A PRELIMINARY INVESTIGATION OF A PHYSIOTHERAPY HOME PROGRAM FOR PATIENTS WITH CHRONIC OBSTRUCTIVE AIRWAYS DISEASE

by

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ABSTRACT

The number of hospitalizations for patients with chronic respiratory disease, before and after entry into a home program of physiotherapy was reviewed. This disease progresses slowly and inexorably and involves considerable morbidity. The physiotherapy program, in the investigation, provided patient and family education as a major component in its management approach. The number of days of hospitalization for two years prior to entry and two years after entry to the physiotherapy program was reviewed. The hypothesis was that those people who were in hospital during the two-year period prior to receiving home care physiotherapy would experience hospitalizations either at the same or a reduced rate for a two year period following entry into the physiotherapy program. In addition a consumer satisfaction phone survey to patients with this disease was carried out. This survey evaluated how patient and family perceived the therapy services they received in the home and the impact that such services had.

The results of the investigation demonstrated an actual decrease in days spent in hospital for respiratory disease following the initiation of the therapy program. Statistical

analysis did not demonstrate that the change was significant. The consumer satisfaction survey indicated that those in receipt of the services felt that the program was beneficial in assisting them to improve their health status.

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Introduction

In recent times, it would have been difficult for anyone to have avoided the increased concern regarding the issues relating to the care of the chronically ill and the elderly. Much has been written in newspapers and magazines, as well as in scientific literature on such topics as the ratio of long-term to acute beds in the community, unemployment and housing, and social support systems. This has focused attention on the increasingly scrutinized chronically-ill and/or older population. Within the medical community, concern expresses itself in the following ways:

1. distress over the plight of the elderly and the chronically ill,
2. the inadequacies of the system to meet the needs of these people and,
3. anxiety over the increasing conversion of acute care hospitals into institutions which primarily deliver chronic care services.

Solutions are sought to alleviate or address either one or all of the above under a wide variety of labels (Clarfield, 1983).

The chronically ill have the same basic needs that we all have: food, clothing, shelter and a sense of belonging, (Department of National Health and Welfare, 1982).

When considering the above needs, one might ask what the ideal system of health care for such groups might be? A simple answer is that it should be one that meets all of the above needs in a co-ordinated and comprehensive manner, in a respectful and humane way, and runs as efficiently as possible. The system of care should be able to respond to a population who are normally well, but who require intervention when faced with an accident or acute medical or surgical illness. In addition, it also should be capable of managing the increasing numbers of people suffering from chronic diseases and functional impairment. Few countries in the world can match the Canadian system for its ability to manage acute care effectively at any age . It is struggling, however, to deal efficiently with caring for the chronically ill and elderly.

Clarfield pointed out in 1983, that in order to care for the increased numbers of chronically ill and often housebound individuals, "a whole gamut of co-ordinated services is required" (p. 2).

In this investigation the idea of physiotherapy care in the home will be discussed as, one of the elements which can contribute in any health network. Specifically, this service will be reviewed as it is provided within the home care program in

Manitoba, particularly in its relationship to those individuals with chronic obstructive airway disease. The review will examine what it is, how it works, why it is needed, its promise and problems within this particular setting and framework.

Definition of Home Care

Home care "may be defined as the co-ordinated delivery of a broad range of health and social services to meet the needs of the persons who require assistance or support in order to remain at home or whose functioning without home care is likely to deteriorate, making it impossible for the person to stay at home in the community.

Health is defined as the state of complete physical, mental and social well-being, not merely the absence of disease" (p. 1) (Province of Manitoba, 1983).

Rationale for Home Care

It is only in the past few decades that the hospital has begun to replace the home as the main site for health care. Since that time, however, hospitals have assumed an ever more important position in the health system. They serve as a location for the ever-increasing technological side of health care. The home as an important place for the sick to be cared for has been replaced by the hospital for many understandable reasons: technological and social pressures, economic, staffing and academic considerations.

This era may be coming to an end, however. Hospitals will, of course, always maintain a very important role in health care and no one would suggest that we could manage without them. If for no other reasons, however, economic considerations indicate that there is a limit to the number of large buildings, which are costly to staff and to equip, that any society can afford to build or maintain.

Currently, chronically ill patients and some of the elderly are beginning to fill up existing hospital beds and to compete with acutely ill patients for increasingly scarce resources. Debates concerning the appropriate distribution of acute and chronic services have been common. Studies have shown that many institutionalized patients could be adequately cared for at home if the appropriate community services were made available to them (Schreiber & Hughes, 1982; Kirstin & Morris, 1972).

Why then, are some hospital beds backlogged with people who really do not need to be there? The answer is both simple and complex, based on what Branch (1976) pointed out. "The choice between either being in an institution with the unneeded services and being on one's own without the needed services is really no choice at all" (p. 111). If patients are to be allowed and encouraged to stay in their own homes for as long as possible, then our medical system must adjust, both from the standpoint of the institution and the community. One cannot possibly function without the other and each must assist the other in order to achieve the best solution.

Home care is not a panacea for inappropriate institutionalization but it does have a definite role to play for certain patients, particularly those with functional disabilities and chronic diseases, in the right place and at the right time in their illnesses. There is a great deal in the literature to support Shapiro's (1979) statements that home care, if properly prescribed, is thought to:

1. Encourage more rapid recovery from acute illness and be more satisfying to the patient.
2. Facilitate functional rehabilitation.
3. Reduce in-hospital stays and the number of admissions.
4. Be cheaper than institutional care.
5. Be a cost-effective method of care.

The difficulty of proving these claims by research has been much discussed. Many have debated and challenged some of the above mentioned claims, especially those that are related to the cost effectiveness of home care. There is, however, a growing body of literature describing case studies and other research which supports the benefits of home care. These issues will be discussed in greater detail in Chapter II.

In the Canadian population, respiratory disease is one of the most common chronic diseases limiting patients' abilities to perform on the job, as well as in their activities of daily living. There were 13,734 patients in Manitoba noted as having some form of respiratory disease in a study conducted in 1983 (Manitoba Health Services Commission Handicapped Transportation Study, 1983). It is the most rapidly growing health problem in the United States (Petty & Nett, 1969). In Great Britain it is the major single cause of disability for individuals between the ages of 35 and 74 (Rutter, 1979).

Definition of Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease or chronic obstructive airway disease (COPD or COAD) refers to a group of diseases that produce permanent impairment of lung function. Clinical characteristics are: shortness of breath on exertion, cough and progressive disability (Agle et al, 1973). Once severe COAD has developed, it progresses slowly and inexorably and leads to considerable mortality (Lertzman & Cherniack, 1976; Hugh-Jones & Whimster, 1978; Postma, Burema, Gimeno, May, Smit, Steehuis, Weele & Sluiter, 1979). The rate of deterioration is independent of the extent of the disease and has been described as constant and linear in nature. Little can be done to alter the progressive deterioration of the lungs (Reid & Loveridge, 1983).

Treatment methods are aimed at the symptoms of the disease and designed to prevent further deterioration due to infection. None of the therapeutic measures used are effective in curing the disease. The aim of treatment is to slow or arrest progression of the underlying disorder and, insofar as possible, maintain function. The problem of long-term management of persons with COAD therefore requires not only medical, but also physical, social and emotional support (Grossman, 1963; Sherman & Gingras, 1965).

Many of the studies reviewed, expressed concerns about the numbers of people affected by chronic obstructive airways disease. In "Easy Breathing", a publication of the Manitoba Lung Association (May 1984), it was reported that emphysema, one of the diseases considered as part of chronic obstructive airways disease, has a rising incidence rate. The publication goes on to say, "it is believed to be the major cause of death for over 1,000 Canadians each year while other estimates indicate that the prevalence of this disease may be approximately 40 per 1,000 throughout the population of North America" (p. 1). Petty et al (1970) reported in a study that "disability from chronic airway obstruction (CAO), emphysema and chronic bronchitis, rank second only to heart disease in social security disability payments" (p. 71). Fuhs & Stein (1976) quote 1974 figures in their article on

COPD. They indicate that 13 million Americans currently suffer from the disease and that most of them are men over 45 years of age. They also state that the disease is on the increase, and that the death rate from it in 1970 was 15.2 per 100,000 population. They go on to indicate that this death rate is triple that of two decades previously. Kaplan, Atkins & Timms, in their paper (1984), state that COPD is the leading cause of bed disability and the 4th leading cause of limitation of major activity. The economic costs of COPD they report as being staggering and may be as high as $15 billion per year for health care costs, time lost from work and lost wages in the United States.

While the management of patients with chronic airflow obstruction has improved considerably over the past few decades, no therapeutic measures are curative. As Cherniack and Lertzman (1977) indicated, "the major goals of this care are to improve function, and thereby reduce symptoms and to undertake all possible measures to return the patient to a useful, independent place in society. Even when achievement of the latter is limited, because of the severity of the disturbances present, efforts to improve physical performance and the 'way of life' are essential" (p. 1219). These authors also state that programs have to be highly individualized for such patients and indicate that the major thrust of the management of these patients should be directed towards overcoming, as much as possible, the functional disturbances that are present.

As previously stated, chronic obstructive airways disease is considered to be, at best, slowly progressive and acute exacerbations of the disease occur over many years after the initial diagnosis.

As Lertzman and Cherniack (1976) discussed, COPD requires sustained therapy and the importance of the allied health professionals' contributions has led to the development of organized home care and rehabilitation programs for the integrated management of patients with this disease. This integrated, or team approach to management of chronic disease, is borne out in other studies (Cherniack, 1972; Hudson & Parson, 1981; Davies, 1981; Petty & Cherniak, 1981; American College of Chest Physicians, 1974).

The need to design and develop models which can provide programs and services to address the problems of COPD and other chronic diseases has been recognized. The need for long-term support from the health care system and for the patient to be an active participant in a continuing program of care also has been receiving increased attention in other literature (Grossman, 1963; Bennett, Garrard & Halil, 1970; Sherman & Gingras, 1965;

Librach, Davidson & Peretz, 1972; Nett & Petty, 1978).

This investigation was undertaken in keeping with this emphasis on exploring alternative methods of care for patients with chronic disease.

Introduction to Purpose

Physiotherapists have a long history of involvement in the management of patients with COPD. Their educational background involves anatomy, physiology and exercise training, and equips them uniquely to work with patients with this disease. They also are capable of co-ordinating problem-solving methods for the physical and functional difficulties that inevitably arise for this patient group. While there have been some articles which have documented the role that the physiotherapist plays in a co-ordinated team approach to the management of patients with COPD, the majority of these have been studies done while patients were in hospital. There is little in the literature regarding the impact that physiotherapy intervention has in the home and yet the home is an area where many factors which influence the successful management of a patient with COPD are centered. These factors include:

1. The individual with COPD is frequently confronted with decreasing ability to perform tasks which are important to him such as descending and climbing stairs, preparing meals, bathing,

gardening, and household maintenance.

2. Family and other social support systems are readily accessible to health care professionals in the home. In the hospital, it is not always possible to observe the interaction between patient and family and friends so readily.

3. Meaningful exercise programs and life style modification can be established in a familiar environment. This allows the patients to increase their tolerance while working towards goals that are important to them, such as employment for remuneration, shopping, yard work, hobbies, etc.

4. Patients at home are usually in "better" health than when in hospital and more capable, physically and mentally, of accepting, retaining and implementing educational and treatment recommendations.

Patient and Family Education

Education is a major aspect of any home care program (Nett & Petty, 1978; Journal of The American Medical Association, 1966; White & Briggs, 1980; Young, 1978). As with other conditions, it can and does encompass a wide range of approaches in respiratory rehabilitation. It must be designed to increase the capacity for the patient to perform self care and to remain as independent as possible with normal activities. The goal of education is to provide patients and/or family members with background information and the skills necessary to enable them to function at home and to avoid hospitalization. It is important to instruct and clarify all material in the patient's own normal environment. Particular emphasis must be placed on the recognition of early symptoms of respiratory infection. Preventive measures and tips for common sense living are stressed in an effort to underscore the ability of the patient to control his own disease.

Patients and their families must be skilled in a number of areas in order to successfully manage respiratory disease. These may include use of appropriate support items such as, medication, compressors and nebulizers, air moisturizors, as well as breathing exercises, vibrations and postural drainage, and effective cough techniques. All of these are designed to promote improved clearance of bronchial secretions. The importance of adequate fluid and diet intake may need to be stressed as well as that for graded exercise routines. There is little research that confirms that these respiratory techniques or interventions have a scientific basis for benefiting patients (Reid & Loveridge, 1983; Fishman & Petty, 1971; Petty, 1978; Petty, Hudson & Neff, 1973; Cherniak & Lertzman, 1977), however, they form the basis of the current approach to management.

Patient and Family Counselling

Psychological support and counselling are important aspects of any program. Many of these patients, during the course of their disease, may experience anxiety, depression, guilt, anger and frustration with their disease and the limits that it places on them and their family.

Guilt is sometimes associated with having continued to smoke for a period of time following advice not to.

When faced with 24-hour a day, seven day a week problems with breathing, depression may be a normal, as well as, a realistic reaction. Patients may adopt other behaviours in order to help them cope with the disease. Some patients practice denial. This may be indicated by reduced, or lack of, compliance with recommendations made by the health care team. As McDonald (1981) has pointed out, "Patients may use the 'yes, but' response to each suggestion and will repeatedly thwart efforts ... to improve their situation" (p. 267). It is important that health care professionals in the home provide support and guidance for effective communication between the patient and the family in order to help them all understand and deal with the emotional variations.

Direct Patient Care and Support of Home Care Services

Under the auspices of the Manitoba home care program, many of the patients included in this study had a variety of other services available to them. Direct care services can often be surprisingly small for the home management of respiratory patients. Some patients have homemakers who assist with the preparation of meals and some household tasks. Other respiratory patients may have the services of nursing staff to assist them with bathing or to monitor medications.

Therapists may provide postural drainage and percussion in conjunction with nursing staff during acute episodes. This approach may be used if it has proved to be helpful in the past and if family members are unable to provide it for the patient. A variety of other community resources are available to assist the individual to remain at home. For additional information on co-ordination of these services please refer to Appendix B.

The physiotherapist will assess and establish a care plan at the time of the first visit. On subsequent visits, changes may be initiated if indicated and feedback provided to other health care personnel involved in the care of the patient. (Please see Appendix C for a sample report.) The therapist will contact the physician when poor compliance with the medical regime is detected, and advise him on any deterioration of the patient's physical state. The therapist will explore reasons for the development of this problem in the patient's surroundings, and the human dynamics of the family and the home situation will be observed.

Criteria for Referral to Home Care in Manitoba

Not all patients are ill enough to require home care nor is the home necessarily the optimum place where they should receive therapy. The above criteria indicate those persons in the province who are eligible for such care. Many of the respiratory patients that are seen by physiotherapists are those who have experienced the following:

1. Unstable cardiopulmonary status
2. Frequent hospitalizations
3. Those who are anxious, depressed or who have demonstrated limited understanding of the treatment regime while in hospital.
4. Patients whose care places a heavy burden on their family.
5. Patients who do not have family or other support.
6. Patients whose physical tolerance restricts them from attending for out patient follow-up services.

