

THE ROLE OF A COMMUNITY-BASED CARDIAC EDUCATION PROGRAM  
FOR POST-MYOCARDIAL INFARCTION PATIENTS

by

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## Abstract

This exploratory study examined the role of a community-based cardiac education program for post-myocardial infarction patients in affecting their health knowledge, health beliefs, and health behaviors. Four sources of data were used to address this purpose: components of both a hospital and a community-based program, Home Care nurses, and post-myocardial infarction patients.

The framework for the study was the PRECEDE-PROCEED health promotion planning model (Green & Kreuter, 1991), serving as an organizational framework for instrument development and data analysis. In addition, it provided the conceptual basis for understanding the context in which education is offered, and ways in which the program addressed factors within that context.

Analysis of the hospital program was done to determine the baseline level of cardiac education provided to patients before hospital discharge. Both programs were analyzed in relation to philosophical framework, content, implementation, and evaluation.

A questionnaire addressed Home Care nurses' perceptions of the intended and unintended outcomes of the Home Care Program.

An interview schedule was administered to first-myocardial infarction patients, to determine health behaviors, health knowledge, health beliefs, and perception of both programs. This interview schedule was used both for the in-hospital interview, and a follow-up interview at six to eight weeks post-discharge.

A qualitative approach to data analysis enabled exploration of emergent themes within and across data sources.

Conclusions of the study related to themes identified through the qualitative approach and included the following:

1. The primary difference between the Hospital and Home Care Program related to method of implementation; a standardized versus an interactive, individualized approach;
2. Predisposing factors, such as beliefs, motivation, and culture were of major significance in adoption of recommended behavior changes;
3. Cultural factors played an important role in the social context of the patient and family, thus affecting other antecedents to behavior;
4. The environment in which the education was offered was a key element in determining the effect of the program on promoting behavior and lifestyle change.



## TABLE OF CONTENTS

Abstract .....	ii
Tables of Contents .....	iv
List of Tables .....	vii
List of Figures .....	viii
Acknowledgements .....	ix
CHAPTER 1: THE RESEARCH PROBLEM .....	1
Introduction .....	1
Purpose .....	2
Background .....	3
Self-Care and Wellness .....	5
The Impact of M.I. on Individuals and Their Families .....	6
Cardiac Education at Home .....	8
CHAPTER 2: REVIEW OF LITERATURE .....	12
Introduction .....	12
Factors Affecting Behavior Change in Post-M.I. Patients .....	12
Patient Education in the Hospital Setting .....	20
Hospital-Community Cardiac Education .....	27
Summary of Hospital-Based and Combined-Approach Programs .....	28
Community-Based Cardiac Education .....	29
Summary .....	37
CHAPTER 3: CONCEPTUAL FRAMEWORK .....	39
Introduction .....	39
Review of Conceptual Frameworks .....	40
The PRECEDE-PROCEED Model .....	43
CHAPTER 4: METHODOLOGY .....	54
Background .....	54
Design .....	55
Research Sample .....	57
Measurement Instruments .....	58
Data Collection Procedures .....	65
Analysis of Data .....	67
Summary .....	75

CHAPTER 5: PRESENTATION OF FINDINGS: THE PROGRAMS . . . . .	76
The Hospital Program . . . . .	76
The Home Care Cardiac Rehabilitation Program . . . . .	97
Comparison of Programs . . . . .	113
Summary: The Programs . . . . .	124
CHAPTER 6: PRESENTATION OF FINDINGS: THE HOME CARE NURSES	126
Intended Outcomes . . . . .	126
Achievement of Intended Outcomes . . . . .	129
Lack of Achievement of Intended Outcomes . . . . .	129
Unintended Outcomes . . . . .	130
Facilitating Factors . . . . .	131
Barriers to Achieving Intended Outcomes . . . . .	133
Changes Observed in Patients With Regard to Health Knowledge, Health Beliefs, and Health Behaviors . . . . .	133
Changes Observed in Spouses or Support Persons With Regard to Health Knowledge, Health Beliefs, and Health Behaviors . . . . .	136
Factors to Which Changes Were Attributed (Patients) . . . . .	137
Factors to Which Changes Were Attributed (Spouses or Support Persons) . . . . .	139
Aspects of Lifestyle Most Likely to Change (Patients) . . . . .	140
Aspects of Lifestyle Most Likely to Change (Spouses or Support Persons) . . . . .	140
Aspects of Lifestyle Least Likely to Change Attributed to (Patients) . . . . .	141
Aspects of Lifestyle Least Likely to Change Attributed to (Spouses or Support Persons) . . . . .	142
Use of Community Resources . . . . .	142
Barriers to the Use of Resources . . . . .	144
The Role of Spouses or Support Persons . . . . .	144
Discussion and Analysis . . . . .	145
Summary . . . . .	148
CHAPTER 7: PRESENTATION OF FINDINGS: PATIENT INTERVIEWS . . .	150
Behavior and Lifestyle . . . . .	152
Predisposing Factors . . . . .	155
Enabling Factors . . . . .	166
Reinforcing Factors . . . . .	170
Perception of the Education Programs . . . . .	172
Environment . . . . .	181
Summary . . . . .	183

CHAPTER 8: INTEGRATION OF FINDINGS .....	184
The Program and the Home Care Nurses .....	189
The Program and the Patients .....	192
Triangulation .....	193
CHAPTER 9: DISCUSSION AND CONCLUSIONS .....	195
Summary .....	195
Discussion .....	198
Conclusions .....	201
Limitations .....	202
Recommendations for Practice .....	205
Recommendations for Future Research .....	215
BIBLIOGRAPHY .....	218
APPENDIX 1: DEFINITION OF TERMS .....	229
APPENDIX 2: QUESTIONNAIRE FOR HOME CARE NURSES .....	232
APPENDIX 3: PATIENT INTERVIEW SCHEDULE .....	238
APPENDIX 4: LETTER TO HOME CARE NURSES .....	271
APPENDIX 5: LETTER TO NURSES OF TWO-SOUTH .....	274
APPENDIX 6: LETTER OF INTRODUCTION AND RESEARCH CONSENT FORM FOR PATIENTS .....	277
APPENDIX 7: PATIENT INTERVIEW PATH: CODES WITHIN BROAD DESCRIPTIVE CATEGORIES .....	282
APPENDIX 8: PATIENT INTERVIEWS: ADDITIONAL CODES WITHIN BROAD DESCRIPTIVE CATEGORIES .....	284

## LIST OF TABLES

Table 1	A Priori Categorization for Responses to Home Care Nurse Questionnaire .....	61
Table 2	Summary of Hospital Versus Home Care Cardiac Education Programs .....	114
Table 3	Summary of Home Care Nurses' Perceptions of Intended and Unintended Outcomes of Education Program for Post-M.I. Patients .....	127
Table 4	Summary of Home Care Nurses' Perceptions of Factors Affecting Achievement of Outcomes .....	131
Table 5	Summary of Home Care Nurses' Perceptions of Changes in Post-M.I. Patients and Their Spouses/Support Persons .....	134
Table 6	Summary of Home Care Nurses' Perceptions of Post-M.I. Patients' Use of Resources (Community) and Role of Spouses or Support Persons .....	143
Table 7	A Comparison of Program Intent, Nurses' Perceptions of Program Intent and Outcomes, and Patient Experiences/Outcomes, Using the PRECEDE-PROCEED Model (Green & Kreuter, 1991) .....	185

## LIST OF FIGURES

Figure 1 The PRECEDE-PROCEED Model for Health Promotion Planning and Evaluation (Green & Kreuter, 1991) . . . . .	45
Figure 2 Patient Interview Items in Relation to the PRECEDE- PROCEED Model (Green & Kreuter, 1991) . . . . .	70
Figure 3 Summary of Patient Interview Findings in Relations to the PRECEDE-PROCEED Model (Green & Kreuter, 1991) . . . . .	151

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## CHAPTER 1

### THE RESEARCH PROBLEM

#### Introduction

Each year, thousands of Canadians develop cardiovascular disease which results in myocardial infarction, otherwise known as "M.I." or "heart attack." In 1985, the chance of eventually dying from a disease of the circulatory system or the heart were greater for all age groups than from any other cause (World Health Organization, 1987, p. 82). Cardiovascular disease continues to exist as the most prevalent chronic illness and leading cause of death in Canada. In 1988, forty-one percent of all deaths in Canada were due to cardiovascular disease. Ischemic heart disease accounts for twenty-five percent of all deaths, of which more than half are attributable to acute myocardial infarction. One-quarter of people who suffer a myocardial infarction die suddenly before they reach hospital; seventeen percent die before discharge from hospital and up to twenty-seven percent die within the first year (The Heart and Stroke Foundation of Canada, 1991, p.3). Those who survive an initial cardiac event become potential long-term consumers of the health care system. Cardiovascular disease presents many challenges to the health care system in Canada. Ongoing study of outcomes of efforts to prevent and treat such chronic health problems provides policy makers, program planners, and health personnel with information which is essential to improvement of health care. Inherent in prevention and treatment is promotion of self-care and responsibility by individuals for their health, through provision of health promotion and education programs.

There is an abundance of research-based literature relating to the outcomes of

educational interventions for chronic conditions such as cardiovascular disease. Much of this literature addresses knowledge gain, behavioral change, or health status as outcomes of various educational approaches. Many of the recommendations made within the research literature relate to consideration of factors in addition to those studied, in order to determine the effectiveness of education within the context which it is offered. It was discovered by this researcher that there is a scarcity of research which addresses cardiac education within a broad social context, especially with regard to programs designed to reach individuals in their own natural environments. For this reason, the study described within this paper was designed and conducted.

### Purpose

The primary purpose of the study was to critically examine the role of a community-based cardiac education program for post-M.I. patients in affecting their recovery and adaptation to the cardiac illness. In order to study the program within a broad context, an analysis of four inter-related areas of concern was conducted as follows:

1. Analysis of a community-based cardiac education program for post-myocardial infarction patients with regard to the following components: (a) philosophy and goals; (b) design, including behavioral objectives, conceptual framework, and strategies for implementation; (c) implementation, including preparation of staff for patient education; materials and resources used, and delivery; and (d) evaluation, including feedback from patients and families, research studies, patient-completed knowledge tests, and program evaluation by health professionals who are responsible for education. This analysis was directed at gaining an understanding of the structure and processes of the educational



intervention, and intended and unintended outcomes.

2. Description and analysis of a cardiac education program offered to post-M.I. patients in the hospital which refers patients to the community-based program, according to the four components described above. This was conducted in order to gain an understanding of how the community-based program interfaces with education offered to post-M.I. patients in the hospital setting prior to discharge;
3. A qualitative approach to analysis of themes noted in patients' health knowledge, health beliefs, and health behaviors over a six to eight week period, and patients' perceptions of both the hospital and community-based programs. This was conducted as a means of providing a perspective of the consumer, with regard to the role of the program in affecting patients' recover and adaptation to the M.I.; and
4. A questionnaire administered to the nurses who implement the community-based program, asking them to assess their cardiac education program in relation to intended and unintended outcomes, changes observed in patients' and spouses (or support persons') health knowledge, health beliefs, and health behaviors, and utilization of community resources.

A qualitative approach was employed in order to analyze data within the context of patients' lives and the settings in which the education was offered, using the four data sources described above to compare findings through a triangulation process, upon which conclusions and recommendations could be based.

### Background

An overview of cardiovascular disease with regard to demographics, risk factors, and economic impact provides a background to the many challenges imposed upon

individuals, their families, the health care system, and society at large. These factors, addressed by the Heart and Stroke Foundation of Canada (1991), could be considered the driving force behind education programs such as those analyzed within this study.

The demographic profile for death from cardiovascular disease has been studied extensively. Death from this disease is twice as prevalent in men as in women; for both sexes, rates increase dramatically in the older age groups, although it is still the leading cause of death in the 35-64 age group. Higher death rates are also associated with lower income and educational levels (The Heart and Stroke Foundation of Canada, 1991, pp. 3-8).

The risk factors associated with this disease are classified either as modifiable or non-modifiable. Through prevention of modifiable risk factors, some of the burden of cardiovascular disease can be alleviated. Optimal prevention incorporates a combination of individual lifestyle changes, modification of social and physical environments, and medical management of disease (The Heart and Stroke Foundation of Canada, 1991, p. 27).

An executive summary of the British Columbia Heart Health Survey was conducted in 1987 to estimate the prevalence of cardiovascular disease risk and level of knowledge and awareness. Results of this provincial study included discovery that knowledge and awareness of the causes and consequences for heart disease is low, and there was poor recognition of the major risk factors. In addition, slightly less than two of every three British Columbians have one or more of the major risk factors; smoking, high blood pressure, and elevated blood cholesterol (1990, p. 3).

Not only is cardiovascular disease a major concern of the health care field in

relation to its direct impact on the lives of Canadians; it also presents a significant drain on health services. The death rates for this disease are declining, while related economic costs are increasing, and patients survive longer, and become long-term consumers of health care. Effort must be made not only to support the decreasing mortality rate, but also to decrease the incidence of the disease in order to reduce social and economic costs (The Heart and Stroke Foundation of Canada, 1991, p. 24). It is with this purpose that the health care industry has undertaken extensive education and research relating to cardiovascular disease. There is now conclusive evidence that modification of certain risk factors and use of health promotion strategies and prophylactic agents can substantially reduce both mortality and morbidity in survivors of acute M.I. (Fallen, et al, 1991). Various approaches have been implemented to facilitate prevention and self-care within society, through development of health promotion and education programs.

#### Self-Care and Wellness

In times of increasing economic restraint and increasing health care costs, self-care and the "wellness" concept have become a popular focus of community-based health care programs and the health care industry in general. According to Ardell (1979), wellness consists of dimensions such as physical fitness, nutritional awareness, stress management, environmental sensitivity, and self-awareness/self-responsibility (p. 19). The media has done a great deal to promote wellness, as well as campaigns by health organizations such as the Heart and Stroke Foundation. Institutions such as the government, schools, hospitals, and industries, have become involved in promoting healthy lifestyles, physical fitness, and stress management (Tulloch & Healy, 1982, p. 14).

The concepts of self-care and wellness have been considered from a broader

perspective by some authors. It has been argued that heart disease and at-risk behavior for heart disease are influenced by broad social structural factors, including the family and its social networks, community organizations, and the broader political-economic spectrum. The frequent failure of many health intervention programs could be considered largely attributed to the inadequate recognition given to aspects of social context (McKinlay, 1975, p. 7). Green and Kreuter (1991) discuss the controversial debates which have occurred at the policy-making level, relating to individual vs. social responsibility for health, facilitating individual behavior change vs. broader institutional and social change approach to health promotion, and blaming the victim vs. the manufacturers of illness (p. 2). These authors recommend the community as the "centre of gravity" for health promotion (p. 4).

#### The Impact of M.I. on Individuals and Their Families

It is important to recognize the potential impact of a cardiovascular disease, such as M.I., on individuals and their families, in order to understand the challenges confronted by educators in helping them adjust to the chronic illness. The entire coronary experience can be placed on a continuum on which the M.I. patient's hospital stay represents only a small segment (Liddy & Crowley, 1987, p. 19). During this time, the patient is likely to experience emotional disequilibrium, as the reality of the cardiac event is begun to be accepted. Stern (1984) describes a process which occurs within the first few days of the M.I., whereby the patient takes stock of his situation, and considers the potential short and long-term effects on himself and the family. Anxiety and depression often become evident during the early phase of recovery, neither being related to clinical severity of the M.I. (p. 454). Patients who have suffered an M.I. often

experience fear and uncertainty regarding what they may do independently in the initial weeks, and how to incorporate the necessary changes into their lives (Garding, Kerr, and Bay, 1988, p. 356). The process of recovery in M.I. patients and their families can be viewed as a psychological process, during which their lives must be reorganized in order to adapt to their new situation (Hentinen, 1986, p. 126). Once the patient has been discharged from hospital, he is likely to feel vulnerable and insecure about his ability to recover and resume his previous lifestyle. Much of the information given in hospital is not remembered, due to psychological reactions to the event (Pinneo, 1984, p. 460). Redman (1976) states that during the convalescence phase of an M.I., an individual must accomplish three tasks: reassessing and modifying lifestyle, dealing with threat to self-image, and coping with dependence for an undetermined length of time. She argues that short hospital stays (due to cost-containment strategies and available outpatient services) mean that many patients are discharged before much of this 'work' has been completed (p. 45). Gregor (1985, p. 3), Liddy and Crowley (1987, p. 17), and Garding et al. (1988, p. 361) support the view that the short period of time M.I. patients spend in hospital prevents them from meeting their learning needs before discharge. In fact, according to Liddy and Crowley (1987), much of the necessary adjustment takes place during the first four to six weeks following discharge from hospital (p. 19).

The transition from hospital to home may, in some cases, be made more difficult by conflicts between patients and their families, due to misunderstandings about the nature of coronary artery disease, and misinterpretation of instructions (Wishnie, Hackett & Cassem, 1971, p. 1292). As families cannot anticipate the challenges they will be met with during recovery from the M.I., they often think of questions in the early

weeks following discharge from hospital (Argondizzo, 1984, p. 161; Hilgenberg & Crowley, 1987, p. 32; Liddy & Crowley, 1987, p. 22).

During convalescence, the M.I. patient gradually progresses along a continuum from a "sick" role to a new role. Dracup, Meleis, Baker & Edelfsen (1984) describe this as the "at risk" role, claiming it demands permanent changes in nearly all aspects of the patient's and family's life (p. 115).

The assumption underlying health education for management of chronic illnesses such as myocardial infarction is that patients who are knowledgeable about coronary disease and reduction of risk factors will apply this knowledge to their own personal lives (Niskala, 1986, p. 2). For this reason, health professionals involved in cardiac education seek ways to foster knowledge gain in positive attitudes in their patients, with the hope that positive health behaviors will result. With post-M.I. patients, the challenge lies in helping them develop new behaviors to reduce risk factors which make them susceptible to recurrent M.I.'s or other complications of cardiovascular disease, and to regain an optimal level of physical, psychological, emotional, and social functioning.

#### Cardiac Education at Home

Education for post-M.I. patients and their families is considered by most researchers as necessary in both the acute and convalescence stages of recovery; however, most programs occur primarily in the hospital setting (Niskala, 1986, p. 1). This observation remains true at the present time, although some literature describes programs which begin in the hospital and continue in some capacity in the community. There is an abundance of literature which suggests the need for cardiac education which continues in the post-hospitalization phase of recovery from M.I. During this period, the

patient is considered to be more receptive to educational efforts, because the initial shock of the event has passed, and the patient and family are likely to have questions which pertain to their own unique situation. Individualized education and support are believed by many researchers to be more meaningful to the patient and family than a standardized education program. There is limited research, or other information, however, relating to programs which have adopted a community-based approach to reacting individuals during the window of opportunity which occurs in the early weeks following M.I.. Niskala (1986) reports that a search of medical/nursing indices for the years 1980 to 1985 (150 entries) yielded only six references which discussed community-based programs (p. 2).

This study acknowledges the extensive experimental and quasi-experimental investigations done by other researchers in the past, as well as the non-research based work by authors who present reports of their experiences with education of post-M.I. patients and their families. The literature provides a useful frame of reference for the purpose and methods of investigation for this study. Because of the limited amount of research relating to community-based education programs, this study was designed to analyze such a program, in order to gain insight about ways in which it affects the recovery and adaptation of patients following M.I..

Chapter 1 has addressed the impact of cardiovascular disease, on individuals and their families, the community, and society. The rationale for provision of education has been discussed as a means to promote risk factor reduction and prevention of illness in order to maintain or enhance wellness, and to reduce the economic impact of cardiovascular disease. The purpose of this study was discussed, in order to identify

ways in which a community-based cardiac education program supports the rationale for provision of health education.

Definitions of terms to be used throughout the body of this paper are located in Appendix 1.

Chapter 2 contains a review of the literature relating to patient education which occurs in both the hospital and community settings, and factors which are thought to affect patient learning and behavior change. Both research-oriented and non-research oriented literature is presented, to frame the study in the context of current perspectives and research findings relating to cardiac education programs.

Chapter 3 is a presentation of the conceptual framework for the study, the PRECEDE-PROCEED<sup>1</sup> health promotion planning model (Green & Kreuter, 1991). This model provides a systematic means of analysis of a community-based cardiac education program offered in the Lower Mainland of B.C., through discussion of factors which are critical to program development.

Chapter 4 presents the methodology of the study and includes a description of (a) the research design; (b) the research sample, (c) the research instruments, (d) data collection procedures, and (e) the analysis of data.

Chapter 5 consists of a presentation of the findings relating to the philosophical framework, content and implementation of both the hospital and the community-based

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<sup>1</sup> PRECEDE is an acronym for the diagnostic planning and evaluation model emphasizing predisposing, reinforcing, and enabling constructs in educational (and environmental) diagnosis and evaluation. PROCEED is an acronym for policy, regulatory, and organizational constructs in educational and environmental development, the phases of resource mobilization, implementation, and evaluation following the diagnostic planning phases of PRECEDE (Green and Kreuter, 1991, pp. 433-434).



cardiac education programs.

Chapter 6 presents the findings of the Home Care nurse questionnaire.

Chapter 7 presents the findings of the patient interviews.

Chapter 8 contains the integration and interpretation of the findings.

Chapter 9 presents the conclusion, discussion, and recommendations of the study to health educators and researchers, as well as limitations of the study.

## CHAPTER 2

### REVIEW OF LITERATURE

#### Introduction

The primary goal of education for post-M.I. patients is to affect behavior change, which is intended to ultimately influence health status and social outcomes such as quality of life. A review of research and health educators' perspectives provides insight regarding ways in which education programs address factors which predispose, enable, and reinforce behavior change in post-M.I. patients, and affect outcomes.

There exists a substantial body of literature which addresses such issues as the impact of M.I. upon the patient, and success of various types of education programs to foster compliance to a cardiac regimen following M.I. In recent years, researchers have also studied the effects that this chronic illness has on the patient's and family's life during the post hospital recovery phase known as convalescence. A better understanding of the impact of M.I. with the context of the patient's and family's life appears critical to the design of education programs, in order to ensure that such programs are meaningful and applicable to daily life.

The purposes of this chapter are (a) to first discuss the literature relating to factors which affect behavior change in post-M.I. patients, such as knowledge and psychological factors, and with this as a background, to (b) discuss the literature relating to cardiac patient education.

#### Factors Affecting Behavior Change in Post-M.I. Patients

The following discussion focuses on the factors that are suggested in the literature as affecting behavior change in post-M.I. patients. These factors relate to knowledge

and psychological adjustment following M.I.

### Knowledge

Learning in the post-M.I. patient is affected by many factors, in addition to those identified in the adult education literature (such as previous experience, culture, socio-economic background, and need to be self-directed). Length of time for learning while in hospital, the perceived relevance and meaningfulness of information, and the patient's readiness to learn, based on progress from the sick role to the transitional at risk role, all influence learning in the post-M.I. patient. The factors which predispose learning to live with this chronic illness have been studied by numerous researchers.

Post-M.I. patients, like other patients with newly diagnosed chronic illnesses, have varying levels of knowledge, as well as specific values, perceptions, and beliefs about health which predispose them to adopt certain health-related behaviors. Of these factors, knowledge gain has been studied as a primary focus by many researchers in efforts to determine effectiveness of cardiac education programs. Although the findings of their studies have shown limited effect of knowledge in behavior, the importance of other factors, such as beliefs and learner readiness, have been identified by some authors. Shaw, Cohen, Doyle, and Palesky (1985) state that cardiac rehabilitation in the form of patient education has become an integral part of hospital treatment for patients recovering from a heart attack. Although this leads to significant knowledge gain, the impact of information gained on subsequent recovery from M.I. remains unclear (p. 262). In a quasi-experimental time series study of differences in knowledge and compliance in post-M.I. patients, Scalzi, Burke, and Greenland (1980) found experimental subjects improved only marginally in knowledge following an in-patient

education program, suggesting that retention of information during the acute phase of illness is limited. Various factors are suggested for non-significance of findings such as possible interviewer bias. Learning and compliance outcomes of this study do not provide strong support for education programs; the authors advocate providing learning opportunities at appropriate times for post-M.I. patients stating that their retention of information during hospitalization is limited and that continued instruction during the post-discharge phase appears to improve knowledge and compliance (p. 852). The authors did not address factors which contribute to changes in knowledge and behaviors. Argondizzo (1984) supports this conclusion, emphasizing that patients' stages of physical and psychological adaptation to the chronic illness affects learning, retention, and use of new knowledge in their daily lives (p. 162). Hentinen (1986), in studying the effectiveness of in-hospital and community-based cardiac education programs, found that, despite improved knowledge, post-M.I. patients became non-compliant to care by three-months after discharge from hospital (p. 135). Liddy and Crowley (1987) found that patients were not well-informed following hospital teaching; they did not attempt to determine reasons for their subjects' inadequate knowledge (p. 23). Rahe, Scalzi, and Shine (1975) were also unable to demonstrate significant knowledge gains after a planned patient education program, which may be due to questionable reliability of the instrument used (p. 759).

A three-month study conducted by Sivarajan, Newton, Almes, Kempf, Mansfield, and Bruce (1983) indicated minimal significance in differences between compliance outcomes in treatment and control groups; in areas of smoking cessation, dietary modification, or weight loss; however, the treatment program did not begin until after

patients' discharge from hospital. These authors concluded that a prescriptive, individualized approach to education, beginning while patients are still in hospital, and continuing after discharge, may be more beneficial than the post-discharge group approach. The authors also recognized that their interventions were not sufficient in providing needed stimulus for long-term behavior change (p. 73), and that knowledge acquisition is only one of many factors which influence behavior change (p. 72). Horlick, Cameron, Firor, Bhalerao, and Beltzan (1974) had found similar results; in an experimental longitudinal hospital study of 116 post-M.I. patients they, however, suggested in their conclusion that pre-existing health attitudes might play a key role in compliance with cardiac regimens, and that perhaps the control subjects were more highly motivated than the experimental subjects (those included in teaching and group discussion). They indicated that this factor may account for the minimal differences noted between groups after experimental intervention was discontinued (p. 493). A review of research literature on inpatient post-M.I. education programs published between 1975 and 1989 suggests that formal programs are of some value in increasing patients' knowledge and promoting lifestyle change after discharge. However, the findings are not consistent between programs of all subject matter; the author concludes that factors which contribute to the success of such programs require further investigation (Duryée, 1992, p. 224).

### Psychological Factors

Other key factors in the process of post-M.I. adjustment have been identified and studied in addition to the patient's knowledge of the cardiac event. Dracup et al. (1984) focused on the effects of psychological adaptation on cardiac rehabilitation, emphasizing

the importance of spousal involvement in "role transition" of the post-M.I. patient.

Burgess and Hartman (1986) found that by altering health attitudes and beliefs within the first three months after M.I., the patient's quality of life could be improved (p. 571). Patients' perceptions of the M.I. influenced several factors associated with return to work; psychological distress, social independence, and re-employment barriers. An individualized cognitive-behavioral approach was used to assess belief patterns and provide strategies for reforming these beliefs when they impeded recovery. In this way, the patient and support person could be encouraged to make positive decisions affecting their work-life (pp. 568, 571). Using a time sequential quasi-experimental approach, Maeland and Havik (1987) discovered that patients with more knowledge and realistic beliefs about M.I. and fewer initial emotional disturbances had better short-term coping behaviors than patients not possessing those characteristics. For example, they resumed physical activities more rapidly, consulted physicians less often in the first six weeks after discharge; there was no significant effect on smoking, return to work, resumption of sexual activity, or number of re-hospitalization. Although the mortality rate was significantly lower at six months in the experimental group, long-term survival was the same (p. 57). The significance of the lower short term mortality was considered a tentative finding, due to small sample size and number of deaths, and convergence of survival curves later (p. 63). Krantz (1980) shares Maeland and Havik's (1987) perspective, stating that recovery from M.I. involves the interaction of medical and psychological processes, and that important recovery outcomes may depend on the patient's interpretation of illness, and an ability to apply psychological coping mechanisms (p. 27). Perception of health, fear of reinfarction, anxiety, depression, and

loss of control are identified by the author as possible predictors of post-M.I. adjustment (p. 28).

Croog and Richards (1977) found a high level of belief in the role of smoking as a cause of heart attack for post-M.I. patients, thus contributing to their abstinence from smoking over an 8-year follow-up period. Other causes identified by patients were stress at work, worry, and working too hard. Using a structured interview questionnaire based in part on Croog and Richards' (1977) causal questionnaire, Rudy (1980) found tension to be the most frequent cause of M.I. given by both spouses and patients before discharge from hospital, and again at 30 to 60 days after discharge. This indicated a need to help people recognize tension-producing situations and develop alternatives to dealing with tension (pp. 352-356). Fielding (1987) argues that information from beyond professional sources help establish patients' beliefs about the cause of M.I., which the patient uses to weigh costs and benefits of various strategies, such as compliance or denial, to minimize or avoid the perceived threat of reinfarction. This author claims that patients tend to attribute the M.I. to psychosocial factors which they perceive as beyond their control, such as overwork and stress. They therefore become depressed and anxious about managing factors in their lives which they perceive as causative of M.I. The focus of health professionals on biological factors fails to address specific concerns of M.I. patients. They receive little help with the most threatening aspects of their disease, possibly resulting in poor compliance and/or high psychological morbidity (pp. 121-130). Wenger (1984) poses important questions about patient education as it relates to "internally" and "externally" oriented patients. She suggests that various methods of implementation of patient education may enhance or exacerbate traits of patients who

tend to be either self-reliant or experientially motivated (pp. 166-167). These questions warrant careful consideration in terms of how psychosocial factors relating to patients can influence their ability to learn under certain circumstances.

Byrne and Whyte (1978, 1981), among other researchers, have extensively studied the psychological and social disability of post-M.I. patients in relation to the effectiveness of cardiac rehabilitation programs. They focus on "illness behavior" describing it as the collective expression of cognitive, effective, and behavioral responses made by an individual to the challenge of physical illness (p. 485, 1978). They argue that the clinical significance of illness behavior is in its potential to affect the processes of recovery and rehabilitation. In a study of illness behavior patterns in 120 post-M.I. patients during hospitalization and eight months later, several aspects of illness behavior were determined as predictive of outcome. Those who had not resumed work by eight months post-M.I. were more likely than others to have assumed the sick role (1981, p. 97). Adoption of the sick role was considered to be based on individual personality traits, attitudes to illness, and subjective perceptions of the cardiac event (p. 100).

Mayou, Williamson, and Foster (1978) studied physical activity outcomes in relation to patients' psychological state, physical condition, and attitude toward the future. The authors examined patients' social context and quality of life before the heart attack in comparison to the two-month period following the event, by interviewing 100 patients before discharge from hospital and 94 patients at home, eight weeks later. Spouses were interviewed as well. Wide individual variation in outcome measures such as cardiac state, compliance, coping, or physical activity was found. Time of return to work, which has been regarded by other researchers as the most valuable, or only



measure of social outcome was unrelated to other measures. Social disability, as measured by behavior and mental state, was found to be unrelated to cardiac function or degree of compliance with medical care (pp. 439-444). This discovery casts doubt upon provision of education to patients on the basis of physical status or compliance alone. In an experimental study of three groups of post-M.I. patients, Mayou (1981) found differences in rehabilitation treatment outcomes which were not statistically significant, thus reinforcing earlier conclusions that early rehabilitation offered to every patient is not dramatically effective in reducing distress and social limitations (pp. 423-427).

In a study of 30 patients, Shaw et al. (1985) examined three factors which affected their recovery, finding that patients who denied more gained less information about anatomy and physiology of the heart; patients who valued socially desirable behavior gained less information about symptoms indicative of heart trouble, and activities appropriate for recovery; and patients who tended to use repressive behavior gained less information about heart disease risk factors (p. 262).

