164	4.69	5.65	-0.97
170	Symptoms, senility and ill-defined conditions	22	608	27.64	7.70	19.94
92	Acute upper respiratory infection, except influenza	21	107	5.10	4.44	0.65
44	Diabetes mellitus	20	161	8.05	11.87	-3.82
2	Other intestinal infections	17	49	2.88	4.27	-1.39
139	Other complication of pregnancy	16	41	2.56	4.07	-1.51
81	Other forms of heart disease	14	109	7.79	10.46	-2.67
78	Hypertensive disease	11	36	3.27	7.61	-4.33
84	Other cerebrovascular disease	11	872	79.27	26.45	52.82
126	Other diseases of urinary system	11	41	3.73	7.47	-3.75
178	Laceration, open wound, superficial injury, contusion and crushing with in...	10	45	4.50	4.82	-0.32
186	Special conditions and examinations without sickness	10	63	6.30	6.08	0.22
8	Other virus diseases	9	58	6.44	4.61	1.83
108	Gastritis and duodenitis	9	17	1.89	4.98	-3.09

Table 21 (Continued)

C.List	Diagnosis	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
115	Other diseases of intestines & peritoneum	9	36	4.00	8.81	-4.71
140	Abortion	9	49	5.44	4.21	1.24
80	Other ischemic heart disease	8	68	8.50	9.26	-0.76
144	Delivery with other complication including anesthetic death in uncomplica	8	42	5.25	7.05	-1.80
79	Acute myocardial infarction	7	36	5.14	13.29	-8.15
96	Asthma	7	46	6.57	5.64	0.93
138	Toxemias of pregnancy and the puerperium	7	17	2.43	5.16	-2.73
136	Infection of genital tract during pregnancy, and urinary infections during pregnancy	6	18	3.00	3.76	-0.76
137	Hemorrhage of pregnancy	6	34	5.67	4.66	1.00
171	Fractures of the skull, and other intracranial injury	6	13	2.17	5.60	-3.43
51	Other diseases of blood & blood forming organs	5	11	2.20	7.04	-4.84

to 20.03 days for being treated for Affective psychosis.

In Burgeo for 1972, understays were mostly between 1 to 3 days, except for the following diagnoses: Other diseases of the intestines and peritoneum 7.84 days, neuroses 8.46 days, Avitaminoses and Other nutritional deficiency 22.13 days and Other cerebrovascular diseases 10.31 days. There were seven overstays ranging from 0.61 days for abortion to 3.72 days for pneumonia. Understay in 1981 ranged from 1 to 4 days except for those individual diagnoses with myocardial infarction who showed an understay of 8.15 days. Overstay was noted in eight of the top 25 diagnoses. In six of these diagnoses it was less than one day, but in the diagnoses, Symptoms, senility and ill defined conditions and Other cerebrovascular disease the overstay was 19.94 and 52.82 days respectively.

A Comparison of Average Lengths of Stay in Days for All Diagnostic Categories at the Cottage Hospitals and the Newfoundland Average Length of Stay 1980-81

A comparison of patient days and average length of stay, by diagnoses and age group, for Burgeo cottage hospital and the Province of Newfoundland for the year 1980-81 is presented in Table 22.

At the Burgeo hospital under the category of "General Medical & Surgical" the average length of stay ranged from 3.80 to 27.00 days. The age groups 0-14, 15-64 years show an understay of 2.50 and 4.42 days respectively. In the age group 65 years plus, there is an overstay of 11.30 days. In psychiatry, the age group 15-64 years show an understay of 30.15 days, whereas those individuals 65 years plus show an overstay of 73.35. All age groups in Obstetrics show an understay ranging from 1-4 days. In the total of all diagnoses the age groups 0-64 show an understay of 1.00 to 30.15 days. However, the age group

Table 22

Comparison of Average Length of Stay at Burgeo Cottage Hospital and Placentia Cottage Hospital by Diagnoses and Age Group with the Newfoundland Average Length of Stay, 1980-81

General Medical & Surgical	Los. Burgeo	Los. Nfld.	Los. Placentia	Excess Los. Burgeo	Excess Los. Placentia
0 -14 years	3.80	6.30	3.04	-2.50	-2.90
15-64 years	4.18	8.60	4.00	-4.42	-4.60
65+	27.00	15.70	7.45	+11.30	-8.25
Psychiatry					
0 -14 years	0	17.70	2.00	0	-15.70
15-64 years	3.25	33.40	3.73	-30.15	-29.67
65+	112.67	39.30	5.23	+73.37	-34.01
Obstetrics					
10-14 years	6.00	5.80	1.00	+0.20	-4.80
15-24 years	3.88	5.90	3.49	-2.02	-2.41
25-34 years	4.90	5.90	3.16	-1.00	-2.74
35-44 years	4.00	8.00	3.75	-4.00	-4.25
45-54 years	0	4.00	3.00	0	-1.00
Total of all diagnoses					
0 -14 years	3.82	6.40	3.03	-2.58	-3.37
15-64 years	4.14	9.50	7.35	-5.36	-5.73
65+	29.76	16.80	7.35	+12.96	-9.45

Note: Los. - Average Length of Stay in Days.

65 years and over show an overstay ranging from 11.30 to 73.37 days. The overstay in this hospital seems to be a reflection caused by five females over 65 years who had a total length of stay of 1,551 days and one male in the same age group whose stay was 316 days.

At the Placentia hospital under the category of "General Medical & Surgical" all age groups show an understay ranging from 2.90 to 8.25 days. In psychiatry all age groups show an understay ranging from 15.70 to 34.01 days. All age groups in Obstetrics show an understay ranging from 1.00 to 4.80 days. In the total of all diagnoses patients at Placentia hospital showed an understay ranging from 3.37 to 9.45 days.

Top Twenty-Five Surgical Listings for Persons Treated at the Placentia Cottage Hospital for the years 1972 and 1980-81

The top 25 surgical listings for Placentia cottage hospital for the years 1972 and 1980-81 are presented in Tables 23 and 24.

There was a total of 403 surgical procedures performed at the Placentia hospital in 1972. The top 25 surgical listings included: 49 Tonsillectomies and Adenectomies, 36 Episiotomies, 34 Appendectomies, 11 Cesarean Section and 6 repair of hernia. Twenty diagnostic procedures were included in the surgical listings: these included 10 Biopsy of breast, 5 Endoscopy of colon, 3 spinal punctures, 1 Biopsy of stomach and 1 Biopsy of bone.

In the year 1980-81 there were only 57 surgical procedures listed. Twenty-seven of those were Episiotomies and 25 were normal deliveries. There was only one each of the following procedures: Mid forceps delivery, Traction and External fixation . . . , Closed reduction of other bone site fracture, Local excision of lesion of

Table 23

Top Twenty-Five Surgical Listings for Placentia Cottage Hospital, 1972

Surg.	Description	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
212	Tonsillectomy with Adenectomy	49	233	4.76	3.38	1.37
759	Episiotomy	36	164	4.56	5.69	-1.13
781	Dilation and Curettage after delivery of abortion	33	93	2.82	3.68	-0.87
411	Appendectomy	34	201	5.91	8.39	-2.47
703	Dilation and curettage of uterus	27	52	1.93	5.15	-3.22
612	Circumcision	24	58	2.42	3.76	-1.34
921	Local excision of lesion of skin and subcutaneous tissue	17	49	2.88	7.49	-4.61
716	Dilation of vagina	14	41	2.93	8.07	-5.15
702	Local excision and destruction of other lesions of uterus, cervix	12	29	2.42	3.87	-1.45
993	Extraction of tooth, forceps extraction	12	22	1.83	3.95	-2.12
771	Cesarean section, low cervical	11	114	10.36	11.79	-1.42
925	Suture of skin or mucous membrane	11	28	2.55	6.29	-3.75
816	Traction and external fixation device without manipulation for reduction	10	41	4.10	13.71	-9.61
924	Removal of nail, nail bed or nail fold	10	19	1.90	4.85	-2.95
755	Low forceps delivery without episiotomy	9	42	4.67	6.53	-1.86
882	Excision of lesion of muscle, tendon and fascia	9	18	2.00	9.68	-7.68
213	Adenectomy without tonsillectomy	7	11	1.57	3.18	-1.61

Table 23 (Continued)

Surg.	Description	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
382	Repair of inguinal hernia except recurrent	6	48	8.00	8.58	-0.58
783	Repair of other obstetrical lacerations	6	26	4.33	5.46	-1.12
833	Closed reduction of wrist fracture	6	13	2.17	3.54	-1.37
879	Other operations on joint structures	6	11	1.83	9.68	-7.85
756	Low forceps delivery with episiotomy	5	44	8.80	6.62	2.18
933	Free skin graft to other sites	5	110	22.00	33.65	-11.65
072	Other excision and destruction of lesion of eyelid	4	6	1.50	3.93	-2.43
A23	Biopsy of breast	10	18	1.80	4.95	-3.15
A45	Endoscopy of colon and rectum without effect upon tissue or lesion	5	31	6.20	13.48	-7.28
R95	Spinal puncture	3	15	5.00	13.63	-8.63
A18	Biopsy of stomach and intestines	1	3	3.00	21.19	-18.19
A27	Biopsy of bone	1	1	1.00	23.16	-22.16

Table 24

Top Twenty-Five Surgical Listings for Placentia Cottage Hospital, 1980-81

Surg.	Description	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
759	Episiotomy	27	106	3.933	5.66	-1.73
764	Normal Delivery	25	107	4.28	5.49	-1.21
757	Mid forceps delivery	1	8	8.00	7.04	0.96
816	Tractions and external fixation device without manipulation for reduction	1	1	1.00	13.76	-12.76
844	Closed reduction of other bone site fracture	1	1	1.00	7.64	-6.64
921	Local excision of lesion of skin and subcutaneous tissue	1	3	3.00	9.28	-6.28
924	Removal of nail, nail bed or nail fold	1	4	4.00	4.42	-0.42

skin . . . , and removal of nail, nail bed or nail fold. There were no surgical diagnostic procedures reported for 1980-81.

Top Twenty-Five Surgical Listings for Persons Treated at the Burgeo Cottage Hospital for the Years 1972 and 1980-81

The top 25 surgical listings for Burgeo cottage hospital for the years 1972 and 1980-81 are presented in Tables 25 and 26.

There was a total of 56 surgical procedures performed at Burgeo hospital in 1972. The top listing by number of separations was 7 Closed reduction of wrist fracture, followed by 6 sutures of skin or mucous membrane. There were 4 Dilation and curettage . . . , Closed reduction of other bone site fracture, and removal of nail, nail bed or nail fold. There were 3 Appendectomies, Episiotomies, Repair of other obstetrical lacerations, and Incision of skin and subcutaneous tissue. There were 2 External version and Traction and external fixation device. . . . There was only 1 of all other listed procedures performed. Among those, there was 1 Mastectomy, Partial. Three endoscopy of colon and rectum were the only diagnostic procedures performed.

In 1980-81 there were 71 surgical procedures listed, 41 of these were Normal deliveries. There were 5 Episiotomies and Dilation curettage. There were 8 Ligations and division of fallopian tubes, and 4 Closed reduction of other bone site fractures. There were 2 Forcep extraction of teeth and 1 of all other procedures which included: 1 Thoracotomy and Pleurotomy. There were 2 diagnostic procedures performed: they were 1 Cholecystography and cholangiography and 1 spinal puncture.