Sometimes discharge from hospital may occur before education programs or full instruction and comprehension has been able to be completed. This places the patient under increased stress to carry out things that he may not fully understand. Even when hospital instruction is unhurried and discharge is planned for over a longer period of time, many patients find it difficult to transfer knowledge from the hospital to the home. This is probably due to a variety of reasons such as anxiety, difficulty with learning owing to chronic disease and hypoxemia. Any patient who is discharged from the hospital with a major change in his program should be referred for home care. The literature does indicate some studies that describe the impact of respiratory home care programs (McDonald, 1981; Roselle & D'Amico, 1982; Petty, Nett, Finigan, Brink & Corsello, 1969). These programs involved home follow-up by nursing and respiratory technicians. Patients did improve their functional capacity. This is achieved in spite of the fact that many patients with chronic obstructive pulmonary disease do not have reversible disease. Nevertheless, improved exercise tolerance can be sustained for years (Peach & Patby, 1981; Petty, 1974; Hudson, Tyler & Petty, 1976). This continued follow-up seems to support patients and families to accept more responsibility and to be better prepared to assess early changes in cardiopulmonary status and to initiate appropriate remedial action.

Cherniack & Lertzman (1977) describe many aspects of the care of COAD patients that are provided in the home by the physiotherapists in this investigation. While they acknowledge that this approach to treatment is palliative, they substantiate that such regimes can enable patients to be kept at home and out of hospital, that invalidism can be combated, and exercise tolerance can be considerably increased, as well as improving the psychological adaptation to this illness. They speculate that, perhaps, early institution of continuous and intensive therapy with such patients, might reduce the rate of deterioration of function, as well as morbidity and ultimately affect the mortality rate of chronic obstructive pulmonary disease. Fishman and Petty (1971) and Berzins (1970) reported similar results.

Purpose of the Investigation

Based on the literature, little in the form of treatment or education can be done to alter the progressive deterioration of the lungs and this rate of deterioration has been described as constant and linear in nature. It, therefore, follows that there should be a steady increase in the number of days of hospitalizations for acute exacerbations over time for most patients. The analysis of the data in this investigation will attempt to show what impact, if any, that physiotherapy in the home has on the hospitalizations of this client group. The data for the analysis will be taken from Community Therapy Services home care records and include information from the computer records of the Manitoba Health Services Commission on hospitalizations. In addition, information will be obtained from a consumer satisfaction survey done with patients with respiratory disease.

This investigation will examine the following research questions:

1. Do those people with respiratory disease who were in hospital during the two-year period prior to receiving home care physiotherapy experience hospitalizations at a reduced rate for a two-year period following entry into the physiotherapy program?

2. Is this form of care perceived to be a satisfying one for patients and families?

Limitation of the Investigation

This investigation is limited by four major factors. The first limitation is that the persons involved in the investigation are not a random sample of all people with COPD. They are however, representative of people referred to Community Therapy Services of Manitoba, the agency involved in the study. Available demographic characteristics have been described in the investigation to assist comparisons with other groups who have similar characteristics.

The second limitation, involves the fact that all persons in the investigation were enrolled in the Provincial Home Care Program. As a result, other inter-disciplinary services were available to them through this program (eg. Victorian Order of Nurses, homemaking services). It is therefore difficult to control for variables that might have been introduced by such services. As well, rural and urban discrepancies exist between types and quantities of services. In an attempt to offset the possibility that any differences seen in the investigation were due to the impact of the presence or absence of services rather than the therapy intervention, two sub-sets of the groups in the investigation had their hospitalization data followed for a further two year period after discharge from the therapy program.

The third limitation is that predictor factors on hospitalization rates for chronic diseases are not widely documented. This makes it difficult to compare and examine the effect of intervention programs.

The final limitation involves the small sample size. Great care must be taken in drawing generalizable conclusions from the results and attributing them to the larger COPD population. This investigation is seen as a preliminary to a larger follow-up study.

Chapter II

Review of Related Literature

Patient and Family Education

A common theme in the literature is the need for information to be provided to patients and families. Berzins (1970), for instance, indicates that, along with patient education, family education is important in order that family members can assist and support the patient in living comfortably and productively within the limitations of his disease.

Many different components make up the total effective management of the patient with COPD. As Traver (1975) indicated, one aspect of such management is for health care professionals to provide information. She states:

> "commonly, a patient with chronic obstructive lung disease (COLD) is anxious and depressed, a realistic response to his condition. But if he understands his disease and treatment, he usually becomes less fearful and, therefore, better able to cope with his problems. Obviously, treatment which decreases his physiological symptoms may decrease behavioural symptoms. Many patients say that once they understand their symptoms and how to control them, they are able to do more because they are no longer afraid" (p. 1781).

The need for informing patients and their families about their illness is well recognized throughout the literature. Hasselkus (1983), states the following: "A new awareness of the complexities of health behaviour has led health providers to focus on the need to guide patients in understanding their illnesses, in developing strategies to continue daily life in spite of chronic conditions, and in acquiring adaptive skills for mastery and competency in living" (p. 55). She indicates that health education for adult patients is a form of adult education and that the idea of life-long learning is an important concept that does take place both formally and informally throughout life. In her paper, she quotes DiMatteo and DiNicola (1982) as indicating "the explicit goal of health education within the primary care context is client self sufficiency and the promotion of the practitioner/patient relationship as a partnership" (p. 56). She also outlines that patient educators must be aware that the characteristics of the individual learner are critically important to the learning experience.

The actual transmission of accurate information and facts is only one part of health education. Therapeutic communication also depends on the communication skills of the participants, the social situation of the patient and the physical and psychological conditions that are present as well as the understanding of what the client already knows and is ready and willing to learn and is capable of learning.

When dealing with chronic diseases, there must be a shift in health care goals from that of being curative to that of long-term management and care. Health education must be geared towards helping such patients with their personal autonomy and to maintain their competence as well as the ability to remain independent in their way of life. Hasselkus (1983) outlines some of the advantages and disadvantages of providing effective health education for older or chronic disease patients that require consideration:

1. Low self-esteem and internalized negative self-image.
2. Negative early life educational experiences.
3. A rich history of past experiences which may be capitalized on to encourage active participation.
4. Sensory impairments.
5. Diminished willingness to take risks.
6. Values which are incongruent with the new knowledge.
7. No perceived need for the new knowledge.
8. Subtle language problems.

These factors can influence the transmission and receipt of messages and, in that way, affect the educational outcome of any learning activities.

Further the most individualized approach to patient education is face to face instruction.

Hassalkus defines patient education as

"a term which refers to planned combinations of learning activities designed to assist people who are having, or who have had, experience with illness or disease, in making changes in their behaviour conducive to health. It is based on the premise that disease management requires new or changed behaviours and skills on the part of the affected person and that intervention toward return to health must be both therapeutic and educational" (p. 60). This is in keeping with the Health Belief Model (Hassalkus, 1983; Roberts, 1970) as a theory regarding readiness to take health action. According to this Model, health action by patients depends on:

1. the belief that they are susceptible to the disease,
2. the belief that the disease would have serious effects on their lives if contracted,
3. an awareness that action is possible and that such action will reduce the likelihood of contracting the disease or the severity of the disease, and,
4. a belief that the threat of taking the action is less than the threat of the disease.

These components, in combination, provide the patient with the motivation or lack thereof that triggers health behaviour. This Model is very similar to Mechanic's (1977) definition of illness behaviour. According to him, "patients react experientially to symptoms and illness in terms of their total life situation and the extent to which their total functioning is affected" (p. 80).

On the basis of these articles, it seems important that an individualized approach, based on individual beliefs and values, form the basis for any educational strategies which are implemented. The part that the life time experiences of the patient play in facilitating learning must be recognized. The partnership approach enables the health care professional and the patient to both have an active participatory role in the learning process. An emphasis on home environment and everyday functional factors creates an applied problem-solving component to the educational program. Each time that the patient and his family comes in contact with a health professional, provides an opportunity for a potential learning experience. Opportunities for positive reinforcement when appropriate behaviour change appears, must be incorporated into any educational package. With chronic conditions and illnesses, there are multiple behavioural changes required (e.g. physical reconditioning, modification of the home and activities, diet, medication), and these require a great degree of patient responsibility and self directed change. Such changes require continuing support and feedback, both from health care providers and family and significant others.

Many of the studies on research in patient education describe the educational programs and extol their values. There continues to be an on-going need for objective evaluation of whether patient education programs are being effective or not. It is generally agreed that health education programming should focus on patients with chronic diseases and the elderly persons within the context of their families and other support.

Educational activities should proceed from simple, familiar tasks to those which are more complex and unfamiliar. Feedback should be provided on what has been learned and also as new material is introduced, additional follow-up should be sought. Multiple cueing, that is, presenting the material through several different sensory channels, may be helpful in enhancing learning performance. In the home situation, it is possible to make direct application of material being taught in order that it be incorporated immediately to heighten its relevance and to facilitate learning. Active involvement of the learner should be a goal, not just passive listening. In keeping with the Health Belief Model, and adult education principles, the place to start is to explore what is important to the patient. As Parijs (1980) stated, adult educators are well versed in the conceptual basis, but not the content of patient education and health providers are versed in the content but not the conceptual basis!

As Nichols and Bogdonoff (1962) outlined, patients with chronic illness must be viewed in a so-called "sick role". This means a definite way of life, quite different from the role of health, which is vigorous, assertive and productive. This "sick role" implies limitations, tentativeness, reduced productivity, withdrawal, non-assertiveness and dependency. Chronic illness almost invariably establishes, to some degree, a new style of living for the patient and the people around him. Gradually, through time, patients with chronic diseases modify their expectations and their associates no longer expect them to perform in the same way as formerly. Many of these patients have been cared for by several physicians and have already experienced some disappointment when treatment programs instituted have failed to attain complete reversal of the disease process.

There is much support for the approach to health care education as being a behavioural one. As Bartlett (1982) has indicated, "the behaviourally diagnostic approach has been applied to a broad range of clinical problems, including chronic illness, health promotion and psychiatric care. Although we have no proof that arriving at a correct behavioural diagnosis will improve the effectiveness of patient education it seems plausible that educational efforts directed at the influences of behaviour will be more effective than those that aim solely at teaching the patient the facts of the disease and regimen" (p. 33).

Allison (1982) has discussed, however, that while self responsibility is a positive development to the extent that it has resulted in greater individual capacity for understanding and change of factors affecting individual health, it is important to keep the perspective that individual change alone cannot improve many contemporary health problems. For example, environmental pollutants pose a health problem, particularly for patients with respiratory disease and this problem remains, despite individual attempts to overcome it.

Murdock, Pack & Palma (1984) cited in their paper, the following benefits of patient education based on the literature which include "improved patient care, better utilization of services, fewer re-admissions, shorter length of stay, increased community support, and improved communication" (p. 85). They also describe the present challenge in patient education as not being whether patient education should be initiated, but rather that the efficiency and effectiveness of such programs be stressed. Much of this can be facilitated by paying attention to the linking of educational programs to patient outcome.

Another interesting paper by Strodtman (1984), suggests that patient education has come about, in part, as a result of the consumer's movement which has alerted people to their rights to receive health care, to be informed about their care, and to participate in care decisions. She goes on to state that patients are coming to recognize the value of such information themselves and that health professionals are recognizing their obligation to educate patients. Strodtman also includes the fact that the cost of health care has become a nation-wide concern and that this too has influenced the enthusiasm for any program which indicates that it may potentially decrease the cost of care and shorten hospital stays. She lends support to the increased interest in the holistic approach to health and disease. The impact that this approach has had on health care has been far reaching and its importance cannot be over-emphasized.

If it is agreed that health education is a good thing and an integral part of patient care, some decisions must be made about where it is most appropriately given, that is, in the home, in the community, in community health care clinics, or in hospitals. The literature indicates that various programs have been run in almost all these areas. Most frequently, services of a patient education nature have been delivered to patients while they were either in-patients in hospital or attending at hospitals for out-patient follow-up. Many of these programs have no doubt been effective and provided useful and helpful material on a wide variety of patient care topics. As Adcock et al (1979) have pointed out in their article in 1979, however

> "hospitals tend to be rigidly structured. Staff members occupy status positions that strongly affect both formal and informal communications. It is difficult for a free exchange of ideas to take place among groups and individuals within the hospital. Written policies and procedures developed over a long period of time ensure standardization and quality care but discourage experimentation" (p. 11).

In many of the above situations where patient education can be delivered, it is difficult to include family members in instruction.

One of the leading figures in health education, Beryl Roberts (1970), defined the nature and objectives of health education succinctly and positively in her paper. In it she described health education as well recognized today and a fundamental means by which to improve both individual and community practices. She goes on to say

> "it is an approach which helps people to become aware of their health problems; to apply such problems to themselves; to see the need to deal with a given problem; to sense

> whether the necessary action (health) fits in with their motives, aspirations, goals and values; to consider possible courses of action for dealing with the problem; to select the course acceptable to them; to commit themselves to this course (such as seeking early diagnosis, adding certain foods to the diet, or maintaining uninterrupted chemotherapy); and to adopt the necessary behaviour and maintain it. Moreover, education provides learning situations in which people sense social support from other persons important to them when they adopt new or modified health practices" (p. 2).

Roberts goes on to describe the educational approach as allowing people to make their own choice about moving off or on the acceptance-adoption-maintenance continuum at any point. As people employ these new health practices because they are self imposed, they are more meaningful to them and are integrated into their life patterns. Such health practices are longer lasting once adopted. Roberts also feels that much influence is exerted by "important others", and that educational efforts must reach such other people and groups as well as the patient. She also feels tremendous opportunities for education open up in connection with the services various health workers render and that the relationship and rapport they build with people offer a strong base for such education.

Fralic (1981), in her paper on patient education, emphasizes the importance of providing individualized health teaching for the patient and/or significant others. She also suggests that many past efforts of teaching were "random, episodic, intuitive, and without structure or system" and goes on to describe the distinguishing characteristics of today's patient teaching efforts as including: "1. an organized system, 2. deliberate incorporation into the patient's plan of care, and 3. inclusion of teaching as an integral part of the nursing process" (p. 37). Her points are well taken and, over the course of the years, the physiotherapy staff in this investigation have developed the educational component of their home visiting routine with COAD patients along similar lines.

Simonds (1976) has pointed out that health care professionals are in the position of being generalists "who must synthesize data from many fields of knowledge in order to apply them in their work" (p. 3).

Much of the health education carried out in the North American continent would seem to be being done by what Simonds described in 1976 as the "compromise" model. He describes this health model as being a combination of two other models, the specialist and integrated model and depends on there being some health education specialists available in the country but, in addition, health education being integrated into the professional activities of other health care deliverers.

Although few health care professionals would deny that there are aspects of health education that they perform and many would feel that there are specially trained health educators on whom they can rely for support, there are many who are critical of the current state of the art. Sprank and Warmenhoven (1983) described patient education as a "broad, non-specific term with many meanings" (p. 68). They also indicate that, although the numbers of studies on patient education are increasing, most of these studies have limited range. The results that are available from these studies, however, show systematically that patient education has a positive effect.

Given the uncertainty in the minds of some about the benefits of health education, anyone undertaking research in an attempt to quantify what in actual fact health education does accomplish, must believe like Davies (1980), in his paper, in "the tenet that educating the public about health and disease will improve the health and well-being of our citizens" (p. 1476).

Rosenberg (1971) described a patient education program for patients with a history of congestive heart failure. These patients were very similar in type to the chronic obstructive airways disease patients in this study. They, too, were characterized by recurrent attacks requiring immediate hospitalization, which might potentially be prolonged into a period of weeks. Such recurrent re-admissions to hospital disrupted the patient's life, were costly to him and his family or the community and produced acute anxiety for the patient because of the fear of recurrences and potential of resulting in death. While this study concluded that their co-ordinated approach to education was effective, an interesting side comment was that the approach to the whole person, rather than to just the disease, was of paramount importance. Treating the person is much more important and it was felt by one member of this multidisciplinary team that you cannot treat a person without knowing his social background. There was a consensus that such an approach was valuable and should be extended to all patients with chronic diseases.