Garrity and Klein (1975) made behavioral observations of 48 patients during the acute phase following M.I., in relation to behavioral disturbance and positive behavior (reliability exceeded 0.01 level of agreement). Two distinct groups emerged; adjusters and non-adjusters. A six-month follow-up which indicated a higher survival rate among the adjusters was thought to be due in part to their ability to manage the threats and losses associated with M.I. in ways which minimized emotional distress (p. 135). Using multiple regression techniques, Philip, Coy, Stuckey, and Vetter (1981) were able to predict physical, psychological and social outcomes in 72 patients one year after M.I., in order to establish an "index of outcome" (pp. 137-141).

Other factors, such as sex, age, culture, socio-economic background, and previous life experience all influence patients' ability and readiness to learn (Fletcher, 1987, p. 195). These factors have been identified within the field of adult education as essential to the development of education programs for adults, of which patient education is a particularization.

### Summary

In summary, there is an abundance of research literature which describes the need to acknowledge factors other than, and in addition to, knowledge gain in the delivery of education programs for post-M.I. patients, based on the psychological processes which occur in these individuals. These psychological processes include role transition (from a sick role to an at risk role), coping mechanisms (denial, repression, depression, anxiety), health beliefs, and perception of the cardiac event. Many of the authors cited within this chapter have conducted studies of educational interventions directed toward patients and their families. These studies have attempted to determine relationships between education programs and outcomes, such as return to work, reduced mortality rate, and enhanced quality of life due to behavior and lifestyle change. Within the remainder of this chapter, both research and non-research oriented literature is presented with regard to hospital-based, community-based, and combined approaches to cardiac patient education.

### Patient Education in the Hospital Setting

#### Program Development

Within Canadian hospitals, education for post-M.I. patients is a standard component of care, due to the impact of cardiovascular disease on the health care

system. Education of these patients is justified on the basis that providing patients with the knowledge and skills they require to adjust to the chronic illness may have a positive impact on health care costs, such as through lower rates of readmission to hospital (Gregor, 1985, p. 3). The existence of such programs, and others which are offered on an out-patient basis, however, is not clearly justified in terms of outcomes; rather, research on these programs has suggested varied degrees of success. As stated by Garding et al. (1988), patient education programs which consist of written materials and audio-visual aids are commonplace in most health care institutions today; however, they are frequently not evaluated for their effectiveness (p. 361). Evaluation is a key component in the program planning and development process, upon which revision to design and implementation should be based.

The design, implementation, and evaluation of education programs are widely-accepted as essential components to program development; however, process analysis relating to these areas is not addressed within the research on post-M.I. patient education. It is interesting to note, however, that in a study of 120 hospitals in the United States by Stanton (1983), these components were lacking in varying degrees. With regard to design components, 60% of hospitals set objectives for patient education, but of these, 40% did not use a taxonomy as the basis for objectives. Bibliographies were infrequently provided. In the area of implementation, staff development and formative evaluation rated poorly, as well as staff input and in-service regarding program implementation. Evaluation of programs was found to be the weakest component in the instructional development process, whereby research and formal evaluation procedures were virtually non-existent (pp. 211-212). These findings are in agreement with Gregor's

(1985) comments about an inadequate commitment of hospitals to patient education. In order to better realize the potential impact of patient education on behavioral and quality of life outcomes, more research dedicated to the investigation of program development and delivery is needed.

### Delivery of Patient Education in Hospitals

The delivery of patient education within the hospital setting is affected by many factors which act as barriers to patient learning. In interviewing 100 M.I. patients just before discharge, Gregor (1985) found that only 15 had completed reading self-instructional pamphlets given to them six days prior. Factors impacting on their learning included their physical and psychological condition, the hospital environment, the timing of educational interventions, the health professionals' ability as educators, and organizational support for patient education (pp. 3-5). It is important to recognize and address not only patient-related factors which may influence the effects of education programs, but environmental and program-related factors as well.

### The Health Professional as Educator

Few studies which have examined patient education programs have addressed the role of the health professional as an educator. There appears to be an assumption within the health care disciplines that health professionals are prepared to accept and perform this role as an integral part of health care delivery. Their ability to do so is not questioned within the literature. As Gregor (1985) argues, however, this role, particularly in relation to nurses, is not well developed or supported within the hospital setting, despite the fact that the nurse is in the most appropriate position to assess patients' learning needs and facilitate their learning (p. 5). The author contends that

due to lack of support for this role, nurses often do not feel comfortable teaching patients, nor are they expected by the organization to be accountable for their performance in this role (p. 5). Gregor's findings, which may not be generally representative of educational practice in hospitals, indicate a need to explore the process of education program development for patients and their families. According to Argondizzo (1984), it is essential that information be provided in a consistent manner by all members of the health care team who are responsible for education, who have also been prepared clinically and educationally for the teaching role (p. 163). This is a challenge within the hospital setting, where tight working schedules give priority to medical and nursing activities, and leave no time for discussion. Education brochures are useful, but do not address patients' anxieties about the future. They may, in fact, act as a barrier to elaboration of more important aspects of patient education. Self-help groups, which may be of benefit to some individuals, may not meet the needs of those who cannot adapt to the group approach (DeHaes, 1982, pp. 98-99).

#### The Role of Reinforcement in Patient Education

Regardless of the methods of implementation and delivery chosen to facilitate knowledge gain, modification of psychosocial factors, and behavior change in post-M.I. patients, reinforcement and support must be provided in order to promote their continuation during and following recovery from the M.I.

Dracup et al. (1984), and Owens, McCann, and Hutelmyer (1978) describe reinforcement of positive changes in health beliefs, perceptions, knowledge, and behaviors as benefits of the group approach. According to these authors, mutual support, optimism about the future, and re-establishment of family and social

equilibrium can be achieved through group interaction.

Other authors recommend a prescriptive, individualized approach to meeting the learning needs of patients and their families (Argondizzo, 1984; Bedsworth & Molen, 1982; Burgess & Hartman, 1986; Fletcher, 1981; Garrity & Klein, 1975; Gregor, 1985; Simonds, 1983; Sivarajan et al., 1983; and Stern, 1984). In this way, health professionals can provide reinforcement and encouragement to patients and their families as they meet their goals.

Many studies (i.e. Dracup et al., 1984; Duryée, 1992; Simonds, 1983) have identified the importance of including post-M.I. patients' spouses and other family members in the educational process, as they are believed to play a key role in the recovery of patients. Some authors (Bedsworth & Molen, 1982; Burgess & Hartman, 1986; Skelton & Dominian, 1973; and Fletcher, 1987) have examined the psychological effects of the M.I. on spouses, recommending their involvement early in convalescence and on an ongoing basis.

#### Outcomes of Hospital-Based Cardiac Education Programs

Various approaches to cardiac education in the hospital setting have been studied in terms of their outcomes. For example, Scalzi et al. (1980) studied an in-patient cardiac education program with discouraging results relating to knowledge and compliance after two years. They describe their education program as consisting of printed materials, slide tapes, consultation with a dietitian, and individualized instruction by a nurse which continued through clinic visits for two years post-discharge (pp. 847-853). Maeland and Havik (1987) also report minimal benefits of an in-patient program. They found that patients who participated in an audio-visual education program, were

more knowledgeable and had fewer misconceptions and fear-provoking beliefs about the M.I. They resumed physical activities more rapidly, consulted their physicians less often after discharge, and had fewer emotional disturbances. Although the mortality rate was significantly lower in this group than the control group at six months, long-term survival was the same. There was no significant effect on smoking, return to work, resumption of sexual activity, or number of readmissions to hospital (p. 57).

In a study of patient knowledge, by Owens et al. (1980) a single group, time-sequential design, and a pre-tested structured interview schedule were used by two clinical specialists to independently interview 36 patients. The education program consisted of presentation of standard material through group discussion in the hospital, prior to discharge. Medication information was presented on an individual basis. Compared to a pre-study group, the study group was more knowledgeable regarding the M.I. (pp. 148-150).

Fletcher (1987) reports on an individualized teaching program for 20 first-time M.I. sufferers, which was designed and implemented by a nurse, using an experimental time-series approach. Experimental subjects were found to have lower anxiety and modified risk factors such as smoking, weight, diet and exercise (p. 199). Fletcher's findings, while based on a small sample, support a systematic, individualized approach to education, in order to address confusion and ambiguity about heart disease, risk factor modification, and expectations for the future (p. 199).

The importance of providing individualized education and counselling is noted by many authors, in order to meet patients' and their families' specific learning needs, as well as to ensure that limited resources are allocated to those who require them, and in

ways which are meaningful to them. Perkins, Oldenburg, and Andrews (1986) advocate that cardiac rehabilitation should be commenced while patients are in hospital and the need for further interventions based on their responses to in-patient interventions (p. 360). Horlick et al. (1984) further suggest that cardiac rehabilitation be directed only at those patients with "negative" attitudes, and with more than usual anxiety and depression (p. 485). Based on their findings, Mayou et al. (1978) suggest identifying at risk patients as early as possible, with regard to mental state, i.e. previous psychological history, number of life events in the previous two years; coping, i.e. age, occupation, previous major illness; physical activity, i.e. previous major illness, and physical symptoms of previous major illness (p. 445). Simonds (1983) argues that in order to facilitate patient learning, an individualized behavioral diagnosis and education assessment is necessary in relation to the patient's readiness to learn, emotional capability, and willingness to engage in learning and self-care (p. 178). For patients who do not appear to overcome their initial anxiety and depression with a decrease in their physical symptoms and an increase in their activity, in-hospital management should include counselling through active listening to physical and psychosocial concerns, and supporting the patient's strengths and resources. Education should address modification of debilitating beliefs, providing a cognitive framework to help the patient understand the M.I. This can be done either through group or individualized discussion, with family members involved whenever possible. Progressive and gradual mobilization not only produces positive physical effects, it also provides patients with evidence that they can and are expected to regain their health (pp. 455-456). Argondizzo (1984) supports this view, describing three domains which should be addressed by educational objectives, the cognitive (intellectual



needs), the affective (attitudes, values and other psychosocial factors), and the psychomotor (skills). For rehabilitation to be successful, the patient must understand what he must know, do, and value (p. 162). In the hospital setting, information can be presented repeatedly, in terms which the patient can understand. This can help to alleviate anxiety and depression, and provide a basis for teaching later in convalescence (p. 163).

### Hospital-Community Cardiac Education

Based on the variable and inconclusive findings relating to research in hospital-based cardiac education programs, most authors have recommended a combined hospital and community approach, whereby continuity and individualized attention to patients and their families can be provided.

Argondizzo (1984) views the in-hospital learning experience of the post-M.I. patient as a basis for ongoing education (p. 161). Teaching which occurs during hospitalization should continue systematically after discharge, in order to reinforce behavioral changes and dispel myths (Pinneo, 1984), with special attention to development of rapport between individual patients and families and their care-givers (Hentinen, 1986). Hilgenberg and Crowley (1987) support continuity of education, through communication between hospital and community nursing staffs (p. 32). Scalzi et al. (1980) advocate continued instruction following discharge, suggesting follow-up visits to an outpatient clinic (p. 853). Sivarajan et al. (1983) recommend that nurses and physicians use opportunities to reinforce new behaviors such as smoking cessation, while the patient is still in hospital, followed by individualized education and counselling regarding risk factor management. Findings from this controlled study indicate that the

group education and counselling approach may have only minimal effects on outcomes such as lifestyle changes (p. 72). In contrast to these findings, Owens et al. (1978) argue that the group approach not only enhances patient knowledge, but also has psychosocial benefits for participants, who develop a social support network for each other which continues after discharge from hospital (pp. 148-150).

Maeland and Havik (1987) concluded from their study that a standardized audio-visual M.I. education program is practical and cost-effective in improving short-term coping behavior, but should be considered as only an initial step in the education process, supplemented by both individual counselling and post-discharge group discussion in order to support and reinforce knowledge and behavior during convalescence (p. 64).

#### Summary of Hospital-Based and Combined-Approach Programs

The preceding discussion has centred on cardiac education programs offered either in hospital settings, or through a combined in-patient/out-patient approach, whereby the outpatient approach usually involves group interaction in a clinic setting. The literature is tentative with regard to determining effects of cardiac education on patient outcomes such as behavioral change leading to enhanced quality of life. Several common themes however, emerge from the literature discussed in this chapter; and are summarized as follows:

1. Although much of the information given to patients before discharge from hospital is not absorbed, it serves as a basis upon which teaching at a later phase in recovery from the M.I. can be continued;
2. An individual approach to education enables assessment of learner readiness, and

other factors predisposing behavior change and recovery from M.I. such as values, beliefs, and attitudes. This approach is also favored by many authors, as it ensures that education resources are allocated most appropriately to assist patients who are ready to learn and have specific learning needs;

3. The patient's social support network, usually the spouse, should be acknowledged and included in the planning and implementation of education programs for patients; and

4. Patient education is considered part of the nurse's role in delivery of patient care, both in the hospital and community settings.

These four themes are identified in much of the literature relating to post-M.I. patient education which is available in hospitals and outpatient clinics. There is, however, a scant amount of literature which addresses the timeliness of individualized family-focused education, as delivered by nurses who care for patients in their own homes following discharge from hospital. For the purpose of this study, the patient's home is considered as an environment in which learning can be facilitated at a time in the recovery period which is conducive to learning, and in a way which is meaningful to the patient and family.

### Community-Based Cardiac Education

Cardiac education in the community is exemplified in various ways, both formally and informally, through structured exercise, nutrition, and other behavior modification programs, as well as self-help group programs and resources, for self-directed learning. Green and Kreuter (1991) view the community as the focal point for social policy development, regulation and organization with regard to health promotion planning.

Community members should be involved in identifying their own needs, setting their own priorities, and planning their own programs. This, in itself, is a form of intervention. It provides an opportunity for ownership, which enables empowerment and self-determination. Although these are difficult to measure, intangible factors, they can make a difference between long-term success and failure (p. 269). By departing from the medical model which dominates health care planning in traditional settings, there is greater emphasis on self-care and patient-centred authority. Although this is a break from medical tradition, it is familiar to the nursing profession (p. 392).

In a position statement on cardiac rehabilitation for patients identified at risk following M.I., Health and Welfare Canada (1986) includes core components of a cardiac rehabilitation program. These include: education, exercise (formal programs), support groups, vocational counselling, and risk factor modification; all of which begin in the hospital and are centred "close to home" in the community. An example of such a program at work is the Field House Program, in Saskatoon, Saskatchewan (population 200,000). This program is a unique tri-hospital cardiac rehabilitation program, for patients with documented cardiac disease, which began as a research project in 1969 by program directors and cardiologists Dr. Horlick and Dr. Firor. Since 1984, the program has expanded to its current average enrolment of 400 cardiac patients. Patients are introduced to the program, while in hospital, by one of three part-time patient education nurses who liaise between the three hospitals and Field House, a city recreational facility and often, by cardiac patients already in the program. Physician referral is not required for program entry; patients are referred to one of the program's cardiologists for cardiac consultation. Within two to four weeks of discharge from hospital, patients begin to

attend the first of eight one-to-two hour education sessions. These sessions address patients needs, expectations, and feelings, through group discussion, cardiac anatomy and physiology, risk factor modification, goal-setting, and lifestyle modification, using behavioral and interactive approaches to enable and reinforce learning. Following the last education setting, patients begin a physiotherapist and cardiologist supervised exercise program, in which patients can remain enrolled indefinitely (program coordinator, The Field House program, Saskatoon, Saskatchewan, personal communication, Feb., 1993)

Enrolment to the Field House program is further enabled by a transportation service, provided by more than 300 program graduates, for patients who are unable to drive, especially in the early weeks following M.I. Translation is available for non-English speaking patients, and hospital visitation by "graduates" is done on a volunteer basis as well. The program costs patients 15 dollars per month to cover equipment rental and hourly helper wages. There is only one full-time employee, the program coordinator. Reinforcement of behavior change is provided in part by an award for patients who are medically stable, demonstrate sound judgement in health behaviors, and have participated in the exercise program for a minimum of three months. This award is entitled the "Royal Society of the Golden Handshake and Crimson Jersey," and is sought by many who enter the program.

The Field House program has become so well established in Saskatoon that new cardiac patients come to expect that they will be involved in it, as it is well known in the community. It is an unique program in that it does not require physician referral, it is a non-profit organization, and all three city hospitals are involved (program coordinator;

patient education nurse, the Field House program; Saskatoon, Saskatchewan; personal communication, February, 1993).

The program described above exemplifies community-based education which addresses factors which facilitate and reinforce health behavior change. It undergoes ongoing evaluation; although no system exists for statistical analysis, the program's Quality Management Committee distributes patient satisfaction surveys. The pilot project was systematically evaluated, as reported earlier in this review, by Horlick et al. (1974).

The Field House program is an exception to the common practice of cardiac rehabilitation. Although other programs may exist, many such programs are never systematically evaluated; therefore, literature in this area is limited (Niskala, 1986, p. iv).

Community programs most often described in the literature are primarily exercise-related or group-focused, rather than based on individualized education and support in the home setting. Niskala (1986) argues that rehabilitation programs provided by Home Nursing Care offer individualized, family-focused, sustained education, which is applied during a receptive period of convalescence, and proceeding at rates which permit individual learner readiness. However, the benefits of such programs remain unknown in the absence of evaluation (p. 5).

While it appears that information relating to cardiac education in patient's homes remains limited, this approach is well-supported. The uniqueness of the home setting is described by Colman (1974), who discusses the significance of territoriality, through comparison of behavior in the home and in hospital, whereby different psychological perspectives can be obtained in the different settings. The peculiar arrangement of

family life space in the home setting is a valuable aid in understanding the context in which adaptation to a chronic illness occurs. A shift in dominance occurs with territoriality, which may affect the relationships the patient has with others, including the family, and care-givers (p. 26). An example of this disparity is the role of a male who has suffered an M.I., as he progresses from the dependency of the sick role while in hospital to a more independent, dominant role as he continues to recover at home. Within the context of the patient's own life, the care-giver can gain an understanding of the patient as a person functioning within his territory, in roles which may be quite different from those apparent in the hospital environment.

It is during the convalescence phase that "role transition" (Dracup et al. 1984) occurs, as well as most of the patient's and family's adjustment to the chronic illness (Scalzi et al. 1980). Rudy (1980) and Liddy and Crowley (1987), indicate a great need for ongoing education and support during this time. In their study of eleven post-M.I. patients and their spouses, who were interviewed in their homes, Liddy and Crowley (1987) report that respondents claimed the general information they were given in hospital was difficult to apply to their own daily lives (pp. 23-24). Despite the limitations of the study, which included non-random sampling and potential bias by both the respondents and the researchers, their findings offer suggestions for closing the gap between hospital care and post-discharge adjustment, by focusing on specific, meaningful information, and reinforcing this throughout the rehabilitation phase (p. 24). Hilgenberg and Crowley (1987) concluded, in a study of the adaptation of 25 primary M.I. patients and their families, that Home Care nurses have an opportunity to assess the family as a unit, and to include family members in the plan of care. They contend that patients and

their families tend to be more receptive to teaching once they are at home, where the Home Care nurse is in a unique position to offer education and support. The authors recommend communication between the hospital and Home Nursing Care agency to achieve an effective, comprehensive rehabilitation plan (p. 32). This perspective is shared by Garding et al. (1988).

Pinneo (1984) emphasizes the nurse's role in assisting patients and their families to adjust to living with coronary artery disease during early and late convalescence. During the early stages of recovery, this author advocates using an individualized approach with patients in their homes, to reinforce hospital teaching. Crucial topics to discuss include perceptions of the M.I., diet, medications, overcoming environmental barriers, resumption of sexual activity, vocational and economic concerns, warning signals, smoking, physical conditioning, and interpersonal relationships. The author addresses the specific needs of women as patients, who often have careers and many other responsibilities (p. 464). Pinneo's concerns relating to women who suffer M.I.'s are shared by Stern (1984), who discusses the need to provide ongoing education and support for women as they recover. Stern points out that women tend to resume their multiple roles earlier than men following M.I., often returning to household tasks, family responsibilities, and jobs earlier than recommended by their doctors (p. 458).

In late convalescence, Pinneo (1984) suggests nurse-facilitated community self-help groups, through which post-M.I. patients can share their concerns about lifestyle changes, diminish their sense of social isolation, and collaboratively develop strategies for coping with everyday problems (p. 465). Dracup et al. (1984) support this approach, suggesting a role supplementation program which addresses such topics as problem-



solving, overcoming fears, stress management, relationships with families, dealing with the at risk role, sexuality, and outlook for the future (pp. 115-119).

Yet another approach to providing education and support for first-time M.I. patients following hospitalization is described by Garding et al. (1988). These authors report that a telephone teaching program offered within the first six to eight weeks after discharge led to an increase in knowledge relating to the disease, self-care, and the cardiac regimen. Patients who received follow-up telephone calls acquired greater knowledge than the control group. Although this study did not address the relationship between knowledge and behavior change, it demonstrated an effective and accessible means of enabling and reinforcing application of knowledge relating to recovery from the M.I. (p. 361).

While telephone teaching appears to be a viable alternative to more resource-intensive approaches to cardiac education in the community, it does not allow the educator an opportunity to assess the patient and family in their own environment, as they interact and communicate both verbally and non-verbally with each other. Like the group approach, telephone contact takes people outside the personal context of their lives; any information which is gained must be interpreted by the patient and family in terms of how they can apply it in their own unique set of circumstances. During the early weeks of convalescence following M.I., the visiting Home Care nurse is able to assist with interpretation of information, and to provide ongoing education in a way which holds personal meaning to the patient and family.

In a descriptive study of a community-based cardiac rehabilitation program in North Vancouver, B.C., Niskala (1986) identified specific patient learning needs, such as

for strategies to minimize risk factors and ways to modify lifestyles. Data were collected on patients' health knowledge, health behaviors, health functioning, sources of information, and learning needs as identified by patients themselves. Barriers to learning were described, as well as factors which facilitated learning (p. V). Patients identified one-to-one discussion as the major context for learning, and topics needing ongoing clarification and discussion were medications and management of risk factors (1987, p. 15). In addition to gaining insight regarding the patient's perspective, the author analyzed the nurse's role in the cardiac rehabilitation program. Suggestions were made for expansion of this role, to include communication with hospital staff in order to integrate educational efforts and provide continuity (1987, pp. 11-15). Niskala states that although the literature stresses the need for community programs in which community health nurses are involved, nurses have not published accounts of their role in these programs. Examples of such programs are offered by the Y.M.C.A., municipal health departments, and the Heart and Stroke Foundation (1987, p. 10).

In summary, there has been limited research on community-centred cardiac rehabilitation and education, despite extensive research which suggests its potential value. Community-based cardiac education appears to have the potential to address the four themes outlined in the previous summary; however, without documentation of such programs, their impact on post-M.I. patients and their families is difficult to assess. Niskala's (1986) study is somewhat unique in representing a systematic evaluation of an existing community-based (Home Care) cardiac education program. The Field House program is an example of how a multi-disciplinary, community-based program meets the needs of cardiac patients. In order to determine what other programs exist, it is

necessary to access specific community networks for information. Due to the scarcity of research in this area, this researcher was interested in exploring further the role of an individualized cardiac education program which is offered by nurses in patients' homes, in promoting cardiac rehabilitation.

### Summary

The review of literature has, by no means, been exhausted by the preceding discussion. Rather, it provides a basis for the research question, and background to the issues relating to patient education for post-M.I. patients. The research findings suggest a need for further study of how effectively factors which affect patients' ability to learn about living with cardiac disease are addressed by existing education programs. Although much research has shown the need to individualize education for post-M.I. patients and provide it on an ongoing basis throughout the recovery phase, there is a limited literature which describes how this is addressed by community-based programs. Without systematic analysis of this approach, it is unlikely that it will gain recognition as a valuable means of meeting the learning needs of post-M.I. patients. It was the intention of this researcher to examine the role of a community-based cardiac education program in facilitating recovery and adaptation post-M.I., and how it interfaced with a hospital-based program. This program is offered by the Richmond Health Department, and has not been subjected to analysis in the past. The program is, at present, one of very few programs of its kind offered in the Greater Vancouver-Lower Mainland, B.C. area. Other programs, such as the North Vancouver program studied by Niskala in 1986, and a similar program which was, in the past, been offered in the New Westminster/Coquitlam area, are no longer in existence. It was expected that through a

qualitative methodology, as described in Chapter 4, a greater understanding of the role of a community-based cardiac education program could be gained. Analysis of this program as an adjunct to the hospital-based program was expected to provide valuable data, which in turn, could be useful in directing health professionals in development, implementation, and evaluation of such programs.

For the purpose of this study, the conceptual framework chosen as the foundation for investigation of how the community-based cardiac education program in Richmond, B.C. affects health knowledge, health beliefs, and health behaviors is the PRECEDE-PROCEED health promotion planning model (Green & Kreuter, 1991). This model is described in the following chapter, in relation to the research question.

## CHAPTER 3

### CONCEPTUAL FRAMEWORK

#### Introduction

Health promotion, as defined by Green and Kreuter (1991) for the purposes of this study, consists of both educational and environmental supports for actions and living conditions conducive to health. In addition to health education interventions, health promotion encompasses the social, political, economic, organizational, policy, and regulatory circumstances which affect health. Health promotion interventions are therefore directed toward specific targets of change, such as preventative behavior, environment, and/or resources, through an identified process, in an effort to produce specific outcomes, either immediate, intermediate, or ultimate (p. 6). Health promotion addresses preventative behavior at three levels: primary, secondary, and tertiary.<sup>2</sup> At each of these levels, health promotion interventions have potential to impact on specific targets of change.

For post-myocardial infarction patients, immediate outcomes may include reduced risk factors such as smoking cessation, and reduced intake of salt and foods high in cholesterol. These may lead to increased productivity and reduced utilization of acute care health resources which, in turn, may result in reduced illness, or potential for recurrent M.I., and thus improved quality of life.

Within the definition of and encompassed by health promotion, health education is defined as any combination of learning experiences designed to facilitate choices conducive to health, whereby the multiple factors which determine behavior are matched

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<sup>2</sup> Levels of prevention are defined in Appendix 1: Definition of Terms.

with multiple educational interventions or learning experiences. Health education is viewed by the authors as a systematically planned activity which predisposes, enables, and reinforces behavioral efforts taken by someone on the basis of understanding and acceptance of the purposes of the action (Green & Kreuter, 1991, p. 17). This definition provides a useful frame of reference with which to examine education programs for post-myocardial infarction patients.

### Review of Conceptual Frameworks

In order to fully understand the role of health education as a component of health promotion, it is necessary to examine it within the context of a conceptual framework. Several conceptual frameworks were reviewed in relation to the purpose of this study. These included the health belief model (Rosenstock, 1974) the model of information-seeking (Donahew & Tipton, 1973), and social learning theory (Rotter, 1958, as cited by Phares, 1976).

#### The Health Belief Model

The literature suggests that patients' and their families' ability to adapt to the at risk role following M.I. is related to health attitudes and beliefs. The health belief model, therefore, provides a basis for study of these factors as they influence cardiac rehabilitation.

According to Rosenstock (1974), there are two elements central to the health belief model: (a) the individual's readiness to take action as determined by perception of susceptibility to a health problem and perception of severity of the health problem; and (b) the individual's evaluation of the recommended health action in terms of its benefit and feasibility weighed against perceived barriers to this action.

For M.I. patients and their families, the process of acting upon health beliefs may begin with a concern about post-M.I. health behaviors, as well as a perception of severity and risk of susceptibility to subsequent cardiac events or sudden death. These factors, and perception of benefits -- such as the usefulness of information received regarding cardiac rehabilitation -- are weighed against perceived barriers to taking action.

In addition to these elements, a triggering mechanism, defined as either an internal or external stimulus, must occur. This "cue to action" is believed to be necessary for activating the readiness component (Rosenstock, 1974). In the context of this study, cue to action can occur during the convalescent stage of recovery from M.I., when an individual decides to make lifestyle changes.

#### The Model of Information-Seeking

Donahew and Tipton's (1973) model was also considered as a conceptual base for this study, due to its comprehensive explanation of the complex activity of seeking, avoiding, and processing information.

When seeking information, an individual may choose from various strategies. Donahew and Tipton (1973) make a distinction between a broad-focus and a narrow-focus strategy. A broad-focus strategy involves making an inventory of possible information sources, reviewing these, and deciding which source to use. This is an active process, as compared to the narrow-focus strategy which is a passive process. The narrow-focus strategy involves taking a single source as the point of departure, often leading to developing of inaccurate perceptions, such as beliefs about health and illness (pp. 84-85). One of the salient points to be addressed is the concept of congruence between information acceptance and image of reality held by an individual. Often in the

case of M.I. patients and their families, information which is too threatening or conflicts with their image of reality is rejected. This image of reality is comprised of health perceptions and beliefs about the M.I. event, and may largely determine the decision to take action on the information received. This factor warrants further study in relation to the role of educational programs for post-M.I. patients.

Both the health belief model and the model of information-seeking provide a framework for the study of psychosocial and knowledge-related factors which influence health behaviors of post-M.I. patients and their families.

Where the former explains the components of health belief, the latter discusses the process by which decisions are made in relation to such beliefs. Related studies support a hypothesis or view that various personal factors are key to the effectiveness of educational programs in facilitating behavior change and may be more important than the type of educational program employed. Neither of these models, however, address the environmental influences, or other factors which might influence behavior.

### Social Learning Theory

The major assumptions underlying social learning theory (Rotter, 1954, as cited by Phares, 1976) are related to the interaction of the individual with the environment, which is affected by accumulated knowledge from previous experience, which becomes the basis of expectancy. Expectancy is considered a prime determinant of behavior, in the same way as reinforcement (pp. 11-13). Phares (1976) theorizes that learning and performance in specific situations are different when subjects perceive that they control the contingency between behavior and reinforcement and when they perceive that they lack such control (p. 25).



Social learning theory and the other two models reviewed address ways in which individuals receive and apply information, based on their beliefs and/or image of reality, or interaction with social environment. All three models provided a component of the broader context in which the research purpose of this study was to be addressed. Following review of these frameworks, the PRECEDE-PROCEED health promotion planning and evaluation model (Green & Kreuter, 1991) was selected for this study.

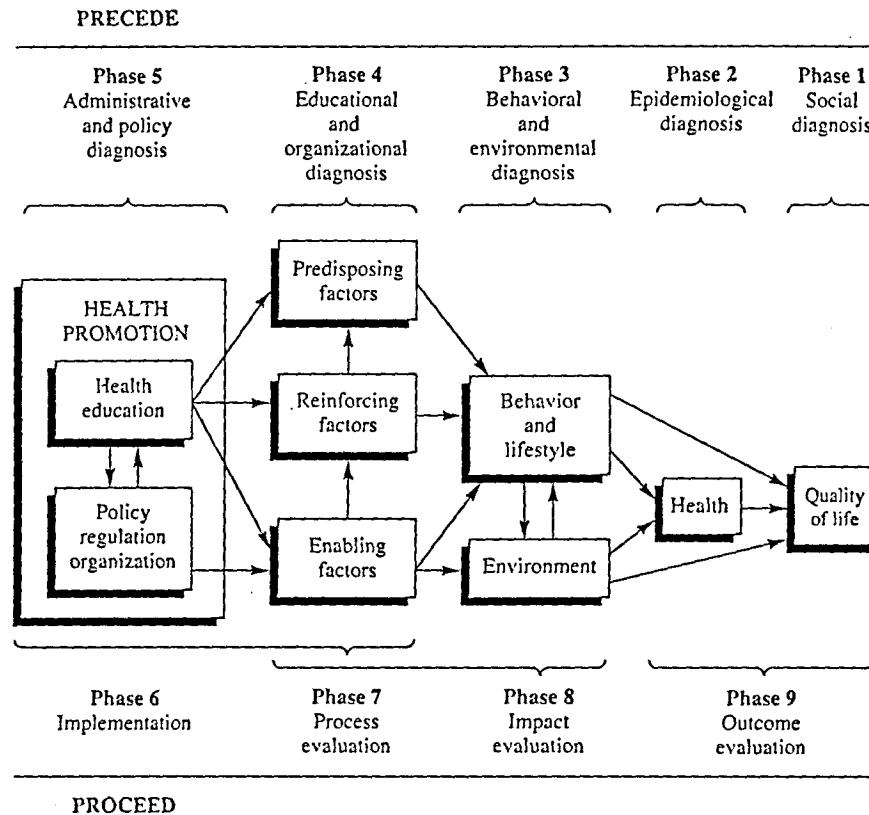
### The PRECEDE-PROCEED Model

The PRECEDE-PROCEED model encompasses a broad social context, in which health promotion and education are designed to affect factors which influence behavior and lifestyle, health, and ultimately, social well-being. The model has been used extensively in health education research, and is considered theoretically robust in that it applies to health promotion in a variety of situations and has been rigorously evaluated (Green & Kreuter, 1991, p.24).