Table 25

Top Twenty-Five Surgical Listings for Burgeo Cottage Hospital, 1972

Surg.	Description	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
833	Closed reduction of wrist fracture	7	17	2.43	3.54	-1.11
925	Suture of skin or mucous membrane	6	48	8.00	6.29	1.71
781	Dilation and curettage after delivery of abortion	4	20	5.00	3.68	1.32
844	Closed reduction of other bone site fracture	4	34	8.50	17.97	-9.47
924	Removal of nail, nail bed or nail fold	4	32	8.00	4.85	3.15
411	Appendectomy	3	40	13.33	8.39	4.95
759	Episiotomy	3	33	11.00	5.69	5.31
783	Repair of other obstetrical lacerations	3	21	7.00	5.46	1.54
920	Incision of skin and subcutaneous tissue	3	26	8.67	7.49	1.17
751	External version	2	7	3.50	2.67	0.83
816	Traction and external fixation device without manipulation for reduction	2	2	1.00	13.71	-12.71
205	Emergency tracheotomy or tracheostomy	1	3	3.00	43.04	-40.04
509	Other operations on rectum	1	4	4.00	15.00	-11.00
612	Circumcision	1	2	2.00	3.76	-1.76
652	Mastectomy, Partial	1	3	3.00	5.29	-2.29
702	Local excision and destruction of other lesions of uterus, cervix	1	2	2.00	3.87	-1.87
721	Excision of lesion of vulva and perineum	1	7	7.00	8.03	-1.03

Table 25 (Continued)

Surg.	Description	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
725	Repair and plastic operations on vulva and perineum	1	19	19.00	10.83	8.17
755	Low forceps delivery without episiotomy	1	5	5.00	6.53	-1.53
756	Low forceps delivery with episiotomy	1	15	15.00	6.62	8.38
840	Closed reduction of elbow, knee or shoulder region fracture	1	1	1.00	8.14	-7.14
921	Local excision of lesion of skin and subcutaneous tissue	1	5	5.00	9.40	-4.40
993	Extraction of tooth, forceps extraction	1	7	7.00	3.95	3.05
A45	Endoscopy of colon and rectum without effect upon tissue or lesion	3	15	5.00	13.48	-8.48

Table 26

Top Twenty-Five Surgical Listings for Burgeo Cottage Hospital, 1980-81

Surg.	Description	Sep.	Days	Hosp.-Los.	NF-Los.	Excess
764	Normal delivery	41	195	4.76	5.49	-0.73
685	Ligation and division of fallopian tubes, bilateral	8	29	3.63	2.95	0.68
759	Episiotomy	5	30	6.00	5.66	0.34
844	Closed reduction of other bone site fracture	4	8	2.00	7.64	-5.64
781	Dilation and curettage after delivery of abortion	3	19	6.33	4.29	2.05
703	Dilation and curettage of uterus	2	5	2.50	2.81	-0.31
993	Extraction of tooth, forceps extraction	2	2	1.00	2.55	-1.55
320	Thoracotomy and pleurotomy	1	1	1.00	15.42	-14.42
575	Dilation of urethra	1	1	1.00	29.30	-28.30
612	Circumcision	1	4	4.00	2.72	1.28
816	Traction and external fixation device without manipulation for reduction	1	8	8.00	13.76	-5.76
924	Removal of nail, nail bed or nail fold	1	3	3.00	4.42	-1.42
925	Suture of skin or mucous membrane	1	5	5.00	5.40	-0.40
A88	Cholecystography & cholangiography	1	1	1.00	7.43	-6.43
R95	Spinal puncture	1	3	3.00	16.56	-13.56

Obstetrical Profile by Age and Diagnoses for Patients Treated at Placentia and Burgeo Cottage Hospitals for the Years 1972 and 1980-81

Because of the high percentage of obstetrical patients admitted to the cottage hospitals it was felt important to examine the data separately. The distribution of admissions for this service is presented in Tables 27 to 33.

There were a total of 115 deliveries at the Burgeo hospital in 1972, two-thirds were in the age group 15-24 years. Complications of delivery were reported in 9 women, 7 of them were in the age group 15-24 years, and 2 in the age group 25-34 years. There were no complications noted for those 35 years and over; 44 women were admitted with complications of pregnancy, 56% of these were in the age group 15-24 years, 22.7% were in the age group 25-34 years and 13.6% were 35 years and over. There were 12 abortions (understood to be spontaneous) recorded for 1972, 4 were in the age group 15-24 years and 8 in the age group 25-34 years.

In the Burgeo hospital in 1980-81 there were 47 deliveries; of these 60% were 24 years of age and younger. In this age group of 15-24 years, 33% were listed as having complications of delivery, and 22% in the age group 25-34 years. There were 34 women admitted with complications of pregnancy; of these 73.5% were in the age group 15-24 years and the remainder in the age group 25-34. There were a total of 9 abortions; 6 were in the age group 15-24 years, 2 in the 25-34 age group, and 1 in the 35-44 age group.

In the Placentia hospital in 1972 there were 183 deliveries; of these 52% were 24 years of age and under; 37% were in the age group 25-34 years, 11% in the age group 35 years and over. Complications

Table 27

Obstetrical Profile by Age - Placentia Cottage Hospital, 1972

C. List	Diagnosis	10-14 years	15-24 years	25-34 years	35-44 years	45 + years
136	Infection of the genital tract during pregnancy and urinary infections during...	2	3	1	2	0
137	Hemorrhage of pregnancy	0	7	9	6	0
138	Toxemics of pregnancy and puerperium	2	0	1	4	0
139	Other complications of pregnancy	2	13	5	3	0
140	Abortions	2	13	10	7	1
141	Delivery without mention of complications	2	75	57	15	1
142	Delivery complicated by placenta previa or antipartum hemorrhage	0	0	2	1	0
143	Delivery complicated by abnormality of pelvic, fetopelvic disproportion in...	0	10	2	1	0
144	Delivery with other complications including anesthetic death in uncomplica...	0	6	7	3	0
145	Complications of puerperium	0	3	0	0	0

Table 28

Obstetrical Profile by Age - Placentia Cottage Hospital, 1980-81

C.List	Diagnosis	10-14 years	15-24 years	25-34 years	35-44 years	45 + years
136	Infection of genital tract during pregnancy, urinary infections during...	0	3	3	0	0
137	Hemorrhage of pregnancy	1	4	5	1	0
138	Toxemias of pregnancy	0	3	5	0	0
139	Other complications of pregnancy	0	6	10	0	0
140	Abortions	6	3	3	1	1
141	Delivery without mention of complication	0	19	31	2	0
142	Delivery complicated by placenta, previa or antipartum hemorrhage	0	0	0	0	0
143	Delivery complicated by abnormality of pelvis fetopelvic disproportion	0	0	0	0	0
144	Delivery with other complications including anesthetic death	0	1	0	0	0
145	Complications of puerperium	0	0	1	0	0

Table 29

Obstetrical Profile by Age - Burgeo Cottage Hospital, 1972

C.List	Diagnosis	10-14 years	15-24 years	25-34 years	35-44 years	45 + years
136	Infection of genital tract during pregnancy	0	2	0	2	0
137	Hemorrhage of pregnancy	0	6	1	0	1
138	Toxemias of pregnancy, puerperium	0	10	2	2	1
139	Other complications of pregnancy	0	7	7	2	0
140	Abortion	0	4	8	0	0
141	Delivery without mention of complications	0	71	26	9	0
142	Delivery complicated by abnormality of the pelvis or fetopelvic disproportion	0	1	1	0	0
143	Delivery complicated by placenta previa or antipartium hemorrhage, retainea...	0	2	0	0	0
144	Delivery with other complications, including anesthetic death in complica...	0	4	0	0	0
145	Complication of puererium	0	0	1	0	0

Table 30

Obstetrical Profile by Age - Burgeo Cottage Hospital, 1980-81

C. List	Diagnosis	10-14 years	15-24 years	25-34 years	35-44 years	45 + years
136	Infection of the genital tract during pregnancy and urinary tract infection	0	4	1	0	0
137	Hemorrhage of pregnancy and puerperium	0	3	3	0	0
138	Toxemias of pregnancy and puerperium	0	7	0	0	0
139	Other complications of pregnancy	0	11	5	0	0
140	Abortion	0	6	2	1	0
141	Delivery without mention of complication	1	19	14	1	0
142	Delivery complicated by abnormality of pelvis or fetopelvis disproportion	0	0	1	0	0
143	Delivery complicated by placenta previa or anti partium hemorrhage retainea	0	1	1	0	0
144	Delivery with other complications including anesthetic death in uncomplica...	0	6	2	0	0
145	Complications of puerperium	0	1	0	0	0

Table 31

Obstetrical Patients Treated at Placentia Cottage Hospital and Burgeo Cottage Hospital - 1972 and 1980-81

	1972		1980-81	
	Burgeo	Placentia	Burgeo	Placentia
Total deliveries	115	183	47	54
Deliveries without complications	106 (92.2%)	148 (81%)	35 (74.5%)	52 (96.3%)
Deliveries with complications	9 (7.8%)	35 (19%)	12 (25.5%)	2 (2.7%)
Abortions	12	31	9	8
Complications of pregnancy	44	54	26	41

Table 32

Obstetrical Patients from Placentia District Treated at St. John's Hospitals, 1980-81

Total deliveries	96
Deliveries without complications	29 (33.7%)
Deliveries with complications	57 (66.3%)
Abortions	15
Complications of pregnancy	11

Table 33

Obstretical Patients from Burgeo District Treated at Corner Brook Hospital, 1980-81

Total deliveries	39
Deliveries without complications	9 (23%)
Deliveries with complications	30 (77%)
Abortions	3
Complications of pregnancy	5

of delivery were reported in 20% of those in the age group of 15-24 years, 16% of those in the age group of 25-34 years had complications of delivery and 25% in the 35-44 age group. There were 54 women admitted with complications of pregnancy; 42.5% were in the 15-25 year age group; 29.6% were in the age group 25-34 years with 28% in the 35-44 age group. There were 31 abortions in 1972; 13 of these were in the age group 15-24, 10 in the 25-34 age group, 7 in the 35-44 age group and 1 in the 45 years and over age group.

There were a total of 54 deliveries in the Placentia hospital for the year 1980-81; of these 37% were 15-24 years of age, 59% were 25-34 years and 3.7% in the 35-44 age group. There were only 2 deliveries reported with complications, 1 in the 25-34 age group and 1 in the age group 25-34 years. There were 41 women admitted with complications of pregnancy; 2.5% of these were in the age group 10-14 years, 39% in the age group 15-24, 56% were in the age group 25-34 and 2.5% in the 35-44 age group. There were 8 abortions; 3 were in the 15-24 age group, 3 in the 25-34 age group, 1 in the 35-44 and 1 in the 45 plus age group.