Bille (1977) reported that health care consumers are seeking knowledge about illness and no longer believe that such information is the exclusive property of health care professionals. His study showed that patients learn almost as well in an unstructured setting as they do with a structured teaching format and, further, that compliance was not significantly related to the patient's knowledge about his disease entity. There was also a suggestion in the study that a warm, interpersonal relationship may be a predictor variable in complying with post-hospitalization prescriptions.

Parijs (1980), talks about the work of social epidemiologists and scientists in enlarging the scope of health education in the domain of secondary and tertiary prevention. He credits Kasl & Cobb (1966), Blackwell (1963) and Lazes (1979) for this interest, as well as concerns and research activity into the delay in seeking medical care, self care and compliance. Parijs also has stated that "in curative service contacts, the element of biological crisis dominates and education is to be scheduled at teachable moments" (p. 214).

Bartlett (1984) had some very interesting things to say about patient education. He quotes research as finding that recent studies demonstrated that behaviourally oriented patient education is two to three times more clinically effective than education of purely didactic nature. Bartlett goes on to describe a "stepped approach" to patient education. The steps that he describes are:

Step 1. Use interpersonal skills to:

(a) establish rapport, and

(b) reduce anxiety and fear.

Step 2. Teach the patient about the illness, regimen, and other health matters.

Step 3. Overcome obstacles to behaviour change by:

(a) assessing the extent of the patient's non-adherence,

(b) identifying the obstacle(s) to non-adherence (the behavioural diagnosis), and

(c) overcoming these obstacles to adherence by improving social support, use of behaviour modification techniques, peer group discussions and other methods.

Freudenberg (1984) cautioned health care professionals that they may make chronic disease patients unnecessarily dependent on them and diminish their self-esteem and autonomy.

Richards (1975) described health education as "lying fairly and squarely at the crossroads of social science and medicine" (p. 141). He goes on to state that "just as the absolute boundaries of health are difficult to define, so too is it difficult to specify where Health Education begins and ends" (p. 141). He indicates that something more than the removal of ignorance is necessary and that, while the problem often appears simple, the solutions are neither easy nor quick. Such solutions must be based on education and learning theory strategies and successful intervention will result only if a two-way process can be established with the health educator becoming involved and working with and through people to achieve the desired results. He quotes John Ruskin's statement that "education is not that one knows more, but that one behaves differently" (p. 143). With the advance of modern medicine, he sees us moving from concerns with acute care to that of the morbidity and mortality associated with chronic diseases. He describes this shift from disease cure to prevention and health maintenance and comments on the need for voluntary participation from people to adhere to recommended regimes. He notes that today's health care consumers are much more aware of their own ability to become involved in the mechanism of the health delivery system and are much less willing to play a subservient role. This supports the "whole person" or holistic approach to health problems.

Webb (1980) states that poor patient compliance with physician recommendations is a major problem in treating chronically ill patients and that one of the major tasks in treating such patients is the identification of strategies to improve compliance. Accordingly, she describes several patients' characteristics which are thought to be related to compliance. These include, "knowledge of disease, anxiety level and locus of control orientation, measuring the extent to which an individual believes his actions alter events in his life" (p. 1048).

Rand (1978) found that previous studies of patient education in the traditional method of one on one communication had often demonstrated little effect on the knowledge or compliance of patients. She also described the importance of reinforcing factors such as those influences that health professionals, family or friends might have on shaping a patient's health behaviour. In her experience, patients who have learned appropriate health principles would find it difficult to follow through in the home setting unless family members were supportive. The ultimate carry over of changed health behaviour into the home setting is paramount in order to obtain long-term results.

Grover (Grover & Miller, 1976) sums up his guidelines for making health education work with these words, "clear messages and proper reinforcement need to be combined with consideration of the environmental factors which may enable or hinder the patient's in making the necessary behavioural changes" (p. 253).

Warner (1983) has reservations about "patient education". In his estimation, the patient education programs reported in the literature, lack the ability to effectively and empirically defend themselves. He goes on to say that if the overall effectiveness of patient education is uncertain, it is therefore not able to be described as cost effective either.

Roberts et al (1983) however state that "health education and self care have been shown to be effective and efficient in the management of a variety of chronic conditions such as diabetes and hypertension" (p. 1986).

Mazzuca (1982), in his review of 320 articles on patient education comments that over the last 50 years in the United States, acute infectious diseases have declined in prevalence and chronic illnesses such as hypertension, diabetes, lung and heart disease affect more Americans than ever before. He describes patient education as being accepted by many disciplines as a valid part of chronic disease management and that such education is designed to teach the patient about his disease and its treatment. Those patients who have received such instructions, are presumed to be in a better position to participate in their own health care and to maximize therapeutic benefit. The finding from this review was that

> "the literature shows clearly that behavioural (regime oriented) instruction has therapeutic value. Patients need to know less about the pathophysiology of their disease and more about integrating new demands into their daily routine. Moreover, patient education must begin that change. Among the more successful interventions were regular contact with the same health care professional, control over stimuli and rewards for progress, establishment of mnemonic systems and daily self care rituals ... A patient education program conceived and designed to help patients cope with their unique self management plan is much more likely to improve the course of chronic disease than is a standard presentation

of medical facts and treatment rules" (p. 528).

Brown & Margo (1978) document concerns about the narrowness of the health educator's role that emphasizes the changing of individuals rather than social conditions. They suggest a model of health education that takes into account the multiple causes of diseases and recommend that health educators concern themselves and commit more energy to progressive social change. They are critical of health education programs that measure their effectiveness by changing behaviour of individuals rather than concentrating on reducing morbidity and mortality statistics.

Levin (1978) in his paper on patient education and self care, describes the role of the professional who interacts with patients from a different perspective. It is his premise that self care duration does not assign a "sick role" to a patient and that educational goals are initiated in response to a state of the disease based on the learner's perceived needs and preferences. The content of educational programs, therefore, is learner determined. It is his belief that the goal of patient education must be to encourage the patient's self sufficiency. We, therefore, must restrain our professional instincts to identify more needs and to organize yet more educational care. Our job is to hold to the minimal necessary professional input and to evaluate our success in terms of reducing client or patient dependency on our services.

Standard & Kuplun (1983) view health education, as it is currently provided, as a basis for improving the ability of individuals to think and act constructively in identifying and solving their problems. This approach, coupled with the fact that health, science and technology have reached a point where their contribution to the "further improvement of health standards can make a real impact only if people themselves become full partners in safeguarding and promoting health" (p. 61), means that education must cover all the relevant factors associated with lifestyles in a comprehensive fashion.

Posavac (1980) describes the shift to increased patient education as being largely due to the majority of patients being treated for chronic conditions that cannot be cured and must be lived with and coped with in the best possible way. He describes chronic patients as being unlike acutely ill patients in that they are responsible for following the extended treatment regimes prescribed for their condition.

Logue (1984) identifies home care as a potential area of patient education that has not been maximized. She also comments on the shift in the profile of patients seen by home care agencies, in that many patients are more acutely ill (particularly the elderly patients) and less education may have been able to be accomplished in the hospital as a result of earlier discharges. As Marietta Stanton (1983) elaborated in her article, "patient education has always been a part of the professional responsibility of physicians, nurses, and other health care professionals" (p. 14). She describes patient education as being directed usually towards individuals who already have manifestations of a particular disease process. It focuses on the individual's current health care needs related to that health problem and its primary goals are to alter unhealthy behaviours which would predispose the individuals to their present state of ill health, and to facilitate the patient's adaptation to the problems or limitations of that disease process in order that they may attain their maximum health potential.

Stanton sees patient education as an integral component of care. It is shaped by the particular patient illness, by the nature of the treatment plan and the individual needs of the client.

Stanton quotes that "planned educational experiences for selected populations of patients have produced evidence of better compliance with medical regimens than individuals who have not been offered such educational opportunities" (p. 16). She comments that families have also been found to be more co-operative when included in the educational process and in assisting the patient with follow-up.

Stanton also quotes Timmreck (1980) in her article as emphasizing the need for adaptation of the program to meet individual learner differences in order to increase the program's effectiveness.

Some of the advantages of providing education for chronic obstructive pulmonary disease patients in the home, that the program in this investigation, has found, are the following:

1. The program may be staged and presented over a period of visits, depending on how quickly the patient and his family are able to progress through and comprehend the material.

2. The program can be adjusted by the therapist to make it more understandable for patients and families with varying educational backgrounds.

3. The spouse or other family members are frequently available to participate in the teaching or treatment sessions with the patient.

4. The patient and his family are able to interrupt at any time to ask questions as they arise or the program can be discontinued when the patient needs to rest or, perhaps, think about what has been said.

5. Between the therapist's visits, the patient and his family are encouraged to write down any questions that they may

wish to raise at the next visit of the therapist.

It is gratifying to see how frequently family members are appreciative of the opportunity to understand the patient's disease process more clearly and to participate in the management of that disease.

As Panarese & Liversidge (1979) pointed out in their paper, those of us involved in delivering health services in the home have often heard the value of home care programs as being able to reduce the days of hospitalization by allowing earlier discharge of patients. According to these authors, perhaps, an even greater potential for cost saving and/or benefits lies in the education of patients in the home in order to avoid hospitalization. The program that they describe had the following objectives:

1. To help COPD patients and their families adjust to the limitations of their illness.
2. To encourage patients to become more active.
3. To assist patients and families to recognize the complications of the disease and to take appropriate action.

Brashear & Rhodes (1978) also quote the goal of rehabilitation as being to help individuals to cope with chronic disability. Since this is a life-long problem, it is important for patients and their families to understand the nature of the disease, the fact that it is chronic, the rationale of different therapeutic approaches and what they may reasonably expect from therapy. They go on to describe that many people are treated for months or for years for COPD and have little idea of the nature of their problem, other than its symptoms. In summary, they comment that "patients must be given accurate information about the disease and its effect on their future and be allowed to ask questions and voice the many anxieties they have about these problems" (p. 244). They go on to elaborate that no simple formula of care can be prescribed that would be suitable for all chronic obstructive lung disease patients. Treatments must be individualized and changed as the patient's condition improves or deteriorates.

Silton & Levin (1979) in their evaluation of self care, have said that self care accounts for a significant proportion of all health activity. They define self care as being "that array of activities undertaken by individuals for their own or their family's benefit" (p. 201). They quote Pratt (1976) as having summarized a number of studies on self care and that her findings suggest that families provide much more health care than is provided by the professional health care system. These activities performed "cover almost the entire spectrum of health care-health promotion, disease detection and treatment, and maintenance of chronic disease" (p. 204). It would seem that there is a mutually compatible goal for health care professionals providing services into the home and for the advancement of self care programs. The goal being to reduce dependence and enhance self confidence in health. These authors describe the need for educational methods with a self care perspective to be focused on shifting the locus of control to the individual and to reduce dependency on professional services. In order to attain this, educational methods which are selected, should provide many opportunities for patients and their families to practice and test their skills.

Currently, the discussion and interest in such aspects of health as: health education, prevention, self care and individual responsibility, would seem to have come about as a result of some of the following aspects as described by Katz & Levin (1980):

1. Medicine's depersonalization, and over-specialization and concentration on technology having led to a general loss of confidence.

2. The health care system's embodiment as fragmented and episodic, rather than comprehensive and continuous care.

3. The changing nature of morbidity, so that chronic illness is now more prevalent as a health problem, particularly in technologically advanced countries.

4. The drive toward greater control of one's own life and destiny and the rise of consumerism in the belief that we, as

individuals, can positively discover, control and affect our own health and our risks of illness.

5. An understanding of the relationship between environment and illness and of other stress-related disorders.

6. The popular appeal of such programs as diet, exercise, meditation and other practices.

7. The increasing numbers of self help groups in the health fields which provide social care and mutual aid and give material and emotional support to their families.

In summary, they state that "the movements of self care and self help constitute a social development of great variety, breadth, and dynamism, about which few generalizations can be made" (p. 330).

Cost Effectiveness

To summarize the work on health economics, Roberts (1979) has pointed out the following,

> "The maximum benefit to be achieved by eradicating a health problem can be considered as the elimination of all its costs. The primary costs of a health problem are of two kinds:
>
> (a) The direct cost of treating the manifestation of the problem, of providing health care, rehabilitation, etc.
>
> (b) The social costs of death, disability, pain and

> suffering, etc., suffered by those individuals and groups affected by the problem.
>
> We can consider the sum of (a) + (b) as the total cost of the problem, which cost, if eliminated, becomes a benefit" (p. 224).

Roberts goes on to describe that when any program such as health education is added to existing services, it must be considered as a sacrifice of other benefits that might have been enjoyed had the money been spent in other ways on other programs. We, therefore, have to know what limit should be set on investments in health education. We must invest only in those programs which can demonstrate that there is greater benefit to be yielded in comparison with the level of investment.

Cohen & Cohen (1978), feel strongly that health education is not the panacea that many people wish for in solving the escalating costs and the low returns of disease oriented medicine. They state that "higher health costs and stagnating mortality rates can only be comprehended and solved in the context of the whole society, not on an individual level" and that "real changes in health must entail a difficult and protracted struggle" (p. 720). Their paper focuses on the four principle causes of mortality, those being: 1. circulatory system disease, 2. neoplasms, 3. accidents, poisonings and violence, and

4. respiratory disease.

As LaVor and Callender (1974) pointed out in their paper in 1976, "home health care has been the subject of a long and continuing debate; little agreement exists on the goals and purposes of that care, the kinds of population groups it should serve, or the costs and benefits to be expected" (p. 866). While the debate continues, there has been some progress made regarding studies into the effectiveness of home care delivery programs since the time of this article. The definition that they use of home health care is applicable to the Manitoba scene as well. Their definition is "an array of services which may be brought into the home singly, or in combination, in order to achieve and sustain the optimum state of health, activity, and independence for individuals of all ages who require such services because of acute illness, exacerbations of chronic illness, long-term or permanent limitations due to chronic illness and disability" (p. 866). They go on to elaborate two major goals of home care as being to keep people in their normal environments, and to aid people in recovering after an institutional stay. These authors describe three levels of care available in the home which are: 1. the intensive level, 2. the intermediate care level, and 3. basic or maintenance care. The basic differences being the amount of service provided, the numbers of people involved in providing the care and the training of those people.

One of the conclusions which LaVor and Callender point out, is that the greater the level of an individual's impairment on home care, in general, the greater is the cost of units of care. They also identify one of the fundamental problems in talking about cost effectiveness in home care as being what you compare the cost to. For example, while the acute, intensive level of home care might be considered very costly in comparison with a nursing home, it is not, perhaps, that expensive when compared with the cost of care in hospital.

The difficulties in controlling for all the variables is a well recognized problem in research. As Hammond (1979) discussed in his paper, in his overview of the literature on cost effectiveness in home health care, much of what has been written in this area concentrates on the cost benefit analysis approach. That is to say that "the cost of a health expenditure is compared with estimates of the monetary value of the benefits that are realized as a result" (p. 305). He considered three categories of benefits and costs which were direct, indirect and intangible. Those he described as "direct costs include resources used in caring for the patient, such as physician services and pharmaceuticals. The loss of earnings by the patient that result from his or her inability to work is an example of an indirect cost. Pain and the inconvenience of illness are intangible costs" (p. 305).

While Hammond concluded that the evidence from the studies that he reviewed suggested home health care as being less expensive than extended hospitalization, he felt that the limited number of articles available for review dictated caution in drawing a similar conclusion regarding the effect such home care might have on unnecessary hospital admissions. Information available to him indicated that the costs of home health services for patients requiring the same level of care are roughly equivalent to the costs of nursing home care.