Within the PRECEDE-PROCEED model, predisposing factors are drawn from both the health belief model and social learning theory. Individuals' expectations of the outcomes of their behaviors, in relation to health and quality of life, are addressed, as well as social acceptance and self-image, their ability to control their behavioral outcomes, and beliefs held about health and their susceptibility to illness. The PRECEDE-PROCEED model supports the concept of self-efficacy -- a perception of one's own capacity for success in adopting a new pattern of behavior, based largely on experience with similar actions or circumstances encountered or observed in the past. The concept of self-efficacy is considered important in the health promotion field, as it can be used in planning programs to help people with compulsive disorders such as over-

eating or smoking. The model also supports the concept of reciprocal determinism, from social learning theory, whereby an individual is viewed as being predisposed to change by the perception that others are making the change with success and satisfaction, with regard to activities such as exercise programs, or low-fat diets. Social change and environmental circumstances therefore support the change in the individual (Green & Kreuter, 1991)

The PRECEDE-PROCEED model provides a basis for systematic and critical analysis of priorities and possible cause-effect relationships in a variety of health promotion situations (pp. 24-25). It is therefore possible to study a particular problem of interest, such as the role of a cardiac education program, with consideration to a number of variables which may impact on the outcome of the program itself. (See Figure 1.)



**Figure 1.**

The PRECEDE-PROCEED model for health promotion planning and evaluation. From "Health Promotion Today and a Framework for Planning" by L.W. Green and M.W. Kreuter, 1991, Health promotion planning: An educational and environmental approach, p. 24.

The PRECEDE-PROCEED framework emphasizes health outcomes before educational process; in other words, the health educator is encouraged to ask "why" before "how". This is done by starting with final consequences, and working back systematically through a series of six phases, in which variables affecting the planning, implementation, and evaluation of a health promotion program are identified (p. 26). For example in phase 1 (social diagnosis), quality of life is assessed as a final outcome.

In this phase, health is one of many influences on quality of life and social well-being. Health is valued as a means to an end, an instrumental value which enables people to achieve what they view as quality of life (p. 49). Because other values also affect quality of life, it is important to examine the reciprocal cause-effect relationships which exist within this phase. This relationship can be altered by social policy, social service intervention, health policy, and health programs (p. 46). To take this example one step further, post-myocardial infarction patients who are provided with educational support during the convalescence stage of rehabilitation in a conducive environment may make behavioral changes which enhance their health, which can in turn enable them to lead productive lives. At the same time, individuals experiencing economic difficulties or other upheaval in their lives, may have a low quality of life, which may be observed through behaviors which affect health in a negative way, thus having a negative impact on the health care system.

#### Educational and Organizational Diagnosis

The PRECEDE-PROCEED model encompasses areas of interest relating to the effectiveness of a community-based education program for post-myocardial infarction patients. One phase of interest to the researcher is "educational and organizational diagnosis," whereby predisposing factors, such as knowledge and beliefs, enabling factors, such as skills and availability and accessibility of health resources, and reinforcing factors, such as family, and health providers can be addressed.

#### Predisposing Factors

With regard to predisposing factors, knowledge is a factor which is often tested by health educators and researchers, as a measure of a program's effectiveness. According

to Green and Kreuter (1991), however, although health knowledge is probably necessary before a conscious personal health action can occur, the desired action is dependent on a cue strong enough to trigger the motivation to act on that knowledge. Motivation is based on various factors, factual knowledge being only one. The authors stress that knowledge needs to be incorporated into the system of beliefs, values, attitudes, intentions, and self-efficacy, and eventually into behavior (p. 155).

The acquisition of new health knowledge is a primary focus of cardiac education programs, as evidenced by the content of such programs. This is probably based on the assumption that knowledge influences behavior. Although this may be true, the PRECEDE-PROCEED model illustrates knowledge as just one factor in determining health behavior, which in turn affects health, which leads to the outcome, social well-being or quality of life. For the purpose of this study, therefore, knowledge was viewed as first layer dependent variable; it does not serve in isolation to predisposed health behavior, any more than health behavior is an ultimate value in and of itself. It was considered worthwhile to examine the role which knowledge plays in affecting health behaviors and ultimately, quality of life as perceived by patients.

The role of health beliefs as a predisposing factor to health behavior was also of interest to this researcher. The literature suggests that patients' and their families' ability to adapt to the at risk role following M.I. is related to health beliefs and attitudes. If, in fact, health belief is a key factor in cardiac rehabilitation, education programs must acknowledge this through their design and implementation.

Within the PRECEDE-PROCEED model, health beliefs can be examined in relation to their effect on behavior, also within the context of many other factors.

Reference is made to the Health Belief model, which addresses an individual's readiness to take action and evaluation of the recommended health action, in terms of its benefit weighed against perceived barriers (Rosenstock, 1974). For M.I. patients and their families, the process of acting upon health beliefs may begin with a concern about post-M.I. activities as well as a perception of severity and risk of susceptibility to subsequent cardiac events or sudden death. These factors, and perception of benefits -- such as the usefulness of information received regarding cardiac rehabilitation -- are weighed against perceived barriers to taking action.

In addition to these elements, a triggering mechanism, defined as either an internal or external stimulus, must occur. This "cue to action" is believed to be necessary for activating the readiness component (Rosenstock, 1974). In the context of this study, cue to action may occur at some point during the convalescence stage of recovery from M.I., when an individual decides to make behavioral changes. This point may be critical in terms of design and implementation of an education program, and is addressed within this study.

#### Enabling Factors

In addition to examining factors which predispose health behavior, other factors which influence the behavior must also be addressed. For post-M.I. patients and their spouses or support persons, these factors include skills such as strategies for planning physical activities and minimizing stress, techniques to stop smoking such as relaxation, and creativity and meal planning and preparation. Other factors which enable health behaviors include cost of medications, and foods recommended for post-M.I. patients, transportation to and from community programs, and the availability and accessibility of

those programs to patients. As well as factors which enable positive health behaviors, there are others which enable negative health behaviors, such as fast food restaurants or availability of cigarette machines in public places.

Patients' perceptions of the education program may provide useful information about how the program enables behavioral change in post M.I. patients; therefore the instrument was designed to address this. In addition, the researcher addressed other enabling factors which may have affected behavioral change in these patients.

### Reinforcing Factors

Another component of educational and organizational diagnosis is reinforcement of behavior. Factors such as support from family, friends, health care providers, and others are of key importance to the occurrence of the behavior and whether it is continued. Feedback from the environment serves to reinforce or discourage behavior; either through acceptance or disapproval, or in some instances, punishment (Green & Kreuter, 1991, pp. 165-166). In the delivery of the cardiac education program for post-M.I. patients in their homes, the nurse can reinforce patient's efforts to reduce salt intake by acknowledging their efforts and successes, and by helping them set realistic, achievable goals to build on their present level of skill.

The role of family (spouses) or support persons has been identified in the literature as being a key factor in behavioral change among cardiac patients. The support provided by these persons may reinforce behavioral changes within post-M.I. patients. It was decided, therefore, to investigate the role of these individuals, and their involvement in the education program, as perceived by patients.

An example of environmental reinforcement is advertising. Social acceptance or

disapproval of behavior is powerfully conveyed through many media, to which individuals are exposed on a continual basis, and on many levels of consciousness. Just as a weight loss clinic reinforces changes in nutritional habits to enhance quality of life, other advertising campaigns promote foods high in cholesterol and fat content, reinforcing pleasure and gratification. This form of reinforcement may influence behavior in ways which the individual is not even aware of. Within this study, the role of the spouse was addressed, from patients' perspectives, in order to explore the significance of this role. In addition, the role of the health educator, both as perceived by patients was examined. Respondents were also asked to identify sources of information which were most valuable to them as well as what caused them to make changes in their health behaviors, in an effort to identify reinforcing factors. The three categories of factors within the educational and organizational diagnosis phase of the PRECEDE-PROCEED model were addressed by this study, in relation to their influence on health behavior.

#### Behavioral and Environmental Diagnosis

Another phase of the PRECEDE-PROCEED model which was of key interest to the researcher was "behavioral and environmental diagnosis." As mentioned previously, health behavior is not generally undertaken as an outcome in itself; it warrants careful study in the planning process of an education program, due to its impact on health, and ultimately, on quality of life. Of the twelve leading causes of death in the United States, most of the associated risk factors are directly controllable through behavior, and through environment and social policies which support such behaviors (Green & Kreuter, 1991, pp. 129-131).



### Health Behavior

For the purpose of this study, health behavior was addressed as a second layer dependent variable, in relation to predisposing, enabling, and reinforcing factors for post-M.I. patients. Health behavior outcomes may include reducing risk factors, increasing physical activity, and efforts to modify lifestyle. Health behavior was assessed through self-reporting by patients who participated in the study, and within the instrument administered to Home Care nurses.

### Environment

Environment (social, biological, and/or physical) is considered within the model as a key element in affecting health and quality of life, being drawn from social learning theory. It was expected to hold significance for this study, as it has been identified in the literature as a factor in determining behavioral, health, and social outcomes. The role of environmental influences on individuals was considered worthwhile exploring, in relation to how it was addressed by the cardiac education programs, and how it was perceived by nurses and post-M.I. patients.

### Epidemiological and Social Diagnosis

The direct influence of behavior and environment on health (Phase 2 - "epidemiological diagnosis") was not measured, due to the fact that respondents were interviewed six to eight weeks after discharge from hospital, at which point, significant changes in health status may not yet be observable. For the same reason Phase 1, "social diagnosis," or quality of life, was not assessed within this study, except through questions which addressed patients' perceptions of quality of life, well-being, energy, and sense of control over their personal circumstances. The study did not examine ultimate

outcomes such as reduced illness, extended longevity, or improved quality of life, as measured by a quality of life scale. Intermediate outcomes, such as increased productivity, improved physical performance, fitness, and reduced medical utilization were addressed only as identified by patients during the interviews.

An assumption based on the PRECEDE-PROCEED model is that changes in such factors as health knowledge and health beliefs must occur before a change in health behavior is observed. These factors, as well as reinforcing and enabling factors were investigated within this study in order to identify needs which must be met either through health education or some other means of health promotion.

#### Administrative and Policy Diagnosis

##### Health Education

Within the realm of health promotion, health education exists as an intervention designed to address needs identified in each of the other four PRECEDE diagnosis phases. It is within this phase (administrative and policy diagnosis) that the Precede model becomes the PROCEED model, through implementation of programs and/or policy regulation and organization. This is followed by evaluation of the other phases, including process, impact, and outcome evaluation. (Green & Kreuter, 1991, p. 189).

In order to study the role of community-based education program for post-M.I. patients, the researcher described and analyzed the program in terms of philosophy, goals, and objectives, content, process, and evaluation. In addition, those responsible for delivery of the program were asked about the intended and unintended outcomes of the program. The PRECEDE-PROCEED model was utilized to assess how the education program addresses needs identified in the other phases of the model such as those

discussed in this chapter, and others such as environment, health, and quality of life, as applicable.

## CHAPTER 4

### METHODOLOGY

#### Background

This study was initially conceived as a quasi-experimental pre-test/post-test design, whereby an intact group of patients who had suffered a first M.I. were to be separated either into a treatment or control group according to referral by physicians to a Continuing Care cardiac education program. The study, which was under development in 1987, was to involve the Simon Fraser Health Unit, in Coquitlam, B.C. to which a number of physicians at Royal Columbian Hospital in New Westminster, B.C. referred their patients. During completion of the research proposal in 1992, it was discovered that the Simon Fraser Health Unit program no longer existed due to insufficient support by the general practitioners responsible for referral of patients to the program (coordinator, Continuing Care, Simon Fraser Health Unit, personal communication, November, 1992). The study was subsequently presented to the administrators of Richmond Hospital and the Continuing Care Division of the Richmond Health Department in December, 1992. Both agencies agreed to participate in the study. At this time, the Richmond Health Department was the only health department in the B.C. Lower Mainland offering a cardiac education program to patients in their own homes, other than one which existed in Burnaby, B.C. The Boundary Health Unit, which serves Surrey and White Rock, B.C., was currently in the process of establishing a cardiac education program (coordinator, Continuing Care, Boundary Health Unit, personal communication November, 1992).

According to the unit manager for the cardiac/medical nursing unit at Richmond

Hospital, and the Home Care liaison nurse, nearly all patients suffering first M.I.'s who live in the Richmond area are referred to home care for cardiac education and support (personal communication, December, 1992). For this reason, a two-group design was considered not feasible, as the number of patients enrolled in the control group, who would not be participating in a community-based education program would be minimal. Instead, a single group design would be employed to measure changes in post-M.I. patients' health knowledge, health beliefs, and health behaviors over a six to eight week period. It was estimated that, based on a total of about 160 patients admitted in the year 1991/92, approximately 12 patients would be admitted per month on average. For the months of September, October, and November 1992, the number of M.I. patients ranged from 5 - 13. It was therefore expected that between the months of January and April, 1993, there would be between 20 and 30 patients who would meet eligibility criteria for the study.

The total number of patients admitted to Richmond Hospital between January and April 1993 was much lower than predicted. This fact, in addition to a limited time-frame for completion of the study, precluded statistical analysis of the patient data. However, the purpose discussed in Chapter 1 was addressed as initially intended through a qualitative approach to analysis of the hospital and community-based cardiac education programs, and to the study of themes in patients' health knowledge, health beliefs, and health behaviors, as well as their perceptions of the education programs in which they participated.

### Design

A design based on a combination of content analysis and a qualitative approach

to data analysis was used for the study. Private interviews were conducted with post-M.I. patients on two occasions; before discharge from hospital, and at six to eight weeks post-discharge. The initial observation occurred following the hospital's cardiac education program. The second observation occurred at about the mid-point of the twelve week period during which patients were visited by the Home Care nurse in their homes. The six to eight week point was chosen as an appropriate time for the second interview because at this point in the recovery process, physicians usually give approval for return to work and other activities; at eight weeks post-M.I., patients are usually permitted by their physicians to resume driving an automobile. Although valuable data could be obtained through additional interviews at later intervals, it was felt that the time period chosen for the study had potential to yield useful information, while the cardiac event and issues enshrouding the early weeks of recovery were still very familiar to patients. A qualitative approach to collection of patient data involved administration of semi-structured questions directed at determining the contextual forces which affect changes in patients' health knowledge, health beliefs, and health behavior; within the social context in which these changes occurred, the role of cardiac education was explored.

In order to gain an overall perspective of the role of the community-based cardiac education program in the patients' recovery, the researcher undertook an analysis of both this program and the hospital-based program. Areas examined were design, methods of implementation, and evaluation, through review of materials used, documentation of program process and outcomes, and through interviews and questionnaires completed by hospital and health unit personnel. By means of examining the programs, it was hoped that the relationship between educational interventions and

other phases of the PRECEDE-PROCEED model might be identified.

As the PRECEDE-PROCEED model was chosen as the framework for analysis of data, the research instruments were designed to address phases of this model which were of key interest to the researcher, as described in Chapter 3. The rationale for employing a combination of data collection approaches for this study was that, according to the model, changes in health knowledge, beliefs and behaviors cannot be addressed in isolation from the many environmental, political, economic, and social factors which comprise the context in which health education occurs. Green and Kreuter (1991) claim that any recommendations for enhancement or modification of an education program must be based on synthesis of literature, information from various scientific and professional disciplines, and other sources as appropriate. The PRECEDE model is used to provide direction and focus to such attempts at synthesis, using a multi-disciplinary, multi-dimensional approach to diagnosis, planning, and implementation of health education and health promotion. The PROCEED model begins with implementation, and provides direction for systematic evaluation of attempts at synthesis (p. 31). It was the aim of this researcher to study the role of a community-based education program for post-M.I. patients in such a systematic manner, in order to determine how it affects recovery and adaptation within a broad social context.

#### Research Sample

The sample for the study consisted of four data sources: a hospital program, a home care program, home care nurses, and post-M.I. patients.

Both programs were analyzed based on descriptive documents, educational materials, and discussion with individuals responsible (or program coordination and

delivery). The Home Care nurse sample consisted of the group of nurses responsible for direct care and delivery of the Richmond Home Care Cardiac Rehabilitation Program to post-M.I. patients. The patient sample consisted of individuals who met the following criteria: (a) they had suffered a first (primary) M.I.; (b) they were willing to participate; (c) they were able to converse fluently in English; (d) they were alert, oriented, and able to read and sign a written consent form; and (e) they were expected by the Home Care liaison nurses to be referred to the Richmond Home Care Cardiac Rehabilitation Program following discharge from hospital.

Between January and April, 1993 there were a total of 23 patients admitted to Richmond Hospital with confirmed myocardial infarction. Of these, three were non-English-speaking, two were discharged early by their physicians without completing the hospital education program, three refused to participate in the study, one was not alert and oriented, three had suffered a second or third M.I., two were not approached by nursing staff to request they meet the researcher, and one was moving to another province after discharge. Of the remaining eight patients who were approached to participate in the study, all agreed.

#### Measurement Instruments

Two instruments were developed to obtain data from Home Care nursing staff and patients.

#### Design of Questionnaire for Nurses

A questionnaire for community health nurses which was designed by the researcher, also used semi-structured questions to determine aspects of the education program relating to: (a) intended outcomes; (b) unintended outcomes; (c) changes



observed in patients health knowledge, health beliefs and health behaviors; and (d) utilization of community resources by patients and their families (see Appendix 2). The questionnaire for nurses was also based on the PRECEDE-PROCEED model (Green and Kreuter, 1991) in relation to changes observed most often in patients' health knowledge, health beliefs, and health behaviors, as well as the program's intended and unintended outcomes.

The program had not been subjected to analysis or evaluation prior to the study. The questionnaire was designed to provide a systematic means of analysis, by asking specific questions about the implementation of the program, and patients' responses to it.

During the early stages of the study, several Home Care nurses shared with the researcher their perspectives and experiences with regard to working with post-M.I. patients and their families. The questionnaire served as an opportunity for the nursing staff to reflect upon their experience and articulate their observations with regard to specific areas of concern.

The researcher had initially intended to meet with the Home Care nurses in groups, in order to facilitate interaction between staff with regard to their experiences. This was not feasible, however, due to the workloads of the staff. The questionnaire, therefore, became the most practical and systematic way to investigate the Home Care nurses' experiences regarding patient outcomes.

The questionnaire was pre-tested with one of the Home Care nursing staff prior to administration to all of the staff. Comments by this nurse related to combining two of the questions as one. Because there were no other changes suggested which

might affect responses, this nurse's completed questionnaire was included in the study.

The final version of the questionnaires consisted of 16 questions, all of which had been conceptually derived from the PRECEDE-PROCEED model. Questions were distributed across the model in order to ensure that each area of concern to the researcher was addressed adequately. Due to the open ended nature of the questions, it was expected that some responses would be placed in more than one category. A priori categorization, therefore, resulted in a reference table to be used for data reduction, display, and analysis (See Table 1).

**Table 1**  
**A Priori Categorization for Responses to Home Care Nurse Questionnaire**

Topic	Component <sup>a</sup>	Questions
Intended Outcomes Unintended Outcomes	Quality of Life Health Behavior/Lifestyle Predisposing Factors	1,2,5
Factors Which Facilitate Achievement of Outcomes Barriers to Achievement of Outcomes	Predisposing Factors Enabling Factors Reinforcing Factors Health Education	3,4
Changes observed in Patients, Spouses/Support Persons	Predisposing Factors Behavior/Lifestyle	6,10
Changes Attributable to...	Predisposing Factors Enabling Factors Reinforcing Factors Health Education Environment	7,11
Aspects Most Likely to Change	Predisposing Factors Behavior/Lifestyle	8,12
Aspects Least Likely to Change	Predisposing Factors Enabling Factors Reinforcing Factors	9,13
Use of Community Resources	Health Education Behavior/Lifestyle	14
Barriers to Use of Resources	Enabling Factors Reinforcing Factors	15
Role of Spouse/Support Person	Enabling Factors Reinforcing Factors	16

<sup>a</sup> Derived from the PRECEDE-PROCEED model. From Health promotion planning: An educational and environmental approach by L.W. Green and M.W. Kreuter, 1991.

### Design of Interview Schedule for Patients

The research instrument for patients was an interview schedule designed to measure changes in three identified areas of interest: health knowledge, health beliefs, and health behaviors. In addition, this instrument was designed to obtain broader contextual data relating to reinforcing and enabling factors, perception of quality of life, and perception of the educational programs. Both structured and semi-structured items were included in this interview schedule (See Appendix 3).

The interview schedule for patients was developed by the researcher, based in part on a questionnaire used by Niskala (1986), questions derived from a study of health beliefs by Croog et al (1971), and other questions which address the areas of interest identified above. The instrument was subjected to a pre-test in order to test validity, and some questions were re-worded for clarification purposes. The patient interviews addressed specific areas of interest.

#### First Interview (In-Hospital)

This interview addressed:

1. demographics;
2. previous health behaviors;
3. health knowledge:
  - 3.1 factual knowledge
  - 3.2 practical knowledge;
4. health beliefs relating to M.I.; and
5. perception of Hospital Cardiac Education Program.

Second Interview (Home Visit at Six - Eight Weeks Post-Discharge)

The follow-up patient interview addressed:

1. current health behaviors;
2. health knowledge
  - 2.1 factual knowledge
  - 2.2 practical knowledge;
3. health beliefs relating to M.I.; and
4. perception of Continuing Care Cardiac Rehabilitation Program.

The areas of interest incorporated into the interview schedule are described below.

Previous health behaviors.

These questions addressed the individual's health behaviors prior to the M.I. to serve as a baseline for comparison with health behaviors six - eight weeks after the M.I.. Demographics were also included in the instrument for the purpose of identification of factors which could impact on the effectiveness of the education programs, as well as to provide a description of characteristics of the study sample. Previous health behaviors included: smoking, diet, exercise, management of stress, and alcohol consumption.

Current health behaviors.

Questions in this section corresponded to those which addressed previous health behaviors in order to determine any changes in health behaviors subsequent to the educational program.

Health knowledge relating to M.I..

Questions were designed to measure patient understanding about myocardial infarction and its management, and were identified either as factual knowledge items, or

practical knowledge items. These two categories served the purpose of measuring what is taught relating to pathophysiology of a heart attack, and what the patient understands as applicable to his own life, such as management of risk factors (i.e. diet, blood pressure, activity, stress, smoking). A four-point scale was used to score responses. Completely correct answers were scored 3, partially correct answers were scored 2, incorrect answers were scored 1, "do not know" and "does not apply" responses were scored '0'. Scores on the factual knowledge scale could range from 0 to 36; scores on the practical knowledge scale could range from 0 to 24.

The health knowledge questions were based on the instrument developed by Niskala (1986), as derived from teaching materials produced from the American and Canadian Heart Foundation, as well as an instrument developed by Pickard (1979). The researcher categorized knowledge questions, in order to determine whether factual knowledge was translated into applicable knowledge. Applicable knowledge could thus be compared to current health behaviors at the home visit, in order to explore the relationship between knowledge and behavioral change.

#### Health beliefs relating to M.I.

Questions in this section of the interview schedule focused on susceptibility to another heart attack; severity of the M.I., in terms of effect on quality of life; cue to action, or factors which have motivated change; and preventive action related to changes in health behaviors. Health beliefs, life knowledge, were addressed as predisposing factors to health behavior.

The questions were open-ended in nature, in order that responses could provide depth which is not possible through a forced response approach.

The health belief section was administered at both patient interviews, in order to explore themes that emerged during the six - eight week period.

#### Perceptions of education program.

Specific questions were designed to address patients' perceptions of the program goals, content, methods of implementation, and applicability to the program to their own unique situations. This data was to be used to compare both programs from patients' perspectives, and to draw conclusions and make recommendations for enhancement of each program.

#### Data Collection Procedures

Approval to conduct the study was been obtained form the Nursing Education and Research Committee, the Hospital internists, the Medical Advisory Committee, and Hospital Executive Committee at Richmond Hospital in Richmond, B.C. Post-M.I. patients who meet the aforementioned criteria were interviewed prior to discharge from hospital, in order to obtain a baseline of information against which changes in health knowledge, health beliefs, and health behaviors could be measured at the post-discharge interview six to eight weeks later. Approval to conduct the second interview was obtained from the administrator of the Continuing Care Division of the Richmond Health Department.

#### The Home Care Nurses

Arrangements were made with the administrator of the Continuing Care Division of the Richmond Health Department for the researcher to deliver questionnaire packages to the Department for distribution to the 25 Home Care nurses. Each questionnaire was enclosed, with a letter of introduction to the study (see Appendix 4),

and a self-addressed envelope, in a sealed envelope. A period of two weeks was set as a time-frame for completion of the questionnaire.

Due to the fact that the Health Department was in the process of preparing to move to a new location, the coordinator of the Cardiac Rehabilitation Program agreed to distribute the packages to and collect them from each of the staff prior to the moving date.

At the end of the two week period, 14 of the 25 questionnaires (56%) had been completed and were collected by the coordinator for pick-up by the researcher.

The questionnaire was developed as an alternative to group interviews; no attempt was made to control cross-contamination of data, or interaction of staff regarding completion of the questionnaire. Rather, the questionnaire was used as a means of access to Home Care nurses' experiences relating to the program.

### The Patients

The researcher requested from the nursing unit clerk on the medical nursing unit the names of patients admitted with M.I. who met the study criteria, were near the end of their hospital stay and had had their cardiac teaching. Patients' names were entered in a log book kept at the nursing station. Should patients meet eligibility criteria, they were advised by hospital personnel that a researcher from The University of British Columbia would be interested in meeting with them to request their participation in a post-M.I. education study (see Appendix 5). If patients granted permission for the researcher to approach them, a time convenient both to patients and hospital personnel was established, so the researcher could meet with patients in the hospital to describe the purpose of the study and request their participation. At this time, a letter of



introduction and request for consent was given to patients (see Appendix 6). It was made clear to patients that participation was voluntary and that they could withdraw from the study at any time. The interview was approximately 45 minutes to one hour in length. Following the interview, the researcher reviewed patients' medical history, progress notes, and documentation of cardiac education.

Following discharge from hospital, patients were interviewed again, six to eight weeks after discharge, in the home following the six-week appointment with the physician, and at patients' convenience. The interview content was the same as that used during the initial interview.

Other sources of data for analysis of both the hospital and community-based education programs were: (a) audiovisual and written patient education materials; (b) agency policies and framework for the education program, documentation forms, written philosophy, goals, and objectives; (c) personal interviews with nursing administrators and staff, relating to history of the programs.<sup>3</sup>

#### Analysis of Data

The data collected were instead analyzed according to the PRECEDE-PROCEED model using a systematic qualitative approach, as described by Miles and Huberman, (1984) in order to develop a profile of the role of the community-based education program in relation to the hospital-based program, and within the context of patients' lives during recovery from M.I.. These authors advocate the use of a structured, formalized approach to qualitative data analysis, comparing their systematic methods to statistical analysis, whereby words are analyzed rather than numbers.

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<sup>3</sup> Written historical information was unavailable.

According to Miles and Huberman (1984), "analysis consists of three concurrent (and interwoven) themes of activity: data reduction, data display, and conclusion drawing/verification" (p. 21). Through the process of data reduction, raw data are summarized, coded; analysis is inherent in this process. It is "a form of analysis that sharpens, sorts, focuses, discards, and organizes data in such a way that "final" conclusions can be drawn and verified (p. 21). Data display is defined as "an organized assembly of information that permits conclusion drawing and action taking" (p. 21). Charts, matrices, graphs and networks are considered by the authors as more comprehensive methods of data display than narrative text. Conclusion drawing/verification involves deciding what things mean, and occurs from the beginning of data collection, through the process of data reduction and display. Once final conclusions have been drawn, they are verified, by reference back to the data, in order to confirm the validity of the conclusions (p. 22).

#### Home Care Nurse Questionnaires

Responses on questionnaires completed by the Home Care nurses were manually transcribed into spreadsheets for each question. Each question was placed into a broad descriptive category, based on the PRECEDE-PROCEED model, and data displayed within these categories. This enabled first level coding, from which patterns and relationships emerged. The reference table provided a useful framework for coding of questionnaire responses, and as expected, the coding process revealed several new categories within the broader descriptive categories. In addition, it was noted that many responses indicated a diversity of factors which affected outcomes of the program. Where components of the PRECEDE-PROCEED model were not addressed by the

nurses in their responses as expected, they were replaced with other components which were more applicable. In this way, data could be organized to determine whether the researcher's tentative hypotheses relating to responses were accurate.

### Patient Interviews

In order to facilitate the process of data display and reduction, the patient interviews were audio-taped, with permission by respondents, and later transcribed verbatim onto the interview schedule following each interview. Responses were then numbered, according to the interview schedule, for reference and to facilitate coding.

Prior to data collection, each question had been placed into a broad descriptive category, based on the PRECEDE-PROCEED model (See Figure 2). These categories were (a) behavior and lifestyle, (b) quality of life, (c) health beliefs, (d) knowledge, (e) enabling factors, (f) reinforcing factors, and (g) perception of education program.

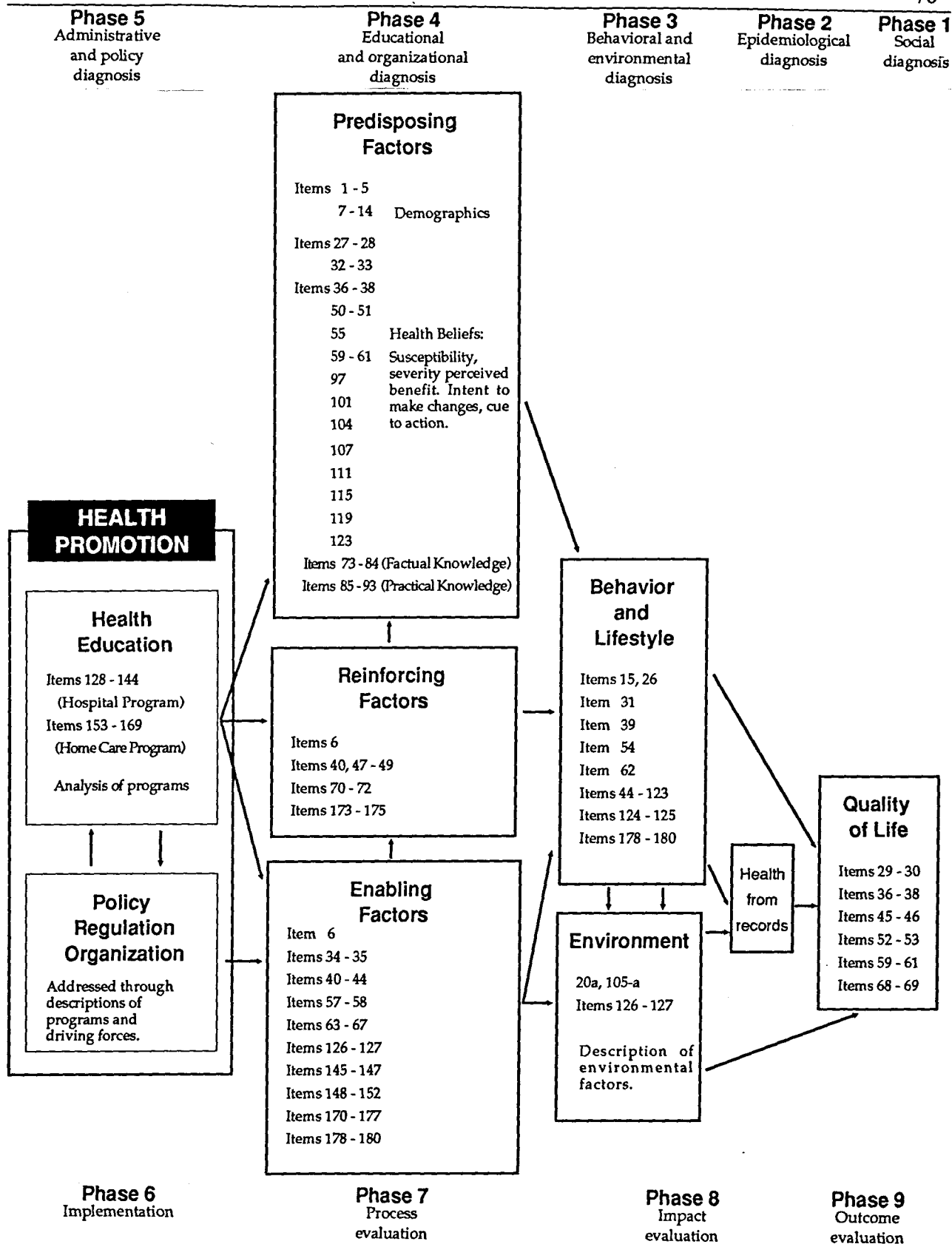


Figure 2: Patient interview items in relation to the PRECEDE-PROCEED model (Green & Kreuter, 1991).