It is of interest to note that the number of deliveries in the hospitals in both districts have decreased over 50% from 1972 to 1980-81. In 1972, 7.8% of the deliveries at the Burgeo hospital were reported to have had complications, with Placentia hospital reporting 19%. There is a change in 1980-81 with Burgeo reporting 25.5% and Placentia reporting 3.7% of their deliveries with complications. In both hospital complications of delivery were mostly reported in women under 34 years of age. The complications of pregnancy have remained relatively high in both hospitals, and most occurring in women under

34 years of age. More deliveries were performed in St. John's for women from the Placentia district than were performed at the Placentia hospital. The deliveries performed in St. John's from this district reported a much higher percentage of complications than those delivered at the Placentia hospital. For the Burgeo district there were fewer deliveries performed in Corner Brook than at the Burgeo hospital, but the deliveries performed at Corner Brook had a much higher percentage of complications than those at the Burgeo hospital. The available data do not distinguish between those who choose to go to larger centres from those who were referred by the hospital or by a private physician.

Out-Patient Utilization of the Cottage Hospitals

The Out-Patient records at the hospitals did not lend themselves to detailed discussion, therefore only the number of visits have been tabulated. Because of a natural disaster (flood) at the Placentia hospital only a five-month sample of the records for 1972 were available, the corresponding five months for 1982 were examined. In order to look at comparisons the corresponding months from the Burgeo hospital Out-Patient records were examined. The number of Out-Patient visits for both hospitals are presented in Table 34.

It is interesting to note that the number of Out-Patient visits at Placentia hospital during the time frame examined decreased by 4,708 visits, a decrease of 54.81% in the utilization of Out-Patient services.

In the Burgeo hospital Out-Patients department there was an increase of 601 visits, a 14.9% increase in the utilization of the facility.

Table 34

Out-Patient Visits, Burgeo and Placentia Cottage Hospitals
1972 and 1982

Month	Burgeo		Placentia	
	Number of Visits		Number of Visits	
	1972	1982	1972	1982
January	699	1,035	1,628	693
February	777	957	1,767	580
March	873	899	1,720	875
April	742	923	1,730[a]	857
May	947	823	1,741	863
TOTAL	4,036	4,637	8,586	3,878

[a]Estimated data not available.

Patients from Placentia and Burgeo Health Districts Treated in Hospitals Other Than the Cottage Hospitals, 1980-81

The total number of persons from the Placentia health district treated in hospitals for the year 1980-81 were 2,182; of these 1,173 (53.75%) were treated in the Placentia cottage hospital, 890 (40.78%) were treated in hospitals at St. John's, Newfoundland. The other 6.45% were treated in other hospitals in the province.

The total number of persons from the Burgeo health district treated in hospitals for the year 1980-81 were 834; of these 463 (55.31%) were treated in the Burgeo cottage hospital, 86 (10.27%) were treated in hospitals at St. John's, Newfoundland, 198 (23.65%) were treated in hospitals at Corner Brook, Newfoundland, the remaining 10.87% were treated in other hospitals in the province. Among the number of persons from both health districts who were treated in hospitals in 1980-81, only slightly over 50% were treated in their cottage hospitals. Note: these data for the year 1972 are not available for comparison.

Summary

In this chapter the volume and character of use of the Placentia and Burgeo cottage hospitals by residents of the health districts were described.

Each of the cottage hospitals is providing a wide variety of care, but the overall in-patient utilization has dropped considerably over the past 10 years. All complex medical treatments and all surgery are being referred to larger hospitals. Particularly noticeable is the large case load of obstetrical patients, although the numbers have dropped considerably over the past 10 years, they still rank in the top five of diagnostic distribution in both hospitals. Also of note is the large decrease in the numbers of persons being treated at the cottage hospitals. Among those who are being treated (excluding obstetrics) the largest numbers are in the age groups of 10-14 years and 65 plus years in both hospitals, with the long lengths of stay at the Burgeo hospital by those in the age group 65 plus generated by a very small number of patients. The Out-Patient department records at the Placentia hospital show a decrease in utilization, while the Burgeo hospital records show an increase in the utilization pattern of the Out-Patient department during the time frame examined. It must be noted that in Placentia there are two physicians in private practice which does not exist in Burgeo.

CHAPTER VI

DISCUSSION OF FINDINGS IN RELATION TO RESEARCH QUESTIONS

> Has the cottage hospital a function to perform or is it simply an anachronism? Is the best possible use being made of the cottage hospitals and if not, what changes are required? These are some of the questions which present themselves to all who plan, administer, or provide the medical services of rural areas about which little factual information is available. (British Medical Journal, 1966, Vol. 8, p. 1147. Author not identified)

Many concerns have been expressed about the future of the cottage hospitals. Health care professionals and health care planners question whether or not the system has kept pace with the environment, and social changes in the communities it serves.

The purpose of this study was to examine the utilization of two cottage hospitals in a 10-year time frame, and attempt to identify the influence of social changes and other factors in contributing to changes in the perceived health needs of the people and their utilization of the cottage hospitals.

Factors the population reported as influencing their use or their non-use of the cottage hospitals were also examined. In addition, the opinions of health professionals working in the areas were explored in relation to the present status of health care delivery in rural areas and their perceived needs for future health care services. It was expected that the study would gather baseline data to examine more accurately the continuing functions and utilization of the cottage hospitals, that it would act as a basis for future studies in estimating the need of health services to a defined population and in

determining what services are most essential.

The study was essentially descriptive and contained an exploratory element as it sought responses to the research questions.

The health districts in the study were chosen by selected criteria. They each have different sized hospitals and one district is comprised of small fishing communities while the other is a more industrial area. Each district has different accessibility to professional health services and some significant difference in distance or availability to a metropolitan area.

In the Placentia district there are two physicians engaged in private practice, so the people have an alternative to using the hospital services. There is road access from the Placentia district to the city. A number of people commute to the city for work and some of them have family physicians in the city. Also 12% of the population surveyed stated they would not use the services of the cottage hospital. In the Burgeo district, only the town of Burgeo has access to other communities by road. The catchment area for the hospital is still only accessible by boat or plane, and there are no physicians in private practice in the district. The hospital is their only "doctor."

The questionnaire (Interview Guides) served as useful tools in gathering basic information from the population as to their perceived health service needs, and the opinions of health professionals regarding health services in rural areas.

Description of Population Surveyed

The characteristics of age, sex, occupation, education and income were chosen to be examined because the literature identifies

them to be influencing factors in the utilization of hospital services.

The majority of the respondents interviewed from both districts were female: of those 76.5% in the Burgeo district and 64.6% in the Placentia area identified themselves as wives. They ranged in age from 25 to 65 years, with the majority in the age range of 35 to 64 years. In the Burgeo area 52.9%, and in the Placentia area 79.8% said they had at least some high school education. The majority in both areas stated their income to be between $8,000 and $15,000 per annum.

Summary of Responses to Questionnaire

A large percentage of the people surveyed felt it was a good idea to go to a larger hospital for medical care. This could be considered a reflection of social change because people everywhere are becoming more aware of the benefits that are available, and they want what they consider to be the best care possible, especially when they are ill.

The characteristics of the cottage hospitals identified by the respondents as those most liked were social factors, such as "convenient for visitors," and "friendliness of staff"; as to dislikes the majority of people said "nothing in particular." It would appear they have adjusted to the changes that have taken place, and have accepted the changes as part of their everyday living.

In both areas there were a small number of people who suggested it would be more convenient to have all their medical needs including surgery provided by the cottage hospitals. These statements were qualified by their realization of the impossibility of having the required specialist personnel located in small rural areas.

Characteristics of Population Surveyed

The demographic characteristics of the population surveyed were used to determine what effect, if any, they may have on the respondents' probable utilization of the cottage hospital services. Age showed little variation in the overall potential use of the cottage hospital, except that in both districts a very small percentage of the respondents 35 years and over said they would be more likely to use the hospital services, than those in the younger age groups. In the Placentia district 12% said they would not use the cottage hospital; these were equally distributed among the age groups except the under 25 age group, in which double the percentage said they would not use the facility at all.

The majority of the respondents in all occupational groups and in both districts reported they would use the hospital for emergency services. In the Burgeo district those whose occupation was identified as professional (only two respondents) stated that they would use all the services except for care of the aged. In the Placentia district all but one of the respondents who listed their occupation as clerical said they would use the hospital for emergencies only. The one exception would use it for children's illnesses. In fact 40% of respondents in this category in the Placentia district said they would not use the hospital services at all. No one was listed in this occupational category in the Burgeo district for comparison. Overall in the Burgeo district occupation appears to make no difference to the probable utilization of hospital services. However, in the Placentia district, the blue collar workers (fisherman and unskilled) have stated they would use the services of the hospital more

than those in the white collar category (professional, managerial, self-employed and clerical). The retired and unemployed were similar in both areas with the majority in these categories stating they would probably use the hospital services.

In both districts the majority of the respondents of all educational levels stated they would use the hospital for emergency services. Those living in the Burgeo district whose educational status was stated as graduation from high school or more reported a higher probable utilization of the cottage hospital services than the respondents with less than high school education. In the Placentia district the opposite is true with those in the lower educational levels reporting a higher probable utilization of the hospital services. In fact, one in four of those with more than high school education stated they would not use the cottage hospital services at all.

In the Burgeo district, income levels appear to have minimal effect on the potential utilization of the hospital services. In the Placentia district, the reported probable utilization of emergency, Out-Patient services and care of the aged decreased as the respondents' annual income increased. This trend did not show for children's illnesses and maternity care, as those with reported incomes of less than $8,000 per annum said they would make little use of these services. The percentage of those who said they would not use the hospital at all decreased as their income increased. It is also of interest to note that none of the respondents said they would use the cottage hospital for surgery. Demographic characteristics appear to have some effect on the utilization of the cottage hospital services but the trend is not consistent in the two areas. These results do not

support the findings of Anderson (1973) but rather suggest the involvement or interaction of other factors in the utilization of a health service.

Approximately equal numbers of respondents in each district stated that their "out of pocket" cost (transportation, loss of pay, drugs, baby sitters and meals) to receive health care was fair. The costs were felt to be unfair by 9% in Burgeo compared to 24% in the Placentia district; almost double the number in the Burgeo district could not identify the cost as compared to those in the Placentia district.

Opinions of Health Professionals

The health professional personnel generally agreed that primary care by doctors and nurses in the cottage hospitals is as good as in the urban areas. The major problems they identified were transportation and lack of community resources such as physiotherapy, community nurses, dental services, health education and social services. The majority felt the "out of pocket" costs to the patients were reasonable, but that the low income families were most penalized by transportation costs.

Common factors emerging from the data were the extent to which the views and perspectives of the providers and the consumers of health care in both districts were congruent in their suggestions and comments regarding health care in the areas. These comments were ranked in order of their importance to both groups. Among the most prevalent suggestions were the need for clinics to be held in outlying areas on a regular basis, and more community health nurses and subsidized drugs for those with chronic diseases under 65 years of age. The services

that the health professional personnel suggested to be offered by the cottage hospitals interfaced with suggestions and comments from the consumers. These included: "Good" obstetrical services, child care services, "Quality" laboratory and X-ray investigations with up-to-date equipment, "Good" referral services and home care services. One physician wrote on the questionnaire:

> People with geriatric or psychiatric problems could live better lives with improved community facilities, based from the cottage hospital.