It is important to remember as Creese and Fielden (1977) pointed out, that care in the home for patients is possible only if emergency hospital support is also available. This is essential with people suffering from chronic obstructive airways disease.

Clarfield (1983), makes some interesting philosophical points when considering the pros and cons of home care. He describes the following: In studies where home care has been shown as no more effective from a cost point of view, that, perhaps, the studies examined patients with a relatively low functional level. It is not surprising, therefore, that home care would not efficiently replace institutional care and that the latter would be more economical for those people. On the other hand, other studies which demonstrate that home care is cost effective, may well have investigated more patients with relatively mild disability. Real challenges arise when we are asked to analyze and examine patients "at the margin" to determine which level of care is the most appropriate, keeping in mind the relative cost and effectiveness of other alternatives. He goes on to pose the question about "what if home care is never cheaper?" (p. 1183). Does the provision of services depend entirely upon economics? He states that there is little doubt that home care is preferred by the majority and that it would be a sad commentary on our times if being old and sick entailed the loss of one's preferred place of residence. He recognizes that financial considerations are important and feels that "home care will work and be economical if eligibility is reasonably controlled and the appropriate population is selected to receive services. It is this balance between the desirable and the practical that we must strive to attain" (p. 1183).

Zimmer, Groth-Juncker & McCusker (1984), in their paper, also point out the need for targeting services to people who can be served the most cost effectively in the community as being a critical issue for home health care services.

Zook & Moore (1980) quoted that a major portion of medical resources in the United States is consumed by a small fraction of patients. They concluded that, since research has shown that major savings can be achieved in long-term illnesses, economy measures should be targeted to small groups of patients who require much longitudinal care or demonstrate a high probability of re-admission. Certainly, chronic obstructive pulmonary disease patients could be described as being such a target group.

Green (1976) questions whether health education in the home setting, or in any other locale, for that matter, is really cost effective. Green also stated that "health education can contribute to increased patient compliance with medical regimens through ensuring that the patient understands the instructions and the rationale, has developed the skills to implement the regimen, and believes strongly in the importance and the efficacy of the regimen for improving or maintaining his health" (p. 58). He quotes other authors as having found health education helpful in preparing the patient and family for self care and informing them which symptoms to ignore and which to report to the physician and impressing on them the importance of any follow-up visit schedule. The procedures should reduce unnecessary use of emergency services for symptoms that could be managed at home as well as unnecessary re-admissions for complications that could have been prevented and unnecessary appointments and telephone calls and missed appointments. Green concludes that the potential benefits of health education outweigh the costs and the ratio of benefits to cost will almost certainly be greater than the corresponding ratios for most medical and surgical procedures directed at the same problems.

In summary, it would seem that the rehabilitation and long-term care of respiratory patients can involve a variety of health care professionals in a variety of settings. It is important that the right treatment be given in the right place at the right time. On occasion, this will be in institutions, at other times in the community and at still other times, may require a combined approach. Optimal care cannot be provided, however, without a strong educational and home care component. The final success of any program with respiratory patients and, indeed, chronic disease entities in general, depends a great deal on the quality of the interaction between the health care professionals involved and their communication and understanding of how the patient and family view the disease and its management.

Chapter III

Methodology

In this chapter the research questions have been reviewed, the method of selection of the patients involved in the sample and survey has been outlined and the physiotherapy home program which was delivered has been described. Please refer to Appendix D for the format of the consumer satisfaction survey.

As was observed earlier, the economic and supportive resources that any society can make available to the elderly and chronically disabled are limited. In addition, these resources can be put to a wide variety of alternative uses with varying degrees of benefit.

This retrospective investigation was developed to gain information on real or imagined benefits of a therapy program delivered in the home for COAD patients. It was felt that results might point the way to further research and evaluation of such programs and subsequently either justify their continuation based on effectiveness or indicate that resources allocated to such programs might be reassigned to other programs which have greater impact.

In this investigation, the following research questions were examined:

Research Question One

Do those people with respiratory disease who were in hospital during the two-year period prior to receiving home care physiotherapy, experience hospitalizations at a reduced rate for a two-year period following entry into the physiotherapy program?

Research Question Two

Is the current form of physiotherapy follow-up and education in the home perceived to be a satisfying one for patients and families?

In order to provide answers to these questions data were collected on the following factors:

1. The number and length of hospitalizations for respiratory disease for two groups of patients with COAD. Hospitalizations for two years prior to entry and two years after entry to a physiotherapy home program formed the basis of this examination. One group had experienced hospitalizations prior to the home program being initiated, the other group had not.

2. Demographics of sex, age (at start of physiotherapy program) and places of residence (Winnipeg or non-Winnipeg) were noted.

3. A consumer satisfaction phone survey evaluated how patients and their families perceived the therapy services received in the home and the impact of such services.

Reseach Question One

For research question one above, the procedures below were followed:

Hospital in-patient claims during the time frame from January 1, 1970 to March 31, 1985 were reviewed for selected patients in this investigation. This informtion was obtained from the computer records of the Manitob Health Services Commission. The 44 patients selected for this review were identified from the home care records of Community Therapy Services of Manitoba, the agency responsible for the provision of therapy services to the provincial Home Care Program. These clients of the agency were the total number available meeting the investigation criteria (i.e. a minimum of two years on treatment) during the time frame noted. Only those hospital admissions for a first or second diagnosis of respiratory disease, as coded by the current I.C.D.-9-CM method were considered for the purposes of this study.

The Sample

The study group (Group A) consisted of 20 people. This group had hospital admissions for respiratory disease during the two year period prior to Community Therapy Services involvement. Group B consisted of 24 people. This group had no hospital admissions for respiratory disease prior to Community Therapy

Services involvement. The effects of physiotherapy intervention in the home was assessed by comparing the mean number of days spent in the hospital for two years before and after the program was implemented.

Data for subsets of these groups were reviewed. From Group A, a subset Group A.1, of 9 people and a subset Group A-2 of 11 people, and from Group B, a subset Group B-1 of 14 people and Group B-2 of 10 people had data on hospitalizations reviewed for a further period before, during and following discharge from the Community Therapy Services home physiotherapy program in order to determine if withdrawal of services caused a change in hospitalization.

After the initial assessment by the physiotherapists, individually tailored programs of home respiratory therapy, education and follow-up were established for each patient. Details of these individual programs are included in Appendix A.

Continued participation in home physiotherapy follow-up was determined by the need of the patient as assessed by the therapist. Services do not necessarily continue indefinitely. The reason for patients no longer receiving home physiotherapy include:

1. The patient is managing well and capable of carrying out self-care.

2. Non-compliance with the program.

3. No new referral or contact after hospital admission or vacation.

The comparison of hospitalization experiences was restricted to only those patients who completed two years on physiotherapy follow-up. Data from patients completing less than two years on follow-up were not included in this investigation, as it was felt than anything less than a two year time frame would provide insufficient information for analysis.

The Survey

Additional information regarding consumer satisfaction with the therapy services provided in the home was obtained by telephone survey (Appendix D) from a separate group of 9 clients with respiratory disease currently on the caseload of Community Therapy Services. It was not possible to obtain sufficient numbers of clients involved in the original investigation, owing to deaths and relocations to survey in this manner. The clients who were surveyed were selected from the files of Community Therapy Services and were similar in characteristic to the group involved in the original investigation.

This survey was carried out to provide information for the second research question which was:

Is the current form of physiotherapy follow-up and education in the home perceived to be a satisfying one for patients and families?

The survey contained predominately structured questions with a seven grade scale for response ranging from strongly disagree to strongly agree. An unstructured comments section was included in an effort to give the respondents an opportunity to provide their own opinions (Dillman, 1978). The survey was reviewed by a panel of experts associated with Community Therapy Services to ensure that questions were appropriate.

Letters were sent out in advance of the telephone contact advising the individuals involved that they would be contacted. The format of the survey was reviewed with a trained survey person who assumed responsibility for the collection of this material.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

The data analysis is based on hospital inpatient claims for respiratory disease for 44 patients. This retrospective review of hospitalizations looked at the time frame from January 1, 1970 to March 31, 1985. In addition to hospitalization information, the telephone survey with a separate group of 9 clients was carried out to determine consumer satisfaction with the physiotherapy home program. At the time of this survey, the individuals involved were on the active caseload of Community Therapy Services receiving follow-up services for respiratory disease. They were considered to be representative of that agency's respiratory clients.

Analysis of relationships and trends with supporting statistics is provided later in this chapter. In this more detailed review of the data, statistical testing was performed to support or refute some of the findings of the literature reviewed and to provide answers to the research questions of the investigation.

Demographic Factors

Demographic factors of sex, age, (at start of physiotherapy program) and place of residence (Winnipeg or non-Winnipeg) were available for all clients in this investigation. These factors are presented in tables 1 - 3.

a) Table 1 for Group A - 20 people

b) Table 2 for Group B - 24 people

c) Table 3 for Group C - 8 people

Factors worthy of note in these tables are:

1) The majority of people in all groups resided in Winnipeg. This area of the Province has the most developed and staffed home care program.

2) Groups A and B were comprised of approximately half females and half males. In Group C, 75% of the respondents to the telephone survey were female.

3) The average age of Groups A and B was approximately the same at 67.8 years and 70.5 years respectively. Average age was slightly younger for Group C at 63 years.

4) Age ranges for all groups were comparable as was the largest proportion of people being in the 60 - 80 age bracket.

Frequency of Selected Demographic Factors

Table 1

Group A (N = 20)

Sex

Female - 18

Male - 12

Place of Residence

Winnipeg - 16

Non-Winnipeg - 4

Sex Distribution by Place of Residence

Female/Winnipeg - 6

Female/Non-Winnipeg - 2

Male/Winnipeg - 10

Male/Non-Winnipeg - 2

Age at Start of Home Care Physiotherapy

26 - 35 years - 1

36 - 45 years - 0

46 - 55 years - 2

56 - 65 years - 3

66 - 75 years - 7

76 - 85 years - 7

Total 20

Range - 27 years to 83 years

Average - 67.8 years

Frequency of Selected Demographic Factors

Table 2

Group B (N = 24)

Sex

Female - 11

Male - 13

Place of Residence

Winnipeg - 21

Non-Winnipeg - 3

Sex Distribution by Place of Residence

Female/Winnipeg - 9

Female/Non-Winnipeg - 2

Male/Winnipeg - 12

Male/Non-Winnipeg - 1

Age at Start of Home Care Physiotherapy

26 - 35 years -	1
36 - 45 years -	0
46 - 55 years -	1
56 - 65 years -	4
66 - 75 years -	9
76 - 85 years -	8
86 - 95 years -	1
Total	24

Range - 29 years to 96 years

Average - 70.5 years

Frequency of Selected Demographic Factors

Table 3

Group C (N = 8)

Sex

Female - 6

Male - 2

Place of Residence

Winnipeg - 8

Non-Winnipeg - 0

Sex Distribution by Place of Residence

Female/Winnipeg - 6

Female/Non-Winnipeg - 0

Male/Winnipeg - 2

Male/Non-Winnipeg - 0

Age at Start of Home Care Physiotherapy

26 - 35 years	1
36 - 45 years	0
46 - 55 years	0
56 - 65 years	3
66 - 75 years	3
76 - 85 years	1
Total	8

Range - 27 years to 78 years

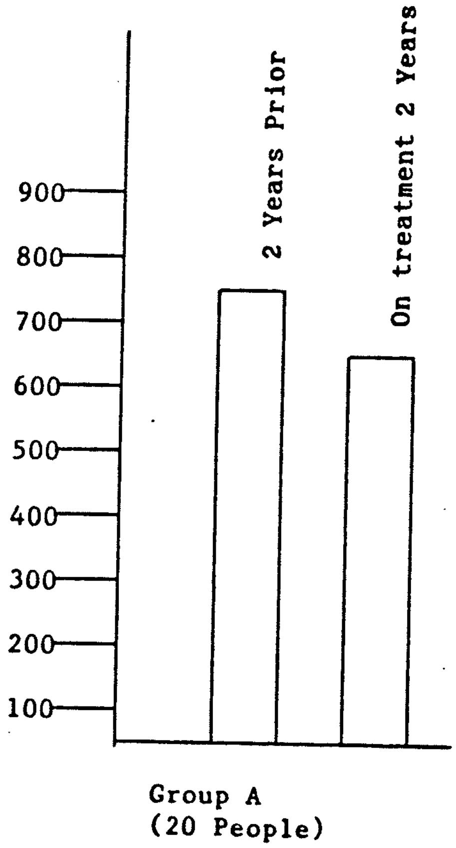
Average - 63 years

Analysis of Information for Research Question One

Information on number of days spent in hospital for respiratory disease for the 20 people in Group A is presented in Figures 1 and 2.

Hospital Inpatient Days for Respiratory Disease

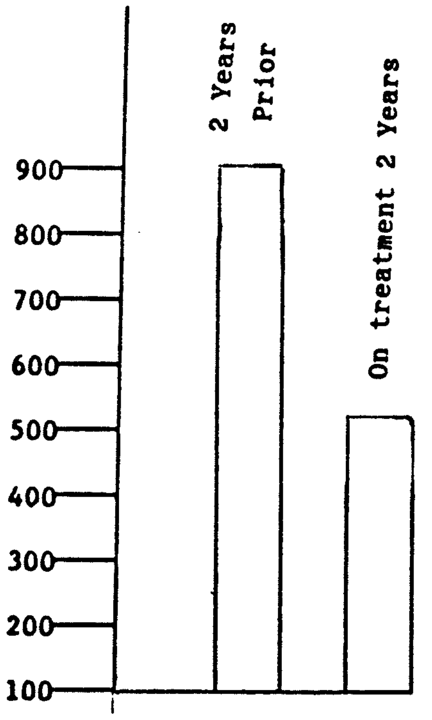
Figure 1



When the data were examined, there was a slight decrease in the number of days spent in hospital for a two year period after physiotherapy treatment was implemented in the home, when compared with the two years prior to treatment. This amounted to a total of 87 fewer days or 11.8% reduction in time spent in hospital during the second two year period for the group.

One individual in the group spent 242 days in hospital during the 2 years treatment time. This large total for one person was not typical of the others in the group and when this subject's hospitalization data is removed, the statistical change is more dramatic. This is presented in Figure 2 and shows a decrease of 314 hospital days or 43.6% reduction post treatment intervention for the group when comparing both two year periods with this one person's data eliminated.

Figure 2



Group A
(19 People)
One patient deleted
from analysis with
242 days.

An additional 2 years of data were available for 2 subsets of this group. In Figure 3 this information pertains to the hospitalization of a nine person subset (Group A-1) for a two year period post discharge from the home physiotherapy program. There were three primary reasons for people being discharged from the program. They included the following:

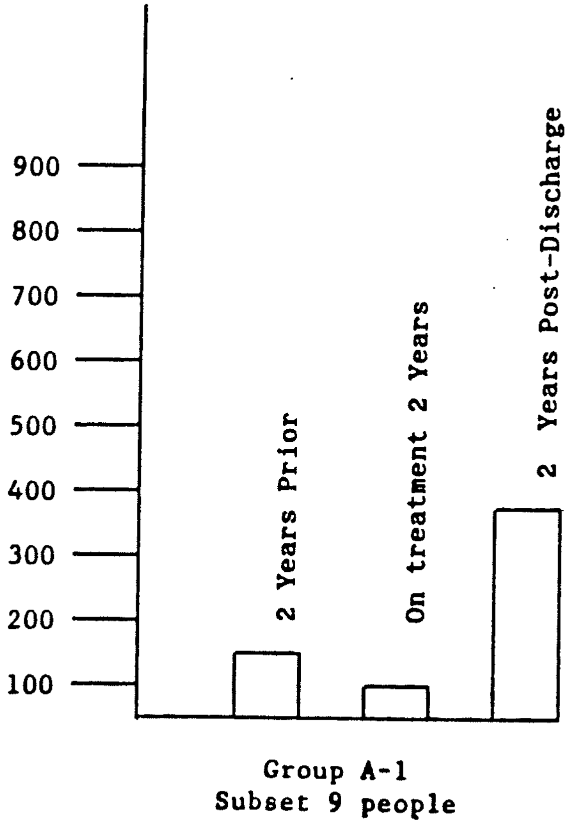
a) Discharged as managing well.

b) Discharged as not complying with the program.

c) Discharged as no new referral after going on extended vacation or following hospital admissions.