The qualitative approach produced themes and relationships within the initial interviews, within the follow-up interviews, and between the first and second interviews for the group of respondents. These themes and relationships were then used in a triangulation process to place the interview portion of data analysis within a broader social context. Respondents comments were not treated separately within the study; rather, the patients were considered as a single data source from whom data would be collected for comparison with other data sources within the study. Those other sources were (a) analysis of the programs and (b) the Home Care nurse questionnaire data.

During and following data collection, responses were manually transcribed onto spreadsheets for each question within each broad descriptive category, as was done with the Home Care nurse data. Manual transcription enabled the researcher to become well acquainted with the data. Through this process, first level coding was achieved. Some codes which were applied to data were deleted as data display and analysis proceeded; they were either encompassed by different categories, or did not appear representative of the data as initially expected. Codes within each of the broad descriptive categories were created for the first level coding as seen in Appendix 7.

### Behavior and Lifestyle

Several questions in the patient interview schedule were designed to address post-M.I. patients' health behaviors prior to and following the cardiac event. At the initial interview, respondents were asked about their previous health behaviors; the second interview addressed changes in health behaviors which had occurred over the six to eight-week period following discharge from hospital. It was recognized that changes may not have been directly attributable to specific factors such as knowledge gain through

participation in the hospital and home care cardiac education programs. It was expected, however, that interview data would provide clues regarding any combination of factors which might contribute to behavior change, and what changes actually occurred in the six to eight week period following the M.I.

Within the behavior and lifestyle category, the following codes were applied to interview questions relating to behavior and lifestyle: (a) smoking, (b) alcohol, (c) physical activity, (d) stress: source and management, (d) dietary measures taken with regard to salt and cholesterol intake, (f) blood pressure measures, (g) sexual activity [second visit only], (h) work adjustment [second visit only], (i) aspects of lifestyle unchanged, and (j) use of resources [second visit only].

### Predisposing Factors

#### Knowledge.

Knowledge questions were derived from a study by Niskala (1986) and administered at both the first and second interviews. Questions allowed some flexibility of response; an answer key on the interview schedule was used as a reference for scoring of items, with several response choices listed for each. While these response themes were not offered to respondents, each item was derived from and reflective of the content of both the audio-visual programs and the education pamphlets. It was therefore assumed that the content level of each questions was appropriate for the study. Knowledge questions were placed in two categories for scoring; factual knowledge and practical knowledge. Factual knowledge items included pathophysiology of the M.I., physiological rationale for management of risk factors such as salt and cholesterol intake, smoking, and stress, and for physical exercise. Practical knowledge items were

developed to focus on application of factual information to daily life, such as techniques for stress management, reduction of high cholesterol consumption, cessation of smoking, pacing activity, and resumption of sexual activity.

Each of the two categories of questions were scored for both the first and second interview, for the purpose of exploring potential relationships between factual and practical knowledge for each respondent, and for comparison of health knowledge scores of the first and second interviews. These relationships were considered important because they would be used later in relationship to other factors to develop themes in analysis of data. The possibility of knowledge having been derived from sources other than the education programs themselves was not considered an issue; rather, the intent was to make inferences about the importance of knowledge as a single factor which predisposes health behavior and lifestyle. Respondents were asked to identify their main sources of information; however, it was expected that their responses would represent a lifelong culmination of personal experience and beliefs, knowledge of others' experiences, and other extrinsic sources of information, as well as new knowledge, which would together serve to form a knowledge base and orient them in both the cognitive and affective domains of information-processing.

#### Health beliefs.

Health beliefs are identified by Green and Kreuter (1991) as predisposing behavior and lifestyle. Both the first and second interviews included questions pertaining to health beliefs, in order to explore ways in which they might affect respondents' use of educational material in application to their daily lives.

The broad categories within which questions were initially developed were: (a)

susceptibility, (b) severity, (c) perceived benefit, and (d) cue to action.

### Enabling Factors

Enabling factors were assessed throughout the first and second patient interviews from respondents' perspectives, in order to be used in comparison with the enabling factors addressed through the education programs and community resources.

Due to the semi-structured nature of the questions, a priori categorization of specific questions tentatively placed certain items in the enabling factors category; however, it was expected that some responses may be later placed in the reinforcement factors category, depending on sources of information and support identified by respondents, and whether they emphasized information or support as more significant to their recovery.

Codes for the enabling factors category were established prior to data collection as (a) meal preparation, (b) knowledge or skills required, (c) source of learning, (d) expectations for spouse, (e) source of learning, (f) expectations for spouse, (g) sources for learning for spouse, (h) changes in spouse's life, (i) barriers to making change, (j) spouse participation in education program, (k) spouse preparation for patient's return home from hospital, and (l) additional sources of information.

### Reinforcing Factors

Reinforcing factors were illustrated by patients as presented below.

It was expected that many of the interview items which were placed in the descriptive category of enabling factors may elicit responses which would in fact reflect reinforcement of behavior rather than enabling of behavior. For example, the question "What would you expect your spouse/support person to do to help you learn to live with



a heart condition?" elicited answers like "support me during my mood swings" or "tell me I'm doing really well staying off cigarettes." These types of responses, based on Green and Kreuter's (1991) definition of factors, would be most appropriately categorized as reinforcing factors.

In the following three chapters entitled "Presentation of Findings," data reduction and display are presented; both narrative and other forms of display are incorporated. Integration of findings through triangulation is discussed in Chapter 8.

### Summary

Much of the literature on experimental and quasi-experimental research suggests that health status and behavioral outcomes following cardiac education programs are not significantly better in the long term than when education is limited or not available to patients. In fact, it has been acknowledged by some researchers that the most significant effects of cardiac education are related to psycho-social factors such as improved morale, self responsibility, and sense of well-being. This type of finding may impact on utilization of health services through reduced number of visits to physicians offices and hospitals, fewer disability claims, and a higher percentage of individuals who return to work following M.I. For this reason, qualitative research on the role of education in helping post-M.I. patients and their families adapt to this chronic illness is considered by this researcher as valuable as studies which investigate mortality rates and health status outcomes of health promotion interventions such as patient education.

## CHAPTER 5

### PRESENTATION OF FINDINGS: THE PROGRAMS

Within this chapter, both the Richmond Hospital and the Richmond Home Care education programs for post-M.I. patients are described and analyzed, in relation to (a) philosophical framework, (b) content, and (c) implementation. Sources of data for analysis of the programs included documents pertaining to philosophical framework, the educational materials used, and personal interviews with individuals involved in development or coordination of the programs. Information relating to the background of each program was based on personal interviews, as no written background information was available.

Analysis of the two programs was done using the PRECEDE-PROCEED model as an organizational framework, encompassing components of the programs as they address predisposing, enabling and reinforcing antecedents to behavior. Comparisons made between the two programs with regard to these components serve as a basis for discussion and analysis of the programs as perceived by the Home Care nurses and the patients included in the study.

#### The Hospital Program

The role of the hospital program was explored as a point of entry into the educational process for Post-M.I. patients. Most post-M.I. patients admitted to the medical unit "Two-South" participate in the Hospital Cardiac Education Program prior to discharge, followed by referral to the Richmond Home Care Cardiac Rehabilitation Program (unit manager, Two-South, Richmond Hospital, personal communication, December, 1992). This program, therefore, serves as an introduction to cardiac

education for patients who have suffered a first M.I., and as reinforcement of knowledge for those who have had a second or subsequent M.I.

### Background

Information relating to the history of the Hospital Program was obtained through discussion with a registered nurse, who had developed the program in collaboration with a colleague in the mid-1980's. The purpose of the program, according to this nurse, was to provide education to post-M.I. patients and their support persons whenever possible, and to heighten awareness of how to live with a cardiac condition and make necessary lifestyle changes. This purpose was addressed through development of a reference manual, designed to guide nurses in their efforts to facilitate cardiac patients' learning, and to provide a standardized approach to teaching based on pamphlets, audio-visual materials and discussion (personal communication, March, 1993). Within the reference manual, the philosophy and goals of the program were stated, providing a frame of reference upon which the program itself was based.

### Philosophy and Goals

The philosophy of the cardiac education program for post-M.I. patients at Richmond Hospital is stated in the Cardiac Education Reference Manual as follows:

each patient and his/her significant other experience the grieving process after an M.I. or threatened M.I.. Each patient and his/her significant other have individualized learning needs based on their stage in the grieving process. It is the responsibility of the health care team to assess and address all learning needs.

The goal of the hospital based program is: "to promote health and prevent further illness through education of the patient and his/her significant other in order to achieve a modified healthy life style as necessary."

The philosophy and goal of the cardiac education program at Richmond Hospital

reflect a belief that patients and their families need to be provided with individualized assessment and education in order to make appropriate behavioral and lifestyle changes. These statements are broad and generally applicable to anyone learning to live with a chronic illness.

Using the PRECEDE-PROCEED framework (Green & Kreuter, 1991), the philosophy, as stated, represents identification of predisposing factors, such as beliefs, perceptions, and the psychosocial factors which must be taken into consideration when planning to deliver an educational intervention. Enabling factors are addressed within the philosophy and goal, through provision of the education program, in order that the necessary skills and knowledge may be applied through behavioral and environmental changes. Both the philosophy and goal acknowledge the importance of reinforcing factors, through the participation of significant others in the education program; however, other influences on behavior are not reflected in the philosophy and goals, such as the environment in which learning occurs, and which provides the social context for the patient and family. The goal represents an assumption that the educational intervention can lead to lifestyle modification. By addressing predisposing, enabling, and reinforcing antecedents to behavior and lifestyle, the education program is intended to ultimately affect behavior and lifestyle. As interpreted by this researcher, however, the order in which components of this goal are stated differs from that of the conceptual framework. The PRECEDE model works from quality of life and social well being as ultimate outcomes back toward to lifestyle and behavior as immediate outcomes of the three antecedents, based on the intervention. The goal of the Richmond Hospital cardiac education program is stated in such a way that lifestyle is viewed as an ultimate

outcome, dependent upon "health" and "prevention of further illness," and other factors as previously described. Stated another way, attainment of health and prevention of further illness appear to be viewed as means to a healthy lifestyle. Within the framework of the PRECEDE model, it would be argued that lifestyle modification and behavioral changes are valued as means to improvement in health, which in itself is valued as a step toward enhanced quality of life. The distinction between assumptions underlying the goal statement and those of the PRECEDE model will be described in greater depth, as other components of the hospital education program are examined.

### Content

The Richmond Hospital Cardiac Education Program consists of slide tapes produced by the American Heart Association, which have been transferred onto videotape for ease of presentation, and several educational pamphlets produced by both the American Heart Association and the Heart and Stroke Foundation of B.C. and the Yukon.

Review of these materials was done by the researcher, focusing on ways in which the content addressed predisposing, enabling, and reinforcing antecedents to behavior and lifestyle change, and how the content is used to fulfil the philosophy and goal of the program. A summary of the content of the tapes and supplementary pamphlets is presented in this chapter to serve as a basis for comparison with the content of the Home Care Program, and analysis of the role of the Home Care Program in affecting behavior and lifestyle changes in post-M.I. patients.

The videotape presentations, which represent the main format for delivery of the educational material, are numbered, in order that they might be shown in sequence to

patients as they progress through the early steps of the recovery process in hospital.

Tape #1: "Your Heart Attack and Your Future" (18 minutes in length) and  
Supplemental Pamphlets.

These introductory educational materials are primarily "factual knowledge" oriented, their purpose being to provide information relating to normal function of the heart, pathophysiology of a heart attack, and what the patient should expect while recovering from the event. The healing process is discussed, as well as feelings commonly associated with the impact of the M.I.. Fear, anger, and depression are addressed and emphasis is placed on the normalcy of these emotions. The impact on family members is discussed, as well as how to recognize warning signs of abnormal depression. The presentation also addresses physical activity and rationale for planned, gradual increase in exercise, return to work, occurrence of angina (chest pain), weight control, dietary restrictions, smoking, sexual activity, and medications.

The audio-visual presentation described above serves as an introductory overview of general information which applies to an individual who has suffered an M.I. Supplementary information is provided by means of a pamphlet entitled "After A Heart Attack" (American Heart Association, 1986). This pamphlet contains diagrams of the heart, coronary arteries, and the effects of an occluded coronary artery. In addition to providing a general overview of a heart attack and related information, a glossary of terms is included. Terms such as myocardium, ventricle, atherosclerosis, and collateral circulation are defined, in order that patients may become familiar with the meaning of words used by health personnel and in the literature. Both the audio-visual program and pamphlet emphasize the fact that the M.I. patient can return to activities enjoyed prior

to the M.I., and may feel better than previously, if risk factors in the patient's life are reduced. The video states "if you value your life and your health, you'll do your part by setting a plan and goals and starting now." Strategies for goal-setting are not addressed within the videos. The material presented to patients and their families emphasizes an active partnership between patient and the physician and health care providers, stating that the doctor can only do so much and that the rest is up to the patient. Patients are asked to think about what changes they are willing to make in order to reduce risk factors and increase their quality of life following the M.I.

Tape #2: "Signals For Action" (16 minutes in length).

In this presentation, which is knowledge-oriented, warning signs for an M.I. are identified and compared to breakdown of a car. Patients are encouraged to become knowledgeable regarding how to recognize and treat angina, and how to distinguish angina from an M.I. Angina is defined and examples of factors which trigger angina are given. This tape discusses how angina usually feels, where it is located, and how it can be relieved, either by rest or nitroglycerin. The action of nitroglycerin, is described, as well as frequency, side effects, when to take it, speed of onset of action, and storage.

Instructions are given for action to take in the event of prolonged angina or angina which is unusual in its location, frequency, or intensity. Signals of a heart attack are described, as well as what to do if a heart attack is suspected. Patients are instructed not to waste time as "the heart cannot wait." Finally, they are encouraged to have an emergency plan in place, including emergency phone numbers and a map of the fastest route to hospital.

Tape #3: "You Are What You Eat" (21 minutes).

This presentation addresses the entire family as a means of enabling primary prevention for family members and secondary prevention for the M.I. patient, the program defines healthy eating as reduction of total cholesterol and fats. The patient and family are encouraged to speak to the dietitian regarding specific needs relating to changes in dietary habits.

As in the tapes described above, knowledge is addressed as a means of promoting behavior change. In this tape, the effects of cholesterol on the heart are described. The differences between polyunsaturated, mono unsaturated, and saturated fats are explained and examples given of each type of fat. Significance of high triglyceride levels in the body is explained, and suggestions are made for reducing triglyceride levels. Suggestions for changing eating habits include eating moderate portions of food, avoiding fried food, eating food that has been cooked to remove fats, eating low-fat dairy products, limiting salt and sodium intake and avoiding prepared foods such as snack foods, cured meats, and sauces, such as barbecue and soya sauce. Salt is described as "acting like a sponge which soaks up fluid," therefore increasing workload for the heart. It is suggested that salt intake be reduced by half, or substituted with herbs or salt substitutes. Resources suggested for patients and their families who require support in making dietary changes include weight control programs which include appetite retraining, visiting the dietitian, and discussion with the physician to identify specific dietary requirements. In addition, strategies for limiting portions and increasing intake of high fibre and low fat content foods are suggested.

The information provided by this audio-visual presentation is reinforced by the



dietitian who visits M.I. patients for whom the physician has recommended special diets. The dietitian gives patients a detailed brochure which serves as a guide to the selection of foods in the supermarket, as well as their preparation and consumption. Patients are also given a brochure on eating in restaurants entitled "How Can You Eat Out and Stay Healthy" produced by the Heart and Stroke Foundation (1991). This brochure provides tips for making choices at restaurants by looking for restaurants with large, varied menus and choosing foods which are high in fibre and low in sodium, calories and fat. Other suggestions include requesting sauces to be served to the side of the entrée, choosing broth based soups rather than cream soups, requesting low fat dressings and looking for restaurants that offer "Heart Smart" menus.

Tape #4: "Prescription For Health" (11 minutes).

The role of the patient as an active partner in his health is reinforced in this informational tape. Patients are encouraged to learn the facts regarding medications, to be aware of common problems in adhering to the regime, and to seek strategies for ensuring medications are taken as prescribed. Patients are instructed to refer to their medication guide and learn the reason for taking each medication, what it is called, what it looks like, how to take it, how often to take it, how much to take, its common side effects, and any special precautions associated with it. Strategies for adhering to the medication schedule are suggested. In addition, patients are instructed to learn any special skills required in relation to taking of the medication, although they are not advised of resources to help them learn these skills. Information contained in this audio-visual presentation is to be reinforced on the patient discharge form, which is to list medications to be taken at home.

Tape #5: "Move Into Action" (16 minutes).

In this tape, doubts that the patients may have about resuming physical activity and changes in their lives are acknowledged and addressed. It is emphasized that level of activity can be even greater than before the heart attack and that patients may feel even better once new lifestyle habits have been established. Effects of physical activity on the heart are explained, as well as the importance of gradually increasing physical activity over six to twelve weeks. Inactivity, by contrast, can have a negative impact on and lead to depression following an M.I. This tape refers to patients who have had heart surgery as well as an M.I., whereby the signs and symptoms of normal versus abnormal signs following events are discussed. In relation to specific details regarding activity, patients are advised to speak to the physician. Examples of activities which can be safely done in the early weeks following a M.I. are mentioned. It is emphasized that approximately 90% of patients return to work, useful productive lifestyle following heart surgery or M.I., usually within four to ten weeks. Guidelines for pacing daily activities are suggested, as well as what to do if symptoms such as fatigue or angina occur. Patients are referred to the audio-visual presentation entitled "Signals for Action" for more information on angina.

This tape acknowledges common beliefs and perceptions held by family members, as well as the importance of the family in providing reinforcement of knowledge and behaviour changes.

Reactions of family members to the cardiac event are discussed, including behavior which is over-protective due to the family member's natural concern for their loved one. Patients are advised to be tolerant of over-protective, bossy family members,

during the initial weeks, recognizing that it is a period of adjustment for all members of the family. It is suggested that a family member or support person, if possible, should be present for discussion between the physician and the patient regarding return home from the hospital and what to expect in the early weeks of recovery from the M.I.

With regard to resumption of sexual activity, patients are reassured that there is no valid reason for concern; if able to climb two flights of stairs without becoming short of breath or developing chest pain, they are capable of engaging in sexual activity. Patients are advised to discuss this with the family physician. The value of exercise training following the M.I. is addressed in order to heighten patients' awareness that such community resources are available for patients participation in following the M.I.

The discharge guidelines given to patients on discharge from Two-South include specific activity suggestions and guidelines for the first four weeks of recovery following discharge from hospital. These include activities such as driving, return to work, follow-up visits to the family doctor and performing activities of daily living.

Tape #6: "Quit for Life" (21 minutes).

This tape addresses predisposing factors such as knowledge and beliefs, as well as enabling factors, such as skills to quit smoking, and reinforcement of quitting.

The introduction to this presentation addresses the media image of cigarette smokers and the importance of taking the warning label on cigarette packages seriously. The risk of developing heart disease through smoking is addressed as well as the benefits of quitting smoking. The presentation acknowledges resentment toward to the harsh reality of being required to quit smoking that may be felt by the post-M.I. patient or any viewer of this program. The purpose of the "Quit for Life" presentation is to assist the

patient in developing new skills to eliminate a well-established habit and to practice those skills to mastery. The harmful effects of smoking on the heart are described in terms of the pathophysiology relating to smoking; patients are informed that it is their responsibility to quit smoking and that programs offering to help patients quit can only help temporarily. Patients are told that even if earlier attempts to quit have been unsuccessful, success can be achieved this time. This is because now there is a strong reason to quit, having survived a M.I. The personal benefits of quitting are suggested and it is emphasized that individuals, by quitting, are taking control of their own lives. Strategies for adhering to this lifestyle change include taking public responsibility for deciding to quit, letting others know, using such skills as learning to predict and handle situations when one usually smokes; using simple, physical activities to break the cycle of smoking such as exercise or walking, and relaxation exercises to relieve tension. Potential problems such as weight gain and "breaking down and having just one cigarette" are addressed; the patient is encouraged to talk out the craving or difficult event that may lead to smoking, with a support person. Above all, it is emphasized that the patient should remain in control and feel proud of the ability to take control by quitting smoking.

Within the discharge guidelines given to patients upon discharge from hospital, cigarette smoking is strictly prohibited.

Tape #7: "Taking it in Stride: a Positive Approach to Stress Management" (22 minutes).

In this presentation, skills to enable patients to manage stress are presented. A case study is used to illustrate how a complicated lifestyle and poor management of

stress leads to decrease in quality of life and to the development of chronic illness such as headaches and other psychosomatic complaints. Emphasis is placed on the restructuring of lifestyle in order to achieve greater quality of life, through strategies such as prioritizing activities and incorporating relaxation techniques into daily routines.

Tape #8: "Relaxation Tape"

This videotape uses color bars and music to facilitate relaxation rather than a verbal approach to promoting a relaxed state.

Themes Within Program Content

In review of the educational tapes and pamphlets several themes common to all of the materials are noted as follows:

1. Factual and practical information is integrated within each of the audio-visual programs and pamphlets in order to present strategies for coping with the physical and psychological challenges after the M.I. This researcher attempted to distinguish between the quantity of factual and practical information presented, as reflected in the health knowledge section of the patient interview schedule. The distinction between these two types of information is not clear, however, as facts relating to the M.I. are provided in a manner whereby they can be applied to the broader context of daily life. This observation was made for each of the tapes and pamphlets.
2. An active partnership and shared responsibility for health and modifications of health behaviors is emphasized throughout all of the educational material. Patients are advised to discuss details of their rehabilitation with the physician, such as diet, physical, and sexual activity. They are, however, informed that the ultimate responsibility for their health is their own.

3. Use of hospital and community-based resources for modification of behaviour and lifestyle changes is suggested in each of the tapes and educational pamphlets. The generic nature of the content does not lend itself to addressing environmental factors which may influence the use of these resources by patients.
4. Recognition and encouragement to use support systems for reinforcement of behaviour modification of health beliefs are provided throughout.

Predisposing, enabling, and reinforcing factors are addressed, by the educational materials, as described below.

Predisposing factors.

The audio-visual programs and pamphlets provide a means of imparting knowledge relating to anatomy and physiology of the heart and pathophysiology of the M.I, recognition of signs and symptoms and appropriate actions, and management of risk factors. Strategies for lifestyle adjustment are suggested as well. Although the content is primarily knowledge-oriented, other predisposing factors, such as beliefs and perceptions are addressed; for example, the materials focus on common misconceptions relating to cause of the M.I., which often lead to fear of resuming regular activities following the event.

Enabling factors.

The content of both the audio-visual programs and written materials include suggestions of ways in which to make necessary lifestyle changes following an M.I. These include strategies for smoking cessation, dietary restrictions, gradual resumption of physical activity, taking medications as prescribed, and stress management. Patients are encouraged by the videos to identify resources in their community for further

information on skill development as they progress through the rehabilitative phase of the M.I., as short hospital stays and limited resources restrict potential for skill development in the hospital.

Resources within the hospital setting include the physician, dietitian, nurse, and physiotherapist. These professionals not only reinforce the material contained in the audio-visual programs and pamphlets; they are able to facilitate development of skills which are feasible and achievable for each patient and his/her support person. The accessibility of these professionals to patients however, is dependent on factors such as workload, time, early patient discharge, and physician referral.

#### Reinforcing factors.

The content of the presentation and written materials reflect acknowledgement of the importance of involving family members or significant others in the education process. Viewers are informed of the possible emotional effects of the M.I. on patients and their loved ones; as common reactions such as depression, irritability, and fear of causing further damage to the heart. By clarifying common misconceptions, and acknowledging the psychosocial effects of the cardiac event, the educational content provides reinforcement of positive intentions to make behavioral and lifestyle changes following M.I.

#### Environment.

Within the PRECEDE-PROCEED model, the environment is viewed as playing a key role in influencing the behavior and lifestyle of individuals. For the post-M.I. patient, there may be environmental factors which need to be addressed before positive changes in health behaviors or lifestyle can occur. For example, stress in the workplace

or at home may need to be considered, in order to manage stress as experienced by the patient, particularly in the early weeks following M.I.

Within the hospital program, environment is not addressed by the philosophy and goal of the program, by the educational content, or in implementation. The hospital environment itself warrants consideration in relation to how it can be made conducive to learning; the patient's immediate environment should also be assessed with regard to how it may influence changes in health behavior and lifestyle, and ultimately, health and quality of life.

A limitation of both the audio-visual materials and the literature provided patients is their inability to provide individualized information to address specific concerns of the patient and family. The content serves as a beginning point for developing an understanding of the cardiac event and how it may affect the patient's and family's life. Those who already possess this knowledge, and have identified a need for more advanced or more specific information may not be satisfied with the level of content delivery provided by these two methods. Likewise, patients and families who are less able to comprehend the material, due to educational background, cultural or language barriers, or other limitations, such as sensory impairment, may not benefit from the content delivered through the audio-visual format or from written materials. The individualization of patient education, in order to meet specific needs relating to the patient's and family's future, resumption of activities, and other personal issues, cannot be achieved through these two approaches; however they provide a frame of reference for discussion between patients and their caregivers.



### Implementation

The cardiac education material is presented to patients with clinical and/or laboratory evidence of M.I., following transfer from the Intensive Care Unit at Richmond Hospital to the medical nursing unit Two-South. Due to the staffing system on that unit, either a registered nurse or a practical nurse may be responsible for delivery of care to these patients, which includes cardiac education. While on Two-South, post-M.I. patients are to receive informational pamphlets and view the cardiac teaching tapes provided by the nursing staff of that unit. The tapes are kept with a TV/VCR unit which is used to present the audio-visual programs. The reference manual for staff is also kept on the TV/VCR stand for ready access.

As the patient and/or significant other reviews each tape or pamphlet, the nurse is expected to assess the need for supplemental information, through discussion of content and learning needs. If questions are raised which the nurse is unable to answer, these are to be referred to someone with more depth of knowledge, such as in the case of a practical nurse who calls upon a registered nurse to address the patient's questions regarding details of a medication. The nurse caring for a post-M.I. patient may also direct a patient's questions to the physician, dietitian, physiotherapist, or other professional as appropriate (unit manager, Two-South, personal communication, December, 1992). Feedback regarding whether the program is implemented as intended consists of documentation of teaching on a nursing flowsheet for each patient.

The point at which post-M.I. patients begin viewing the teaching tapes and receiving the educational booklets is variable, according to the nursing staff of Two-South. When asked about why variation exists, the nursing staff state that at least two for

the internists prefer to order cardiac teaching on an individual basis for their patients. The nurses assume that this is based on these physicians' belief that some patients' anxiety levels may actually be heightened by cardiac education during the early phase of recovery, thus inhibiting the rehabilitative phase. As these physicians may not order cardiac teaching until the patient is almost due for discharge, there may be limited time for the patient and/or his significant others to view the tapes prior to leaving the hospital. Other post-M.I. patients may not receive the tapes or pamphlets until near the end of their hospital stay due to complications relating to the M.I., or lack of readiness, as identified by nursing staff (nursing staff, Two-South, personal communication, February 1993).

Implementation of the program presents a second dimension to the ways in which the program addresses factors which influence behavior. Predisposing antecedents to behavior, such as knowledge, beliefs and perceptions, are to be assessed by staff and addressed on an individual basis in addition to the tapes and pamphlets. Concerns relating to predisposing factors are communicated to other professionals as appropriate, or addressed by the nurse through personal interaction with the patient and family. One licensed practical nurse states, "sometimes they just want someone to talk to." In such a way, misconceptions and sources of anxiety for the patient and/or their significant others can be assessed and appropriate interventions planned. In the event that time does not permit the nurse to engage in discussion with the patient, his health beliefs and perceptions of the cardiac experience may in fact inhibit any potential benefits of the education program because it may be perceived as unapplicable to his own unique situation. According to Green and Kreuter (1991), predisposing factors

need to change before enabling factors; that is, a patient will not devote effort to learning skills or pursuing resources if he/she has little commitment to the behavioral change (p. 403). Before the patient is taught new skills for making behavioral or lifestyle changes following the M.I., time must be spent assessing his motivation, and gaining some insight regarding his current level of knowledge and beliefs about help. Green and Kreuter's assessment of 102 controlled studies of patient education reveal that factors which predicted the extent of change in patient knowledge and beliefs, as well as outcomes, were the individual attention, relevance, and feedback provided through communication, rather than the materials used in implementing the program (p. 406). On Two-South at Richmond Hospital, the individual counselling and discussion between health provider and consumer depends, in part, upon the workload of staff caring for with varied needs, occurring as a supplement to the standardized education program (unit manager, Two-South, personal communication, December, 1992).

The teaching tapes and informational pamphlets serve as convenient methods of enabling new skills and identifying resources for post-M.I. patients' and their families; providing they are in a state of readiness for this information and are motivated to apply it within the context of their own lives. While many studies have shown value in implementing education programs during the acute phase of a chronic illness, barriers to patient learning exist within the hospital setting. Hospital-based patient education is threatened by many forces such as: (a) length of stay and shortage of learning time in hospital; (b) the patient's physical and psychosocial condition; (c) the hospital environment, and frequent interruption of activities; (d) lack of confidence by nursing staff to accept a teaching role, due to limited support from the organization; (e)

interprofessional relationships, whereby physicians may be reluctant to permit nurses to teach patients, in which case, the nurse's teaching role is undermined; (f) organization of nursing work, whereby a task-oriented approach to nursing activities includes distribution of educational materials, which can be checked off as completed on the clinical flow sheet; and (g) the organization of nursing time, through extended work hours such as 12 hour shifts and utilization of nursing floats to supplement staff. Twelve hour shifts mean fewer shifts in a week, which may impact on development of nurse/patient relationships, and therefore on education. The daily turnover and skill mix of staff necessitate provision of an education program which can be delivered by any nurse whenever an opportunity presents itself (Gregor, 1985).