On the whole the health professionals stressed the need for a broad spectrum of health care based in the cottage hospital. This concept is supported by Reilly and Legge (1980) who believe that "if the small rural hospital can redefine itself by extending into ambulatory types of care, it can generate by the new multiple functions a support system that will make it the center of medical activity" (p. 21). Comments from the health professional and the population suggest that neither group view the cottage hospital as an acute care hospital but rather as a primary care facility offering out-patient care, diagnostic, emergency, obstetrical and basic pediatric services with appropriate referrals and with emphasis on the need for public health education and community out-reach programs. This concept was stressed in the following statement made by one of the physicians:

> Health care means more than hospitals with doctors and nurses working in a rather conventional and probably outmoded model.

The lack of out-reach programs and community resources stressed by both the professional personnel and other respondents surveyed, combined with the fact that most of the respondents would prefer to receive medical care at a larger centre, strongly suggests that the cottage hospitals model in its present form is not adequately meeting

the perceived health needs of the population, and in order to meet these stated needs the model would have to be modified.

In-Patient Utilization of Cottage Hospitals

The overall utilization of the cottage hospital at Burgeo has dropped by 66% in 1981 as compared to 1972. At Placentia the number of admissions for the same time period dropped by 33%.

Distribution of the utilization by age groups has also changed. The percentage of total admissions of those in the age group 0-14 years has decreased by 13% at the Placentia hospital and by 6.4% at the Burgeo hospital from 1972 to 1980-81. However, in the age group of 65 years and over there has been an increase in the percentage of total admissions from 1972 to 1980-81. In the Burgeo hospital the percentage of admissions in this age group has tripled and it has doubled in the Placentia hospital. The percentage of overall admissions in the age group 15-64 years of age shows little change in both hospitals for 1972 and 1980-81.

The number of deliveries performed at both cottage hospitals have decreased drastically from 1972 to 1980-81. A decrease of 58% at Burgeo hospital and 69% at Placentia hospital. One-quarter of the deliveries at Burgeo hospital in 1980-81 were diagnosed as having complications. This does not appear to be a problem at Placentia. The decrease in the number of deliveries in the cottage hospitals is not meant to be associated with any change in the birth rate of the area. In 1980-81 there were 47 deliveries at Burgeo hospital and 43 deliveries from the district in larger centres. From the Placentia district, there were 54 deliveries at the Placentia hospital and 86 deliveries in larger centres.

The utilization of the in-patient services has decreased drastically in both districts from 1972 to 1980-81. The distribution of age groups have also changed. The most noticeable changes are in the age groups 0-14 and 64 years and over, with 0-14 age group showing a lower rate of utilization in 1981 than in 1972 and the age group of 65 years and over showing a higher rate of utilization of services. At the Placentia hospital there was an understay in 1981 ranging from 11.00 to 29.65 days in all age groups and for all diagnoses. The Burgeo hospital showed an understay for all diagnoses in the age group 0-64 years, but an overstay ranging from 11.30 to 73.37 days for the age group 65 years and over. The overstay results from six persons in this age group whose stay was approximately 300 days each. Spitzer (1970) suggests that understay could be an indicator of poor care, in that the patients did not stay long enough to receive the necessary care. However, this concept cannot be applied to these hospitals because the data do not identify the patients who received complete care and those who were transferred to other centres. The overstay at Burgeo for those in the 65 and over age group could be an indication of lack of facilities for care of the aged, either in the community or in their homes.

Out-Patient Utilization of Cottage Hospitals

The number of visits to Out-Patients in both hospitals has shown considerable change. At the Placentia hospital Out-Patient visits in 1981 had decreased by 54.81% and at Burgeo the Out-Patient visits increased by 14.1%. The percentage of the population surveyed who said they would use the emergency and Out-Patient services of the hospital was higher in the Burgeo district than in the Placentia

district. It is also notable that the number of respondents who said they would use the cottage hospital for maternity services, corresponded with the number who actually did use the services.

In spite of the differences in the communities, the overall probable use of the hospital services as expressed by the population surveyed, and the actual utilization of the hospitals (except for Out-Patient services) are very similar. This suggests that the size of the hospital, the difference in accessibility and other criteria used in choosing the health districts made little or no difference in the present utilization pattern of the cottage hospital services, although the in-patient utilization of the cottage hospitals has decreased drastically from 1972 to 1980-81. Apart from obstetrics the majority of patients treated in the hospitals are in the age groups 0-14 and 65 plus. Primary care services are being provided but from the data it can be seen that because of the lack of community resources, these services are limited and for the most part are "medical" and emergency care. The large number of deliveries from both districts being performed in larger centres indicate than an effort is being made to provide only uncomplicated obstetrical services in the hospitals.

The services offered by the hospitals are easily accessible by the people living in the communities where the hospitals are located, but the people in the catchment areas are still plagued by poor transportation. It appears that added to the people's expressed desire to receive treatment by a specialist and in larger hospitals, the most valid factor affecting their use of the services from the cottage hospitals is transportation. If they can get to the communities where the cottage hospitals are located they then have comparatively easy

access to larger centres, and it is conceivable that some may choose the alternative. The data on the number of patients from the districts admitted to hospitals in larger centres do not identify how many were referred from the hospitals, from private physicians or made their own decisions to go to a larger centre.

The findings from the data leave no doubt that the role of the cottage hospital in delivery care has changed in the 10-year time frame (1972 and 1980-81) and leave little doubt that they will continue to change. The question is, how will they change? Will the cottage hospital become part of a regionalization concept and be administered by boards of regional or district hospitals? How would such an arrangement affect the professional staff of the hospitals? The responses from health professionals on the subject suggest that the majority of the health professionals agree with supervision by a larger hospital of laboratory and X-ray facilities and also feel benefits could be derived from a combined board of directors. This issue needs further exploration, not only in terms of the type of administration that would be the most effective for all concerned but also in terms of services offered. Will Out-Patient and ambulatory care in the cottage hospitals be improved with the objective to provide "the right care to the right patient in the place," and with consideration of the patient rather than to the institution? If comprehensive community based programs with out-reach clinics are put in place, the existing physical facilities would have to be modified or replaced, with consideration given to placing all services under one roof in order to facilitate team working relationships. Could more nurses be employed and involved in the development of services as well as providing primary care?

> Existing studies support the hypothesis that the use of nurses as primary health care workers have major positive impacts on access, cost and quality of care. Acceptance of nurses as primary workers, once people have received such care, is reported in most cases to be high, as evidenced by surveys of attitudes, preference and consumer behaviour. (Hall, 1980, p.72)

What part will the consumer play in the organization and planning of health services? Although it is possible to formulate plans which are feasible and correct from physical and material aspects, the ultimate acceptance of such plans will depend on how much people are involved and their understanding of the changes. Transportation to and from rural communities needs to be examined more closely. The best health services in the world will do no good if people are unable to reach them.

Traditionally people in Newfoundland communities generally tend to think of health care in terms of illness rather than preventive, and display "sick-role behaviour" which is defined as:

> Any activity undertaken by a person who feels ill for the purpose of defining the state of his health and of discovering suitable remedy. (Becker, 1974, p. 354)

This was evident in the people's responses to suggestions and comments of desired health care, which for the most part was directed to "sick" care needs. Also, the health professionals reported that people are reluctant to take their families for consultation for such things as visual and dental care. Motivation of the person to seek health care is sometimes as important as his physical accessibility. Educational programs are necessary to inform people concerning the advantage and benefit to be derived from improved health.

Maternity care is another issue which warrants further investigation. More deliveries from the districts are being done in larger centres. Is this affecting the importance of pre and post natal

programs? The high level of complicated deliveries at Burgeo should have closer examination; this phenomenon could indeed be due to some inconsistency in the system of reporting. Community hospitals staffed by family practice physicians and nurses with expanded roles could well be conceived as a teaching and learning facility as well as providing service. Opportunities would be available for medical students to be assigned as part of their experience in community medicine and family practice. Nursing students from the University School of Nursing could also participate as part of their experience in community health nursing. These students would work together in developing community clinics including vision and hearing screening, pre and post natal teaching, school health programs, diabetic and hypertension clinics, etc. While they are learning through practical experience, they are also teaching rural people about comprehensive health care and self health care, not just providing treatment for acute episodic illness. An added plus with this type of arrangement is that not only will the students learn, but their presence will encourage the doctors and nurses they work with to keep themselves updated as to current trends.

> The public health community should seek a new future role as the focal point for growth of a broadly conceived science of human ecology. If they did this they [the public] would not have to struggle to get into the hospitals. This development would rapidly show to everybody that, while hospitals are an important element in man's health system, they are not the center of it: that the study of it really is the study of human ecology. (Clute, p. 78)

It is understood that a study of the health care in two geographical areas cannot supply all the answers. It is assumed, however, that the phenomena of service utilization and community reaction are sufficiently universal in their broadest elements so that a study of one or more situations will provide useful insights into other areas.

Although descriptions can be used in policy making, they do not in themselves provide prescriptions: they show what is happening; they identify factors that appear to be associated with differences but they do not accurately show what should be happening. Key requirements for the future must include community and community out-reach programs with consumer involvement. All health care programs must have a built-in evaluation component for testing the validity, efficiency and effectiveness of various approaches, with a view to change or replacement of the programs.

> It is bad enough that a man should be ignorant, for this cuts him off from the commerce of other men's minds. It is perhaps worse that a man should be poor, for this condemns him to a life of stint and scheming, in which there is no time for dreams and no respite from weariness, but what surely is worst is that a man be unwell, for this prevents him doing anything much about either his poverty or his ignorance. (George H. Kimble, p. 159)

Implications for Future Study

The results of the study suggest the need for replication of the study with the following modifications:

1. Larger population sample to enhance the representativeness of the sample.
2. Refinement of the instrument to include
   (a) inclusion of common themes generated by open-ended questions as specific research questions;
   (b) more specific with regard to hospital admissions, discharges and length of stay;
   (c) identification of the social changes that have occurred in the period of study.

The results suggest the following research related to health care services:

(a) A study to determine if similar results would be found in other health districts.

(b) A study to determine the health needs specific to each health district in the province.

(c) A study to determine the specific health needs of women in the child-bearing ages in each health district in the province.

(d) Studies to determine the specific health needs of individuals 0-14 and 65 years plus in each health district in the province.

(e) A study to determine the effects of regionalization of the cottage hospitals on health care services in each health district.

Concluding Statement

This descriptive study has reported on the utilization of the services of two cottage hospitals in a 10-year time frame. The probable utilization of the services of the hospitals, the factors affecting the use or non-use of these services, suggestions and comments regarding health care services as reported by a sample of the population has been presented. In addition, the opinions of health professionals as to the quality and quantity of health care in rural areas and their perceived needs for future health services are reported.

This study has gathered baseline data and examined the continuing functions of cottage hospitals in two defined areas and has provided direction for further studies.

LIST OF REFERENCES

American Hospital Association. Delivery of Health Care in Rural America, 1976.

American Hospital Association. Delivery of Health in Rural North America, 1977.

American Hospital Association. Planning for Survival, 1978.

Amitai, E. Modern Organizations. Englewood Cliffs, N.J.: Prentice Hall, Inc., 1964.

Anderson, B.S., & Ball, S. The Profession and Practice of Program Evaluation. San Francisco, California: Jamsly-Bass Inc., 1978.

Anderson, J.G. Demographic factors affecting health service utilization: a causal model. Medical Care II, (March, April), 1973 C, 104-120.