Hospital Inpatient Days for Respiratory Disease

<u>Figure 3</u>

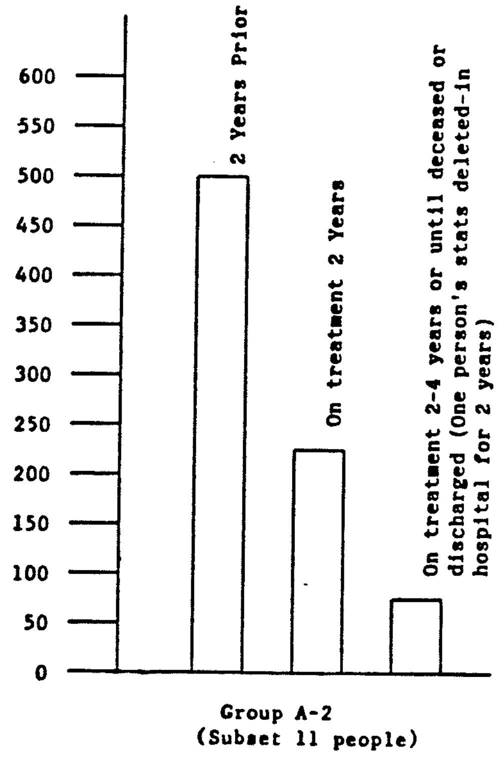


When hospitalization information was separated out for this group there was a 20.7% decrease in hospitalizations when the two years prior to intervention were compared with the two years on the program. Two years after discharge from the program the number of days spent in hospital for respiratory disease had risen by 138%.

Figure 4 presents the data on the other eleven individuals in Group A who continued on the program. This portion (Group A-2) showed a decrease of 277 hospital days when comparing the two years prior with two years after entry into the physiotherapy program. This is a decrease of 51%.

Hospital Inpatient Days for Respiratory Disease

Figure 4



Owing to the small size of these samples it was felt that further analysis of the data might provide useful information to support or refute the hypothesis about experiencing hospitalizations at a reduced rate for a two year period following entry into the physiotherapy program. Accordingly the data were divided into six month intervals and examined. This information is presented in Figures 5, 6, 7, 8, 9 and 10 for Group A and its subgroups. By looking at the data in this way it still seems to lend support to hospital days being reduced after the physiotherapy home program was implemented. The trend during the two year period prior to the program seemed to be for people in the group to spend increasing amounts of time in hospital for their respiratory disease over time. While this linear relationship continued after treatment began, the actual number of days spent in hospital was less even though the individuals were further along in their disease and would reasonably be expected to require more care.

Hospital Inpatient Days for Respirtory Disease

Figure 5

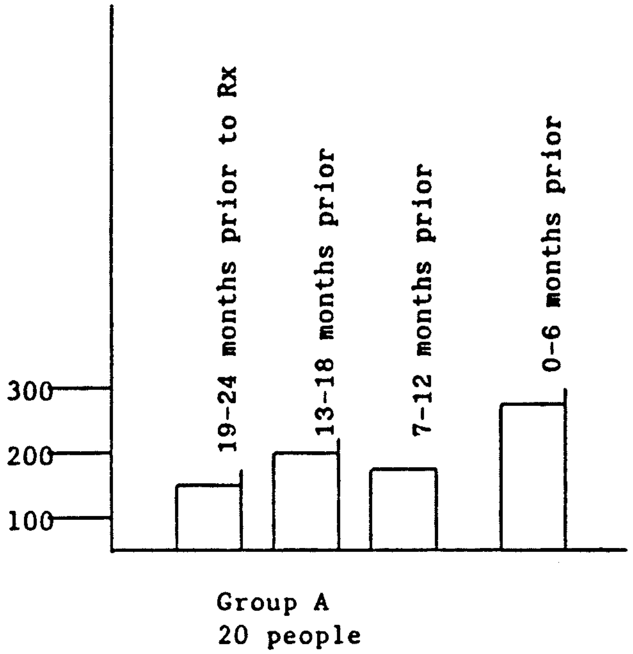
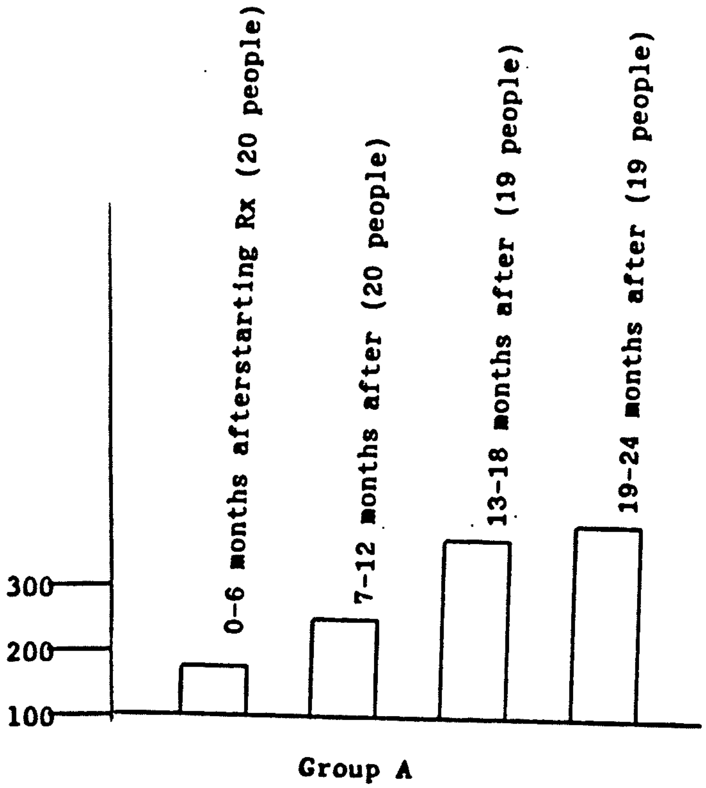
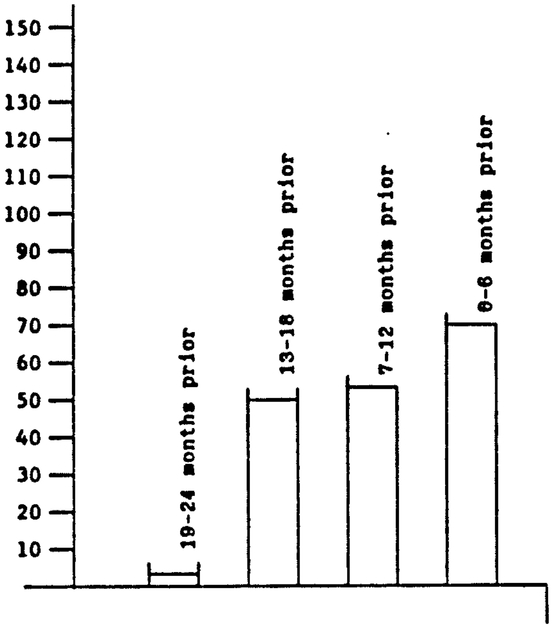


Figure 6



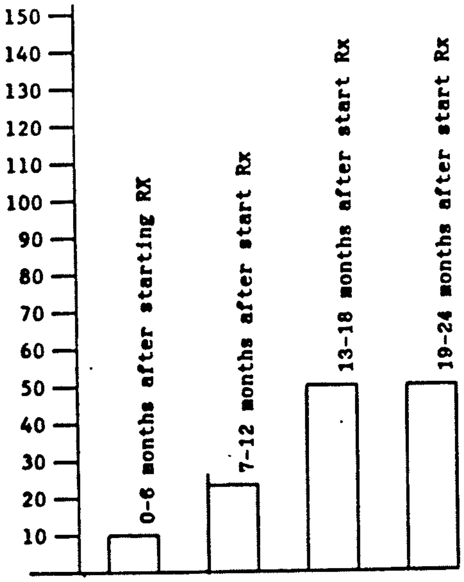
Hospital Inpatient Days for Respiratory Disease

Figure 7



Group A
Subgroup #1 (9 people)

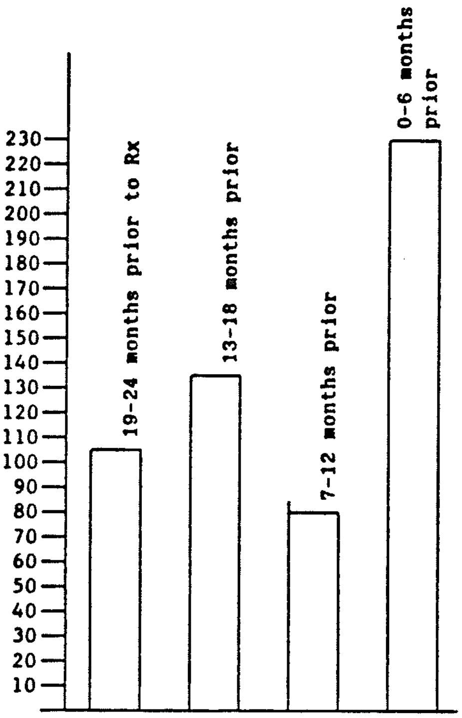
Figure 8



Group A
Subgroup #1 (9 people)

Hospital Inpatient Days for Respiratory Disease

Figure 9



Group A
Subgroup #2 (11 people)

When the group was followed for a further period Figure 10, (i.e. up to four years in total on treatment) the statistics on hospitalization days for respiratory disease indicated the following:

a) Six individuals survived to the 4 year level. At this time they had registered 31 hospital days for respiratory disease.

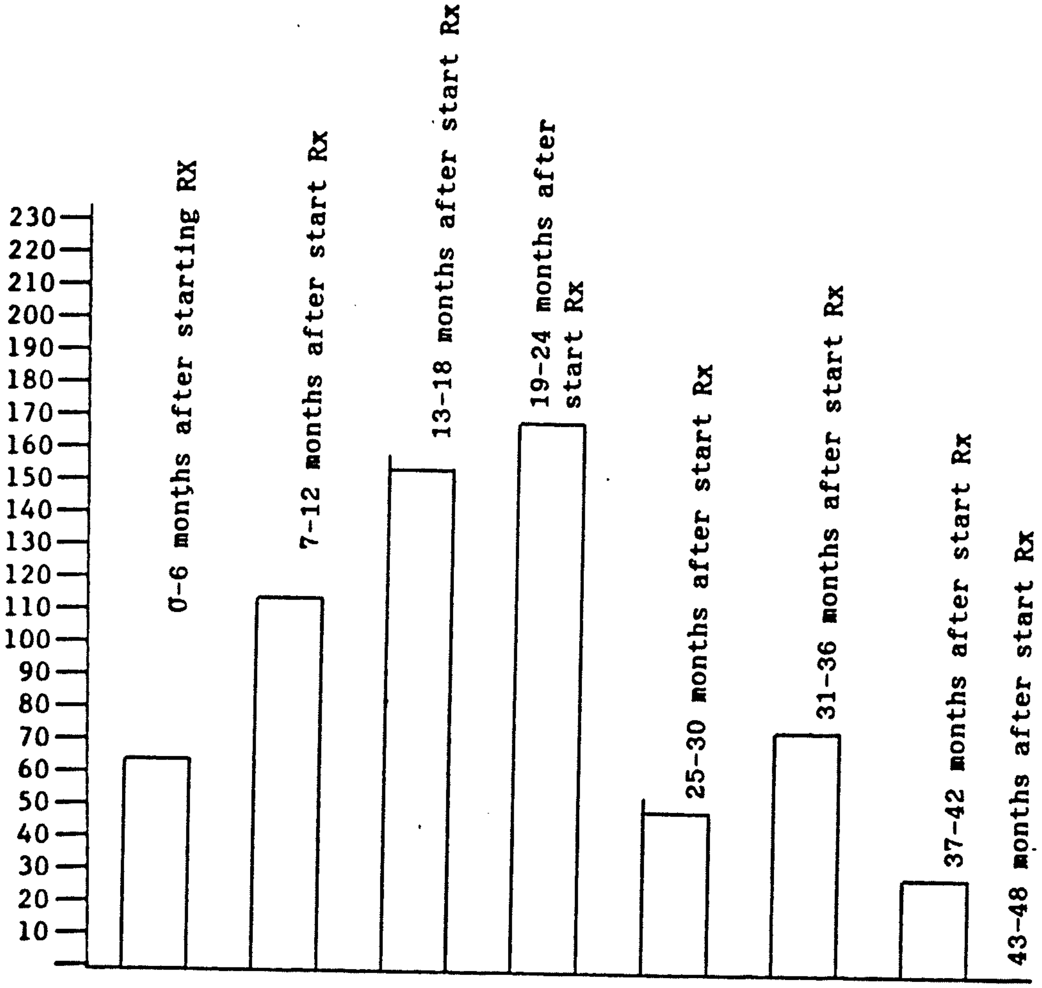
b) One person in the group was in hospital for almost the complete two to four year period. This person's statistics where deleted.

c) Three died within the 2 - 4 year time frame (one at 8 months, one at one year and one at the 16 month level). One person was discharged at the one year level.

d) Total statistics for the group of 10 amounted to 84 days in hospital in the 2 - 4 year period given the above restrictions.

Hospital Inpatient Days for Respiratory Disease

Figure 10

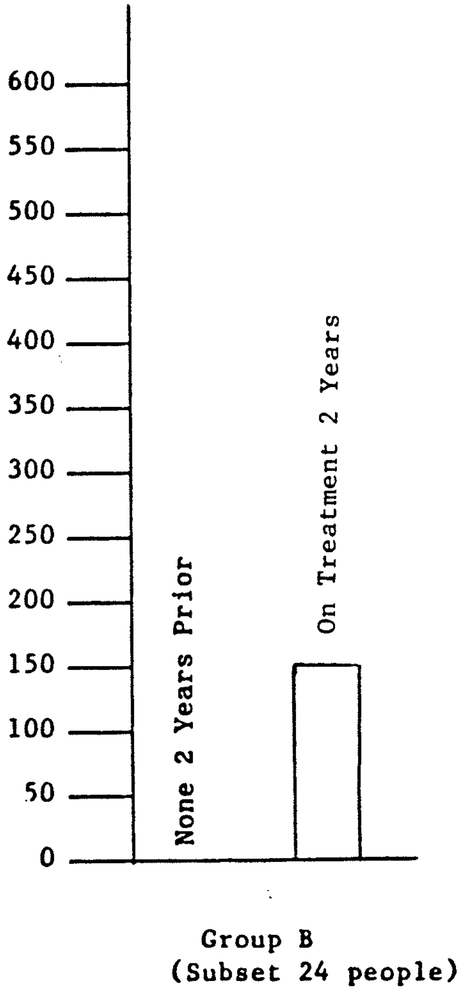


Group A
Subgroup #2 (11 people)

Similar analysis was performed for Group B. This group consisted of 24 people who were not as advanced in their disease as Group A. For the two years prior to entry into the physiotherapy home program there were no hospitalizations for respiratory disease. During the two years on treatment this group experienced 185 days in hospital for respiratory disease (Figure 11).