At Richmond Hospital, the average length of stay for a patient who has suffered an M.I. is 10 days; the first three or four days are spent in the Intensive Care Unit, followed by transfer to Two-South once the patient's condition is considered stable. During the six or seven days the patient spends on the ward, his or her physical activity level is gradually increased. Nursing care includes assisting the patient with personal care, administering medications, and ongoing assessment of the patient's condition. Rest periods follow each meal, and visitors are accepted in the afternoons and early evenings. As Two-South is a medical nursing unit, the nursing staff coordinate and deliver care to patients with many conditions, with varying levels of acuity (unit manager, Two-South, personal communication, December, 1992). Patient education, therefore, may compete against many other patient care needs for adequate attention.

In addition to the obvious challenges presented relating to delivery of cardiac education, such as patient condition and the physical environment of the hospital, the

nurse's role in the program warrants consideration. According to the nursing staff of Two-South, there is an "unspoken rule" with regard to certain physicians who are reluctant to allow their patients to receive cardiac education unless the former have prescribed it. This may lend to delays in delivery of the material; the patient may receive all of it within a short period of time, or only a portion of it prior to discharge, if approved by the physician (personal communication, February 1993).

Although the previous discussion identifies barriers to patient identification as they exist in most hospital settings, the efforts made by the nursing staff of Two-South to provide this component of patient care illustrates their commitment to education in whatever capacity possible with the resources available to them. The unit manager of Two-South states that all nursing staff working on the unit must be familiar with the contents of the educational resources for post-M.I. patients. Although workshops and inservices to foster the nurse's role in facilitating learning have not existed on a regular basis at Richmond Hospital in the past, a newly-established Education and Research Department is currently addressing this area of need. With regard to patient education, nursing staff will, in the future, be given an opportunity to develop their educative role, in order to enable patients to develop skills required to make behavioral and lifestyle changes following onset of a chronic illness. In addition, nurses themselves will be able to address issues of concern to them, and be empowered by their ability to articulate their role in patient education to members of other disciplines.

With regard to reinforcing factors, the methods of implementation primarily used for post-M.I. patients on Two-South are conducive to involvement of patient's significant others, such as the spouse. The audio-visual presentations can be viewed repeatedly,

whenever an opportunity presents itself. The only limitation in relation to viewing the tapes is the fact that only one TV/VCR is available; if in use, patients and their support persons have the option to view the tapes with a group, or to wait until the TV/VCR is available for individual use.

The written material given to the post-M.I. patient may serve as a bridge between the physician and the patient and family or support person. Whereas much of what is heard in discussion with health personnel and on the tapes may be forgotten, the pamphlets are a source of information to which the patient and his family can refer as often as necessary during the recovery period. This is often helpful for the spouse or support person, who may otherwise rely on the patient's interpretation of information. By reading the pamphlets, the spouse or support person may learn how to provide support for the patient during recovery. This may include changes in this person's lifestyle as well, such as smoking cessation and adopting the cardiac diet in order to lose weight. Through primary prevention practices, the patient's spouse or support person provides positive reinforcement to the patient for his own efforts to make lifestyle changes.

#### Summary: The Hospital Program

The first section of this chapter has explored the Richmond Hospital Cardiac Education Program in relation to philosophical framework, content, and implementation, with a specific focus on ways in which predisposing, enabling, and reinforcing antecedents to behavior are addressed as well as environmental factors. This program, for first M.I. patients, has potential to provide a knowledge base upon which decisions regarding behavior and lifestyle change can be made, and resources to enable and

reinforce these changes can be identified and used.

The Richmond Hospital Cardiac Education Program was reviewed as part of this study in an effort to gain an understanding of the education and support available to post-M.I. patients in hospital. Although there remains in the literature much controversy regarding outcomes of cardiac education for patients and their families, provision of such education has become a standard part of care delivery within hospitals, and indeed, an expectation of society at large. Within the hospital setting, patient education presents many challenges, as described in Chapter 2 (Review of Literature). Patient education is, however, considered a responsibility of the hospital because it fulfils patients' rights to information about their health, and provides them with ways in which they can share the responsibility for health maintenance or improvement. Through hospital-community partnerships, patient education and other aspects of care which are provided in the hospital setting can be continued by community agencies and organizations.

The Richmond Health Department is one such community agency which has pursued an interest in continuity of patient education between hospital and community, based on a mandate from the Ministry of Health. Through the Continuing Care Division of the Richmond Health Department, a Cardiac Rehabilitation Program is offered to post-M.I. patients referred to Richmond Health Department by their physicians.

#### **The Home Care Cardiac Rehabilitation Program**

Description of the community-based cardiac education program in Richmond, B.C., provides a frame of reference for comparison between the structure and processes

inherent in the program, and its outcomes as evaluated by those who participate in it.

The following is a description of the Richmond Health Department Cardiac Rehabilitation Program, as it exists under the mandate and scope of services for community health care nursing services, and based on the following: (a) philosophy, goals, and objectives of the Home Nursing Care Program (Continuing Care Division of the Ministry of Health); and (b) The Richmond Health Department goals and objectives. The Home Care Program is described using the same format as was used to describe the Richmond Hospital Cardiac Education Program earlier in this chapter.

### Background

According to the coordinator of the Home Care Cardiac Rehabilitation Program, the program was developed at least twelve years ago, based on a teaching booklet which was written and piloted by a University of British Columbia nursing student who had been working with a cardiac patient as part of a practicum. This booklet was later utilized by the staff at the Richmond Health Department based on recognition of the need to provide educational material and support to patients following M.I.. The coordinator states that staff noticed M.I. patients on the home care case load were younger than they had been in previous years, some being in their 30's or 40's. The staff questioned whether the population characteristics of Richmond were changing over the years due to the growth of the B.C. Lower Mainland area, or if other factors, such as lifestyle or environment, played a more significant role in the incidence of younger cardiac clients. Although this question was not formally investigated, the home care nursing staff decided to pursue development of a formalized cardiac rehabilitation program which would incorporate the use of an educational booklet into a standardized



home visiting schedule (personal communication, May, 1993).

At the time of the revision of the booklet, the Home Care nurses' charting format was also under revision. Visiting nurses were beginning to use a problem-oriented record, where identified problems, interventions, and evaluation were documented. Standardized plans of care were being developed and utilized to enforce parameters of care delivery. Within these care plans, a protocol for visiting, providing educational and psychological support and monitoring of clinical status for post M.I. clients was developed. According to the program coordinator, the idea to develop and implement a cardiac rehabilitation program was discussed with and supported by the administrator for the Continuing Care Division of the Richmond Health Department. Based on literature regarding recovery from M.I., a twelve-week visitation period was established, in order to provide education, support, and monitoring of cardiac status during the most critical weeks of recovery (personal communication, May, 1993).

#### Allocation of Resources

Allocation of resources to the program, to implement the intensive visitation protocol, was based on a decision of the Richmond Health Department within its mandate. The program was considered to be in accordance with the Health Department's philosophy, goals and objectives. No additional funding, therefore was required in order to offer the program to the community. Due to the young cardiac population being cared for by the home care nursing staff in Richmond, the program was considered a service priority by the Health Department. Staffing, therefore, was enhanced to ensure adequate delivery of such a program to the community (program coordinator, personal communication, May, 1993).

### Target Population

The program was initially developed to address learning and support needs of the cardiac population referred from Richmond Hospital. The program was later expanded to include clients who were discharged home from Vancouver General Hospital on an early basis following admission for cardiac disease; typically, clients awaiting surgery, many of whom are anxious and non-compliant to the recommended health regime. These clients are often "carried until surgery as they tend to need a great deal of emotional and educational support prior to their surgical admissions" (program coordinator, personal communication, May, 1993).

The Home Care nursing staff, have noted a predominance of two distinct populations of clients on their case loads for cardiac rehabilitation; business orientated Indo-Asians, with higher than secondary level education, fairly equal male female roles within the family, and fluency in English; and the agricultural community, with generally lower educational levels, unequal male female roles and less likelihood of fluency in English (program coordinator, personal communication, May 1993).

### Philosophical Framework

The Cardiac Rehabilitation Program offered by the Richmond Health Department is reflective of the mandate of the Community Home Care Nursing Service, to improve health, by providing professional nursing care to eligible B.C. residents of all ages with chronic, acute, palliative, or rehabilitative health care needs in a variety of community settings. The Cardiac Rehabilitation Program is an example of a service which includes assessment, direct care, teaching, case management, support consultation, liaison, and referral (Community Health Care Nursing Services Policy Manual, 1992).

### Philosophy

The philosophy of the Home Nursing Care Program emphasizes a belief in the rights of individuals and their families to be responsible for their own care. The role of the Home Nursing Care Program is to support individuals' care needs and maximize their capability to care for themselves and each other through teaching, mobilization of resources, and provision of direct care. Home nursing care involves coordination of health professionals, individuals, family and community resources (Home Nursing Care Program Policy Manual, 1989).

### Objectives

The objectives of the Home Nursing Care Program include: (a) use of a self-care concept to provide direction in design of services, program development, service delivery, and decision making; (b) provision of nursing service which includes patient teaching directed by the self-care concept to those individuals whose families are unable to care for self or family members; and (c) assistance in coordination or identification of additional community resources available to support patients at home (Home Nursing Care Program Policy Manual, 1989).

Scope of service priorities which have been established to assist in management of service demands include those requiring cardiac rehabilitation, such as unstable patients who are adherent to their medical regime, or post-M.I. patients. The provision of the Cardiac Rehabilitation Program for these patients is considered a high priority. Priority levels state criteria for patients as high, medium or low priority (Community Home Care Nursing Service Policy Manual, 1992).

### Mission and Goals of the Richmond Health Department

Under the mandate of the Community Home Care Nursing Service, the mission of the Richmond Health Department is to "assist the people living and working in the City of Richmond in achieving a level of health which enhances their quality of life" (Richmond Health Department: Department and Community Goals and Objectives, 1993). The goals of the Richmond Health Department include: (a) to promote and monitor the health of the community and environment; (b) to promote wellness and good health practices; (c) to provide treatment and rehabilitation and support of care services in the community; and (d) to plan and organize community health programs that are resourceful and compatible with the philosophy and goals (Richmond Health Department: Department and Community Goals and Objectives, 1993).

### Purpose of the Cardiac Rehabilitation Program

The Cardiac Rehabilitation Program is one of many programs offered by the Richmond Health Department. The purposes of the Program are: (a) to monitor the general health status of the cardiac patient and to provide him/her and his/her family with support, and (b) to provide information and guidance which will facilitate positive changes in the patient's general health and quality of life (Richmond Health Department and Community Goals and Objectives, 1993).

### Content

In order to meet the post-M.I. patient's educational and psychosocial needs, an educational booklet which provides information about the following is provided by the Home Care nurse: anatomy and physiology of the heart, medications, the difference between angina and myocardial infarction, the healing process, risk factors which can or

can not be changed, and community resources. This booklet serves as a basis for discussion between the Home Care nurse and the patient and family during the twelve-week visitation period. Inside the front cover of the booklet, the patient is advised to use the booklet as follows:

try to absorb as much information as you can, when you can, and keep this booklet handy as an easy reference guide. If you find that you do not understand something in this booklet jot down some notes as the question arises, and be sure to ask about it (It's All for Your Heart, Richmond Health Department, p. 2).

The last two pages of the booklet entitled "Notes" are available for writing questions as the client thinks of them.

A table of contents at the beginning of the booklet provides an orientation to the organization of the booklet, and each topic is listed with page numbers for easy reference. An introduction to the booklet states its purpose, and what can be found in the booklet. Presentation of the content of the booklet is described below.

### Anatomy and Physiology

Anatomy and physiology of the heart are addressed with regard to the following: (a) location of the heart, (b) layers of the heart, (c) blood supply to the heart, and (d) workload of the heart.

Diagrams of each of these aspects are provided with labels, and a short description of the function of each part of the heart anatomy. For example, below the diagram entitled "Layers of the Heart," the description presented in lay terms is as follows:

The myocardium is the muscular part of the heart that does the pumping. The heart is divided into four chambers: right and left atria, right and left ventricles. Notice that the wall of the left ventricle is thicker than the right ventricle. This is because it has the most strenuous work to do; it has to pump blood to the rest of the body. The right ventricle pumps blood only to the lungs. (The distance to

the lungs is less than that to the rest of the body.) (It's All for Your Heart, Richmond Health Department, p. 6).

The workload of the heart is compared to balanced and unbalanced scales which are used in diagrammatic form to illustrate the principle that oxygen supply must equal oxygen demand.

### Medications

This section lists the five main contributors to heart disease, followed by six major classes of cardiac medications which try to balance the workload of the heart and blood supply to the heart. The purpose of each of these medication class follows, with examples of each type which the client may be taking. Points to remember with regard to cardiac medications are listed in large, bold type on a single page, emphasizing the importance of becoming familiar with the action of medications, how, when and why they are to be taken, and to consult the nurse, doctor, or pharmacist regarding medication concerns.

### Angina vs M.I.

The distinctions between angina and M.I. are illustrated by both a labelled diagram and a comparison chart, which address such differences as onset of pain, duration and characteristics of pain, location, and relief, as well as the physiological differences and results of each type of pain. A section on the healing process describes how the damaged heart recovers from the M.I. event, length of time involved in healing scar tissue in the heart muscle, and the need for physical and emotional rest.

### Risk Factors

Risk factors as identified by the Canadian Heart Association are listed, with distinctions made between factors which can be controlled, and those which cannot be

controlled. Factors which can be changed or controlled are then listed as smoking, hypertension, diet, stress, exercise and sexual activity. Factual information is presented with regard to each of these risk factors on how the factor acts against the heart, to increase risk of heart disease. Suggestions are made regarding what the patient can do to reduce risk factors. Within the section relating to diet, polyunsaturated, mono-unsaturated, and saturated fats are defined. Sources of each type of fat are listed along with the form in which each type exists at room temperature. The difference between good and bad cholesterol is discussed, as well as ways to raise the level of good cholesterol and lower the level of bad cholesterol.

A nine-page section is dedicated to charts which contain information on the following: (a) foods to choose vs not to choose for each of the food groups; (b) facts about action of caffeine, salt, and how to reduce their intake; (c) how to read food product labels; and (d) tips on dining out.

Also discussed in the booklet is the physiological effect of stress on the heart, through release of chemicals and hormones. A chart is used to differentiate between the actions and results of the release of chemicals such as adrenaline and hormones (corticosteroids). The body's response to stress is discussed as well as tips for keeping stress within reasonable limits.

### Exercise

The effect of exercise on the heart is described, with information and suggestions for a gradual increase in physical activity over the first two weeks at home, following a consistent routine. Points to remember when walking and doing household tasks and planning activities are suggested, and the patient is referred to the Home Care nurse to

discuss specific organized activity programs in the community.

### Sexual Activity

Some reassuring facts about resumption of sexual activity are provided, as well as 15 practical guidelines for sexual intercourse. These guidelines are described in an effort to help the client and partner enjoy "a satisfying sexual relationship while minimizing the workload on the heart" (It's All for Your Heart, Richmond Health Department, p. 46). The client is advised to report any signs and symptoms as outlined in this section to either the doctor or Home Care nurse.

### Factors That Cannot Be Changed

These factors are identified as diabetes, heredity, age, and gender, each of which is explained in relation to heart disease. The client is advised that although these factors cannot be changed, reducing other changeable risk factors will reduce overall risk of heart disease.

### Conclusion

The booklet concludes with a summary of the most important points to remember during recovery from a heart attack in a few paragraphs, which, in a positive manner, acknowledge the psychosocial adjustments during recovery from the M.I. Some of the points to remember include "carry a prescribed nitroglycerin with you at all times," "relax - life can still be good or better! - after a heart attack," and "laugh at yourself!" (It's All for Your Heart, Richmond Health Department, p. 51).

### Resources

An extensive resource list is provided at the back of the booklet which includes support groups, programs, reading material, and other sources of information and



support for people with a cardiac condition.

### Analysis of Program Content

The Home Care Cardiac Rehabilitation Program consists of two major components:

1. monitoring of health status of patients with cardiac conditions; and
2. discussion aimed at providing information support to facilitate positive changes in patients' health, and ultimately, quality of life. Through provision of an educational booklet designed and produced by the Richmond Health Department, all patients have an opportunity to learn both the factual and practical aspects of living with a cardiac condition.

The content of the booklet is broadly applicable to patients with cardiac disease or as information to patients at risk for cardiac disease who are interested in primary prevention. A realistic approach to addressing each area of concern is used in terms which are easily understood, and material is presented in a comprehensive manner. Charts and diagrams are used to organize the material, which facilitates the ease with which the reader can locate specific information. In review of the booklet, several observations are noted as follows:

1. Factual and practical information are provided in appropriate proportion to each other whereby the rationale for making lifestyle and behavioral changes is explained; in other words, the "why" which supports the "what" and "how" of making recommended changes. Practical tips are provided for each of the risk factors that can be changed, as well as acknowledgement of the difficulties that may be experienced in making adjustments.

2. Patients are made aware of the responsibility for self-care, based on the recommendations and suggestions made by the Home Care nurse.
3. Use of community resources is not only suggested throughout the booklet, it is facilitated by an extensive resource list at the back of the booklet.

With regard to ways in which predisposing, enabling, and reinforcing antecedents to behavior, as well as environment are addressed, the content of the booklet is analyzed as follows:

Predisposing factors.

Both factual and practical knowledge are addressed within the content of the Home Care Cardiac Rehabilitation Program. Knowledge is not, however, presented as an ultimate goal of the program; rather, it is promoted on the basis that patients can make informed decisions about their health and assume responsibility for their own care. Common beliefs and perceptions about M.I., and related areas of concern, are addressed, in order to facilitate behavior change. The information presented in the booklet is consistent with that which is presented in the hospital program; however, more emphasis is placed on practical application of knowledge to daily life.

Enabling factors.

The program content serves to enable patients to make behavioral changes, by providing practical tips or reduction of risk factors, which can be incorporated into daily life without a prohibitive cost factor. For example, suggestions are provided for reducing intake of foods high in "bad" cholesterol, which would make little or no impact on the grocery budget. An extensive resource list is provided, with details of purchase or membership costs to various programs, as well as alternatives in each area of interest.

Patients and their families are encouraged to ask their Home Care nurses about any questions they may have regarding ways to reduce risk factors.

#### Reinforcing factors.

The educational booklet, which is primarily informational in design, does not address reinforcing factors such as the role of the spouse or support persons.

Reinforcement is, however, a major component of the Home Care Program, as is discussed in the following section relating to implementation. In addition, the booklet serves as a link between the program and the spouse or support persons, whose role may be to provide support and encouragement to the post-M.I. patients throughout the recovery period.

#### Environment.

Tips for activity planning are provided which address physical environment, such as weather, and walking up hills, or room temperature when engaging in sexual activity. Patients are also provided with guidelines for dining in restaurants. Stress is acknowledged as being caused by some environmental factors; patients are offered strategies for managing their stress.

### Implementation

#### Preparation of Home Care Nursing Staff

According to the program coordinator, orientation for Home Care nurses at the Richmond Health Department is extensive, ranging from one to two months in duration, as compared to two or three days offered in other agencies. Orientation to the Cardiac Rehabilitation Program is based on a standardized provincial program, and for a new staff member, involves review of Home Care nursing manuals, patient education

manuals, and information relating to cardiac medications. Nurses are expected to prepare for their educational role by completing continuing education courses through local colleges, universities, and other resources such as the R.N.A.B.C. Cardiac Interest Group. Staff receive paid education leave for continuing education, and in some instances, speakers are brought to the Health Department to address staff on topics of interest. New staff are "buddied" with an experienced Home Care nurse in the community and are expected to become familiar with content of the educational booklet used and common areas of concern expressed by patients (personal communication, May, 1993).

### Delivery

Delivery of the Cardiac Rehabilitation Program is achieved through the regular visitation schedule of the Home Care nurses to cardiac patients' homes. On written referral by attending physicians to the program, patients are visited as follows: during the first seven days on the program, a Home Care nurse monitors the patient daily; then after seven days, the number of visits are reduced to three times a week for two weeks, and then two times a week until the patient is 12 weeks post M.I. In addition to monitoring health status by assessing vital signs, signs and symptoms of complications, and activity tolerance, Home Care nurses help meet patients' educational and psychosocial needs by reinforcement of information and one to one discussion of concerns (program coordinator, personal communication, May, 1993).

On the initial visit to patients' homes, (usually within one day of discharge from hospital) the Home Care nurses provide patients and their families with the educational booklet produced by the Richmond Health Department. This booklet is provided free

of charge, and serves as a reference for patients when questions arise during the recovery period. The schedule for monitoring may vary in some instances; for example, if a patient does not adhere to the recommended health regime, the Home Care nurse may discuss this with the referring physician, and either discharge the patient from Home Care or reduce the frequency of visits as appropriate. Home Care staff exercise professional judgement in alerting the physician of any concerns they may have regarding follow-up of the client. Several issues relating to implementation of the program are identified by the program coordinator as follows:

1. Patients' perceptions of the cardiac event are influenced by physicians' explanations of the event. This is often problematic to Home Care nurses who are frustrated by conflicting recommendations made by themselves and physicians. Physicians may minimize the event, which affects patients' beliefs about the M.I.. This, in turn, impedes nurses' ability to educate patients about the importance of lifestyle changes and reduction of risk factors. The program coordinator questions whether this conflict may be due in part to physicians' personal difficulties accepting the impact of M.I. on quality of life, particularly with regard to the young population of patients seen in Richmond.
2. Perhaps as a result of physicians' minimization of the M.I. event, Home Care nurses note that patients are not always informed of driving restrictions. The responsibility for determining when a post-M.I. patient is ready to resume driving rests with the physician. The Motor Vehicle Act does not specify standards for resumption of driving following an M.I.; physicians are held responsible for sending notification to the Motor Vehicle Branch in Victoria that based on their professional opinion, their patients

are clinically stable to drive. To avoid this procedure, the standard of eight weeks post-M.I. is accepted as the time period after which patients usually resume driving.

However, some patients are informed by their physicians that they may resume driving after only a few weeks; a cause of concern to Home Care nurses. In addition, guidelines for resumption of sexual activity are often not provided on the hospital discharge form completed by physicians and given to patients. The coordinator states that this is an area of concern to Home Care nurses, as the topic of sexual activity is often not raised by the physician in discussion with the patient.

3. The program is offered to non English-speaking patients and their families who comprise a significant proportion of the case loads. Many patients or their families rely on translation of information. Information may not be translated accurately, or may be translated in ways which support or reflect the decision making powers in families, or their religious beliefs. As the Indo-Asian community is largely comprised of extended families, family dynamics often present challenges to home care nurses in their facilitative role. Within the caste system, nurses are not revered, which further impedes their role in working with these families. In order to address the challenges of multiculturalism within the Home Care program, workshops and educational programs are offered to staff (program coordinator, personal communication, May , 1993).

### Analysis of Implementation

The method of implementation of the Home Care Cardiac Rehabilitation Program consists of visits by Home Care nurses to each patient's home, during which health status is monitored, and discussion of patient and family concerns occurs. Information is provided by the educational booklet described earlier in this chapter, and

is reinforced in discussion. Regular visits over a twelve-week period provide opportunities for patients to ask questions and discuss concerns as they arise during the recovery period.

#### Summary: The Home Care Program

The Home Care Cardiac Rehabilitation Program is designed to provide a comprehensive, individualized approach to patient education. It provides a means of addressing patients' (and their families') knowledge relating to the M.I., and their perceptions and beliefs about the cardiac event; it also makes use of a window of opportunity for education, by helping patients and their families learn necessary skills to make behavioral changes during a period of time when they are motivated by a health concern in their most familiar environment.

Whereas the Hospital Program, comprised mainly of standardized educational materials, introduces post-M.I. patients to the knowledge and skills required to make behavioral changes, the Home Care Program builds upon and integrates this knowledge base with interactive problem-solving, involving the patient and support persons whenever possible, to individualize the educational process.

#### Comparison of Programs

Comparison between the Hospital and Home Care programs highlights some of their similarities and differences pertaining to philosophical framework and methods of implementation.

Table 2  
Summary of Hospital vs. Home Care Cardiac Education Programs

Comparison Categories	Hospital	Home Care
Philosophy/ Goals/ Objectives	Goal to promote health, prevent further illness through education, to achieve modified health & lifestyle.  No objectives stated.	Promote health; family oriented approach to self-care (overall Home Care) philosophy and objectives.  Purpose of program: monitoring providing information and guidance.
Implementation of Education	Content-oriented  Standardized  Introduction to cardiac education	Discussion-based  Individualized  Practical application  Adult learner oriented
Predisposing Factors	Predisposing knowledge not recognized  Beliefs addressed generically	Predisposing knowledge assessed; beliefs discussed on individual basis
Enabling Factors	Knowledge-oriented, provided by video, pamphlets  Accessibility - Dr. - dependent  English only	One-to-one daily problem solving skills  Accessibility - Dr. - dependent  English only
Reinforcing Factors	Spouse/support person involved on incidental basis	Spouse/support person included in discussion
Evaluation	None relating to program process or outcomes	None relating to program process or outcomes



Comparison Categories	Hospital	Home Care
Philosophy/ Goals/ Objectives	Goal to promote health, prevent further illness through education, to achieve modified health & lifestyle.  No objectives stated.	Promote health; family oriented approach to self- care (overall Home Care) philosophy and objectives.  Purpose of program: monitoring providing information and guidance.
Environment/Setting	Institutional  Program incorporated into other aspects of care delivery  Environmental factors not addressed	Home setting  Interactive  Environmental factors addressed
Issues	Two physicians refer on individual basis	Multi-culturalism  Inconsistency between physician's advice and Home Care nurses' advice to patients

Note. Comparison categories are derived from interpretation of the PRECEDE-PROCEED health promotion planning model. From Health promotion planning: An educational and environmental approach by L.W. Green and M.W. Kreuter, 1991.

Goals and objectives are not stated in measurable terms for either program. The goal of the Hospital Program is health promotion and illness prevention through education; the goals of the Home Care Program are encompassed by the overall philosophy and objectives of the Home Nursing Care Program, and the mission and goals of the Richmond Health Department. The purposes of the Home Care Cardiac Rehabilitation Program focus on the nurse's role in monitoring health status, and providing information, support and guidance to patients and their families, in order to facilitate positive changes in patients' health and quality of life. These purposes reflect the philosophical framework of the Home Nursing Care Program; they do not, however, serve as measurable objects of interest, upon which program evaluation can be based. Such objectives might be related, for example, to behavioral changes with regard to risk factors for recurrent M.I.

Although the philosophy of the Hospital Program emphasizes a belief in the individual needs of patients and their "significant others," the standardized educational approach used is incongruent with this belief; however, the use of videos and pamphlets serves as a basis upon which discussion of specific concerns and skill development could occur, as conditions on the nursing unit permit. Environmental factors are not addressed within the philosophy, nor is enhancement of quality of life for patients and their families.

Delivery of the Home Care Cardiac Rehabilitation Program more closely reflects the mission, philosophy, goals, and objectives of the Home Nursing Care Program, through an individualized, discussion-based approach, which promotes practical application of factual information and self-care. The promotion of health in the

environment and community is stressed within the Richmond Health Department goals as fulfilling the mission of the Department to assist the people of Richmond with achievement of a level of health which enhances their quality of life.

#### Predisposing Factors

With regard to predisposing factors, both programs are based upon a recognition of the individual needs of patients and their families. The standardized format of the videos and written pamphlets are not sensitive to predisposing knowledge; health beliefs, fears and perceptions are acknowledged in a generic manner. The management of predisposing factors, therefore, depends upon interaction between the health professional and the patient and family. Again, this activity is performed only as workload and other factors in the hospital environment permit. The Home Care Cardiac Rehabilitation Program, being largely interactive in its delivery, presents greater opportunity for discussion of psychosocial factors, and assessment of knowledge level.

#### Enabling Factors

Enabling factors are addressed by the hospital program primarily with regard to knowledge. Cardiac patients and their families are introduced to the knowledge and skills considered necessary for achieving a "modified healthy lifestyle," to which access is dependent upon physicians' acceptance of the program as appropriate for some post-M.I. patients during the early phase of recovery. The Hospital Program appears to serve as a foundation for learning about living with a cardiac condition, although actual opportunities for development of skills such as stress management techniques, reading food product labels, developing ways to assess their immediate environment for factors which may increase risk for recurrent M.I., how to develop realistic goals and an

emergency plan, are limited by short length of stay in hospital, and availability of resource personnel, among other factors. The Home Care Program is also based upon physician referral, which could be seen to reflect physicians' beliefs in the value of the program. Those patients who participate in the education program (the majority of first-M.I. patients) participate in individualized discussion with the nurse, often in the company of their spouse or support person, who may be responsible for such tasks as meal preparation, or new roles following the M.I.

### Reinforcing Factors

Reinforcing factors are acknowledged within the philosophy of the Hospital Program by including the spouse or support person in cardiac education. The Program, however, includes this person only if visits to the patient in hospital coincide with availability of the teaching tapes, and with visits from the physician, dietitian, or other health professionals. The Home Care Program, by comparison, involves the spouse or support person in discussion and problem-solving, thus fulfilling the overall philosophy of the program.

### Environment

The environment, or setting in which the education programs occur, provides the context in which the learning processes and outcomes are facilitated. The Hospital Program, provided in an institutional setting, is incorporated into a diversity of care delivery activities. Education, thus, competes with a multitude of other demands on the health care provider's time. Frequent distractions and interruptions, and the unfamiliarity of the surroundings to the patient also may impede the learning process. The importance of environment to the learning process is not addressed in the

philosophy of the Hospital Program. The Home Care Program is offered to the patient in an environment which is familiar to them; if the home setting is supportive (such as supportive family, low noise level, physically comfortable), learning may be more likely to occur than in the hospital. It appears that the environment for learning is recognized by the Home Care Program, as a key factor in the learning process for patients and their families.

### Issues Relating to the Programs

In review of the education programs, two issues were identified which appear to held central importance to this study. These issues were related to (a) referral to cardiac education by physicians and (b) multi-culturalism.

Referral to the Hospital and the Home Care Programs was identified by both hospital personnel and the coordinator for the Home Care Program is an area in which inconsistency exists. Comments made by physicians who completed a short questionnaire regarding their referral to the Home Care Program did not reveal their philosophical perspectives or professional opinions. The physician-patient relationship, and the exploration of the impact of physician beliefs on the outcomes of the cardiac education program were not the focus of this study; however, this topic was raised as a concern by both the Hospital staff and the Home Care Program coordinator, and warrants further research.

The second issue identified through the review of program design and implementation, which also emerged in the Home Care nurse and patient interview data, was that of culture. Both programs are oriented to English-speaking patients. For patients who do not speak and understand English, an alternate within the family or

support network is sought, through whom translation can occur. The language and cultural barriers present an added dimension to the challenges confronting health educators. In the hospital setting, workload on the nursing unit, cultural values, family sex roles, and alteration of information through translation can all serve to influence the impact of education on the family and patient. Multi-culturalism is not addressed within the hospital cardiac education philosophy, although it is a focus of the newly-developed Education and Research Department. According to the Home Care Program coordinator, translation is an ongoing concern for the nursing staff as one of the many issues relating to multi-culturalism in the community. The Richmond Health Department is currently addressing this topic through provision of workshops for staff, in order to heighten awareness of cultural influences on behavior, not only from the patient's and family's perspective, but also from the perspective of health care providers. The written booklet provided by the Home Care nurses is presently available only in English; translation of information is sought in much the same manner as for the hospital program.

The issues identified within this discussion, reflect a need for evaluation, not only of the Home Care Program, but of the Hospital Program as well. As stated by Stanton (1984), evaluation of health education programs in hospitals is infrequently conducted by program developers and providers. Niskala (1986) also discussed the lack of evaluation of education programs by providers, particularly in the community setting. The following is a discussion and analysis of evaluation as it occurs in both the Hospital and Home Care Programs.

### Evaluation of the Hospital Program

Within the context of health education and health promotion, evaluation is defined by Green and Kreuter (1991), as a "comparison of an object of interest against a standard of acceptability" (p. 217). Within the goal statement for the cardiac education program of Two-South at Richmond Hospital, health promotion, prevention of further illness, and modified healthy lifestyle achievement are addressed as objects of interest.