Anderson, R., & Adey, A. Access to Medical Care. Ann Arbor, Michigan: Health Administration Press, 1975.

Anderson, R.O., & Hull, J.T. Hospital utilization and cost trends in Canada and the United States. Medical Care, 7, 4.

Anderson, R., Kasper, J., Frankel, M., & associates. Total Survey Error, Jossey Bas Publishers, 1979.

Annual Report. Department of Health Newfoundland and Labrador, 1971.

Babbi, E.R. Survey Research Methods. Belmont, California: Wadsworth Publishing Company Inc., 1973.

Becker, M.H. The Health Belief Model and Personal Health Behavior. Health Education Monographs, 1974.

Bennett, A.E., & Ritchie, K. Questionnaires in Medicine. Oxford University Press, 1975.

Bernstein, J., & Hege, F. Rural Health Centers in the United States, 1979.

Borus, M., Buntz, G., & Tash, W. Evaluating the Impact of Health Programs. Cambridge, Mass.: MIT Press, 1982.

Brown, M. Production and cost relations of Newfoundland cottage hospitals. Inquiry, 1980, 17, 226-277.

Btesh, S. International research in the the organization of medical care. Medical Care, 1965, 3, 41-46.

Carr, W., & Wolfe, S. Unmet need as soc sociomedical indicators. International Journal of Health Services, s, 1976, 6 (3), 417-429.

Campbell, D., & Stanley, J. Experimental tal and Quasi-Experimental Designs for Research. Chicag: Ran Rand McNally College Publishing Company, 1963.

Chambers, L., & Sachett, D. et al. Deve evelopment and Application of Indexes of Health. Project supporte ted by Ministry of Health, Ontario, 1976. Health and Welfare Canada.

Clute, K.F. Emerging international and nd Canadian trends. Health and Society. The School of Hygiene, Univ niversity of Toronto, 1973.

Clute, K. Health and Society. Addresses ses to the Anniversary Symposium. The School of Hygiene, University of of Toronto, 1973.

Coburn, D'A. Health and Canadian Societiety. Fitzhenry & Whiteside Ltd., 1981.

Community Medicine in Scotland. Joint Wit t Working Party on the integration of medical work. Report of a Sub-Gr Group on Community Medicine. Edinburgh: Her Majesty's Stationary ary Office, 1973.

Cottage Hospitals Division. Administration of Cottage Hospital. Unpublished paper.

A Ciba Foundation Symposium. Health Car Care in a Changing Setting: The UK Experience. London: 1970.

Deniston, O.L., Rosentock & Getting, V.A V.A. Evaluation of program effections. Behavioural Publicators ors, 1969, 219-239.

Denson, P.M. The quality of medical car care. Yale Journal of Biology and Medicine, April 21, 1965, 523-53 -535.

Denton, J. Medical Sociology. ston: n: Houghton Mifflin Company, 1978.

Donabedian, A. Aspects of Medical Care. are. Cambridge, Mass.: Harvard University Press, 1973.

Elinson, J. Introduction to the eme sne sociomedical health indicators. International Journal of Healh Serv ervices, 1976, 6(3), 385-391.

Elinson, J., Mooney, A., & Seegran, A. A. Health Goals and Health Indicators Policy, Planning, nd Eva Evaluation. West View Press, 1976.

Evans, J. Organizational patter for nor new responsibilities. Journal of Medical Education, 1970, 5, 988-988-999.

Feldstein, P., & German, J.J. Predicting hospital utilization and evaluation of three approaches. Inquiry, 1965, II, 128-165.

Firth, R. Elements of Social Organization. Boston: Beacon Press, 1961.

Fox, D.J. The Research Process in Education. New York: Holt, Rinehart and Winston Inc., 1969.

Freeman, H., & Sherwood, C.C. Program Evaluations in Health Fields. H.C. Schulberg, A. Sheldon, F. Baher, Eds. New York: Behavioral Publications, 1969, pp. 73-91.

Future of the rural cottage hospital. British Medical Journal, 1966, 1, 1147.

Gantnor, H. What services should smaller hospitals offer? Journal of American Hospitals Association, June 16, 1963, 37, 59-64.

Grant, M. Handbook of Community Health, 3rd ed. Lea and Febiger, 1981.

Hall, E., Special Commissioner. A Commitment for Renewal. Canada's National-Provincial Health Program for the 1980's.

Health Care Delivery in Rural Areas. Published by the American Medical Association, 1976.

Health Services in Britain. Prepared for British Information Services by the Central Office of Information, London, 1973.

Health Study Group, Health Care Delivery: An Overview. Government of Newfoundland and Labrador, May, 1973.

Hepner, J.O. Health Planning for Emerging Multihospital Systems. The C.V. Mosby Company, 1978.

Institute of Medicine. National Academy of Sciences, Washington, D.C. A Strategy for Evaluating Health Services, 1973. "Panel on Health Services Research."

Johnson, R. Rural hospitals face change for a brighter future. Journal of American Hospitals Association, January 16, 1978, 52, 47.

Keasner, D., & Kalh, C. A Strategy for Evaluating Health Services. National Academy of Service, 1973.

Kelman, H.R. Evaluation of health care quality by consumers. International Journal of Health Services, 1976, 6(3), 431-439.

Kerk, S. The Practice of Community Oriented Primary Health Care. Appleton Century Crofts, 1981.

Kimble, Tropical Africa. New York: The Twentieth Century Fund, 1960, Vol. 2, p. 159.

aframboise, H.L., & Owen, T.H. Surveillance methodology for the practice of medicine. Canadian Medical Association Journal, March 4, 1972, 106, 124-128.

alonde, M. A New Perspective on the Health of Canadians. Health and Welfare Canada, 1974.

a Piere, R.T. Social Change. McGraw Hill, 1965.

arsen, D., & Love, E. Health Care Research, University of Calgary. Offset Printing Service, 1974.

Managing All Our Resources. A developmental plan for Newfoundland and Labrador, 1980-85.

McKinlay, J.B. Research Methods in Health Care. New York: 1973.

McNerney, W., & Riedel, D. Regionalization and Rural Health Care. Ann Arbor: The University of Michigan, 1962.

McPeak, W.W. The Small Frantic Voice of the Patient. Speech given at dedication of Stanford Medical Center, September, 17, 18, 1959.

Miller, C.M., Schuh, S., & Moone, A. Community Health Planning. Ann Arbor, Michigan: University Microfilms, 48106, 1978.

Miller, L.A. The cottage hospital plan in Newfoundland. Newfoundland Medical Association Newsletter, 1974, 6(4), Special Issue, Part 2.

Miller, L.A. The Newfoundland Department of Health. Revision of an article which appeared in June, 1959 issue of the Canadian Journal of Public Health.

Miller, L. Newfoundland as a Province. Reprinted from the Federal and Provincial Health Services in Canada, 1962.

Miller, L., & Hatcher, G. Public Medical Care Programs in Newfoundland. Presented at the annual meeting of the Canadian Public Health Association, 1964.

Milton, R. Rural Health Care. C.V. Mosby Co., 1976.

Morley, P., & Mussells, L. Future Trends for Newfoundland Cottage Hospitals. Unpublished paper.

Neufeld, R.W.J. Clinical Quantitative Methods. New York: Grune and Stratton Inc., 1977.

Newfoundland Archives. Commission of Government 1934-1948 (File S6-5). St. John's: Public Health and Welfare Medical Services.

Newfoundland Hospital Association. Report of the Committee on Regionalization of Health Care Services, July, 1980.

Newfoundland Royal Commission Report. Amulree, Chairman, 1933.

Nutt, P.C. Evaluation Concepts and Methods Shaping Policy for Administration. New York: S.P. Medical and Scientific Books, 1981.

Parsons, T. The Structure of Social Action. New York: Free Press; London: Collier-Macmillan Ltd., 1968.

Patrick, D. Constructing social metrics for health status indexes. International Journal of Health Services, 1976, 6(3), 443-453.

Peterson, O.L., & Burgess, A.M. et al. What is value for money in medical care? Experiences in England and Wales, Sweden and the USA. Lancet, 1967, 1, 771-776.

Polit, D.& Hungler, B. Nursing Research. Principles and Methods. Lippincott, 1978.

Rabich, J., Longest, B., & O'Donovan, T. Facilitating change. Hospital and Health Service Administration, Fall, 1977, 63-67.

Ray, John. Executive Responsibility. New York: Association Press, 1966.

Reilly, B., & Legge, J. Saving the rural community hospital: an endangered species. Hospital and Health Service Administration, 1980, Special II, 17-23.

Reinke, W.A., & Baker, T. Measuring effects of demographic variables on health service utilization. Health Service Research, 1967, 61-74.

Report of a Study: Assessing Quality in Health Care: An Evaluation. Washington, D.C.: National Academy of Science, 1977.

Richardson, W.C. Poverty, illness and the use of health services in the United States. Hospitals, 1969, 43, 34.

Ritro, R.A. Adaptation to environmental change: the boards role. Health and Service Administration, Winter, 1980, 23-37.

Roemer, M., & Roemer, R. Health Care Systems and Comparative Manpower Policies. Marcel Dekker Inc., 1981.

Rosenthal, A. The Demand for General Hospital Facilities. Chicago American Hospital. Association Hospital Monograph Services, Series no. 4, 1964.

Ross, J.M. A Study of Morbidity in General Practice in Newfoundland. Study sponsored by the Department of Health under a national research grant, 1969.

Royal Commission on Health and Public Charities in Newfoundland. H.M. Mosdell, Chairman, 1930.

Schulberg, C.H., & Baker, F. Program Evaluation in the Health Fields. Vol. II. Human Science Press, 1979.

Schulberg, H., Sheldon, A., & Baker, F. Program Evaluation in the Health Fields. Boston, Mass.: Harvard Medical School; New York: Behavioral Publications.

Schwartz, H., & Kart, G. Dominant Issues in Medical Sociology. Don Mills, Ontario: Addison Wesley Publishing Company, 1978.

Segonia, T., & Elinson, J. Decision Making and Power Structure in Health Systems. Unpublished manuscript. New York: Columbia University School of Public Health, 1973.

Shapero, S. End results measurements of quality of medical care. Melbank Memorial Fund Quarterly, 1967, XLV, 7-31.

Shonick, W. Elements of Planning for Area Wide Personal Health Services. C.V. Mosby Company, 1976.

Simon, H. Organization. New York: John Wesley and Sons, 1958.

Simon, J. Basic Research Methods in Social Science. New York: Random House, 1969.

Sonderstrom, L. The Canadian Health System. Great Britain: Redwood Burn Limited; Trowbridge and Esher, 1978.

Spitzer, W. The small general hospital problems and solutions. The Milbank Memorial Fund Quarterly, October, 1970, XLVIII, 4.

Starfield, B. Health services research: a working model. The New England Journal of Medicine, July 19, 1973, 132-135.

Shortell, S., & Richardson, W.C. Health Program Evaluation. C.V. Mosby Co., 1978.

Survey of Health Needs Labrador City-Wabush. April, 1972. G.B. Rosenfeld, Chairman.

Task Force Reports on the Cost of Health Services in Canada, 1969, 1, 2, 3. Queen's Printer for Canada, 1970.