Hospital Inpatient Days for Respiratory Disease

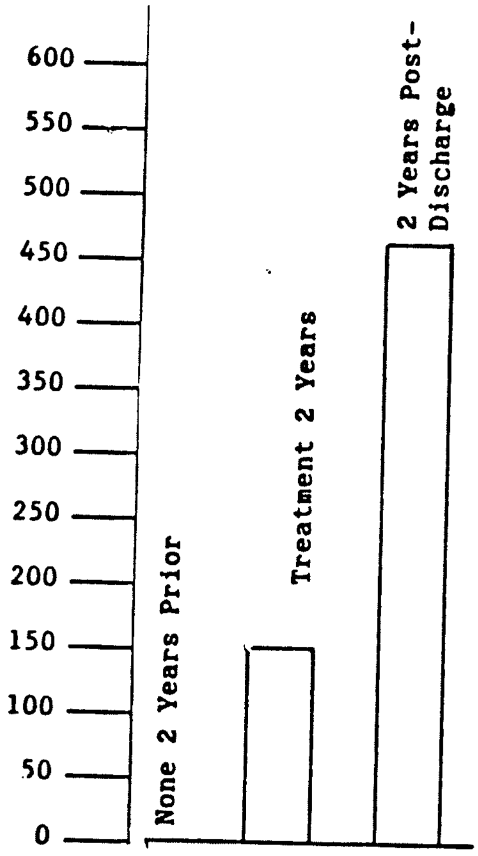
Figure 11



After this time a subset of this group (Group B-1) of 14 people were discharged for the same reasons as those given for the Group A-1 subset. This hospitalization data are illustrated in Figure 12 and show an increase of 279 hospital days or 164% when comparing post intervention with treatment years.

Hospital Inpatient Days for Respiratory Disease

Figure 12

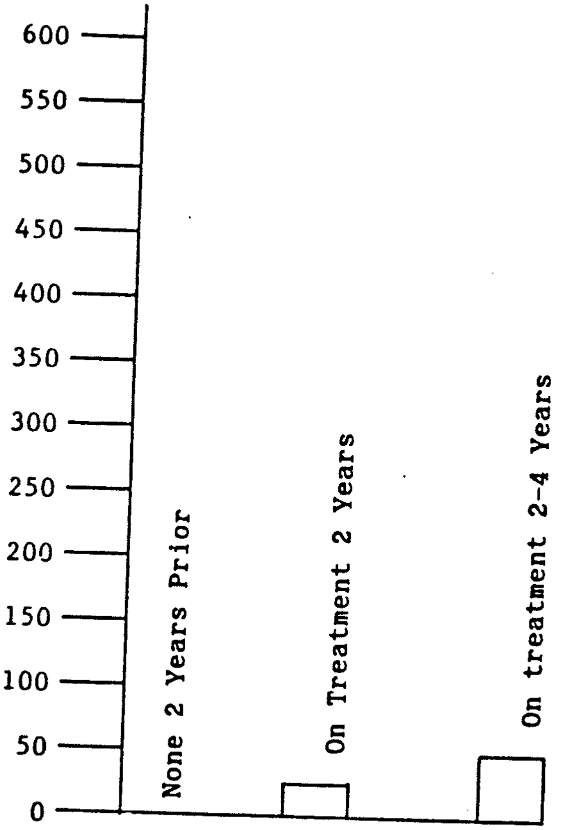


Group B-1
(Subset 14 people)

Figure 13 presents further data on the ten people in Group B who remained on home care follow-up.

Hospital Inpatient Days for Respiratory Disease

Figure 13



Group B-2
(Subset 10 people)

This subset, Group B-2, demonstrated the following:

a) Eight people in the group completed a further 2 years on treatment and registered 14 hospital days for respiratory disease.

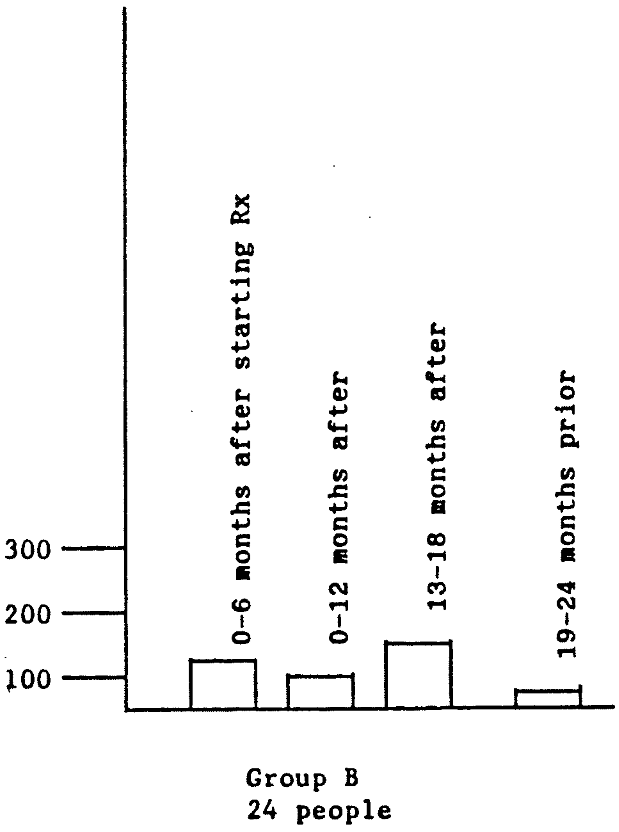
b) Two people died within this 2 year time frame (one at 16 months and the other at 10 months follow-up). They experienced 14 and 31 days in hospital respectively prior to that time.

c) Total hospitalizations for the group amounted to 45 days in the 2 - 4 year period of follow-up.

When the data were analyzed at the six month intervals for Group B, and its subset, no firm linear pattern of increase in hospitalization for respiratory disease was identified. This is illustrated in Figures 14, 15 and 16.

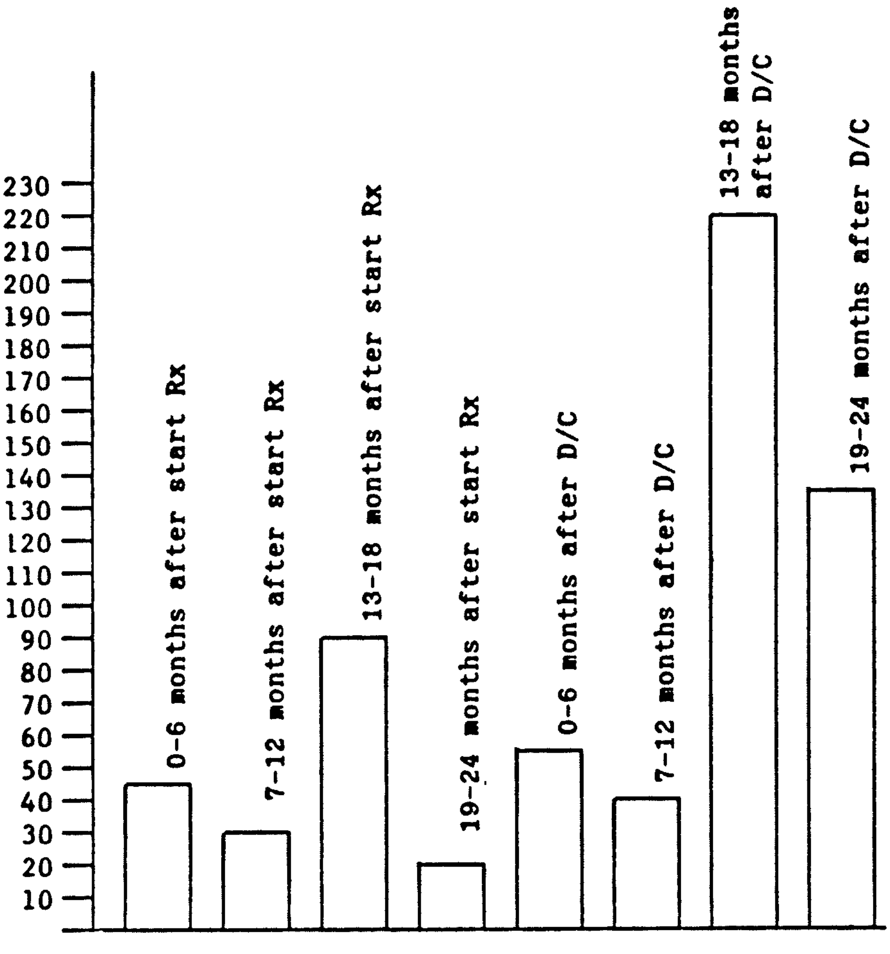
Hospital Inpatient Days for Respiratory Disease

<u>Figure 14</u>



Hospital Inpatient Days for Respiratory Disease

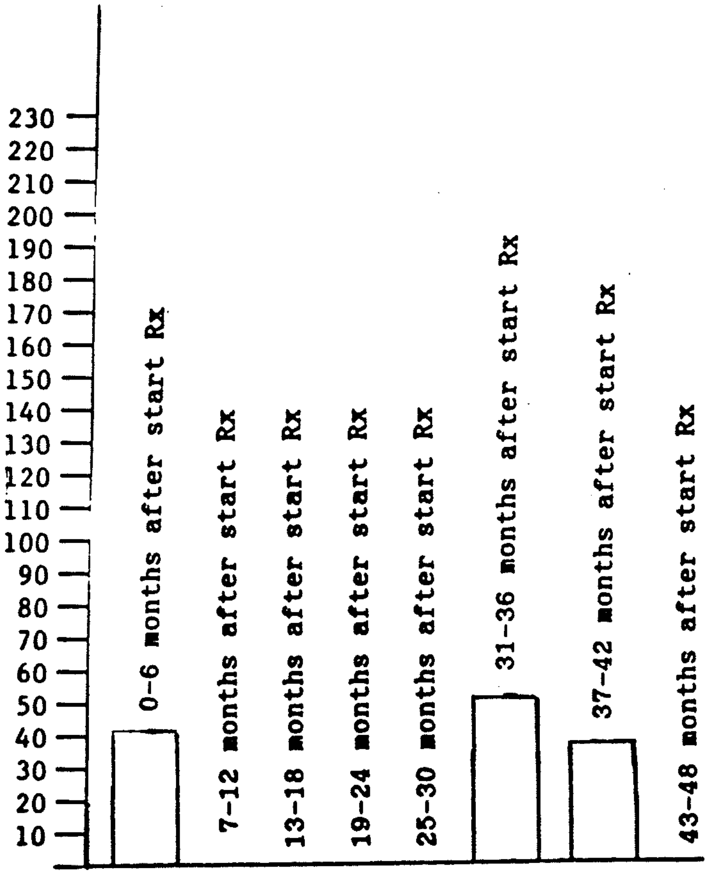
Figure 15



Group B
Subgroup #1 (14 people)

Hospital Inpatient Days for Respiratory Disease

Figure 16



Group B
Subgroup #2 (10 people)

It is difficult to determine reasons for this variation. It is possible that: 1) because these individuals were at an early stage in their disease, hospital patterns had not yet been established; 2) the physiotherapy program being initiated at an earlier stage than that for Group A altered hospitalization patterns.

Further statistical tests of the data were attempted. T-tests and other parametric and non-paremetric tests were carried out but did not confirm statistically significant differences between the study groups. The reason for this is probably due to the small population and the clustering of the data on days in hospital. Such clustering of data does not lend itself to statistical analysis and testing such as independently distributed data. Had the population been larger, a smoothing effect on this clustering may have occured and permitted more in depth testing.

While some of the traditional statistical tests did not confirm significance, the bar graph representations do indicate trends which provide answers to research question number one. Hospitalizations were reduced for people with respiratory disease following entry into the physiotherapy program when data were compared to Group A. Data for Group B, when examined in this fashion, indicated a slowing in the downward spiral typical of patients with this disease. These findings support the positive contribution that physiotherapy education in the home can have for patients with COAD. These results will assist the service agency involved in decision making regarding follow-up and discharge of respiratory patients.

These trends are important ones and indicate a need for further research and study in this area. Using this investigation as a reference, further research into the management of chronic diseases seems clearly indicated. Potential areas for study include such issues as: 1) quality of life factors, 2) economics and cost effectiveness in health care, 3) priorization of the array of health care services available to patients with chronic diseases, and 4) inpact of prevention and education programs.

Based on the literature, further study of the home as the site for delivering treatment and education programs should be carried out (Bennett, Garrard, Halil, 1970; Creese and Fielden, 1977; Hammond, 1979; Librach, Davidson and Peretz, 1972; McDonald, 1981; Nett and Petty, 1978; Roselle and D'Amico, 1982; White and Briggs, 1980).

Analysis of Information for Research Question Two

In order to provide answers to the second research question regarding whether or not a physiotherapy home care program was perceived by patients and families to be a satisfying form of care, a telephone questionnaire was administered to eight clients. The questionnaire was administered by an independent trained interviewer. The interviewer selected was a health care professional, from a discipline other than physiotherapy, with previous survey experience. Training for this investigation included the detailed review of the telephone survey and explanation of the questions together with a mock run-through.

In an attempt to achieve a sample of ten individuals for the survey, advance letters were mailed to thirteen clients of Community Therapy Services. These clients were either current or recently discharged from the caseload of the agency clients were considered to be representative of patients with respiratory disease who are referred to community therapy and similar to the other study groups. The interviewer was unable to complete the survey with five of the people selected for the following reasons:

a) One phone number was not in service and no new listing was available.

b) Two people were deceased.

c) One person was in hospital.

d) One person declined to answer the questionnaire stating "he didn't manage very well on the phone".

A sample of the advance letter and the telephone questionnaire are available in Appendix D. The most informative responses within the questionnaire were selected for discussion and interpretations. However, Appendix E presents the responses to all the questions contained in the survey.

The format of the questionnaire was to pose a question for the individual with respiratory disease and ask them to select their response from a seven step scale ranging from disagree strongly to agree strongly (Dillman, 1978). The questions were developed by a panel of health care professionals employed in the community. Questions were designed to elicit from those surveyed how they perceived the information received from the therapist during home visits. The consensus of the group, involved in developing the questionnaire, was that frequency of visits alone was insufficient to effect change. Change could only occur if the individual with COPD understood and carried out instructions between visits. Questions were therefore designed to gain feedback on how this two-way communication process was perceived from the standpoint of the consumer. The following is a table summarizing the responses to the questions asked.

Responses to Telephone Survey by Group C

Table 4

Group C (N = 8)

Question	Disagree Strongly	Disagree	Disagree Slightly	No Opinion/ Undicided	Agree Slightly	Agree	Agree Strongly	Total
1 a)					1	4	3	8
b)		1		1		3	3	8
2 a)						4	4	8
b)						3	5	8
3 a)						3	5	8
b)						5	3	8
4 a)						3	5	8
b)				1		3	4	8
c)						4	4	8
5		2				2	4	8

The majority of responses fell into the agree to agree strongly range on the scale. This is particularly true for the section which dealth with understanding changes in health status and coping more effectively with health problems as a result of the therapist's visits.

All but one of the people surveyed took advantage of the opportunity to comment in the open-ended section. Responses in this section were positive. They included such statements as the following:

1) "We work together and it is good."
2) "Great. I learned a lot."
3) "Young well qualified staff. I feel better after every visit."
4) "Excellent - come more often."