As it presently exists, the goal statement for the Richmond Hospital Cardiac Education Program does not lend itself to evaluation of measurable objects of interest, nor are specific program objectives identified; the "how much by when and by whom."

Objects of interest for the Cardiac Education Program offered by Two-South need to be defined and articulated in such a way that those responsible for the delivery of the program understand what change or impact is intended with regard to the post-M.I. patient. Objects of interest may include such factors as identified within the PRECEDE-PROCEED model. For example, the program may seek to impact on predisposing factors such as knowledge and beliefs relating to the M.I. and recommended lifestyle changes following the event. The program may also be designed to facilitate development of new skills, such as stress management techniques, and strategies for quitting smoking. If the program is intended to address reinforcing factors such as family support systems, evaluation of the program must address the program's impact on this antecedent to behavior.

Standards of acceptability, which logically follow objectives and serve as markers for achievement of objectives, are not stated for the program. Through comparison of objectives and standards of acceptability, recommendations for improvement of the

program can be made. Equally as important, accolades for the achievement of standard can be awarded the nursing staff as appropriate. This in itself serves as reinforcement of their efforts, and promotes further professional growth and commitment to the program.

At a consumer level, evaluation of the cardiac education program offered by Two-South presently consists of feedback from the patients to the nursing staff with regard to the content of the "teaching tapes" and pamphlets. Documentation of educational activities is done on a nursing activity flow sheet, where a column for patient teaching is provided, as well as a column for comments. In the comments column, the nurse records observations of the patient's response to the educational material. According to the unit manager for Two-South this form is reviewed on a regular basis to monitor documentation of patient education activities, as a Quality Improvement Program indicator. Feedback to staff relates to a percentage of compliance with a standard for delivery of the program (personal communication, March, 1993).

The Education and Research Department, established in 1991, is currently developing a structure for continuing education of staff at Richmond Hospital, which includes professional development programs for nurses. Within this framework, patient education will be addressed as part of the health professional's role in delivery of care and will involve development of standards, goals and objectives, skills and resources necessary for its implementation and systematic evaluation (Director, Education and Research Department, Richmond Hospital, personal communication, December, 1992).

#### Evaluation of the Home Care Program

The existence of the Home Care Cardiac Rehabilitation Program reflects a commitment to the goals of the Richmond Health Department as previously described.



There are no specific goals or program objectives relating to outcomes defined, however; it is therefore difficult to ascertain how the program is evaluated. According to the coordinator, evaluation to date has consisted of ongoing review of the educational booklet by nutritionists, physicians, and Home Care nursing staff, in order to ensure that resource lists are current and information is based on current research and other related literature. The coordinator states that the program itself has not been subjected to formalized evaluation, nor is there a system for communication between the Hospital and the Health Department regarding patient outcomes. At the consumer level, evaluation of patient responses to the program is done and documented on a cardiac rehabilitation flow sheet. Home Care nurses are therefore accountable for their teaching, and any concerns raised by themselves or patients in relation to various aspects of the program can be identified by review of the documentation (personal communication, May, 1993).

The absence of systematic evaluation of the Home Care Cardiac Rehabilitation Program is typical of such programs, as noted by Niskala (1986). Cardiac education programs offered by Home Nursing Care have been established in other communities, and have been discontinued (i.e. Simon Fraser Health Unit, Coquitlam, B.C, and the North Shore Health Unit, North Vancouver, B.C.). Burnaby health unit, in Burnaby, B.C. currently offers cardiac education through Home Care. Boundary Health Unit, in Surrey, B.C. is in the planning and development stage of a cardiac education program.

An essential component to the planning and implementation of health promotion and education programs is systematic evaluation of processes, impact, and/or outcomes, based on clearly-defined goals, and standards of acceptability, as a means to provide a

basis for program revision, enhancement, or discontinuation, and to justify allocation of resources. Green and Kreuter (1991) offer the following perspective about evaluation which can serve as a basis for decision-making about what type of evaluation is most appropriate for a particular program.

If the precede planning process required few assumptions because there was much prior research, which linked with some certainty each cause and each effect in the causal chain, then the only evaluation necessary is the minimum required by the program manager to account for the expenditure of resources. If the precede links were tenuous, requiring some guesswork about cause-effect relationships, then a more elaborate evaluation may be in order to confirm or disconfirm the assumptions (p. 216).

In the case of cardiac education for post-M.I. patients, the literature identifies relationships between certain factors such as the role of beliefs, knowledge, and support networks, and behavioral outcomes. What is not abundantly available in the literature is evaluation research relating to the processes undertaken by programs such as that offered by the Richmond Health Department, and their role in affecting behavioral outcomes.

#### Summary: The Programs

Chapter 5 has consisted of a presentation and analysis of both the Richmond Hospital and The Richmond Home Care cardiac education programs, in relation to philosophical framework, content and implementation. Findings from the analysis of both programs are compared, using the PRECEDE-PROCEED model as a framework for discussion. In addition, two issues, identified with regard to both programs, are discussed, followed by a discussion of how evaluation of the programs is addressed by those involved with their delivery.

Within the following chapter, a description of the findings from the questionnaire

administered to the Home Care nurses of the Richmond Health Department is presented. This questionnaire was designed to address intended and unintended outcomes, and processes affecting these outcomes, of the Home Care Program, as perceived by the nurses involved in its delivery. These findings are then integrated with the findings related to both programs and from patient interviews for analysis of triangular relationships, upon which the conclusions and recommendations of the study are based.

## CHAPTER 6

### PRESENTATION OF FINDINGS: THE HOME CARE NURSES

The questionnaire for Home Care nurses elicited information which is summarized in Tables 3, 4, 5, and 6, according to the a priori categories described in Chapter 4. The following is a presentation of the findings from this data source, followed by discussion and analysis of the same.

#### Intended Outcomes

As was initially expected, intended outcomes of the program, as perceived by the Home Care nurses, were related to the following components of the PRECEDE-PROCEED model: quality of life, health, behavior and lifestyle, and predisposing factors (predominantly, knowledge gain). In addition, some responses indicated either a mis-interpretation of the question or a lack of understanding about the intended outcomes of the program. Responses were distributed across all four of the a priori categories as described below.

Table 3

Summary of Home Care Nurses' Perceptions of Intended and Unintended Outcomes of Education Program for Post-M.I. Patients

PRECEDE-PROCEED Model	Intended Outcomes		Unintended Outcomes
	Achieved	Not Achieved	
Quality of life	--	--	--
Health	Yes	--	--
Behavior and lifestyle	Yes	Stress management changing established patterns	Diet, exercise, smoking essential primary prevention <sup>a</sup>
Predisposing factors (knowledge)	Yes	--	Knowledge of communication resources and health care services <sup>a</sup>
Reinforcing factors	--	--	Support for family member increased stress in patient <sup>a,b</sup>

Note Behavior and lifestyle outcomes were observed by some respondents to be achieved, whereas some respondents indicated these outcomes were not achieved.

<sup>a</sup> Unintended outcomes related to patients' spouses or support persons.

<sup>b</sup> Negative reinforcement of behavior for patients noted by the respondent, due to perceived threat relating to nursing visits.

Quality of Life

It was noted that enhancement of quality of life post-M.I. was identified in only one instance as an intended outcome of the program. All other responses related to more immediate outcomes than quality of life.

### Health

Health was identified in several responses as an intended outcome of the program, as stated by one nurse: "to assist in successful recovery from M.I.; prevention of further cardiac disease;" in other instances, health was identified as an outcome of an intermediate goal, "to reduce risk factors so as to reduce risk of recurrent M.I.," and "to promote a healthy lifestyle and prevent another heart attack."

Other respondents identified health as the intended outcome of efforts to increase knowledge, which in turn would impact on behavior and lifestyle, ultimately leading to enhancement of health. For example, "The intended outcome of the program is to make the patient's family more knowledgeable regarding cardiac status and lifestyle changes needed to decrease risks of further reduced cardiac function and improve rehabilitation."

### Behavior and Lifestyle

Some respondents identified behavior or lifestyle as intended outcomes contingent upon knowledge. An example given was, "a better understanding of problems and related factors; hopefully resulting in lifestyle changes; exercise, diet, stress management, and smoking."

### Predisposing Factors (Knowledge)

Knowledge acquisition was predominately identified as the intended outcome, as illustrated by the following: "to promote a better understanding of healthy lifestyles and of the cardiac problem;" "to increase knowledge regarding status, diet, stress reduction, and need for daily exercise;" "to educate the patient and family regarding medications, diet, exercise, and heart condition."

### Process-Related Responses

Several respondents described their nursing role in response to the question about intended outcomes, rather than describing the intended outcomes themselves. Their responses were considered outliers to the coding process. For example, "to provide support, information, and reassurance to the patient and family in their own environment where they are more able to absorb information;" "support in information to assist the new cardiac patient to adjust to the new health status guidelines."

### Achievement of Intended Outcomes

In response to question 2.01 "Which of these outcomes is achieved?" the following were identified: a) health, based on behavioral changes; b) behavior and lifestyle, as exemplified by the following quotes: "people change their eating habits, at least to some degree, and depending on their age, will increase their exercise;" "not known, as we do not evaluate our program, but I have noted some very major changes in lifestyle factors in some patients;" and c) knowledge. Respondents mentioned increased knowledge regarding function of the heart, in general more aware of how lifestyle affects them."

### Lack of Achievement of Intended Outcomes

With regard to question 2.02, relating to intended outcomes that were not achieved, behavior was identified within the following quotes:

"Stress management, especially in young cardiacs;" "usually patients who are older are reluctant to change lifestyle factors such as smoking and diet;" "actually implementing necessary changes in their lives - perhaps this does happen further down the road, but I am not sure the outcomes are long term. I feel quite often the individual may fall back into the old routines once they are past the initial period."

### Unintended Outcomes

The Home Care nurses identified behavior and lifestyle changes, knowledge gain, and establishment of reinforcement for patients by spouses or support persons as unintended outcomes.

#### Behavior and Lifestyle (Spouses or Support Persons)

It was noted that contact of patients' families and friends with the Home Care nurses often lead to behavior and lifestyle changes in areas of diet, exercise, and smoking cessation. These were viewed as primary prevention behaviors. Comments included "it teaches entire family (and friends) regarding cardiac care;" and "friends, peers may change aspects of their lifestyle."

#### Predisposing Factors (Knowledge)

Awareness of the Home Care nurse's role, the Home Care Program and community resources was identified: "It opens up the health care system; linking the patient to other health care services such as the Heart to Heart program;" "awareness of other family members; nursing visibility in the community;" "better understanding of patient and family of health care services available."

#### Reinforcing Factors

Gaining support of family members for the patient was suggested as an unintended outcome. A negative reinforcement of behaviors was noted by a nurse who stated "at times I feel the client becomes more stressed and feels threatened by nursing visits - the staff become aware of this and decide to make minimal visits or withdraw based on discussion with the M.D. and nurse."



### Facilitating Factors

The Home Care nurses identified a diversity of factors which serve to facilitate (enable) achievement of intended outcomes. They included predisposing, enabling, and reinforcing factors, environmental factors, and the education program.

Table 4

#### Summary of Home Care Nurses' Perceptions of Factors Affecting Achievement of Outcomes

PRECEDE-PROCEED Category	Facilitating Factors	Barriers
Predisposing factors <sup>a</sup>	Knowledge, cognitive ability, age, culture, educational background, beliefs, motivation	Cognitive ability, age, culture, personality type, motivation
Enabling factors	Financial situation	Financial situation, inconsistent/incorrect information
Reinforcing factors	Family support	Limited family support
Education	Home Care Program	--
Environment	Learning occurs in patients' homes	--
Health	--	Other medical conditions

<sup>a</sup> Predisposing factors were the predominant factors which Home Care nurses stated as either facilitating or serving as barriers to achievement of outcomes.

#### Predisposing Factors

The following factors were thought to predispose people to achieve the intended outcomes of the program: (a) knowledge: "prior knowledge and experience with health care providers;" (b) cognitive ability: "the ability to understand or assimilate

information;" (c) demographics: age, culture and "grasp of the English language;" (d) educational background; (e) beliefs: "the patient's understanding that he did have an M.I. - they sometimes minimize this" "attitude, if taking responsibility for health and taking their situation seriously;" "the client's perception of the seriousness of the disease;" and (f) motivation: "the patient's desire to participate;" "willingness to take responsibility for self;" "motivation provided by having a life threatening illness."

#### Enabling Factors

Another factor which was mentioned as facilitating achievement of outcomes was financial ability to make recommended changes.

#### Reinforcing Factors

The Home Care nurses stated that support, involvement, and reinforcement of family were key factors in facilitating intended outcomes, in relation to providing encouragement for the patient. The nurse was also identified as a source of reinforcement: "The Home Care nurse, for a few months, becomes part of their support system."

#### Environment

Several Home Care nurses mentioned environment as a facilitating factor: "a quiet environment for teaching - with few distractions;" "by gaining knowledge in a non-threatening environment where they would ask questions that concern them and be more able to absorb information."

#### The Education Program

The education program was identified by many respondents as facilitating intended outcomes, due to: (a) "communication at the client's level of understanding,

how the doctor explained the M.I. and damage;" (b) "consistency of information;" (c) "dealing with patient's concerns before meeting nurses' need to educate;" (d) "the hospital and community-based education program;" (e) "booklets prepared by the Richmond Health Department;" and (f) "availability of good written material."

#### Barriers to Achieving Intended Outcomes

Primarily, barriers to achieving outcomes as intended were related to predisposing factors. These factors were identified as (a) demographics, including culture or ethnicity - including language barriers, cultural differences with regard to diet and educational level; (b) cognitive ability "lack of intelligence to facilitate the processing of knowledge;" (c) motivation - willingness to learn and make lifestyle changes; (d) personality type - "stubborn, non-compliant personality, addictive personality, type A (often young males between 36 - 45 years with high stress jobs;" (e) beliefs -- as to what his cardiac status is - he either did or did not have a heart attack;" "denial."

Factors which were identified as barriers were (a) financial concerns, (b) inability to return to previous job, (c) inconsistent information from friends, (d) family, and health professionals or (e) the need to return to work. Reinforcing factors were also mentioned, such as "limited family support, or support from friends." Health was also considered a barrier for some patients, with regard to cardiac and other medical conditions.

#### Changes Observed in Patients With Regard to Health Knowledge, Health Beliefs, Health Behavior

Respondents provided examples of changes they had observed in their patients with regard to predisposing factors (specifically knowledge) and behavior.

Table 5

Summary of Home Care Nurses Observations of Changes in Post-M.I. Patients and Their Spouses/Support

Persons

PRECEDE- PROCEED Model Category	Changes Noted	Factors to Which Changed Attributed	Aspects Least Likely to Change	Aspects Least Likely to Change Attributed to (Patient)
Patients				
Predisposing factors	Greater understanding of event and need for behavior changes	Motivation	Beliefs - difficult to change	Beliefs, personality type, cognitive ability, motivation
Enabling factors	--	Information, knowledge and skill development through discussion with Home Care nurse	--	--
Reinforcing factors	--	Family support, support from Home Care nurse	--	--
Behavior and lifestyle	Improved nutrition, activity level, smoking cessation	Knowledge	Long-standing habits, especially in older males or stress management in career oriented males	--
Education	--	Home Care Program, teaching started in hospital, physicians and other professionals	--	--

PRECEDE- PROCEED Model Category	Changes Noted	Factors to Which Changed Attributed	Aspects Least Likely to Change	Aspects Least Likely to Change Attributed to (Patient)
Environment	--	Learning at home where questions arise re daily life	--	--
Spouses/Support Persons				
Predisposing factors	Greater understanding of condition, function of heart	Motivation, altered beliefs, fears due to Home Care Program, reading	--	Belief in seriousness of event, personality type, motivation
Enabling factors	More involved with behavior changes	--	--	Financial concerns and need to work, and lack of knowledge and skill
Reinforcing factors	More supportive of patient, make own lifestyle changes	Home Care nurse support	--	--
Behavior and lifestyle	Changes in diet, activity	--	Behavior as reinforcer or enabler	--
Education	--	Home Care Program	--	Lack of involvement in education program; i.e. if working at time of Home Care nurse visits
Environment	--	--	--	

### Predisposing Factors

#### Knowledge

Knowledge of the M.I. process, cardiac disease and symptoms were seen to usually increase, as exemplified by the following quotes: "awareness that they have some control over health issues and can make some positive changes;" "better awareness of what low sodium and low fat mean;" "more conscious of a better lifestyle;" and "understanding the need to review their lifestyle, dietary habits and exercise."

#### Health Beliefs

Health beliefs were identified as difficult to change as stated by one respondent: "Many times it takes weeks for a patient to actually accept the fact that he has had a heart attack. Nursing may have repeated information for many weeks before it starts to sink in."

#### Behavior

Most respondents stated that increased knowledge usually led to improved habits relating to nutrition. Activity level, quitting smoking, caffeine, and alcohol were also mentioned: "try to make positive changes because they understand the reasons;" "usually willing to change diet with respect to salt and fat intake;" and "generally taking responsibility for own well-being."

#### Changes Observed in Spouses or Support Persons With Regard to

##### Health Knowledge, Health Beliefs, and Health Behaviors

Respondents indicated that they had noted changes in health knowledge, health beliefs and health behaviors, during the course of the Home Care Program.

### Knowledge

Through participation in the Home Care Program and through their own reading and other inquiry, spouses and support persons "gain a better understanding of the condition, and function of the heart, and the effects of medications." Respondents also stated that spouses "are encouraged to be there when the nurse visit to increase knowledge...the spouse can be very anxious otherwise."

### Beliefs

"Initially, fear of further problems or death have the spouse very tense and anxious. If they listen to information and accept support from the nurse, they begin to become very helpful and supportive of the patient."

### Behavior

Behaviors described by Home Care nurses illustrate the spouse's role in enabling and reinforcing lifestyle changes in the patient, while making behavior changes within their own lives simultaneously. Examples of each behavior change are as follows:

#### Enabling Factors

"Wives usually take care of the more healthy diet;" "Most are cooperative;" "Most are wives of male patients;" "Many who don't smoke are pleased if their spouse quit;" "Many wives are interested in diet changes and use special cookbooks."

#### Reinforcing Factors

"Many start their own exercise program and make changes in their diet and health behaviors."

### Factors to Which Changes Were Attributed (Patients)

The diversity of responses to the question which asked "What could these changes

be attributed to?" illustrated the broad, complex social context in which patient outcomes occur. As expected, the Home Care nurses identified predisposing, enabling, reinforcing, educational, and environmental factors as facilitating change in health knowledge, beliefs, behavior, whereas an earlier question addressed factors which facilitate achievement of intended outcomes as identified by the Home Care nurses. This more specific question about cause was posed to elicit data about the basis for changes in the key areas of interest to the researcher. Responses were categorized as follows:

#### Predisposing Factors

Knowledge, cognitive ability, and beliefs were not mentioned. Rather, motivation was identified, based on the patients' desire to be more healthy: "I still think and feel it's the patient's motivation that affects the change."

#### Enabling Factors

The accessibility of the nurse to promote knowledge and skill development was mentioned: "ability for patients to discuss issues they may be embarrassed to bring forward because everyone is expected to know certain things;" "the interest shown the patient by the physician, but more likely the Home Care nurses act as change agents and are very effective most of the time;" "They become relaxed due to knowledge that the Home Care nurses are monitoring them."

#### Reinforcing Factors

The nurses also identified sources of reinforcement for changes noted in patients: "support and encouragement from Home Care nurses, physician and family;" "frequent visits initially, therefore fears and anxieties are reduced because they know they are being monitored closely;" "to media which promotes healthy lifestyles with respect to



walking and to restraints that promote healthy eating."

### Education Program

The nurses also mentioned education as a source of change in patients: "to health teaching provided by the team, usually primarily by nurses in the community;" "most time spent with patients is provided by Home Care nurses; so attributed mostly to them;" "physicians that explain and reinforce specifics, nutritionists, and physiotherapists who do relaxation and activity planning;" "the teaching started in the hospital, and to the Home Care staff ongoing teaching."

### Environment

The home environment was identified as playing a role in causing change in patients. "In hospital, there isn't always time to discuss what the patient's spouse and caregivers want to discuss. At home, in the patient's environment, and as guests and with more time, the Home Care nurses can meet needs as they arise."

### Factors to Which Changes Were Attributed (Spouses or Support Persons)

Changes observed in spouses or support persons were attributed to motivation, support, and education.

### Predisposing Factors (Motivation) and Reinforcement

Responses to this question focused on the impact of both the M.I. event itself and the visits by the Home Care nurse. Respondents stated that spouses were "quite shaken by the M.I." and became concerned enough to make changes. By being motivated by the event and receiving support from the Home Care nurse, they were enabled to make changes as they'd "seen it coming and were glad that somebody from outside was helping them direct or guide the M.I. patient in making changes and understanding the need for

changes."

### Education

Education was identified as a factor to which changes in spouses or support persons were attributed: "the ability to have their questions large or small answered;" "repetitive information especially regarding diet, medications, exercise and stress management.

### Aspects of Lifestyle Least Likely to Change (Patients)

Both beliefs and behaviors were identified as aspects in patients' lifestyles as least likely to change in some cases.

### Predisposing Factors (Beliefs)

One respondent stated previous beliefs that cannot be influenced (no matter how much information is provided): "the belief that illness is a weakness and a punishment" and "if the patient is in denial."

### Behavior

Behavior was also identified as an aspect of lifestyle least likely to change with regard to patients as exemplified by the following quotes: "pre-existing behaviors due to personality traits;" "diet hardest to maintain;" "stress management" and "all behavior if the patient is elderly or male in mid-life."

### Aspects of Lifestyle Least Likely to Change (Spouses or Support Persons)

Respondents identified the spouse or support person's role as a reinforcer or an enabler of the patient's behavior change. Factors which might affect this role were exemplified as "Poor family dynamics - if patient doesn't want spouse involved;" "previous relationship between spouse and patient such as if it was stressful before, it will

continue to be stressful;" "spouse's interest in condition; if not supportive or not involved in the hospital education program." Other aspects identified as being least likely to change with regard to the spouse or support person were personality traits, "such as an overeager, hyperactive person who has to work regardless of the situation;" "individual personality characteristics."

#### Aspects Least Likely to Change Attributed to (Patients)

Beliefs and behaviors which were considered by the nurses as least likely to change, were attributed to several predisposing factors, including previously-held beliefs, as well as long-standing behaviors and lifestyles.

#### Predisposing Factors

Predisposing factors were exemplified by quotes which were categorized as described below.

#### Beliefs

Beliefs were noted as influencing change in beliefs and behaviors: "possibly culturally related beliefs, and previous health experience;" "generally knowing someone who has had an M.I., didn't change diet, exercise or change habits and is just fine; so this encourages them to slip back into their bad habits;" "if the patient doesn't accept the M.I., nothing changes."

#### Personality

"Personality rarely changes - tense, intense, workaholics rarely give in."

#### Cognitive Ability

Cognitive ability was also mentioned as a basis for lack of change in health beliefs and behaviors.

### Motivation

"Patients' motivation - most patients I've seen already have basic knowledge and would like to be healthy, but they find it extremely difficult to change their behaviors because they're not motivated."

### Behavior

"With regard to diet, when the patient has been on the same diet for many years, it is harder to change after years of habit."

#### Aspects Least Likely to Change Attributed to (Spouses or Support Persons)

Behavior of spouse of support person, which was identified as least likely to change, was attributed to a) predisposing factors, such as belief in "the seriousness of the situation," personality type and motivation; and b) to enabling factors, in instances whereby the "need or worry to pay bills overrides everything," and to lack of education, "when the spouse doesn't receive any ongoing knowledge or information."

### Use of Community Resources

The question relating to use of community resources was designed to explore how the nurses felt patients' knowledge of resources led to incorporating use of resources into their lifestyles.

Table 6

Summary of Home Care Nurses' Perceptions of Post-M.I. Patients' Use of Resources (Community) and Role of Spouses or Support Persons

Resources (Community)		Role of Spouses/Support Persons
Use	Barriers to Use	
Variable: some patients use, others don't; or use unknown	Predisposing factors, health, enabling factors, such as lack of finances, transportation	Enabling patient's behavior change, i.e. meal planning and preparation; reinforcing behavior change

There were varying responses to the question relating to the use of resources, ranging from those who felt very few used the suggested resources to those who believed that a majority do. Comments relating to this question were as follows: "If it suits their needs and lifestyles; such as the cardiac fitness centre and activity programs at Shaughnessy, Y.M.C.A., Minoru, Heart-to-Heart Programs." "If resources are arranged for them, most will use them, but often they will not initiate on their own;" "Not known, except spouses find the Heart-to-Heart Program very helpful if they're working and meeting other spouses with the same problems;" "Not sure - some younger patients are willing to attend the Heart Smart course - it also gives them more freedom, as they don't have to wait for the nurse to visit;" "I feel the community resources for physical activity are used very little - if the patient is anxious to get back to work, they will start their own exercise program; they'll use the library occasionally."

### Barriers to the Use of Resources

It was expected that responses to this question would fit into the category of enabling and reinforcing factors. It was noted, however, that in several instances, the Home Care nurses referred to predisposing factors in addition to those expected.

Barriers were identified as follows:

#### Predisposing Factors

Predisposing factors were identified as (a) motivation such as lack of desire, interest, commitment; (b) knowledge of resources and one's understanding of the value of using available resources; (c) beliefs such as denial; (d) demographics (such as age); (e) physical ability; (f) mobility; and (g) other medical problems.

#### Enabling Factors

Respondents mentioned factors which might enable use of resources such as (a) convenience, (b) location, (c) lack of funds, (d) timing of the programs such as too early in the morning or late in the evenings, "seniors reluctant or too tired at night," (e) lack of transportation, and (f) availability ("often no Richmond exercise or Heart-to-Heart program running").

### The Role of Spouses or Support Persons

As expected, the spouse or support person's role was identified as either enabling or reinforcing, or both, in relation to changes in the patient's behaviors. All respondents emphasized that the spouse has a major role, if the relationship is conducive to reinforcing and assisting with changing the patient's behaviors. Examples of how the Home Care nurse viewed the role of the spouse or support person were categorized as follows:

### Enabling Factors

Respondents listed (a) meal preparation, such as "assisting with understanding of education if there is a language barrier," and "just taking over the cooking and making effective dietary changes;" (b) "being aware of risk factors and changes necessary;" (c) "medication knowledge;" and (d) "recognizing signs and symptoms of congestive failure, and angina, to make it much easier on the patient."

### Reinforcing Factors

Respondents identified that spouses or support persons must also change to maintain the change within the home. The reinforcement role was providing "encouragement and support, especially regarding lifestyle changes and activity, reduced stress, stopping smoking, and support with addiction withdrawal (generally taking situation more seriously than the patient.)"

### Discussion and Analysis

The Home Care Nurse questionnaires provided data which not only supported many of the findings cited in the literature and within other sources of data for this study, they also identified some key areas warranting consideration with regard to delivery of cardiac education in the home setting.

The questions pertaining to intended outcomes of the Home Care Program elicited a variety of views about the goals and objectives of the program. Within the description of the program, the philosophical framework which provides the basis for the Cardiac Rehabilitation Program was discussed. There were, however, no measurable objectives stated which pertained specifically to the program; it was therefore, not surprising to the researcher that the Home Care nurses' perceptions of intended

outcomes would be varied. In fact, their own perceptions of the intended outcomes may be based on any combination of factors which predispose their performance within the health educator role, such as past experience, knowledge and skills, personal beliefs and philosophies about the program and their role in its delivery, and demographic features, such as age, gender and ethnicity. One respondent recognized personal predisposition, stating the importance of dealing with patients' concerns before the need to educate.

Of all the intended outcomes mentioned, knowledge gain and behavior and lifestyle change were mentioned as the predominant goals. Both of these outcomes lend themselves to measurement; however, as stated by the program coordinator and the nursing staff themselves, systematic evaluation of the program in relation to these outcomes or processes has not been done.

In addition to improved knowledge and health, behavior and lifestyle change was identified as being achieved in some instances; in other instances, it was not, especially in relation to stress management or changing long-standing habits. This was considered to be due to factors which either facilitated or acted as barriers to making changes. These factors included financial ability, learning environment including consistency of information, the support system, health status, and the program. Predisposing antecedents to behavior were emphasized as critical in affecting behavior and lifestyle changes; motivation due to the M.I. was identified as the main predisposition. The Home Care nurses attributed changes in patients' knowledge, belief and behaviors to previous knowledge, reinforcement of information and support for change by family, and the availability of the program within a conducive learning environment. Respondents were hesitant to speculate about long-term changes in patients' behavior and lifestyle.



These findings, which are supported by the literature, emphasize the importance of addressing patients' individual needs in relation to knowledge, social support, and skill acquisition, based on factors which provide their frame of reference for change in health knowledge, health beliefs and health behaviors. Within the hospital setting, knowledge acquisition is a primary focus, as a means of promoting health and preventing further illness. Although neither the Hospital nor the Home Care Program have established standards and criteria for evaluation of processes, impact, or outcomes, the Home Care Program addresses factors which predispose behavior, through an individualized, interactive approach, within an environment which is familiar and non-threatening, and by involving the patient's support system in the educational process for reinforcement of behavior.

The post-M.I. patient's spouse or support person was identified by the Home Care nurses as playing a key role in enabling behavior change, especially in relation to meal preparation. In addition, based on the patient/family relationship, this person was mentioned as attributing to behavior change through positive reinforcement. For these reasons, the spouse or support person is included in the educational process whenever possible. A commitment was made by one respondent that many spouses claim they've "seen it coming" and "are glad that somebody from outside was helping them." This finding was noted as an indication of the spouse's sense of control over the patient's behavior. Respondents mentioned family support, increased health knowledge and awareness of resources, and primary prevention behaviors among this group as unintended outcomes, but identified barriers to these outcomes as being related to the spouse's or support person's own beliefs, personality types, motivations, demographic

characteristics, and cognitive abilities. As mentioned by the program coordinator, cultural factors often play a major role in the way information is interpreted and utilized, particularly with regard to the language and cultural barrier and need for motivation by a third party. Although neither the Hospital or Home Care Program are presently designed to address issues relating to multi-culturalism in the community, the Home Care nurses indicated that this factor presented a significant barrier to achieving intended outcomes.

The use of community resources, advocated by both programs, and facilitated by the Home Care Program with an extensive resource list, was relatively unknown, as indicated by the wide range of responses by the Home Care nurses. Barriers to the use of resources were primarily associated with predisposing factors, health status and accessibility. As motivation of resources is stated as a purpose of the Home Care Program, it was expected that the nurses would be actively involved in a liaison role.

### Summary

The Home Care Nurse questionnaire findings provide some insight regarding the delivery of the Cardiac Rehabilitation Program and some of the factors which influence its effectiveness. A theme which emerges from the data relates to the importance of predisposing factors, such as beliefs, educational background, culture, and most predominantly motivation. During an interview with the Home Care Program coordinator, a concern was raised relating to the way in which physicians present information about the M.I. to patients. This concern was also mentioned by the Home Care nurses, as inconsistency in how explanations are given to patients. If the cardiac event is minimized during the early phase of recovery, the patient's perceptions, beliefs,

and understanding of the M.I. may inhibit the adoption of behavior changes recommended by the Home Care nurse. Likewise, if the patient is immobilized by fear and a sense of powerlessness following the M.I., which is not addressed during hospitalization, the Home Care nurse's role must be to focus on these concerns prior to attempting to teach new skills and knowledge.

In the following chapter, findings from patient interviews are presented, using the PRECEDE-PROCEED as a basis for analysis. The patient findings add a third dimension to the analysis of both the hospital and community-based programs, providing insight regarding the patients' perceptions of the programs, and emergent themes relating to knowledge, beliefs, and health behaviors.