The place of the small hospital in Scotland. Discussion at Scottish Hospital Center. British Hospital Journal and Social Service Review, June 28, 1969, 1190-1192.

Vayda, E., Pasley, L., Basken, ., Roberts, R., & Anderson, G. Health care attitudes in north end Hamilton. Ontario Medical Review, September, 1974, 544-549.

VanDalen, D.B. Understanding Education Research: An Introduction. Third Edition. New York: McGraw Hill, 1973.

Wirick, G., Sr. A multiple equation model of demand for health care. Health Service Research, Winter, 1966, 301-346.

Woodward, C.A., Chambers, L.W., & Smith, K.D. Guide to Improve Data Collection in Health and Health Care Surveys. Ottawa, Canada: Canadian Public Health Association, 1982.

APPENDIX A

COTTAGE HOSPITAL STUDY

POPULATION SURVEY - INTERVIEWER GUIDE

Name of Hospital:

Distance of Interviewee from the above hospital:

Transportation to hospital — car, boat, etc.
Explain

_____

_____

_____

The purpose of the interview is to find out where people go for their health care, why they go there and if it is in preference to the cottage hospital. What their opinions and suggestions are regarding the use of cottage hospitals. The answers to these questions are expected to be very helpful in identifying problems in the areas, utilization of the cottage hospital public education and possible future needs.

1. Name of Community:

2. Fill in all information requested along the top of the box below for each member of the household. Place a star by the name of the one being interviewed.

Name	Relation To Head	Age	Sex	Marital Status

3. How long have you lived here?

always
more than 10 years
less than 10 years

4a. Where did you live before you moved here?

4b. Do you own your home? Yes No

5a. Who is the main breadwinner in your family? _____

5b. Where does he (she) work? _____

5c. What does he (she) do? _____

6. What was the last grade of school you finished?

less than grade eight
some high school
graduated from high school
some university
graduated from university
business or trade school
other, specify

_____

_____

_____

7. Have you or any members of your family been a patient at the cottage hospital within the last ten years? Yes No

If yes, fill in the information requested across the top of the box.

Name	Age	Sex	When (year)	Medical Complaint	If Referred to Other Hospital Where	Why

8a. Have you or any member of your family been a patient at a larger hospital other than the cottage hospital in the last ten years?

Yes No

Name	Age	Sex	When (year)	Name of Hospital	Medical Complaint

8b. What is your opinion about having to go to a larger hospital for medical care?

good idea

poor idea

no opinion

9. In your opinion does a larger hospital give better care than your cottage hospital is giving its patients?

a great deal better

a little better

about the same

a little less than

a great deal less than

Why do you think so?

_____

_____

_____

_____

_____

_____

10. Is there anything you particularly like about the cottage hospital?

Yes No

Explain.

_____

_____

_____

_____

11. Is there anything you particularly dislike about the cottage hospital? Yes No

Explain.

_____

_____

_____

12. What services would you use the cottage hospital for?

emergency
maternity
children's illness
health problems of the aged
out-patients
surgery
others (specify)

_____

_____

_____

13. Is there a personal cost involved for your receiving service from the cottage hospital? Yes No

13a. Is this cost in terms of money or time lost from work or both?

Explain.

_____

_____

_____

_____

_____

14. Do you think the cost to you in receiving services from the cottage hospital are fair or unfair?

very fair

unfair

fair

don't know

Why?

_____

_____

_____

15. What suggestions do you have that would lessen your cost to health care?

_____

_____

_____

_____

_____

16. About how much income does your family have per year?

under $8,000

$8,000 to $15,000

$15,000 - over

What further suggestions, comments or ideas do you have regarding health care in your area? Please comment.

APPENDIX B

COTTAGE HOSPITAL STUDY

HEALTH PROFESSIONALS INTERVIEWER GUIDE

1. Place of interview:

2. Occupation of interviewee:

   How many years have you held this job (in this community)?

3. Age:

4. Sex: Male Female

5. Do you feel there are problems of getting health care unique to rural versus urban populations in Newfoundland? Yes No

5a. If so, please describe these problems.

_____

_____

_____

_____

_____

_____

5b. If no, please explain.

_____

_____

_____

_____

_____

_____

6. Do you feel the quality of medical care in a rural area is as good as is urban areas for comparable illnesses? Yes No

   Please comment.

_____

_____

7. Do you feel that the rural population of Newfoundland has sufficient access to health care in terms of available of adequate transportation? Yes No

   If no, what do you think is needed?

   _____

   _____

   _____

   _____

8. Do you feel that the rural population of Newfoundland has sufficient availability to health care in terms of services offered? Yes No

   If no, what do you think is needed?

   _____

   _____

   _____

   _____

9. Is there a personal cost factor for people coming to the cottage hospital for treatment? Yes No

   Explain.

   _____

   _____

   _____

   _____

10. In your opinion do you think these costs are fair?

    very fair unfair?

    fair don't know

    Why?

    _____

    _____

    _____

    _____

11. What suggestions do you have to lessen the cost to patients?

_____

_____

_____

_____

12. Concerning a relationship between a cottage hospital and a larger hospital, what would be your attitude toward the following?

a. Regular visits by the administrator of the larger hospital to the cottage hospitals for consultation.

strongly approve

approve

disapprove

strongly disapprove

Explain.

_____

_____

_____

_____

b. Supervision of the laboratory and X-ray departments of the cottage hospital by the larger hospitals.

strongly approve

approve

disapprove

strongly disapprove

Explain.

_____

_____

_____

_____

c. Mecical supervision by the medical staff of the larger hospital over the physician using the cottage hospital.

strongly approve

approve

disapprove

strongly disapprove

Explain.

_____

_____

_____

_____

d. Complete administration by the larger hospital.

strongly approve

approve

disapprove

strongly disapprove

Explain.

_____

_____

_____

_____

e. Combined board of directors.

strongly approve

approve

disapprove

strongly disapprove

Explain.

_____

_____

_____

_____

13. What services do you think cottage hospitals should provide?

_____

_____

_____

14. What further suggestions, comments, or ideas do you have regarding health care in rural Newfoundland?

Please comment:

APPENDIX C

SEPARATION, DAYS STAY AND LENGTH OF STAY BY

DIAGNOSTIC AND AGE GROUPS, PLACENTIA - 1972

General Medical & Surgical	Male			Female			Total		
	Sep.	Days	Length	Sep.	Days	Length	Sep.	Days	Length
0 - 4	239	1091	4.56	123	604	4.91	362	1695	4.68
5 - 9	83	352	4.24	47	167	3.55	130	519	3.99
10 - 14	60	216	3.60	53	183	3.45	113	399	3.53
15 - 19	42	164	3.90	65	202	3.10	107	366	3.12
20 - 24	23	52	2.26	41	150	3.65	67	202	3.45
25 - 34	43	143	3.33	54	224	4.15	97	367	3.78
35 - 44	23	113	4.91	42	154	3.67	65	267	4.11
45 - 54	46	282	6.13	64	223	3.48	110	505	4.59
55 - 64	68	420	6.18	53	292	5.51	121	712	5.88
65 - 69	28	137	4.89	24	239	9.95	52	376	7.23
70 & Over	64	1108	17.31	88	1303	14.80	152	2411	15.86
Total	719	4078	5.67	654	3741	5.72	1373	7819	5.69
Psychiatry									
0 - 4	1	280	280.00	0	0	0.00	1	280	280.00
5 - 9	2	10	5.00	0	0	0.00	2	10	5.00
10 - 14	1	1	1.00	0	0	0.00	1	1	1.00
15 - 19	1	1	1.00	1	1	1.00	2	2	1.00
20 - 24	1	1	1.00	8	20	2.50	9	21	2.33
25 - 34	1	1	1.00	6	15	2.50	7	16	2.29
35 - 44	6	19	3.27	7	47	6.71	13	66	5.08
45 - 54	5	16	3.20	10	53	5.30	15	69	4.60
55 - 64	8	15	1.88	10	26	7.60	18	91	5.06
65 - 69	0	0	0.00	0	0	0.00	0	0	0.00
70 & Over	1	3	3.00	2	13	6.50	3	16	5.33
Total	27	347	12.85	44	225	5.11	71	572	8.06

Placentia - 1972: (Cont'd.)

General Medical & Surgical	Male Sep.	Male Days	Male Length	Female Sep.	Female Days	Female Length	Total Sep.	Total Days	Total Length
Obstetrics									
10 - 14	0	0	0.00	0	0	0.00	0	0	0.00
15 - 19	0	0	0.00	36	201	5.58	36	201	5.58
20 - 24	0	0	0.00	94	379	4.03	94	379	4.03
25 - 34	0	0	0.00	94	440	4.68	94	440	4.68
35 - 44	0	0	0.00	42	185	4.40	42	185	4.40
45 - 54	0	0	0.00	2	6	3.00	2	6	3.00
Total	0	0	0.00	268	1211	4.52	268	1211	4.52
Total of All Diagnoses									
0 - 14	386	1950	5.05	223	954	4.28	609	2904	4.77
15 - 64	267	1227	4.60	629	2668	4.24	896	3895	4.35
65 & Over	93	1248	13.42	114	1555	13.64	207	2803	13.54
	746	4425	5.93	966	5177	5.36	1712	9602	5.61

SEPARATION, DAYS STAY AND LENGTH OF STAY BY

DIAGNOSTIC AND AGE GROUPS, PLACENTIA - 1980-81

General Medical & Surgical	Male Sep.	Male Days	Male Length	Female Sep.	Female Days	Female Length	Total Sep.	Total Days	Total Length
0 - 4	91	266	2.92	61	200	3.27	152	466	3.06
5 - 9	25	60	2.40	24	57	2.37	49	117	2.38
10 - 14	33	150	4.54	22	46	2.09	55	196	3.56
15 - 19	25	65	2.60	34	77	2.26	59	142	2.40
20 - 24	25	70	2.80	29	63	2.17	54	133	2.46
25 - 34	27	82	3.04	43	125	2.91	70	207	2.96
35 - 44	23	73	3.17	36	130	3.61	59	203	3.44
45 - 54	50	259	5.18	51	244	4.78	101	503	4.98
55 - 64	64	355	5.55	54	304	5.63	118	659	5.58
65 - 69	31	199	6.41	47	410	8.72	78	609	7.80
70 & Over	100	625	6.25	84	718	8.54	184	1343	7.29
Total	494	2204	4.46	485	2374	4.89	979	4578	4.67

Placentia - 1980-81: (Cont'd.)