The indication from this small group was that they felt they had benefited greatly from this program. If there was one criticism, it was that the individuals surveyed would like to have more frequent visits from the therapist to reinforce information and provide more support.

The conclusions from this survey provide a positive response to research question number two. That is to say that the current form of physiotherapy follow-up and education in the home is a satisfying one for this group.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This investigation was conducted in order to identify what impact, if any, a home program of physiotherapy had on hospitalization rates for patients with Chronic Obstructive Lung Disease. In keeping with this objective, several conclusions based on the specific areas of the investigation can be formulated. These conclusions should be interpreted with caution however, owing to the small size of the sample and the possibility that variables outside the control of the study might potentially have affected the results rather than the physiotherapy program alone.

Conclusions

Demographic Factors

Representation of people outside Winnipeg is limited in the investigation. The results must therefore be interpreted as more typical of a Winnipeg based population. As such it may not necessarily apply to a non-Winnipeg population who have traditionally had less access to some of the health care resources. A general profile of the groups suggest that they are roughly half female and half male and in the sixty to seventy year age range.

Utilization of Hospital Services

Within the groups investigated, the physiotherapy home program appeared to have a positive effect on reducing the number of days spent in hospital for respiratory disease. Group A, which appeared to be at a later stage in their chronic disease than Group B had hospitalizations for acute exacerbations reduced by 11.8%. One person accounted for a disproportionate amount of hospital days. When this datum is eliminated, hospitalizations decreased by 43.6%. This reduction was not maintained for the subsets of Group A or B once home physiotherapy was discontinued.

Patient and Family Reaction

In general terms respondents to the telephone survey indicated satisfaction with the program of education and treatment in their home. With very few exceptions, responses were in the categories of agree and agree strongly to the positive statements related to the home physiotherapy program. The comments recorded in the open ended section were positive also.

The number of people involved in this survey limits the strength of the conclusions that can be drawn. The group does seem to be in agreement with the literature, in finding one on one educational programs tailored to individual needs as being satisfying (Roberts, 1970; Stanton, 1983; Webb, 1980).

There was strong support by the majority that the program had helped them cope with their health problem and feel more confident in handling their health problem.

Recommendations

Based on these general conclusions, the following recommendations can be made with regard to further study of this patient population:

a) Education

There seems to be positive benefits related to home physiotherapy with regard to reducing hospitalizations. While this is supported to a degree by this investigation we need to determine what part or parts of the program are producing these results (Roselle and D'Amico, 1982). Can the program be delivered more efficiently? Are parts of the program ineffective in achieving the desired results and capable of being deleted so that more time can be devoted to the priority areas? (Brown and Margo, 1978; Cohen and Cohen, 1978; Panarese and Liversidge, 1979; Posavac, 1980).

b) Liason and Co-ordination

There appear to be people who are deriving benefit from the program who were discharged or lost to follow-up. Discharge criteria and linkages with other health care professionals should be reviewed in order to ensure that contact is maintained with individuals who benefit from the program.

c) Cost Effectiveness

This issue has only been examined in a superficial manner in this investigation. Current hourly rate of the community physiotherapy program is $29.40 which includes some administrative charges. In addition to physiotherapy, people at home with respiratory disease may require other home health care assistance and there would therefore, often be additional costs involved above that of the physiotherapy program. The average cost per person per year on the Manitoba Home Care Program in 1986 - 87 however, was $1,023.00. A per diem rate at the Health Science Centre currently is $565.80.

As was documented in the literature, no one is suggesting that we can manage without hospitals (Clarfield, 1983). This is particularly true for people with Chronic Obstructive Lung Disease who are subject to acute exacerbation. If future studies with larger numbers of patients confirm that home physiotherapy can be effective in reducing hospitalizations, the issue of cost effectiveness might be an interesting one to explore in more depth (Green, 1976; Hammond, 1979; LaVor and Callender, 1974).

d) Consumer Evaluation

The number of people involved in the telephone survey was quite small. As well, concern has been expressed that this form of evaluation may receive positive responses owing to fear on the part of those being surveyed that a negative response may result in the withdrawal of the services. Further research with a larger sample should be carried out to ensure that the results of this survey are replicable.

Summary

In keeping with the increasing interest in providing co-ordinated health services for patients with chronic disease which are cost-effective, both government and voluntary agencies have undertaken studies to determine such factors as physical, social and emotional needs of patient populations. The major objective of such studies is the development of programs and services which meet these needs in an efficient and effective manner as well as in a respectful and humane way.

The results of this investigation indicated that hospitalizations for acute exacerbations of respiratory disease for the study group were reduced by providing a physiotherapy home program. This is in spite of the fact that this is a disease which is incurable and progression has been described as constant and linear in nature (Cherniack and Lertzman, 1977; Reid and Loveridge, 1983).

The potential implications of this outcome on the delivery of health care services should not be underestimated. A reduction in hospitalizations is, however, only a part of the whole picture.

Additional points for consideration are the impact that such intervention may have on days of employment, functional abilities and general quality of life.

The results of the telephone survey suggest that the home physiotherapy program providing education and treatment as delivered, was acceptable to this group. This is in keeping with the literature in finding that this is a satisfying form of care (Rosenberg, 1971; Shapiro, 1979; White and Briggs, 1980). While the number of individuals surveyed was small, there was universal agreement that the program had benefited them.

BIBLIOGRAPHY

Agle, D. P. et al: Multidiscipline treatment of chronic pulmonary insufficiency. 1. Psychologic aspects of rehabilitation. *Psychos. Med. 35*, No.1: Jan.-Feb. 1973.

Allison, K.: Health education: Self-responsibility vs. blaming the victim. *Health Ed. 20*, No's.3-4: 11-13, Spring, 1982.

American College of Chest Physicians. *Ann. Meeting Proceedings*. 1974.

Barashear, R. E., and Rhodes, Mitchel, L.: Editor. Importance of general care and education. Chapter 18 of *Chronic Obstructive lung disease*, C. V. Mosby Co., St. Louis, 224-253, 1978.

Bartlett, E. E.: Behavioral Diagnosis: A practical approach to patient education. *Patient Counselling and Health Ed.*. 4, No. 1: 29-35, 1982.

Bartlett, E. E.: Upgrading the practice of patient education. *Patient Ed. Newsletter*. 7, No. 1: 11-12, Feb., 1984.

Bartlett, E. E.: Patient education is 1-2-3. *Patient Ed. Newsletter*. 7, No. 3: 11, June, 1984.

Bennett, A. E., Garrard, J., Halil, T.: Chronic disease and disability in the community: A prevalence study. *Br. Med. J.* 3: Sept. 1970.

Berzins, G. F.: An occupational therapy program for the chronic obstructive pulmonary disease patient. *The American Journal of Occupational Therapy*. *XXIV*, No. 3: 181-186, April, 1970.

Bille, D. A.: A study of patients knowledge in relation to teaching format and compliance. *Supervisor Nurse*: 55-62, March, 1977.

Blackwell, B.: The Literature of Delay in Seeking Medical Care for Chronic Illness. *Health Education Monographs*, 16: 3-31, 1963.

Branch, L. G.: Determining the needs of the elderly and the chronically disabled. *N. Eng. J. Med. 294*: 110-111, 1976.

Brown, E. R. and Margo, G. E.: Health education: Can the reformers be reformed? *Int. J. Health Sciences*, 8, No. 1: 3-26, 1978.

Canadian Governmental report on aging. Ottawa: Department of National Health and Welfare, 1982.

Cherniack, R. M.: Management of chronic airflow limitation. *Medicine International*, 1, No. 21, Sept., 1972.

Cherniack, R. M. and Lertzman, M. M.: Management of patients with chronic air flow obstruction. *Med. Clin. of N. Amer. 61*, No. 6: 1219-1228, 1977.

Clarfield, A. M.: Home Care: Is it cost effective? *J. Can Med. Assoc. 129*, No. 11: 1181-1199, 1983.

Clarfield, A. M.: Home Care: Placebo or Panacea? *Paper written as an academic requirement for fourth year program in Community Medicine*, McGill University, 1983.

Cohen, C. I., and Cohen, E. J.: Health education: Panacea, pernicious or pointless (editorial). *New Eng. J. Med.* 299, No. 13: 718-720, 1978.

Creese, A. L. and Fielden, R.: Hospital or home care for the severely disabled: A cost comparison. *Br. J. Prev. Soc. Med. 31*: 116-121, 1977.

Davies, N. E.: Bringing order to the literature of health education. *new Eng. J. Med. 302*, No. 26: 1476-1477, June, 1980.

Davies, G. M.: *"Rehabilitation" in office diagnosis and management of chronic obstructive pulmonary disease*. Lea & Febiger, Philadelphia, 1981.

Development and use of home-care services. Suggestions for physicians. *J.A.M.A. 197*, No. 2, July, 1966.

Dillman, D.A.: Mail and Telephone Surveys. John Wiley and Sons, 1978.

Easy Breathing: *Manitoba Lung Association Publication*: *11*, No. 2: 1984.

Fishman, D. B. and Petty, T. L.: Physical symptomatic and psychological improvement in patients receiving comprehensive care for chronic airway obstruction. J. Chronic Diseases. 24: 775-785, 1971.

Freudenberg, N.: Addressing the environmental barriers of patient adherence. Patient Ed. Newsletter, 7, No. 3: June, 1984.

Fuhs and Stein: Better ways to cope with C.O.P.D.: Nursing, 76, Feb., 1976.

Green, L. W.: The potential of health education includes cost effectiveness, hospitals. J.A.M.A. 50: 57-61, 1976.

Grossman, M.: Emotional Aspects of Rehabilitation. Am. J. Psychiatry. 109: May, 1963

Grover, P. L. and Miller, and J.: Guidelines for making health education work. Public Health Reports, 91, No. 3, 249-253, May-June, 1976.

Hammond, J.: Home health care cost effectiveness: An overview of the literature. Public Health Reports, 94, No. 4: 305-311, 1979.

Hasselkus, B. R.: Patient education and the elderly. Physical and Occup. Ther. Geriat. 2(3): Spring, 1983.

Hudson, L. D., Tyler, M. L. and Petty, T. L.: Hospitalization needs during an outpatient program for severe chronic airway obstruction. Chest, 70, 5, Nov. 1976.

Hudson, L. D., and Parson, D. J.: Comprehensive respiratory care for patients with chronic obstructive pulmonary disease. Medical Clinics of North America. 65, No. 3: May, 1981.

Hugh-Jones, P. and Whimster, W.: State of the art - the etiology and management of disabling emphysema. Am. Rev. Resp. Disease 117: 343-378, 1978.

Kaplan, R. M., Atkins, C. J. and Timms, R.: Validity of a quality of well-being scale as an outcome measure in chronic obstructive pulmonary disease. J. Chronic Dis. 37, No. 2, 1984.

Kasl, S. V. and Cobb, S.: Health Behaviour, Illness Behaviour and Sick Role Behaviour. Archives of Environmental Health, Vol. 12, 1966.

Katz, A. H. and Levin, L. S.: Self-care is not a solipsistic trap: A reply to critics. Int. J. Health Services. 10, No. 2, 329-336, 1980.

Kristin, H. and Morris, R.: Alternatives to institutional care for the elderly and disabled. Gerontologist, (Summer): 139-142, 1972.

LaVor, J. and Callender, M.: Home health cost effectiveness: What are we measuring? Med. Care XIV, No. 10: 866-872, 1974.

Lazes, P. M., Editor. The handbook of health education, Aspen system corporation, Germantown, Maryland. Chapter 11: Self-care Evaluation, by R. M. Silten, and L. S. Levin: 201-223, 1979.

Lertzman, M. M. and Cherniack, R. M.: Rehabilitation of patients with C.O.P.D. Am. Rev. Resp. Disease 114: 1145-1165, 1976.

Levin, L. S.: Patient education and self care: How do they differ? Nursing Outlook, Mar. 1978.

Librach, G., Davidson, C. and Peretz, A.: A community home care program. J. Amer. Geriat. Soc.: XX, No. 10, Oct. 1972.

Logue, J. H.: Patient education challenges in home health care. Patient Ed. Newsletter, 7, No. 5: 3-4, Oct. 1984.

Manitoba Health Services Commission Handicapped Transportation Study: 1983.

Mazzuca, S. A.: Does patient education in chronic disease have therapeutic value? J. Chron. Dis. 35: 521-529, 1982.

McDonald, G. J.: A home care program for patients with chronic lung disease. Nurs. Clin. N. Amer. 16, No. 2, June, 1981.

Murdock, R. B., Pock, B. E. and Palma, L. M.: A model for assessing patient education. Patient Ed. and Counsel. 5, No. 4, 85-88, 1984.

Nett, L. M. and Petty, T. L.: Managing the C.O.P.D. patient and family at home. Chronic obstructive pulmonary disease. Edited by Thomas L. Petty. Marcel Dakher Inc., New York, 1978.

Nichols, C. R. and Bogdonoff, M. D.: Programming the care of the chronically ill. New Eng. J. Med. 266, No. 17: 867-870, 1962.

Office of Continuing Care, Manitoba: Guidelines, 1983.

Panarese, M. and Liversidge, R. P.: Home health education for patients with C.O.P.D.: Effects on re-hospitalization. Home Health Review, 2, No. 1: 106-111, Jan. 1979.

Parijs, L. V.: Reflections on the medical model and the objectives of health education. Int. J. Health Ed. 23, 205-212, 1980.

Peach, H., Patby, M. S.: Follow-up study of disability among elderly patients discharged from hospital with exacerbation of chronic bronchitis. Thorax, 36, 1981.

Petty, T. L., Nett, L. M., Finigan, M. M., Brinck, G. A. and Corsello, P. R.: A comprehensive care program for chronic airway obstruction. Ann. Int. Med. 70, No. 6, June, 1969.

Petty, T. L. and Nett, L. M.: Patient education and emphysema. Med. Times 97, 117-130, 1969.

Petty, T. L. et al: Chronic airway obstruction respiratory insufficiency and gainful employment. Arch. Envir. Health, 21: July, 1970.

Petty, T. L., Hudson, L. D. and Neff, T. A.: Methods of ambulatory care. Med. Clin. N. Amer. 57, No. 3, May, 1973.

Petty, T. L.: Does treatment for severe emphysems and chronic bronchitis really help? (a response) Editorial. Chest, 65, No. 2, Feb. 1974.

Petty, T. L.: Chronic obstructive pulmonary disease. Med. Times 106, No. 1, Jan. 1978.

Petty, T. L. and Cherniak, R. M.: Comprehensive care of COPD. Clinical Notes on Respiratory Disease. Winter, 1981.

Posavac, E. J.: Evaluation of patient education programs. A meta analysis. Evaluation and Health Professions, 3, No. 1: Mar. 1980.

Postma, D. S., Burema, J., Gimeno, F., May, J. F., Smit, J. M., Steehuis, E. J., Weele, L. T., Sluiter, H. J.: Prognosis in severe chronic obstructive pulmonary disease. Am. Rev. Resp. Disease. 119, 357-367, 1979.

Rand, P. H.: Evaluation of patient education programs. Physical Ther. 58, No. 7, 851-856, July, 1978.

Redman, B. K.: Patterns for distribution of patient education. Appleton-Century-Crafts, New, York, Chapter 3 - Patient education in the general hospital by Fralix, M. F. 36-55, 1981.

Reid, W. D. and Loveridge, B. M.: Review paper - Physiotherapy management of patients with chronic airways disease. Physiotherapy Canada 35: 183-195, 1983.