## CHAPTER 7

### PRESENTATION OF FINDINGS: PATIENT INTERVIEWS

As discussed in Chapter 4 (Methodology), the patient interview schedule was designed to produce data relating to health behaviors of patients prior to the M.I., their health beliefs, knowledge of the M.I., health behaviors in the six to eight-week period following the M.I., and their perceptions of both the hospital and community-based education programs. With the exception of the knowledge section, the data was analyzed using a qualitative approach, as explicated by Miles and Huberman (1984). This approach was taken due to the use of semi-structured questions within the interviews.

Presentation of the patient interview data within this chapter is comprised of an introduction to each broad category, pertinent comments relating to data within the category, and examples of responses to questions placed in each category. In some categories, Interview One and Interview Two are discussed together; in such instances, the responses were similar between both interviews. During the process of coding the data, other codes were applied in addition to those identified through a priori categorization (See Appendix 8). It was noted that the categories in which the most significant differences in responses were (a) behavior and lifestyle, and (b) perception of education program. Differences or similarities between the first and second interview within the other broad categories are highlighted throughout this chapter, as they were considered applicable to the discussion and analysis of the patient interview data. Figure 3 presents a summary of the patient interview findings.

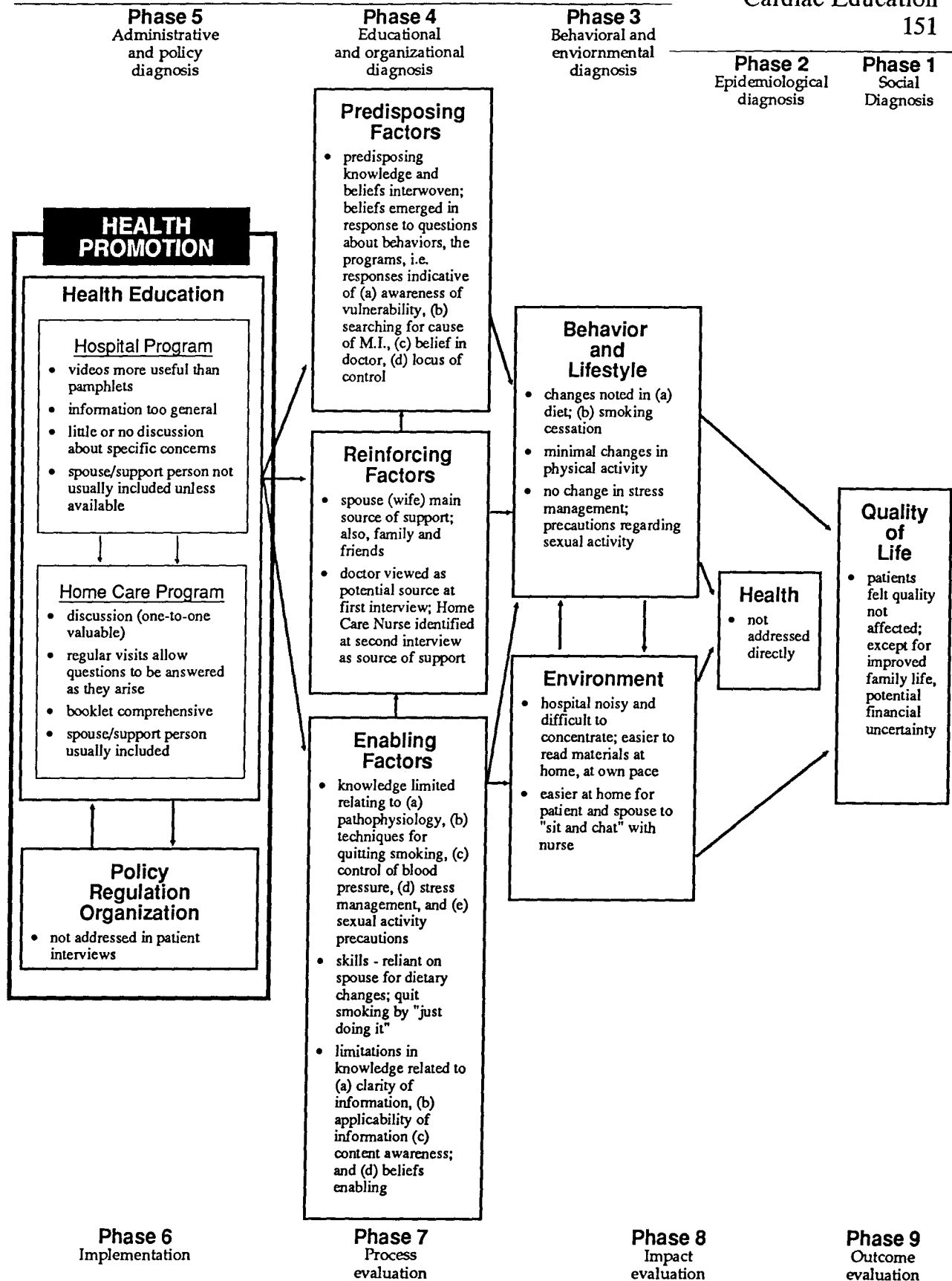


Figure 3: Summary of patient interview findings in relation to the PRECEDE-PROCEED model (Green & Kreuter, 1991).

### Behavior and Lifestyle

Several questions in the patient interview schedule were designed to address post-M.I. patients' health behaviors prior to and following the cardiac event. At the initial interview, respondents were asked about their previous health behaviors; the second interview addressed changes in health behaviors which had occurred over the six to eight-week period following discharge from hospital. It was recognized that changes may not have been directly attributable to specific factors such as knowledge gain through participation in the hospital and home care cardiac education programs. It was expected however, that interview data would provide clues regarding any combination of factors which might contribute to behavior change, and what changes actually occurred in the six to eight-week period following the M.I.

Within the behavior and lifestyle category, differences in responses between the first and second interviews were noted only with regard to smoking, physical activity and dietary measures. These differences are presented below.

#### Smoking

Several of the respondents indicated that they had been smoking for many years, others were non smokers at the time of their M.I. At the second interview all the respondents who had smoked prior to the M.I. had quit smoking. The female respondent had expressed anger and resentment about quitting smoking at the initial interview; however, she was unavailable for a second interview, therefore it was unknown whether she actually quit smoking following the M.I.

#### Physical Activity

Respondents indicated that prior to the M.I., their physical activity was minimal,

with the exception of one patient who stated he participated in regular sustained activity to maintain and control his diabetic condition. By the second interview, there was a general trend toward more physical activity than prior to the M.I. and this included more walking, and more regular light activity.

#### Dietary Measures Taken

With regard to dietary habits, the respondents stated they had not taken measures to control their intake of salt or cholesterol prior to the M.I., with the exception of the diabetic patient who was on a diabetic diet to control his condition. One patient indicated that he was a vegetarian at the time of his M.I., and one respondent stated that he had had coronary artery bypass surgery several years ago and since that time had been taking small portions of food and avoiding fatty foods in his diet.

At the second interview, respondents indicated they had made some changes in their dietary habits. These changes in salt and cholesterol intake included eliminating salt from meal preparation and removing the salt shaker from the table. Cholesterol consumption was reduced or eliminated by avoiding animal fats, and in some cases, even margarine. One respondent stated that he had started to take Becel, fresh vegetables, and small portions of meat, consuming mostly fish and skinless poultry.

Questions relating to sexual activity precautions, work adjustment, and use of community resources were asked only at the second interview, in order to explore whether the M.I. had had an impact on these aspects of patients' lives.

#### Sexual Activity Precautions

In the second interview, questions were directed at any measures taken to avoid excessive workload for the heart during sexual activity. Responses included "I am

avoiding it," and "we share the work," and "none taken; I was unaware of the need to take precautions." The respondent who said he was avoiding sexual activity said this was a change from his habits prior to the M.I. The patient who suggested that the workload was shared stated that this was a slight change from his habits before the M.I.

### Work Adjustment

Of the respondents who had been working prior to the M.I., one had returned to work by the time of the second interview. This respondent stated "I cannot change my employment; I am not super educated...I purchased a house in October, had the heart attack in December, we didn't get disability insurance." Other respondents anticipated personal work adjustments such as separating home and work and minimizing stress in the workplace. For example: "Don't argue with anybody, just go about your job everyday, don't make stress," just say "yes boss, okay; that's what I'm learning to do. He's right, he's the boss. Yes, I guess I'll quit arguing with people, it's not worth it."

### Use of Community Resources

With regard to use of health resources in the community, the only resource identified as being utilized by respondents was the community library. In fact, there was minimal awareness of any community resources among respondents.

### Summary of Behavior and Lifestyle

The behavior and lifestyle changes made in the six to eight-week period following the M.I. appeared to reflect an impact on the patients' lives by processes occurring either intrinsically or extrinsically. In addition to the immediate changes noted in smoking and dietary habits was the lack of change with regard to management of stress, for which respondents stated they had not developed any techniques. The avoidance of



sexual activity or unawareness of recommended precautions alerted the researcher to relationships which might emerge in the data in relation to this topic.

Behavior and lifestyle were viewed as immediate outcomes of the cardiac education programs. The researcher's task in placing these outcomes into a broader context was then to examine some of the factors which might serve as antecedents to the behavioral changes which occurred, as well as factors which might have prevented them from occurring. From the descriptive category "predisposing factors," knowledge, and health beliefs were examined.

#### Predisposing Factors

##### Knowledge

In both interviews, factual knowledge scores were higher than practical knowledge scores. In both categories, respondents had improved their knowledge scores by the time of the second interview. A pattern appeared to be emerging with regard to items which consistently scored low. In order to explore this finding further, items were also scored across respondents. Quantification of this information was done solely for the purpose of identifying areas of information which were not understood by respondents, in order that relationships between these findings and other factors could be explored. Items which were consistently scored the lowest at both interviews were knowledge relating to pathophysiology of the heart attack, strategies to quit smoking, control of blood pressure, stress management, sexual activity, and how to pace activities. Themes which emerged from review of the knowledge data were: (a) clarity of information presented, (b) applicability of information to the individual, (c) content awareness, and (d) belief-based knowledge.

An additional code labelled "recall" was initially established upon review of the data, and later combined under the code entitled clarity of information.

### Pathophysiology

With regard to the pathophysiology questions, respondents who did not provide appropriate answers to the questions indicating they did not know the answers, lack of clarity of information, or responded according to their beliefs or experiences. For example, in response to the question "How do you know if you are having a heart attack?" one patient stated, "Apparently there is different ways but I had this for two days before I came in here so I didn't know I was having a heart attack. I don't know if there is any way that you really know." In response to "How does hardening of the arteries influence a heart attack?" another respondent stated "Your arteries are closing. I don't really know. I can't explain it. I have medical books at home that I read sometimes. I never read about the heart. I got them when my husband was sick and used to read about things for him, but I never read anything about the heart. I will now." Another question was "Why is high blood pressure, or hypertension, a risk factor for the heart?" One patient replied "Hypertension I could see would increase your blood pressure but the actual increase in blood pressure that again I am confused about."

### Smoking

Responses to questions about smoking were coded as relating to clarity of information, applicability of information, awareness of content, and beliefs. In response to "Why are people who have had heart attacks encouraged to stop smoking?" comments included "It's not entirely clear in the documentation;" "I am not a smoker because I know smoking has a bad effect on the lungs and that's why. I am not the professional

you know;" "I am not a smoker, it doesn't apply to me;" "It takes good will power in your own mind you have to want to quit;" and "You've got to do it cold turkey."

### Hypertension

Responses to questions about hypertension were related to clarity of information and applicability. For example, as quoted in the pathophysiology examples, "Hypertension I could see would increase your blood pressure, but the actual increase in blood pressure, that again I am confused about;" "I am sure, I don't think I have high blood pressure;" "It doesn't apply to me;" and "I don't have a blood pressure problem."

### Stress Management

Responses to the question about ways to reduce excessive stress were categorized as clarity of information, awareness of content, and beliefs. Examples were: "That's a problem, I don't know of any ways;" "I really have no problem....just slow down and do my job my way instead of their way which I can do; otherwise, I wouldn't stay there; it's quite simple;" "I don't have any stress....don't eat high-priced food, don't spend a lot of money unnecessarily; if you do these things you don't follow rich people, good house, good job, good car, don't try to buy all those things and that will relieve stress."

### Sexual Activity

Two questions assessed knowledge of resuming sexual relations and when to avoid sexual relations following an M.I. Responses were categorized as indicating lack of content awareness and included examples as follows: "The tapes didn't show the section on sexual activities;" "No one told me that. I could have sworn the doctor told me I could have sex immediately;" "No one told me about this."

### Health Beliefs

As data were sorted into the a priori health belief, categories and responses were reviewed, additional categories evolved which were interpreted as significant and inherent to respondents' systems of health beliefs. These additional categories were: (a) awareness of vulnerability, (b) searching, (c) belief in doctor, (d) locus of control, and (e) self-description.

In review of the data, it was observed that health beliefs did not vary between the first and the second interview, with the exception of belief in the doctor.

It was recognized that health beliefs are difficult to assess quantitatively or through direct questioning. However, careful and systematic review and display of the respondent data had potential to produce belief-related themes which could be meaningful in the context of other factors. The following are a number of verbal illustrations of data that were sorted into each of the categories identified as health belief-related.

#### Susceptibility

When questioned directly about whether they felt likely to have another heart attack, there was uncertainty about this among patients. Of respondents who said they were unlikely to have another M.I., comments made in response to other questions during the interview indicated that they were, in fact, uncertain about the likelihood of recurrence. This contradiction was evident in response to questions regarding cue to action, whereby respondents stated their motivation for making changes in their lives was "having already had a heart attack," or "I don't feel I am going to have another M.I., but I'm not going to take a chance and carry on the way I was eating, too much salt and

stuff like that. I feel that by cutting out that stuff at least I am lowering the odds."

In response to the question "What do you feel makes you likely to have another heart attack," the reality of the first M.I. was the primary belief; also "trying living life as before" and stress were mentioned.

#### Perceived Benefit

All of the respondents stated that the benefits of making changes in their lives outweighed the risks, costs, and disruption they might cause. Rationale was "in order to prevent another M.I.," and "to live longer."

#### Cue to Action

The major theme in this category was as follows "having already had a heart attack," which was further exemplified by respondents who stated "fear of death is a powerful motivator;" and "I love life." These comments illustrated that the M.I. event had altered their belief system in relation to a previously-held self-image regarding health status. The cue to action category, for this reason, seemed to overlap with the category labelled awareness of vulnerability.

#### Awareness of Vulnerability

The category awareness of vulnerability initially existed as two categories; disbelief and vulnerability. However, as data were descriptive of an evolving process, the categories were combined as awareness of vulnerability. This category was established for responses to questions which indicated respondents' difficulty accepting the reality of the M.I., and alteration in self-image with regard to health. None of the respondents displayed disbelief to a degree whereby they were closed to discussion of the M.I. They verbalized their disbelief in the following ways: "I did not expect a heart attack at all. I

skied all day with my son at Whistler. I was tired when I finished, but it was no problem;" "I think it was the shock of thinking I was really healthy and worked for all those years, so that is a good motivation no matter what you do, you can still be a victim, so you have to watch out;" "I have never been in hospital in my life. I have never been sick except for flu and cold and that sort of thing but nothing serious. So it was quite a shock;" "I thought I was doing everything to prevent one (an M.I.);"

I never know. I could have another one, who knows? I am not expecting it. My real thinking or my confidence was my God, all my life I was in sports, heavy sports...I survived 50 years of Russian winters, I survived an occupation, I survived a revolution, and the same year as the revolution we survived an earthquake and a flood and after, I survived immigration, so what do you expect. It was a miracle I didn't have a heart attack before.

"There is certain logic and reality that says alright what can you expect? A guy upstairs is hanging you on a big hook and you don't know when the other hook is coming down. And when that other hook has to come down no matter what we do, it will come down." In response to a question about what respondents would make an effort to change, one respondent stated,

It will be frustrating, but we have to adjust our mind to the new conditions and have the patience to reach the point and realize that this is the thing we can expect in our age, don't expect what you were like at 25...you have a chance to recover and victory has a certain limit...

### Searching

Searching was characterized by a need to identify a cause or explanation for the M.I. event, in order to provide a point of reference upon which to base decisions, and to change behavior and lifestyle. The uncertainty of recurring M.I. gave rise to respondents' answers with regard to susceptibility questions, such as "I don't know what caused this one." In response to questions about source of stress, one respondent stated

in Interview One,

I was thinking about this a lot since I have been in here. What are the reasons this heart attack and I can't specify or pinpoint any specific stress...maybe it is subconscious...just two days before my heart attack, we booked for Mexico and at the beginning I was reluctant to go by boat...when we came to Canada I was sick in the bottom of the boat, I think it was the flu, I was so sick, just unbelievable and we were refugees...that held me back, but I wouldn't consider these incidents contributing to the heart attack but who knows. Something had to be there because it happened.

Another respondent stated, in response to the same question, "I had this heart attack very suddenly, during the night; I was eating well, sleeping well...I don't know what happened...I was not thinking I was sick."

#### Belief in the Doctor

Respondents referred to their reliance upon and belief in their doctor throughout the initial interviews. Comments made at the first and second interviews were of a distinctly different tone, indicating that respondents' expectations of their doctors had changed between the period of hospitalization and the time of the second interview. The following are excerpts from transcripts of Interview One. In response to the question "From whom or what do you anticipate getting support during your recovery from the heart attack?" one respondent replied, "From God Almighty, and doctors who prescribe medicine." In response to the knowledge question "Why are people who have had heart attacks encouraged to quit smoking?" one respondent stated "If I don't want to smoke, that's fine, but I don't think anyone should be able to tell me not to. The doctors tell you for your health but that's different and I will try. I will do what my doctor tells me." The same respondent is quoted in relation to what or whom was the most valuable source of information or support;

My doctor was, he doesn't talk very much but when he says something you listen.

He doesn't go on and on like I am doing. He is very to the point. He says exactly what he wants to say and that's it. I talk a lot when I get nervous. I guess that is why I like it when someone is so direct. Even his action downstairs when I first walked in - I was up in I.C.U. before I realized where I was and that impressed me a lot. Sometimes my husband spent two and three nights in Emergency, there was no place for him. The man impressed me, I don't know why.

In response to the question "If you needed additional information to help you in your recovery from the heart attack, where would you look for it?," this respondent replied "I will call Dr. (the internist) or my own doctor. They both came in every day to see me." In response to the question "In order to make changes, what will you need to know or be able to do?" another respondent replied "I am going to have to understand more about what a heart attack is, and nutrition. In talking to a couple of doctors, they say don't worry too much about your diet...I am not too sure about that."

In response to the question "From whom or what you have mentioned where will you get the most support?" one respondent stated "I have to talk to the doctor yet on a few things, I am going to keep in contact with the doctor in my own regular check-ups." When asked if the doctor would be the best source of support, this respondent said "yes." Another respondent identified the doctor as a source of additional information during recovery from the heart attack:

...My doctor, he has all kinds of pamphlets. I will probably go to him. Dr. (the internist) is pretty strict but I guess it is the best I have. I am staying a little extra time. I could have said I didn't have any pain and could have been out today. It's nothing to play around with. I don't want to be back in next week. I would rather have that anyway, a little stricter. I don't like to see a guy who is too slack.

Changes in the doctor's role or ability to meet the patient's needs are noted in Interview Two in many cases. For example, a respondent who identified the doctor as a source of information for helping a patient make changes, stated in Interview Two "I



don't think all of my learning needs have been met. I have hundreds of unanswered questions. The doctor never has time. The doctor assumes you know things." Another respondent stated, with regard to the question "If you have needed additional information to help you in your recovery from the heart attack, where have you looked for it?"

The doctor didn't tell me anything; he doesn't tell me anything." I would go straight to Vancouver General. He told me I didn't need nitroglycerin and then when I collapsed at the grocery store with the pain, I didn't have any. I phoned Vancouver General in the middle of the night twice now.

Another patient stated,

The doctor didn't spend any time...I have come to the conclusion there is more not known. It's almost like the doctors don't like to admit it, that they don't know everything. They are hard to get information out of. I don't think they are ever up front with you...for example, a session I had with Dr. (the internist). I just kept asking questions and not getting answers, and asking the same question a different way, didn't quit, but I didn't get the answer either...

### Locus of Control

This category emerged as respondents addressed questions from the perspective of their own ability to control their situation. The category was established on the basis of the following lengthy passage from the respondent who began to vent anger and resentment about having to quit smoking.

Smoking causes heart attacks. I don't know. I have been smoking for so long and I never heard about that until this last ten years that they started saying that it does cause heart attacks and things. I have been smoking for 50 years. I don't understand why if these are so bad for people, why do they allow the companies to make them and sell them. They have the warnings on there and nobody forces you to do it. It's the same with liquor; why do they let them make liquor and stuff. I don't understand that either. That takes all your rights away, so that's no fair either. Why take my rights away to give you more rights, say. I am a smoker, you're not, is what I mean. Now you can't even smoke in a cab. You can't blame them; it smells up the cab and if they don't smoke it probably bothers them. It just came too fast, it didn't come gradual; all of a sudden you couldn't smoke here, you couldn't smoke there, you can't do this...if they want to do this

why don't they have a government thing where you can get off smoking, not just tell you you can't do it. There's no such thing as you can not do it, it's hard to stop and anyone who smokes will tell you that but you go in to have a coffee or something and you want to have a cigarette, you can't have the cigarette in here, but you can have the coffee. I don't know if I will quit or not, I am trying to, but whether I will be able to or not I don't know and the idea of people telling me in places that I go that I can't smoke, that annoys me. I figure they are taking my rights away. I have worked all my life for my rights, not somebody else and I don't like that. It really annoys me. I can walk in the store, I can pay for everything in the store but I can't do what I want to do especially in a restaurant. I don't think it is a bit fair. They have the support for alcoholics but not for smokers. Drug addicts on the street..."

Other examples of locus of control content were later identified and are illustrated by one respondent as follows: "I feel I have not going to have a heart attack but I am not going to take a chance and carry on the way I was eating. Too much salt and stuff like that. I feel that by cutting out this stuff at least I am lowering the odds..." Several respondents identified risk factors in the knowledge section of both Interviews One and Two, indicating that they were making changes in their lifestyles in order to gain control of their risk for recurrent M.I. Two examples include smoking and stress.

I used to smoke. I think the big thing about stopping smoking is the mental; you have to prepare yourself mentally to stop smoking and it's quite a task. It takes good will power. I think the mental is the big thing; you can use those aids they have, the patch they have nowadays but I still maintain that in your own mind you have to want to quit.

In response to a question about stress management, one respondent stated

I am going to have to do something about relieving stress, push that out more than I have. Go for a swim. I used to do a lot of shift work and my job is a high stress job and especially the midnight shift. I would go home in the morning and there was no way I could sleep and I would decide to go for a swim on the way home from work. That fixed that. I kind of taught myself that when I get uptight, go for a swim. That's true, you forget everything; Physically, I will have to know if there is a limit or if I can just push myself like I was doing before. I wasn't pushing myself, I knew I couldn't go beyond what I was doing but I would like to get to that level again. I don't think I will have any problem but that is thinking positively, isn't it. I have to. Before I came in here, I had my weight at a level 146 lbs. and I stayed there with the exercise and the diet. The dietitian

put me on a 2100 calorie diet and that's just on my mark. If I drop a little bit below that my weight starts going down so we balanced it, that was including all the exercise and it worked out well.

The same respondent commented on excessive stress:

Excessive stress, I don't have that any more. I used to have it at work. A lot of time I would just walk away from it. I used to be in an office and it was quite stressful, I would just get up and walk out for a while, walk around and then come back in again. It may be a form of escapism but I found it worked to separate myself even for five minutes was beneficial.

One respondent stated in both interviews that his job was the main source of stress in his life as well as financial concerns and in both interviews stated that he was doing nothing to minimize or control stress. His comments included

I can't change my employment; I'm not super-educated. My boss is a very aggravating man. I get very angry and can't control myself. Other people aggravate me. I have no life insurance. I purchased a house in October, had the heart attack in December, we didn't get disability insurance. If I spent \$40,000 - \$50,000 on a truck, what if I died in a month?

### Self-Description

Self-description emerged as a sub-category within the descriptive category of health beliefs. Self-description provided yet another dimension to the patient interview data, reflecting respondents' perceptions of themselves through use of descriptors, in an effort to support their perspectives. Self-description quotes included "I was a workaholic;" "In the early weeks, I was easily upset and aggravated;" "I am a very happy man;" "I'm of the old school. You've got to do it yourself, you can't expect people to do it for you unless you are a cripple or something but I'm far from that. I learned a lot from the way I was brought up; self sufficient;" and

I work in models and want to make sure the information fits in that model. That's the way I think. I find if I understand the basis, you don't have to commit information to memory, if your model works, you can work from that rather than from rote.

### Summary of Predisposing Factors

Within the category of predisposing factors, certain themes emerged with regard to knowledge and beliefs. Knowledge gain appeared to be dependent on four distinct factors: (a) clarity of information, (b) applicability or relevance of information, (c) awareness of content which had been presented, and (d) belief. Although knowledge scores relating to both factual and practical knowledge were higher at the second interview than the first, knowledge was consistently lower for certain topics than others, at both interviews, despite the presentation of information on these topics through audio-visual and written materials. Within responses to knowledge questions, beliefs were revealed, more so, in fact, than in response to direct questions about beliefs. Belief questions were designed to examine patients' views about their susceptibility to recurrent M.I., perceived benefit of making behavioral changes, their intent to make changes, and the source of their motivation. Patients indicated that fear of recurrent M.I. was their main source of motivation; benefits of making changes were seen to outweigh the costs, risks, and inconveniences to making changes. Beliefs about susceptibility were revealed in interviews through discussion of the programs, behavioral changes being made, and in responses to knowledge questions. Additional belief themes emerged, which were interwoven with other responses. These themes included awareness of vulnerability, searching, locus of control, belief in doctor, and self-description. It was noted that locus of control had also been mentioned by a Home Care nurse, in relation to spouses' responses to the outside assistance with addressing patients' health behaviors.

### Enabling Factors

During the coding process, very few differences in responses were noted between

the first and second interviews with regard to enabling factors. Certain themes emerged, however, which were significant in relation to other findings. These themes were related to (a) meal preparation, (b) sources of learning, (c) expectations for spouse, (d) sources of learning for spouse, (e) spouse participation in education program, and (f) additional sources of information.

Findings from which themes appeared are illustrated below:

#### Meal Preparation

Male respondents identified their wives as responsible for meal preparation, with the exception of a single male who stated he did his own cooking and enjoyed it. The female respondent stated that she and her daughter shared the cooking, and one male stated that he led a double life; when working, he frequented truck stops but at home, his wife cooked his meals.

#### Sources of Learning

Respondents identified the following at the initial interview as sources of learning: (a) library or reading, (b) the Shaughnessy Cardiac Rehabilitation Program, (c) the doctor, or (d) themselves.

One respondent stated he would obtain information from

reading, checking labels and stuff. I know a lot now anyway. I have been buying Prevention magazine for years. It's a wonder I haven't stuck with it. I know the right way and the wrong way. I also get that one from Shopper's Drug Mart every three months. There are recipes and all that.

In addition to reading, the following sources were identified at the second interview as means of learning what they needed to know in order to make behavior changes: (a) friends, (b) health professionals such as dietitian, physiotherapist and

Home Care nurse, and (c) the audio visual program viewed in hospital.

Expectations for Spouses/Support Persons and Sources of Learning

Respondents stated at both interviews that they expected their spouses or support persons to manage diet, look after them and change their own habits. At the initial interview, respondents indicated that their spouses' or support persons' sources of learning would be the respondents (patients) themselves, in addition to reading. At the second interview, other sources mentioned were doctors and the Home Care nurse.

Spouse/Support Person Participation in Education Program

None of the respondents' spouses or support persons had participated in the hospital cardiac education program. The following excerpts from the transcripts illustrate comments about why spouses or support persons did not participate. "Not always here when I saw the tapes;" "No education received by myself or my spouse;" "I don't think she knows it's there. I don't think it has been suggested to her;"

She kept hoping to watch some of the videos but every time she came, they took the machine away. That became a problem. We were hoping to include her but they seemed to need the machine when my wife was here and they would come in with the machine after she left. I thought I better watch all eight and then we can discuss them.

At the second interview, some respondents indicated that their spouses or support persons had participated in the Home Care Program as illustrated by the following comments: "Sometimes by listening to the Home Care nurse;" "Yes, we met with the Home Care nurse together;" and "For the first two weeks she participated in discussion with the Home Care nurse;"

Respondents who said that their spouse or support person had not participated in the home care cardiac education program gave as their rationale: "Support person was

working;" or "No English spoken."

### Additional Sources of Information

At the first interview, respondents stated that if they needed additional information to help them in their recovery from the M.I., they would read, or speak to the nurse or the doctor. One respondent commented "I am hoping to get a lot of information from Shaughnessy. I think I told you the reason I said Shaughnessy is because my doctor said Shaughnessy, but at the time I thought sure there was a place in Richmond for heart recovery patients and that. I think there is. You don't pay much attention to those things until the time comes."

At the second interview, respondents identified the Home Care nurse and the educational booklets distributed by the Home Care nurse as sources of additional information. One respondent, in identifying the Home Care educational booklet as a source of additional information, stated "We still have a pile of pamphlets from the hospital as well, and the information is there except for a couple of things I don't quite understand." One respondent identified Vancouver General Hospital as a source of additional information, stating "I have phoned them in the middle of the night twice now." When questioned about using the hospital as a source, the respondent stated "They don't give you enough information, they don't sit down. I don't think they are really that educated here for it to tell you the truth and Dr. (the internist) didn't spend any time. I don't think they are set up for heart patients there and that bothers me."

### Summary of Enabling Factors

Within the enabling factors category, themes identified by the researcher were (a) reliance upon the spouse to adopt the necessary skills to make recommended changes,

(b) access to information for spouses which was not received in the hospital needed to fulfil their enabling role, (c) a language barrier, which would inhibit the spouse's ability to learn the necessary skills, if English was not understood; and (d) a change in views about professional sources of information.

Spouses were considered to play a major role in facilitating behavior change, particularly with regard to food purchase and meal preparation. They had not, however, been involved in any cardiac education at the hospital; their initial source of information was primarily the patient. Language and cultural barriers also impeded some spouses' ability to learn the knowledge and skills required of them.

Doctors were acknowledged, at the first interviews, as a source of information to patients; at the second interview, respondents no longer considered doctors a source of information. The Home Care nurses were mentioned, because they answered questions as they arose.

Enabling of behavior change within the hospital setting appeared to be limited to knowledge acquisition. It was noted that respondents were unable to describe any strategies they had learned for dealing with risk factors such as stress or smoking. In the home setting, skill development appeared to occur primarily with regard to dietary changes, involving mainly respondents' spouses.

### Reinforcing Factors

#### Expectations for Spouse/Support Person

With regard to the specific question "What would you expect your spouse/support person to do to help you learn to live with a heart condition?" most responses were related to enablement of behavior, such as meal management and care of the patient.



However, support of others by changing their own personal habits was identified, as illustrated:

She was diagnosed with high blood pressure years ago and she's pretty well off salt anyway so as long as there's just one of us on salt, take it away. There will be all kinds of benefits too. It was like when we went on the diabetic diet. She enjoyed it because it is a real good basic diet. There is nothing wrong with it but as far as the meals she'll be cooking now, I will notice a change, without the salt and all the type of flavour I like. She is a much better reader than I am. She will pick up quite a bit. She will know more about it than I do in the long run. I think that between the two of us we will investigate what is going on.

### Sources of Support

During the initial interview, respondents stated they anticipated getting support during recovery from (a) spouse (wife), (b) family and friends, (c) doctors, and (d) nurses, indicating they would get the most support from wife and family. One respondent stated the doctor would provide the most support. Many indicated they did not know of any other sources of support for people recovering from M.I.