General Medical & Surgical	Male			Female			Total		
	Sep.	Days	Length	Sep.	Days	Length	Sep.	Days	Length
Psychiatry									
0 - 4	0	0	0.00	0	0	0.00	0	0	0.00
5 - 9	0	0	0.00	0	0	0.00	0	0	0.00
10 - 14	0	0	0.00	1	2	0.00	1	2	2.00
15 - 19	0	0	0.00	0	0	0.00	0	0	0.00
20 - 24	1	4	4.00	5	11	2.20	6	15	2.50
25 - 34	3	5	1.67	6	18	3.00	9	23	2.56
35 - 44	4	17	4.25	2	8	4.00	6	25	4.17
45 - 54	8	27	3.38	8	45	5.63	16	72	4.50
55 - 64	3	17	5.67	4	12	3.00	7	29	4.14
65 - 69	1	4	4.00	4	21	5.25	5	25	5.00
70 & Over	5	34	6.80	3	9	3.00	8	43	5.38
Total	25	108	4.32	33	126	3.82	58	234	4.03
Obstetrics									
10 - 14	0	0	0.00	1	1	1.00	1	1	1.00
15 - 19	0	0	0.00	12	41	3.41	12	41	3.41
20 - 24	0	0	0.00	27	95	3.51	27	95	3.51
25 - 34	0	0	0.00	58	183	3.16	58	183	3.16
35 - 44	0	0	0.00	4	15	3.75	4	15	3.75
45 - 54	0	0	0.00	1	3	3.00	1	3	3.00
Total	0	0	0.00	103	338	3.28	103	338	3.28
Total of All Diagnoses									
0 - 14	149	476	3.19	109	306	2.81	258	782	3.03
15 - 64	233	974	4.18	374	1374	3.67	607	2348	3.87
65 & Over	137	862	6.29	138	1158	8.39	275	2020	7.35
	519	2312	4.45	621	2839	4.57	1140	5150	4.52

SEPARATION, DAYS STAY AND LENGTH OF STAY BY

DIAGNOSTIC AND AGE GROUPS, BURGEO - 1972

General Medical & Surgical	Male			Female			Total		
	Sep.	Days	Length	Sep.	Days	Length	Sep.	Days	Length
0 - 4	56	312	5.75	41	245	5.97	97	557	5.74
5 - 9	21	120	5.71	18	80	4.44	39	200	5.12
10 - 14	15	86	5.73	19	94	4.94	34	180	5.29
15 - 19	8	45	5.62	18	117	6.50	26	162	6.23
20 - 24	11	107	9.72	7	24	3.42	18	131	7.27
25 - 34	9	55	6.11	22	142	6.45	31	197	6.35
35 - 44	12	109	9.08	15	125	8.33	27	234	8.67
45 - 54	16	128	8.00	14	128	9.14	30	256	8.53
55 - 64	21	266	12.67	20	194	9.70	41	460	11.22
65 - 69	7	56	8.00	13	191	14.69	20	247	12.35
70 & Over	14	152	10.85	17	137	8.05	31	289	9.32
Total	190	1436	7.55	204	1477	7.24	394	2913	7.39
Psychiatry									
0 - 4	0	0	0.00	0	0	0.00	0	0	0.00
5 - 9	0	0	0.00	0	0	0.00	0	0	0.00
10 - 14	1	6	6.00	2	8	4.00	3	14	4.67
15 - 19	0	0	0.00	1	3	3.00	1	3	3.00
20 - 24	2	3	1.50	0	0	0.00	2	3	1.50
25 - 34	0	0	0.00	0	0	0.00	0	0	0.00
35 - 44	0	0	0.00	1	10	10.00	1	10	10.00
45 - 54	1	3	3.00	2	13	6.50	3	16	5.33
55 - 64	1	12	12.00	4	33	8.25	5	45	9.00
65 - 69	0	0	0.00	1	6	6.00	1	6	6.00
70 & Over	0	0	0.00	0	0	0.00	0	0	0.00
Total	5	24	4.80	11	73	6.64	16	97	6.06

Burgeo - 1972: (Cont'd.)

General Medical & Surgical	Male Sep.	Male Days	Male Length	Female Sep.	Female Days	Female Length	Total Sep.	Total Days	Total Length
Obstetrics									
10 - 14	0	0	0.00	0	0	0.00	0	0	0.00
15 - 19	0	0	0.00	35	240	6.85	35	240	6.85
20 - 24	0	0	0.00	72	378	5.25	72	378	5.25
25 - 34	0	0	0.00	47	188	4.00	47	188	4.00
35 - 44	0	0	0.00	15	66	4.40	15	66	4.40
45 - 54	0	0	0.00	2	9	4.50	2	9	4.50
Total	0	0	0.00	171	881	5.15	171	881	5.15
Total of All Diagnoses									
0 - 14	93	524	5.63	80	427	5.34	173	951	5.50
15 - 64	81	728	8.99	275	1670	6.07	356	2398	6.74
65 & Over	21	208	9.90	31	334	10.77	52	542	10.42
	195	1460	7.49	386	2431	6.30	581	3891	6.70

SEPARATION, DAYS STAY AND LENGTH OF STAY BY

DIAGNOSTIC AND AGE GROUPS, BURGEO - 1980-81

General Medical & Surgical	Male Sep.	Male Days	Male Length	Female Sep.	Female Days	Female Length	Total Sep.	Total Days	Total Length
0 - 4	29	125	4.31	28	98	3.50	57	223	3.91
5 - 9	16	52	3.25	9	42	4.66	25	94	3.76
10 - 14	11	47	4.27	6	12	2.00	17	59	3.47
15 - 19	16	73	4.56	18	55	3.05	34	128	3.76
20 - 24	3	4	1.33	4	9	2.25	7	13	1.85
25 - 34	15	57	3.80	14	55	3.93	29	112	3.86
35 - 44	11	43	3.91	14	78	5.57	25	121	4.84
45 - 54	7	18	2.57	9	48	5.33	16	66	4.13
55 - 64	16	78	4.88	12	63	5.25	28	141	5.04
65 - 69	8	78	9.75	10	388	38.80	18	466	25.88
70 & Over	35	337	9.62	36	1597	44.36	71	1934	27.23
Total	167	912	5.46	160	2445	15.28	327	3357	10.26

Burgeo - 1980-81: (Cont'd.)

General Medical & Surgical	Male			Female			Total		
	Sep.	Days	Length	Sep.	Days	Length	Sep.	Days	Length
Psychiatry									
0 - 4	0	0	0.00	0	0	0.00	0	0	0.00
4 - 9	0	0	0.00	0	0	0.00	0	0	0.00
10 - 14	0	0	0.00	0	0	0.00	0	0	0.00
15 - 19	0	0	0.00	1	2	2.00	1	2	2.00
20 - 24	0	0	0.00	0	0	0.00	0	0	0.00
25 - 34	1	1	1.00	1	5	5.00	2	6	3.00
35 - 44	0	0	0.00	1	1	1.00	1	1	1.00
45 - 54	1	1	1.00	1	1	1.00	2	2	1.00
55 - 64	1	7	7.00	1	2	2.00	2	9	4.50
65 - 69	2	22	11.00	0	0	0.00	2	22	11.00
70 & Over	1	316	316.00	0	0	0.00	1	316	316.00
Total	6	347	57.83	5	11	2.20	11	358	32.55
Obstetrics									
10 - 14	0	0	0.00	1	6	6.00	1	6	6.00
15 - 19	0	0	0.00	30	128	4.27	30	128	4.27
20 - 24	0	0	0.00	28	97	3.46	28	97	3.46
25 - 34	0	0	0.00	29	142	4.90	29	142	4.90
35 - 44	0	0	0.00	2	8	4.00	2	8	4.00
45 - 54	0	0	0.00	0	0	0.00	0	0	0.00
Total	0	0	0.00	90	381	4.23	90	381	4.23
Total of All Diagnoses									
0 - 14	56	224	4.00	44	158	3.59	100	382	3.82
15 - 64	71	282	3.97	165	694	4.21	236	976	4.14
65 & Over	46	753	16.37	46	1985	43.15	92	2738	29.76
Total	173	1259	7.28	255	2837	11.13	428	4096	9.57

APPENDIX D

POPULATION CHARACTERISTICS

Age and Sex Distribution

AGE	BURGEO DISTRICT				PLACENTIA DISTRICT			
	MALE %		FEMALE %		MALE %		FEMALE %	
	1971	1976	1971	1976	1971	1976	1971	1976
0 - 4	14.1	12.9	15.2	12.5	11.0	9.8	11.1	9.3
5 - 9	13.6	13.8	13.2	14.5	13.5	11.5	14.8	11.2
10 - 14	12.6	12.2	12.1	12.2	15.0	13.0	15.0	14.5
15 - 19	10.8	11.0	11.9	10.0	12.8	13.7	13.3	13.1
20 - 24	8.6	8.2	10.3	9.2	7.3	8.8	7.2	8.1
25 - 34	11.9	14.9	10.3	14.2	9.3	12.1	9.1	13.2
35 - 44	8.8	8.2	7.7	9.0	7.9	7.9	8.3	7.5
45 - 54	7.5	6.3	7.0	6.7	10.0	8.1	8.5	8.1
55 - 64	5.8	5.9	5.9	5.5	6.7	8.0	6.7	7.9
65 - 69	2.5	2.1	2.3	2.5	2.1	2.7	2.3	2.6
TOTALS	1980	2135	1940	2005	5615	5720	5195	5125

Family Characteristics

Number of Children per family	BURGEO DISTRICT		PLACENTIA DISTRICT	
	1971 %	1976 %	1971 %	1976 %
No Children	19.5	19.8	16.5	17.1
1 Child	20.7	18.7	18.5	22.3
2 Children	18.9	21.4	16.5	19.3
3-4 Children	23.8	28.0	20.4	21.7
5 or more	17.1	12.1	28.1	19.1

Family Distribution by Type and Percent	BURGEO DISTRICT		PLACENTIA DISTRICT	
	1971	1976	1971	1976
Husband-Wife families	93.9	91.7	87.2	89.4
Lone-parent families	6.1	8.3	12.8	10.6
Total Families	820	905	1950	2175

Educational Levels of Population

Education Levels	BURGEO DISTRICT				PLACENTIA DISTRICT			
	MALE %		FEMALE %		MALE %		FEMALE %	
	1971	1976	1971	1976	1971	1976	1971	1976
1. Grade 8 and less	67.5	59.8	71.8	62.8	51.0	44.6	40.6	32.1
2. Some High School	15.4	16.5	17.8	21.9	23.0	21.6	28.4	29.6
3. Graduated from High School	8.4	7.3	4.8	5.6	9.6	10.1	14.2	13.9
4. Some University	2.5	2.6	1.7	2.8	5.5	6.3	8.4	9.3
5. Graduated from University	0.8	3.1	0	8.0	1.7	2.1	0.7	2.1
6. Business, Trade School or Other	5.4	10.7	3.9	6.1	9.2	15.5	7.7	13.0

Labour Force

Labour Force Activity	BURGEO DISTRICT				PLACENTIA DISTRICT			
	MALES		FEMALES		MALES		FEMALES	
	1971	1976	1971	1976	1971	1976	1971	1976
Participation Rate	72.5	57.1	16.0	16.0	60.4	60.1	23.8	28.8
Unemployment Rate	0.6	11.4	2.7	12.8	23.4	23.0	13.3	24.0

Source: Census Canada, 1971 and 1976
District: Pertains to health district

Average Income of Individuals by Yearly Breakdown

	COMMUNITY					
	BURGEO			PLACENTIA		
	Number of Taxpayers	Total Income ($000)	Average Income ($)	Number of Taxpayers	Total Income ($000)	Average Income ($)
1971	689	3,194	4,636	1,298	7,612	5,864
1972	841	4,169	4,957	1,829	10,954	5,989
1973	928	5,347	5,762	2,053	13,619	6,634
1974	1,026	6,958	6,782	2,374	18,282	7,701
1975	1,074	8,545	7,956	2,433	20,489	8,421
1976	1,132	10,526	9,299	2,365	22,578	9,551