Richards, N. D.: Methods and effectiveness of health education. Soc. Sci and Med. 9: 141-156, 1975.

Roberts, B.: Research in educational aspects of health programmes. Int. J. Health Ed. Suppl. Vol. XIII, (1): 1-33, 1970.

Roberts, C. R. et al: Reducing Physician Visits for C.O.L.D. Through Consumer Education. J.A.M.A., Vol. 250, No. 15, 1983.

Roselle, S. and D'Amico, F. J.: The effect of home respiratory therapy on hospital re-admission rates of patients with chronic obstructive pulmonary disease. Resp. Care. 27, No. 101, Oct. 1982.

Rosenberg, S. G.: Patient education leads to better care for heart patients. H.S.M.H.A. Health Reports, 86, No. 9: 693-802, Sept. 1971.

Rutter, B.: The prognostic significance of psychological factors in the management of chronic bronchitis. Psychol. Med. 9: 63-70, 1979.

Schreiber, M. S. and Hughes, S.: The Chicago five hospital home-bound elderly program: A long term home care model. Pride Institute J. Long Term Home Health Care; 1(Summer): 12-20, 1982.

Shapiro, E.: Home Care: A comprehensive overview, Part I. Ottawa: Department of National Health and Welfare, 3, 1979.

Sherman, E. and Gringras, G.: Rehabilitation of the aged. Can. Med. Assoc. J.: 93: 797-800, 1965.

Simonds, S. K.: Emerging challenges in health education. Int. J. Health Ed. Suppl. XIX, No. 4: Oct.-Dec. 1976.

Spronk, V. R. A., and Warmenhoven, N. E.: Patient education in general pracitce: Opinions of general practitioners. Patient Ed. and Counsel. 5, No. 2: 68-75, 1983.

Standard, K. and Kaplen, A.: Health education: New tasks, new approaches. W.H.O. Chronicle, 37, No. 2, 1983.

Stanton, M. P.: Patient education in the hospital health-care setting. Patient Ed. and Counsel. 5, No. 1: 14-22, 1983.

Strodtman, L. K.: A decision-making process for planning patient education. Patient Ed. and Counsel. No. 4: 189-200, 1984.

Sutherland, J.: Health education Perspectives and choices. George, Allen, and Anwin, London: Chapter 11, Economics and health education by Roberts, J. L.: 217-239, 1979.

Traver, Gayle, A.: Living with chronic respiratory disease. Amer. J. Nurs. 75, No. 10: 1777-1781, Oct. 1975.

Warner, K. E.: An economist's viewpoint. Patient Ed. and Counsel. 5, No. 1: 6-10, 1983.

Webb, P. A.: Effectiveness of patient education and psychosocial counselling in promoting compliance and control among hypertensive patients. J. Family Prac. 10, No. 6: 1047-1055, 1980.

White, H. A. and Briggs, A. M.: Home care of persons with respiratory problems: Optimization of breathing and life potential. Top. Clin. Nurse. 2, No. 3, Oct. 1980.

Young, D. A.: Quality care for the chronic lung disease patient living at home. Am. Lung Assoc. Bull. Dec. 1977 - Jan. 1978.

Zimmer, J. G., Groth-Juncker, A. and McCusker, J.: Effects of a physician led home care team on terminal care. J. Am. Geriat. Soc. 32, No. 4: 288-292, 1984.

Zook, C. J. and Moore, F. D.: High cost users of medical care. New Eng. J. Med. 302, No. 18: 996-1002, 1980.

APPENDICES

APPENDIX A

Appendix A

Aspects of a Home Care Respiratory Program

While there are many things to be considered about the home setting, the care of a respiratory patient at home is a difficult and, on occasion, discouraging task. The professionals involved in the long term care and follow-up of these people are often faced with:

1. Slow improvement.
2. The need to maintain the patient at his current level.
3. The need to measure their success in slowing the gradual downhill spiral.

Follow-up of such patients must encompass many different components. Among these are:

1. Assessment
2. Patient and family education
3. Patient and family counselling
4. Direct patient care
5. Co-ordination of services

Assessment

Assessment of patients with chronic obstructive pulmonary disease in the home setting must include not only their respiratory status, which can change rapidly, but also their psychosocial relationships, the home environment, and family and other support systems. Physiotherapists in the program being reviewed must recognize, report and recommend appropriate interventions or provide the patient and family with appropriate background information on what to do when the early signs of deteriorating cardiopulmonary function occur.

At the time of the initial home visit, the physiotherapist must perform a complete initial evaluation of the patient, taking into consideration any background or hospital discharge summary material that is provided when the patient is referred for home care follow-up. Referral information provided is often incomplete, and the physiotherapist must be skilled in performing and completing a cardiorespiratory history and examination. Patients with chronic obstructive pulmonary disease often suffer from more than one illness. The therapist must, therefore, assess and report on these other health problems. Such problems that often occur in chronically ill, elderly patients are osteoarthritis, depression and generally diminished mobility and function. These must be monitored and appropriate other health care professionals advised or contacted for intervention. Environmental allergens and irritants such as smoke and dust may increase problems. Families must be advised or helped to identify and minimize these irritants. They must also be made aware of obstacles in the home, such as scatter mats, furniture arrangement, etc., that may make it unsafe or difficult for the patient to remain mobile.

APPENDIX B

APPENDIX B

Co-ordination of Services

The identification of the need for home care and community services can come about in a variety of ways. Routinely, patients may be referred for physiotherapy from the following sources:

1. the family physician or respiratory specialist,
2. health professionals in hospitals who have been involved in their treatment during their in-patient admissions,
3. other allied health care workers in the community, or
4. initiated by a concerned family member.

No matter which method is used, all patients who received physiotherapy follow-up in the home in this investigation were authorized by a physician's referral and approved for such home care services by the appropriate case co-ordinator for the provincial home care program. While the method of referral seemingly is straightforward, many times the actual procurement of such services may be difficult. It may be complicated by inadequate staffing, lack of awareness on the part of physicians or other allied health care workers that such service is available, bureaucratic red tape, or even the patient's own ambivalence about such services.

Although everyone involved in the care of patients shares responsibility for maintaining open communication with one another, this is sometimes more effective than others. Physiotherapists seeing patients in the home care setting prepare a written report which is distributed to referring physicians and to the provincial home care case co-ordinator (Appendix C). Often for respiratory patients, the physiotherapist is the person who is best equipped to assess how that patient is functioning in his home setting.

APPENDIX C

APPENDIX C

Mr. Dr.

Avenue

Dr.

C.O.L.D.: Bronchiectasis: February 24, 1985
Recurrent Pneumonia

An initial visit was made to Mr. residence on February 17th, 1985 with his wife present.

Home Situation: Mr. lives in a one storey home with his wife. There is a basement accessible by 12 steps.

History: Mr. presents with a history of progressive chronic obstructive lung disease. He was recently a patient in the Respiratory Centre due to a right lower lobe pneumonia but was discharged on January 26th, 1976. He was previously admitted to the Respiratory Centre, also in 1972. He states that he had a fall in 1970 resulting in rib fractures on the left side and this has left him with a slight thoracic deformity. He also experienced a traumatic injury to his right upper limb several years ago and has been left with a 90 degree flexion contracture of the right elbow.

Physical Status:

Auscultation - On auscultation scattered expiratory rhonchi were noted. There was poor air entry in the bases bilaterally, particularly over the posterior aspect of the chest wall. The resting heart rate was noted to be 108 beats per minute.

Breathing Pattern - The breathing pattern was apical with some lateral costal expansion noted bilaterally. Supraclavicular indrawing was present as was some use of the accessory muscles of respiration.

Chest Deformity - A bony deformity is present over the left lateral chest wall due to the injury mentioned above. The shoulders are carried high, particularly the right shoulder which was also injured previously.

Cyanosis & Clubbing - Minimal ankle oadema was present. Some clubbing of the fingers was also noted.

Cough & Sputum - Mr. is maintaining a daily record of the quantity of sputum produced. At present his sputum is watery with a heavy layer of thick, green plugs. His cough is effective for over 100 cc. of sputum daily.

Appliances - Mr. uses a Ventolin inhaler three to five times daily.

Medications - A short course of Tetracycline was started on February 8th and was to be continued for 10 days at 250 mg. q.i.d. Other medications are:
Acetaminophylline 325 mg. - q.i.d.
Ventolin 4 mg. - q.i.d.

Exercise Tolerance - Stress Test - A specific stress test was not carried out at thie time.

- General Exercise Tolerance in Daily Living. Mr. is independent in self care. He is also capable of carrying out a daily treatment program as listed below.

Psychological Status: Mr. is very co-operative and works hard at his treatment program.

Treatment Program: At present Mr. is carrying out the following program:

1) He climbs the basement steps four times daily.
2) He has a rowing machine in the basement on which he carries out 100 strokes in two periods of exercises per day.
3) He carries out a walking program in his basement.
4) He records his daily sputum production.
5) With his wife's assistance, he carries out deep breathing and coughing with vibrations to the chest daily.

Recommendations :

1) That Mr. continue his program of home exercises and vibrations with deep breathing and coughing. It was suggested that, as well as carrying out the vibrations with Mr. in the sitting position, Mrs. should also vibrate the right side of the chest with Mr. lying on his left side.
2) That he continue the daily sputum record.
3) That visits be continued on a weekly basis to check on Mr. progress.

(Miss) M.C.P.A.
Physiotherapist

cc: P.T. Department, Rehabilitation Centre, H.S.C.
Dr. Home Care Department, General Centre, H.S.C.,
700 William Avenue

APPENDIX D

Appendix D

TELEPHONE PROTOCOL AND QUESTIONNAIRE

Name ____

Address ______________________________________
____

Phone Number __________________________________

Hello, is this Mr./Mrs. ______________________________?

This is ______________________________________

I am calling from the University of Manitoba about a study on therapy services. Did you receive our letter indicating I would be calling?

Yes ________ No ________

Would you be willing to answer a short questionnaire about the therapy services you received in the past? Yes ________ No ________

(If response is Yes read the following and move to the questionnaire please.)

Thank you. The first question is:

(If response is No, please read the following boxed area.)

If you do not wish to answer the questionnaire, could you please tell me why?

____
____
____
____
____

Thank you.

Telephone Questionnaire

1) Part of the therapist's job is to collect information about you from yourself or your family in order to understand you and how the health problem has affected you. During the therapist's visits, did you feel that:

a) The therapist actively involved you in collecting this information? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

b) The therapist helped you to understand the reason for collecting this information? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

2) It is important that the information that the therapist collected about your health and feelings was correct. Do you feel that:

a) The therapist consulted you or your family to make certain that the information she received was correct? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

b) Did you feel that after the therapist's visits you had a better understanding of your health or health problem? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

3) The therapist attempts to establish goals or treatment routines with each person to improve his/her health or ability to cope with the situation. Do you feel that:

a) The therapist helped you to understand these goals or treatments? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

b) The therapist made you or a family member feel partly responsible for reaching these goals or performing treatment? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

4) Due to the therapist's visits and instruction do you feel that:

a) You can better identify and understand changes in your health status? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

b) You know when to contact your doctor or other health persons as necessary? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

c) You know how to cope yourself with health problems or feel more confident in handling health problems? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

5) Do you feel that due to the visits from the therapist:

a) That your health status or ability to cope with your health status improved? (circle number)

1 DISAGREE STRONGLY
2 DISAGREE
3 DISAGREE SLIGHTLY
4 NO OPINION, UNDECIDED
5 AGREE SLIGHTLY
6 AGREE
7 AGREE STRONGLY

6) Is there anything else that you would like to tell us about the care you received from the therapist?

7) Would you like a copy of a summary of the results of this survey? If so, we would be pleased to mail one to you when the study is completed. Yes ________ No ________ (If Yes) Your current address and postal code are: (Refer to front of protocol sheet please.)

YOUR ASSISTANCE IN THIS SURVEY IS GREATLY APPRECIATED

THANK YOU

15 Kenwood Place
Winnipeg, Manitoba
R2M 1Y4
February 9, 1987

Dear

Within a week or so, we will be calling you from the University of Manitoba as part of a research study. This is a survey in which we are seeking to understand how people feel about therapy services that have been provided in the home in the past and what might be done to improve them.

We are writing in advance of our telephone call because we have found that many people appreciate being advised that a survey is being done, and that they will be called.

When our interviewer calls, she will ask to interview you or an adult member of your family. Altogether the interview should only take a few minutes. If by chance we should happen to call at an inconvenient time, please tell the interviewer and they will be happy to call back later. If for any reason you do not wish to participate in the study, just let the interviewer know when she calls.

Your help and that of others being asked to participate in this effort is essential for the study's success. We greatly appreciate it.

If you have any questions, please do not hesitate to ask our interviewer or you may contact me by phone at 885-1990.

Yours truly,

Jim McLaren   Jmc/vf

APPENDIX E

APPENDIX E

Telephone Questionnaire

1) Part of the therapist's job is to collect information about you from yourself or your family in order to understand you and how the health problem has affected you. During the therapist's visits, did you feel that:

a) The therapist actively involved you in collecting this information? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	1
6	AGREE	4
7	AGREE STRONGLY	3

b) The therapist helped you to understand the reason for collecting this information? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	1
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	1
5	AGREE SLIGHTLY	
6	AGREE	3
7	AGREE STRONGLY	3

2) It is important that the information that the therapist collected about your health and feelings was correct. Do you feel that:

a) The therapist consulted you or your family to make certain that the information she received was correct? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	
6	AGREE	4
7	AGREE STRONGLY	4

b) Did you feel that after the therapist's visits you had a better understanding of your health or health problem? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	
6	AGREE	3
7	AGREE STRONGLY	5

3) The therapist attempts to establish goals or treatment routines with each person to improve his/her health or ability to cope with the situation. Do you feel that:

a) The therapist helped you to understand these goals or treatments? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	
6	AGREE	3
7	AGREE STRONGLY	5

b) The therapist made you or a family member feel partly responsible for reaching these goals or performing treatment? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	
6	AGREE	5
7	AGREE STRONGLY	3

4) Due to the therapist's visits and instruction do you feel that:

a) You can better identify and understand changes in your health status? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	
6	AGREE	3
7	AGREE STRONGLY	5

b) You know when to contact your doctor or other health persons as necessary? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	1
5	AGREE SLIGHTLY	
6	AGREE	3
7	AGREE STRONGLY	4

c) You know how to cope yourself with health problems or feel more confident in handling health problems? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	
6	AGREE	4
7	AGREE STRONGLY	4

5) Do you feel that due to the visits from the therapist:

a) That your health status or ability to cope with your health status improved? (circle number)

		RESPONSES
1	DISAGREE STRONGLY	
2	DISAGREE	2
3	DISAGREE SLIGHTLY	
4	NO OPINION, UNDECIDED	
5	AGREE SLIGHTLY	
6	AGREE	2
7	AGREE STRONGLY	4

6) Is there anything else that you would like to tell us about the care you received from the therapist?

1) Come more often to repeat information you might not have understood the first time.

2) Great - except it wasn't often enough.

3) Great - I learned a lot.

4) Conscientious. I had disorder for 28 years and knew a lot about it before therapist came.

5) Excellent - come more often.

6) Young well qualified staff. I feel better after every visit.

7) We work together and it's good.

7) Would you like a copy of a summary of the results of this survey? If so, we would be pleased to mail one to you when the study is completed. Yes ________ No ________ (If Yes) Your current address and postal code are: (Refer to front of protocol sheet please.)

YOUR ASSISTANCE IN THIS SURVEY IS GREATLY APPRECIATED

THANK YOU