Source: Revenue Canada Taxation

APPENDIX E

CANADIAN HOSPITAL MORBIDITY LIST OF 188 DIAGNOSTIC CATEGORIES BASED ON THE EIGHTH REIVSION OF THE INTERNATIONAL CLASSIFICATION OF DISEASES (1)

18 Group Class No.	188 C-List Group List No.	I.C.D. Numbers	Title
I	1	000-003	Salmonella infections
	2	004-009	Other intestinal infections
	3	010-019	Tuberculosis
	4	034-035	Streptococcal sore throat and scarlet fever & Erysipelas
	5	040-043	Acute poliomyelitis
	6	062-066	Viral encephalitis
	7	070	Infectious hepatitis
	8	044-061,067-068,071-079	Other virus diseases
	9	090-099	Venereal disease
	10	020-033,036-039,080-089,100-136	Other infectious & parasitic diseases
II	11	140-149	Malignant neoplasm of buccal cavity and pharynx
	12	151	Malignant neoplasm of stomach
	13	152, 153	Malignant neoplasm of intestine, except rectum
	14	154	Malignant neoplasm of rectum & rectosigmoid junction
	15	150,155-159	Malignant neoplasm of other digestive organs
	16	162	Malignant neoplasm of trachea, bronchus & lung
	17	160-161,163	Malignant neoplasm of other respiratory organs
	18	170	Malignant neoplasm of bone
	19	172, 173	Malignant neoplasm of skin
	20	174	Malignant neoplasm of breast
	21	180	Malignant neoplasm of cervix uteri
	22	181-182	Malignant neoplasm of uterus
	23	183.0	Malignant neoplasm of ovary

(1) Adapted for use in the United States (I.C.D.A.) - Public Health Service

Class No.	List No.	I.C.D. Numbers	Title
II	24	183.1, 183.9 184	Malignant neoplasm of other female genital organs
	25	185	Malignant neoplasm of prostate
	26	188	Malignant neoplasm of bladder
	27	186,187,189	Malignant neoplasm of other genito-urinary organs
	28	191	Malignant neoplasm of brain
	29	171,190, 192-199	Other primary and secondary malignant neoplasms
	30	204-207	Leukemia
	31	200-203, 208, 209	Other neoplasms lymphatic & hematopoietic tissue
	32	216	Benign neoplasm of skin
	33	217	Benign neoplasm of breast
	34	218, 219	Benign neoplasm of uterus
	35	220	Benign neoplasm of ovary
	36	221	Benign neoplasm of other female genital organs
	37	225	Benign neoplasm of brain & other parts of nervous system
	38	210-215,222-224,226-228	Other benign neoplasms
	39	234.0	Carcinoma in situ of cervix uteri
	40	230-233, 234.1,234.9, 235-239	Other neoplasms of unspecified nature
III	41	240, 241	Nontoxic goiter
	42	242	Thyrotoxicosis with or without goiter
	43	243-246	Other diseases of thyroid gland
	44	250	Diabetes mellitus
	45	251-258	Other endocrine diseases
	46	260-269	Avitaminoses and other nutritional deficiency
	47	270-273	Congenital disorders of metabolism
	48	274-279	Other metabolic diseases
IV	49	280	Iron deficiency anaemias
	50	281	Pernicious anaemia & other deficiency anaemias

Class No.	List No.	I.C.D. Numbers	Title
IV	51	282-289	Other diseases of blood & blood forming organs
V	52	291	Alcoholic psychosis
	53	295	Schizophrenia
	54	296	Affective psychoses
	55	290,292-294, 297-299	Other psychoses
	56	300	Neuroses
	57	303	Alcoholism
	58	304	Drug dependence
	59	301,302, 305-309	Other nonpsychotic mental disorders
	60	310-315	Mental retardation
VI	61	320-324	Meningitis & other inflammatory diseases of C.N.S.
	62	330-333	Hereditary and familial diseases of nervous system
	63	340	Multiple sclerosis
	64	342	Paralysis agitans
	65	345	Epilepsy
	66	341,343,344 346-349	Other diseases of central nervous system
	67	350-358	Diseases of nerves & peripheral ganglia
	68	360-369	Inflammatory diseases of the eye
	69	373	Strabismus
	70	374	Cataract
	71	375	Glaucoma
	72	370-372, 376-379	Other diseases of the eye
	73	381	Otitis media without mention of mastoiditis
	74	382, 383	Mastoiditis with or without otitis media
	75	380,384-389	Other diseases of ear & mastoid process
VII	76	390-392	Active rheumatic fever
	77	393-398	Chronic rheumatic heart disease
	78	400-404	Hypertensive disease

Class No.	List No.	I.C.D. Numbers	Title
VII	79	410	Acute myocardial infarction
	80	411-414	Other ischemic heart disease
	81	420-429	Other forms of heart disease
	82	431	Cerebral hemorrhage
	83	432-434	Cerebral embolism and thrombosis
	84	430,435-438	Other cerebrovascular disease
	85	440	Arteriosclerosis
	86	441-448	Other diseases of arteries, arterioles & capillaries
	87	450	Pulmonary embolism and infarction
	88	451-453	Phlebitis and thrombophlebitis & venous embolism & thrombosis
	89	454	Varicose veins of lower extremities
	90	455	Hemorrhoids
	91	456-458	Other diseases of circulatory system
VIII	92	460-466	Acute upper respiratory infection, except influenza
	93	470-474	Influenza
	94	480-486	Pneumonia
	95	490-492	Bronchitis & emphysema
	96	493	Asthma
	97	500	Hypertrophy of tonsils and adenoids
	98	503	Chronic sinusitis
	99	504	Deflected nasal septum
	100	501, 502, 505-508	Other diseases of upper respiratory tract
	101	510, 513	Empyema & abscess of lung
	102	515, 516	Pneumoconiosis & related diseases
	103	511, 512,514, 517-519	Other diseases of respiratory system
IX	104	520-525	Diseases of teeth & supporting structures
	105	526-529	Other diseases of oral cavity, salivary glands & jaws
	106	532	Ulcer of duodenum
	107	531, 533	Ulcer of stomach, and peptic ulcer site unspecified

Class No.	List No.	I.C.D. Numbers	Title
IX	108	535	Gastritis and duodenitis
	109	530,534, 536, 537	Other diseases of esophagus, stomach, and duodenum
	110	540-543	Appendicitis
	111	550, 551	Hernia without mention of obstruction
	112	552, 553	Hernia with obstruction
	113	560	Intestinal obstruction without mention of hernia
	114	563	Chronic enteritis and ulcerative colitis
	115	561, 562, 564-569	Other diseases of intestines & peritoneum
	116	571	Cirrhosis of liver
	117	570,572,573	Other diseases of liver
	118	574	Cholelithiasis
	119	575	Cholecystitis and cholangitis without mention of calculus
	120	576	Other diseases of gall bladder and biliary ducts
	121	577	Diseases of pancreas
X	122	580-584	Nephritis and nephrosis
	123	590	Infections of kidney
	124	592, 594	Calculus of urinary system
	125	595	Cystitis
	126	591,593, 596-599	Other diseases of urinary system
	127	600	Hyperplasia of prostate
	128	605	Redundant prepuce and phimosis
	129	601-604, 606, 607	Other diseases of male genital organs
	130	610, 611	Diseases of breast
	131	612-616	Diseases of ovary, fallopian tube and parametrium
	132	620, 622	Infective disease of uterus, vagina and vulva
	133	623, 624	Uterovaginal prolapse & malposition of uterus
	134	626	Disorders of menstruation

Class No.	List No.	I.C.D. Numbers	Title
X	135	621, 625, 627-629	Other diseases of female genital organs
XI	136	630, 635	Infection of genital tract during pregnancy, and urinary infections during pregnancy and puerperium
	137	632	Hemorrhage of pregnancy
	138	636-639	Toxemias of pregnancy and the puerperium
	139	631,633,634	Other complication of pregnancy
	140	640-645	Abortion
	141	650	Delivery without mention of complication
	142	651-653	Delivery complicated by: placenta previa or antepartum hemorrhage, retained placenta, or other post partum hemorrhage
	143	654-657	Delivery complicated by abnormality of pelvis, fetopelvic disproportion, malpresentation or other prolonged labor
	144	658-662	Delivery with other complications including anesthetic death in uncomplicated delivery
	145	670-678	Complications of puerperium
XII	146	680-686	Infections of skin & subcutaneous tissue
	147	690-698	Other inflammatory conditions of skin and subcutaneous tissue
	148	700-709	Other diseases of skin & subcutaneous tissue
XIII	149	712	Rheumatoid arthritis & allied conditions
	150	713	Osteoarthritis and allied conditions
	151	710,711, 714-718	Other arthritis and rheumatism
	152	720-723	Osteomyelitis and other diseases of bone
	153	725	Displacement of intervertebral disc
	154	724,726-729	Other diseases of joint
	155	731	Synovitis, bursitis, and tenosynovitis
	156	730,732-738	Other diseases of musculoskeletal system
XIV	157	741, 742	Spina bifida and congenital hydrocephalus

Class No.	List No.	I.C.D. Numbers	Title
XIV	158	746,747.0-747.2	Congenital anomalies of heart
	159	749	Cleft palate and cleft lip
	160	750, 751	Other congenital anomalies of digestive system
	161	752, 753	Congenital anomalies of genito-urinary system
	162	754-756	Congenital anomalies of musculos-keletal system
	163	740,743,744, 745,747.3-747.9,748, 757-759	Other and unspecified congenital anomalies
XV	164	764-768 with 4th digit .0-.3, 772	Birth injury
	165	764-768 with 4th digit .4, 776	Asphyxia, anoxia or hypoxia
	166	774, 775	Hemolytic disease of newborn
	167	777	Immaturity unspecified
	168	760-763,764-768 with 4th digit .9, 769-771, 773,778, 779	Other causes of perinatal morbidity and mortality
XVI	169	793	Observation, without need for further medical care
	170	780-792, 794-796	Symptoms, senility and ill-defined conditions
XVII	171	N800-N804, N850-N854	Fractures of the skull, and other intracranial injury
	172	N805-N809	Fractures of spine and trunk
	173	N810-N819	Fracture of upper limb
	174	N820,N821	Fracture of femur
	175	N822-N829	Other fractures of lower limbs
	176	N830-N848	Dislocation without fracture, sprains and strains of joints and adjacent muscles
	177	N860-N869	Internal injury of chest, abdomen and pelvis
	178	N870-N929	Laceration, open wound, superficial injury, contusion and crushing with intact skin surface
	179	N930-N939	Foreign body entering through orifice

Class No.	List No.	I.C.D. Numbers	Title
XVII	180	N940-N949	Burns
	181	N950-N959	Injury to nerves and spinal cord
	182	N960-N979	Adverse effects of medical agents
	183	N980-N989	Toxic effects of substances chiefly non-medicinal
	184	N997-N999	Complications peculiar to certain surgical procedures, other complications of surgical procedures and other complications of medical care
	185	N990-N996	Other effects of external causes
XVIII	186	Y 00-13, Y14, Y15	Special conditions and examinations without sickness
	187	Y 20,22,23, 26,27	Mature infant
	188	Y 21,24,25, 28,29	Immature infant