At the second interview, respondents identified the same sources of support as they had at the first interview, with the addition of the Home Care nurse. Respondents stated that they had received the most support during their recovery from M.I., from their wives and families or the Home Care nurse. Additional sources of support that respondents were aware of at the second interview were fitness groups, a heart association group, the dietitian, church, and personal friends.

The key role of the spouse and family as sources of support and reinforcement for the patients was noted as identified during the hospital interview and again at the second interview. The doctor, mentioned at the first interview, was not identified at the follow-up interview; the Home Care nurse was viewed as a source of support in the weeks following discharge from hospital, but was not identified at the initial interview.

The primary source of support, therefore, could be considered the spouse and families; their role; however, this was not addressed by the hospital program, according to the respondents. The role of the Home Care nurse could, therefore, be viewed as reinforcing and enabling the role of the spouse and family as reinforcers and enablers of behavior and lifestyle change in the Post-M.I. patient.

### Perception of the Education Programs

The Hospital Program, which was considered the entry point to post-M.I. education, was also examined from the patients' perspectives, as well as the Home Care Program. The following presentation relates to respondents' perceptions of both programs, and is central to the discussion of the role of the Home Care Program in promoting behavior and lifestyle changes.

The patient interviews were designed to provide data about patients' interpretations and perceptions of the programs in which they participated, with regard to (a) program goal statement and fulfilment, (b) content, (c) strengths and weaknesses, (d) usefulness of information, (e) methods of presentation; and (f) most valuable source of information.

### Goals

Some respondents were unable to recall the goals of the education program. Of those who did, the following are examples of their perception of the goals: "To make people aware of why they have had a heart problem; expectations of what life will be like from now on;" "Information about the heart attack, what to do, and how to get back to normal."

Respondents stated that the goals of the hospital program as they understood

them were fulfilled by the video-tapes, which covered all aspects regarding the heart attack, in a comprehensive manner. Comments included the following: "I was impressed by some of the tapes that they were straight to the point. They try to make it easy on you, this is what happened, and this is what caused it. I like that part. Very easy to understand;" "The one that impressed me the most was the actual cause of the heart attack. I had no idea...that impressed me. They said simple and straight and that impressed me. I'm trying to think through the tapes. There were a couple of good ones like the one on smoking and diet;" "The goals were fulfilled by clarifying what a heart attack is, diet, exercise, getting back into life again, and general guidelines for going back to work. Ways in which respondents felt the goals of the program were not fulfilled were: lack of applicability to the individual's situation, too general information, and lack of information on stress management or sexual activity. One respondent stated "the tapes were very general; from congested heart failure to someone like me, or much older or much younger, you have pick out what parts apply." This individual went on to say

I was looking for specifics. I am still uncertain about the future. What I do next, I need to know what I will learn next. I think if they gave me an idea of what I am going to be doing next. They do brush on that but I think they could give you a bit more confidence.

Another respondent stated that,

More graphic detail on risk factors was needed. Like I say it should have gone into the smoking end of it for people because 90% of the people are heavy smokers who have had heart attacks, it didn't go far enough. It did for me but a heavy smoker sitting there wouldn't...it really doesn't say much on smoking. It doesn't give a graphic detail, that's what they should be and scare the hell out of them.

Goals of the Home Care Program were identified as heightening awareness of what the patient can do, providing reassurance, monitoring progress until the patient is

"okay on his own," monitoring heart rate and blood pressure, checking symptoms, and "answering questions when the patient thinks of them."

Respondents stated that the goals of the Home Care Program were fulfilled as intended, through frequent visits from the Home Care nurse, a very comprehensive brochure, and through monitoring of vital signs. A comment from one respondent is as follows:

The information I got from the hospital, I couldn't have absorbed much more than I did. The Home Care nurses have kept track of me; they even suggested that I go outside of what was laid down in the original document, push myself further. It was reassuring that I could do it. The family doctor, he more or less said that it had been prescribed and he wasn't going to change it. The nurses gave me quite a bit of reassurance.

Another respondent identified moral support, and diet and exercise information as ways in which the goals of the program were fulfilled. This respondent stated "the first while you are here by yourself you don't sleep good at night. I had the phone right beside my bed and I was sweating, I didn't sleep too well." Some respondents stated one-to-one discussion was invaluable. One respondent went on to say

I think the goal was to monitor my progress out of the hospital until they feel I am okay on my own. I think education is the big thing...sit and chat, take my blood pressure, mostly sit and chat. And they were coming every day, I would say maybe ten minutes; at first it was half an hour or more. Every once in a while it is a different nurse so we sit and chat for another half hour so it varies once they get to know my situation. They call me boring now because nothing is changing but that's a good sign. I think making us feel more secure after you get home from hospital because you feel vulnerable when you are away from care...them coming and explaining things, and they're on call any time you need them; it made me feel more secure.

There were no goals identified by respondents which they felt were not fulfilled. One respondent stated "if the goals were not fulfilled it would be my own fault."

### Program Content

Respondents stated that the hospital-based cardiac education program consisted of audio-visual programs; specifically, eight video tapes, and some pamphlets from the Heart Association. They said there had been minimal or no discussion with health personnel during hospitalization.

At the second interview, respondents stated that the Home Care Cardiac Education Program consisted of pamphlets provided by the Home Care nurses and discussion, which occurred at regular visits from the Home Care nurse. In addition, the physiotherapist visited patients for their first walks, and the Home Care nurse monitored vital signs and provided information with regard to community resources.

### Strengths and Weaknesses

Strengths of the hospital-based education program related to the videos, and were identified as follows: "The videos were actually quite well done, compared to some other education videos I've seen." Another respondent stated "learning about eating habits and about your heart, what to do and what not to do." as strengths.

With regard to the weaknesses of the hospital program, respondents identified concern that there was not enough discussion or interaction between health professionals and patients, that the material was too general, some of it not applicable, and that the written material could not be readily absorbed in the hospital environment. One respondent stated "There should be some more help to reduce stress, this is a very important thing. There should be more emphasis on stress in our world to deal more fully with stress." Another said

It could be a little more graphic all the way around. Too much of this little guy and their printed drawings, it should be more graphic I think, those videos and

like I say about smokers it should have a heart laid open where it's a real heart and shows before smoking and after. I believe in that.

Strengths of the Home Care Program related to the Home Care nurse with regard to professional competence, and ability to use a comprehensive approach to rehabilitation. The Home Care nurse was used as a source of reassurance and information provided almost on a daily basis. One respondent stated "A question pops into your mind and you can ask it the next day rather than waiting a month - you wouldn't ask the question in a month."

A weakness identified by one respondent was the fact that the Home Care Program had not started early enough after discharge from hospital. This respondent stated "you are a little nervous when you get home and I think somebody, when you get home within the same day they should meet with you and make sure you know all the facts about where to get nitroglycerin." There were no other weaknesses identified by respondents with regards to the Home Care Cardiac Rehabilitation Program.

#### Usefulness of Information

Items related to usefulness of information were distinguished as factual or practical information. Respondents identified reasons for changing eating habits, with regard to salt, sugar, and fats, as well as weight control as being the most useful factual information. Some respondents stated that knowing what a heart attack is was the most useful factual information, such as an

explanation of just what a heart attack is; what it is, what it does and how it does it. I'm a systems analyst. I'm used to models. You modify the model as you go on, fit the information into the model. That's the way I think. If I understand the basis I don't have to commit to memory. If your model works, rather than rote learning, you can follow recipes for good health.

The least useful factual information provided by the Hospital Cardiac Education

Program was noted as being the relaxation and meditation tape, by several respondents who felt that they would not benefit from relaxation tapes. One respondent stated "What stands out is the color bars and the music, well I mean it doesn't really tell you anything. You can listen to music on the radio or anything. Just lay there and close your eyes, and enjoy it;" Another stated "There was an audio tape and relaxation and meditation...I don't think I am that type of person. Too active."

The most useful practical information was identified as information on smoking, discussion of what to expect in the next three to six weeks following the M.I., diet information, and information about returning to work. One respondent stated "charts or discussion of things I can expect to do in the next three to six weeks; how restricted, how far I can push myself."

The least useful practical information was identified as information which was not applicable, such as blood pressure and open heart surgery information, color bars, and broad non-specific information. Respondents were in agreement in identification of needing more discussion, specific information on activities, and of what the future held, medications and smoking, and information about diet, sexual activity, and other restrictions.

At the second interview, respondents stated that all of the factual information was useful including information on diet, exercise and stress. One respondent commented on the practical aspects of the information provided, by saying

I felt most useful, as I went along, was information about various things I would ask the nurse that would come along. For example, those nitro pills, I was given them and they tell you to take them if you have pain but the last nurse asked if anyone had told me to sit down when I take them. Now I sit down when I take them. Once you get home you want the practical side and this is what they are experienced in.

Least useful factual information was identified by one respondent as diet information "because we already knew that from the hospital. Maybe they were just checking up to make sure we did know about it."

The most useful practical information provided by the Home Care nurses was identified as the Home Care nurse's advice about "day to day stuff" such as taking blood pressure and heart rate; "letting me know how I am physically; to set worry aside."

Least useful practical information was identified as insufficient information on dietary restrictions, angina, and the cause of the M.I.

Well I still have the grey areas as to what causes angina. We went through this before. I would like more, clearer information on that. I would like information as to what caused my heart attack. I was low on cholesterol, didn't smoke, didn't drink...but I don't suppose I will ever really know.

#### Method of Presentation

The videotape was identified as the most meaningful method of presentation in the hospital program; respondents stated it was hard to concentrate on pamphlets. One respondent stated the video was more meaningful than the handouts because he was able to remember more when he could see it. Another respondent identified one to one discussion as the best method of presentation. After that, models were identified as most meaningful. "The videos are a good overview, but hard to get depth of information. I had some discussion with the doctor and some nurses which was more meaningful."

The least meaningful method of presentation for respondents at the hospital interview was stated to be the pamphlets by the Heart Foundation. The rationale given for this by respondents was that it was too difficult to concentrate in the hospital on pamphlets.



At the second interview, individualized discussion with the Home Care nurse was stated to be the most meaningful method of presentation.

#### Most Valuable Sources of Information

Most valuable sources of information in the hospital were considered by several respondents to be the videos, although one respondent mentioned the nurse or student nurse." Another respondent stated "so far it has been the cardiologist. I saw him one night for half an hour, he drew me some diagrams." This individual had previously stated that he "works in models;" it was therefore difficult to ascertain whether his response reflected his learning style or if the physician was actually viewed as a important source because of the information conveyed to the patient.

The pamphlets, distributed by the Hospital nurses, were felt to be the least valuable sources of information.

At the second interview, respondents identified discussion with the Home Care nurses as the most valuable source of information. One respondent stated,

The Home Care Program is more personal. You work with one person. The Hospital Program is mostly through video cassettes. I can't ask questions from the video cassette. Sometimes the English is such that I don't understand, too fast, so unless I go over and over again on the same video cassette for a number of times I don't understand.

#### Summary of Perception of the Education Programs

The interview questions which addressed respondents' perceptions of both the hospital and community-based cardiac education programs were designed to provide insight about their interpretations of the role of each program, and how the programs addressed their learning needs. Several themes emerged, as described below.

1. The respondents had a sense of the goals of each program, although the goals

were not stated in writing;

2. Perception of goal fulfilment, and strengths and weaknesses of each program, were directly related to perception of the methods of presentation;
3. The videos provided by and presented in the hospital, were seen as informative, but not appropriate as the primary method of presentation; and
4. Individualized discussion of specific concerns in patients' home environments was seen as the most meaningful method of presentation; this occurred mainly with the Home Care nurses.

These themes can be explored in relation to the other findings within the patient interview data; for example, awareness of the goals of each program could be associated with beliefs about the role of the health care system to educate and support patients with chronic health problems. This awareness may also be due to verbal communication with health personnel, or to a statement made in one of the videos.

The acquisition of knowledge, as a basis for decision-making relating to health, was seen by respondents as a goal of the programs; however many topics covered by both the videos and the written materials were not recalled by respondents. Examples include those presented in the knowledge section of this chapter, such as information about sexual activity, stress management, and topics which did not apply to patients' individual situations.

Both factual and practical knowledge scores improved over the six to eight-week period between interviews. Was this because respondents had had more time to review the content of the educational pamphlets or was it due to other factors, such as the individualized approach used by the Home Care nurses? What role did health beliefs,

such as those related to locus of control, which appeared to remain unchanged throughout the six to eight-week period, play in the acceptance of information and support, and changes in certain risk-related behaviors? These and other questions are addressed in Chapter 8: Integration and Analysis.

### Environment

Yet another descriptive category within the PRECEDE-PROCEED model, which provided insight regarding the context in which the education programs occurred was that pertaining to environment. Within this category, the following topics were raised by respondents, although not addressed directly within the instrument: (a) the hospital and home as environments for learning, (b) environmental barriers to making behavior and lifestyle changes, and (c) extrinsic forces which may impact on patients' abilities to make recommended changes. These topics are described below.

#### The Hospital and Home as Environments for Learning

The following comments are enlightening in terms of patients' perceptions of learning the educational material offered in the hospital environment: "You're really sick when you're in the hospital; you don't take everything in...everything was such a blur...the doctors assume you know things;" "I nagged the doctor to go home. I was only on level 6; I hadn't done stairs or walks in the hall. I walked out of the hospital and fell over the hood of my car. I wanted to be home - it was a mistake;" "I find that in the hospital, it is very hard to concentrate. I've got a book, newspaper, T.V., and I am just jumping back and forth and not interested in anything;" "The hospital information I was left on my own, I was given pamphlets and a T.V. and videos but I was on my own;"

I think I have most of it (written material) and just haven't read it...I wanted to wait until I got home and got comfortable and read it there. I think the dietitian gave me a book and I think it is very interesting what I have read of it so far. I think that will help me with my diet and I want to lose weight and it will help me there too. I have just leafed through it... To do it at home is more relaxing for me. I can concentrate better. There's too much going on in here all the time.

Being in the hospital you see those nurses are busy, they don't have the time or the staff. I suppose I could have asked the nurses some questions but they were so busy there you just didn't feel like it. I would think I could read up on it later myself.

### Barriers to Making Behavioral Change

In response to the direct question "Was there been anything that has prevented you from making the changes you intended to make?" respondents indicated that there were no barriers to their efforts to make change; however, one respondent stated in another section of the interview that he needed to keep working due to the nature of his work; he would therefore be unable to get as much physical activity and adhere to his dietary restrictions as he would like. Another respondent stated that he would like to participate in an exercise program, but if the program was offered during his working times he may not be able to attend as much as he would like.

### Extrinsic Forces

Some respondents identified forces in their environment which added to their stress or impacted on their ability to make recommended changes in behavior. For example one respondent stated "You have to somehow keep your calm and don't let yourself get upset for everything. Don't read the newspaper, don't listen to the news...it is a difficult thing." Another respondent displayed anger and resentment towards society for taking away smokers' rights without providing support for quitting the habit of smoking. This respondent's concerns about the societal impingement on her smoking

habit is illustrated in the health belief category.

The environmental factors identified by respondents as affecting their ability to learn the material presented to them in both education programs considered significant to this study. The environment in which individuals live and function provides the context in which educational interventions are conducted; within this context, knowledge, beliefs, and perceptions work together to apply meaning to the educational process. In order for a program to affect behavior and lifestyle, through enabling and reinforcing skill and knowledge application, these predisposing factors must be addressed as they interact with the environment.

### Summary

Within this chapter, patient interview data have been presented in relation to components of the PRECEDE-PROCEED Model, in order to illustrate the basis of themes which emerged. The following chapter presents integration and triangulation of the program analyses, nurse questionnaire findings, and patient interview data, upon which the conclusions and recommendations of the study are founded.

## CHAPTER 8

### INTEGRATION OF FINDINGS

Triangulation of findings from each of the four data sources was done in order to compare findings with each other for validation purposes (Miles & Huberman, 1984, p.23). The approach used was (a) to first cross-validate findings from analysis of the two education programs with the Home Care nurse questionnaire findings, (b) to cross-validate the results of this process with the patient interview findings, and (c) to link the discussion of all the sources together in order to present an integrated analysis, using the PRECEDE-PROCEED model as the theoretical and organizational framework. Table 8 contains a summary of findings from all four data sources for this study.

Table 7  
A comparison of program intent, nurses' perceptions of program intent and outcomes, and patient experiences/outcomes, using the PRECEDE-PROCEED model (Green & Kreuter, 1991).

Component of PRECEDE-PROCEED Model	Programs		Nurses	Patients
	Hospital	Home Care	Perceptions of Home Care Program Intent and Outcomes	Experiences/Outcomes
Predisposing Factors i.e. pre-existing knowledge, beliefs, perceptions, motivation.	Emphasis on knowledge gain: <u>factual</u> i.e. pathophysiology of M.I.; <u>practical</u> i.e. education of risk factors.	Factual and practical knowledge addressed.	Beliefs, motivation, educational background, cognitive activity, age, and culture* identified as most important factors underlying behavior change.	Beliefs linked to knowledge; revealed indirectly in response to knowledge questions rather than in response to questions about patients' beliefs.
	Pre-existing knowledge not addressed by program content and implementation.			Knowledge gain noted in relation to topics which were seen by patients as applicable or relevant to them, <u>based</u> on beliefs.
	Beliefs, perceptions and motivation addressed only in general manner, as applicable to most post-M.I. patients.	Pre-existing knowledge, beliefs, perceptions, motivation addressed through implementation of Home Care Program.	Physicians' beliefs, perceptions about event thought to affect patients' beliefs about M.I..	Beliefs identified in discussion were related to i.e. awareness of vulnerability, locus of control, searching, self-description, <u>belief in doctor</u> .
				Changes in beliefs noted only in relation to doctor's role: doctor initially viewed as source of support and information; not viewed as such following discharge.

Component of PRECEDE-PROCEED Model	Programs	Nurses	Patients
Enabling Factors i.e. access to program, communication, and cultural factors; skills, or knowledge, strategies for risk reduction.	<p>Knowledge addressed through factual and practical information, strategies for risk factor modification, provided by videos; pamphlets (English only limits access to program).</p> <p>Spouse/support person may be involved on incidental basis to learn meal planning and strategies for reducing diet-related risk factors.</p> <p>Patients advised to discuss specifics with doctor, i.e. weight control, diet, sexual activity - dependent on physician-patient communication.</p>	<p>Addressed through factual and practical information, strategies for risk factor modification, provided by discussion &amp; booklet. (English only limits access to program).</p> <p>Spouse/support person involved as appropriate and available.</p> <p>Financial situation and accuracy of information seen to enable or act as barriers to behavior change.</p> <p>Other health problems thought to act as barriers to behavior change.</p> <p>Information given to patient thought to be inconsistent between physicians and nurses.</p> <p>Culture seen to affect how skills and knowledge incorporated by patients and families, i.e. based on cultural norms, beliefs, family roles, translation of information to person responsible for skill acquisition; i.e. checking food product labels, cooking low-salt, low cholesterol meals.</p>	<p>Spouse/support person seen to be key in skill and knowledge acquisition, i.e. meal preparation; a problem if English not understood.</p> <p>Doctor not available to answer questions; "assumes you know things;" "too busy."</p> <p>Home Care nurse answers questions bout day-to-day concerns; i.e. how to store and take medications, pacing activity.</p> <p>Work schedule may impede ability to attend exercise program.</p>



Component of PRECEDE-PROCEED Model	Programs	Nurses	Patients
Reinforcing Factors i.e. support, encouragement, adoption of risk-reducing behaviors by others.	Philosophy recognizes spouse/support persons; program delivery does not promote consistent involvement.	Philosophical framework recognizes support network; program delivery promotes involvement of support network.	<p>Reinforcement of spouse/support person depends on own predisposing factors; ie, beliefs, motivation, culture, personality type.</p> <p>Reinforcement, support also provided by Home Care nurses.</p> <p>Spouse (usually wife) and family identified as main sources of support; doctor also identified at first interview; Home Care nurse identified at second interview (doctor not mentioned as source of support at second interview).</p>
Environment i.e. context in which learning; behavior occur.	<p>Institutional; Program competes with other aspects of care delivery for patients with varied needs.</p> <p>Patients' social context and environment not addressed.</p>	Home setting; familiar to patients provides opportunity for assessment of patient's environment.	<p>Seen as a facilitating factor to achieving intended outcomes; the patient is comfortable, the nurse is a guest in the patient's home.</p> <p>Unable to concentrate in hospital; think of questions once at home in own environment.</p>

Component of PRECEDE-PROCEED Model	Programs		Nurses	Patients
Education Program	Based on goal to promote health and prevent further illness.	Based on self-care concept; purpose to facilitate behavior change.	Varied perceptions of Home Care Program goals and their achievements with regard to patient outcomes.	Varied perceptions of goals of both education programs.
	Standardized, knowledge-oriented; videotapes and booklets from American Heart Association and Heart and Stroke Foundation.	Individualized, practical approach; booklet developed by Home Care nurses.	Program not as important as predisposing factors (culture, education, age, beliefs, motivation <sup>b</sup> , personality type).	Discussion preferred over video and pamphlets; to learn at home where questions arise.
	Introduction to cardiac education.	Adult learner oriented.		Recognize need for professional support.
	Not evaluated.	Not evaluated.		Want specific information.
			Doctor's advice and description of problem to patient affects how information from Home Care nurse received and applied by patient and family.	Home Care nurse answers day-to-day questions.
				Reliant on translation if support persons do not speak English.

**Note**  
The primary difference between education programs relate to methods of implementation; the Home Care Program is offered on an individualized basis to patients in their homes thus addressing predisposing factors and environmental influences on behavior. Of the components applied to this study, these were found to be the most important components of the PRECEDE-PROCEED model (Green & Kreuter, 1991).

<sup>a</sup> Culture was distributed across predisposing, enabling, and reinforcing factors, as well as environment.

<sup>b</sup> Motivation was seen by Home Care nurses as the most significant factor predisposing changes in patients' knowledge, beliefs, and behaviors.

### The Programs and the Home Care Nurses

Differences in the philosophical frameworks, content, and implementation of the Hospital and Home Care cardiac education programs were discussed in Chapter 5. It was noted, during analysis of the two programs, that both were operating as distinctly separate entities. A hospital-community partnership between Richmond Hospital and the Richmond Health Department appeared to exist to the extent that Home Care liaison nurses were responsible for communicating with physicians, hospital nursing staff, and patients in the process of case-finding for referral of patients to the Home Care Program. According to the coordinator of the Home Care Program, this hospital-community partnership, addressed within the missions of both agencies, was not as strong as it could be. Other than informal feedback to hospital staff from the Home Care liaison nurses, there was no other system for communication between both agencies, with regard to continuity between the programs, or patient outcomes. Referral by physicians to the Home Care Program was not dependent on the introductory program offered by the Hospital; nor did completion of the Hospital Program guarantee patient referral to the Home Care Program. In most cases, post-M.I. patients participated in both programs; lack of participation in either was primarily linked to physicians' decision to refer, due to patients' health status, ability to participate, or, perhaps, physicians' personal biases toward the program. Residence outside the Richmond area could also preclude patients' participation.

The content of both programs, presented in Chapter 5, provide a basis for understanding the information that patients receive in both settings. Both programs offered factual and practical information; it appears that the assumption underlying the

programs is that increased knowledge facilitates behavior change. Beliefs and other psychosocial concerns of post-M.I. patients were addressed by generic statements in the videos and written materials about the normalcy of emotions such as fear, anger, and depression. The materials used encompassed predisposing antecedents to behavior on only a superficial level, with the exception of knowledge.

The most significant differences between both programs, it appeared, were related to the methods of implementation used, and ways in which these methods impacted on patients. This was noted in the Home Care nurses' comments about the Home Care Program's intended outcomes. Within the 16 questions asked of the nurses, predisposing factors emerged as a predominant theme in nearly all responses, across all of the respondents, particularly with regard to motivation and cultural factors. This finding was considered to hold major significance in terms of the role of the Home Care Program in facilitating behavior and lifestyle changes. The Home Care Program enabled personal interaction between the nurse and patient (and support person) in the patient's natural social environment. Through discussion in the patient's home over a 12-week period, beliefs, fears, and questions could be addressed as they arose. There appeared to be a relationship between the Home Care nurses' perception that predisposing factors were most important in influencing behavior change, and the primary method of implementation, which was discussed in the patient's environment, which in turn enabled the examination of these and other factors affecting behavioral change.

With this relationship in mind, the role of the Home Care Cardiac Rehabilitation Program in promoting behavior change becomes more clear. Whereas the Hospital Program provides a point of entry to information about M.I. and living with a cardiac

condition, the Home Care Program serves as a means for patients and their families to assimilate this information within their social context, and become acquainted with the real impact of the M.I. as it is relevant to them.

The cultural sensitivity of the education programs was discussed in Chapter 5, as a concern by the Home Care Program coordinator; neither the hospital or community-based program were currently prepared to accommodate the multi-cultural needs of the community, although the need to address multi-culturalism had been identified by both the Education and Research Department of Richmond Hospital and the Home Care Program coordinator. Cultural differences, including sex roles within the family, language, and tradition were identified by the nurses, as presenting challenges in delivery of the Home Care Program. The Home Care Program coordinator, as well as the visiting nurses, indicated that if cultural boundaries could not be penetrated, effectiveness in enabling behavior and lifestyle changes would be limited.

Within the discussion of the education programs and findings from the Home Care nurse questionnaires, the significance of predisposing factors and social environment have been addressed, in relation to their impact on behavior and lifestyle. The method of implementation provided by the Home Care Program facilitates the exploration of predisposing factors more effectively than that used within the hospital setting. The cultural context in which learning occurs appears to be an outstanding issue, as well as the inconsistency in information given by physicians and Home Care nurses. This inconsistency not only reflects the predisposition of health care providers, it also impacts on the predisposing antecedents to the behavior of patients and their families. For example, if the patient hears the physician say, "it was only a small heart

attack", risk modification strategies recommended by the Home Care nurse may not appear as critical to health, and ultimately, quality of life. The predisposing belief systems of the physician, the nurse, and the patient, therefore, influence how information is interpreted and acted upon.

### The Programs and The Patients

The comparative analysis of the education program and the Home Care nurse findings provides a logical basis for the second level of comparison; to the patient interview findings. Inconsistency and contradiction were noted with regard to the context in which responses were obtained. Patients were asked questions at both the first and second interview which addressed their beliefs and perceptions about the M.I. and its potential impact on quality of life and their day-to-day activities. Responses to these questions yielded minimal information about these predispositions. The patients spoke more openly about their health behaviors and perceptions of the education programs in which they had participated than about their values and beliefs. It was in the coding and analysis of this data that the predisposing factors, interwoven with nearly every response to questions relating to knowledge, behavior, and program perception, were revealed. The patients appeared to be focused on the concrete, immediate context of the education programs, in relation to presentation of content, their need for information from professional sources, and "hands-on" practical knowledge. They also identified the role of the spouse or support person as important to their adoption of new health behaviors, such as quitting smoking and making dietary changes. The knowledge they had gained, as reflected in the knowledge section of the interview schedules, was related to that which patients felt was applicable or relevant to them, and did not change

significantly from the first to second interview. Some information presented through the videotapes, or in the pamphlets, was said to be unclear; in other cases, it appeared that information conflicted with beliefs, or did not stimulate patients' awareness. This finding was interpreted as a selection process which occurred in predisposition to behavior, such as prior knowledge and belief systems, based on the social context of the individual. Patients commented that they preferred the Home Care Program over the Hospital Program, because questions could be answered on a daily basis as they arose. The doctor was no longer viewed as a source of information or support post-hospitalization; although the cardiac videotapes suggested that patients discuss risk reduction strategies with their physicians, the Home Care nurse became a source of information and reassurance at a time in their recovery when they felt vulnerable to complications of the M.I.. These comments were interpreted to represent underlying beliefs and perceptions of the cardiac event.

### Triangulation

Making the final connection back to the programs, it appears that both predisposing factors and social environment play major roles in promotion of behavior change in post-M.I. patients. The findings of this study are congruent with Green and Kreuter's (1991) view that enablement of behavior cannot occur until the predisposing factors have been addressed in their interwoven complexities. Closely linked to predisposition is the social context, which imposes forces which may facilitate or act as barriers to the processes affecting behavior change, such as those forces discussed in this study. Both the Hospital and the Home Care Programs address predisposing factors to an extent; the latter appears to be more conducive to this process, because

implementation occurs within the patient's natural environment.

It is noted that cultural characteristics were distributed across the PRECEDE-PROCEED model, not only as a predisposing factor, but as enabling and reinforcing factors as well. In addition, culture provided the immediate environment or social context in which behaviors occur.

The predisposition of health care providers as educators appeared to be of significance, particularly where the physician was concerned. Based on advice in the videotapes to discuss the post-M.I. rehabilitation plan with the physician, patients initially viewed their doctor as a source of information and support. The patients' belief in the doctor changed however, as the Home Care nurse assumed the role as primary source of information and support. The Home Care nurses identified inconsistencies in the information given to patients by their doctors and the nursing staff, which was felt to inhibit the adoption of risk-reducing behaviors by patients.

These integrated findings emerge as issues which warrant address through practice and research. They are discussed further in Chapter 9: Discussion and Conclusions.



## CHAPTER 9

### DISCUSSION AND CONCLUSIONS

Within this chapter, the following are presented: (a) a summary of the study in relation to the research purpose, methods, and use of the theoretical framework; (b) discussion of the major issues relating to the findings; (c) conclusions of the study; (d) limitations; and (e) recommendations for practice and future research.

#### Summary

##### The Research Purpose

The purpose of the study pertained to exploring the role of a community-based cardiac education program in affecting post-M.I. patients' recovery and adaptation to their chronic illness. Areas of interest included behavior and lifestyle changes, made in an effort to reduce cardiac risk factors, and enhance health and quality of life, as well as factors which act as antecedents to behavior and lifestyle changes, such as knowledge, beliefs and perceptions, skill development, and reinforcement. Four data sources were used to study this program within a broad social context: (a) a hospital cardiac education program, which provided an introduction to information about M.I. and living with a cardiac condition, and served as a baseline upon which the role of the community-based program could be explored; (b) a Home Care cardiac education program; (c) Home Care nurses; and (d) post-M.I. patients who had participated in both program.

Analysis of programs was conducted in relation to philosophical framework, content, implementation, and evaluation; the nurses' data related to perception of intended and unintended outcomes of the Home Care Program; and the patient data pertained to patients' experiences and outcomes in relation to the education programs in

which they participated.

### The Research Methods

The methods used were developed from the context of the research purpose and based on review of the literature as described. The approaches used to collect data were considered appropriate, in order to provide various perspectives of the community-based cardiac education program, and explore its role in influencing behavior and lifestyle changes in post-M.I. patients.

The research methods were comprised of two instruments developed by the researcher, and analysis of both the Richmond Hospital and Richmond Health Department Home Care Program, through review of documentation, educational materials, and personal communications. The comprehensive approach to data collection dictated a qualitative approach to data analysis, in order to maintain intact the context in which data was obtained. The results of the analysis process had potential to provide insight regarding the factors influencing behavioral changes, and the Home Care Program's role in addressing these factors. Using a systematic means of analyzing the data, however, as guided by Miles and Huberman (1984), data was first coded according to broad descriptive categories (the PRECEDE-PROCEED model components); then reduced into sub-categories which enabled the researcher to identify themes emerging from the data. Finally, themes from each data source were triangulated, for the purpose of comparing similarities and contradictions in the perspectives of the nurses and the patients, and in an overall comparison of those perspectives with the existing programs.

Cross-validation of data source findings served to identify consistencies and inconsistencies, and encourage continual reference back to the first-level coding of data

as part of the triangulation process. Through verification of conclusions in this manner, the researcher was able to make recommendations with confidence in the fact that significant themes in the data had been drawn out and dealt with appropriately.

### Use of the PRECEDE-PROCEED Model

The PRECEDE-PROCEED model served as a foundation for the study by providing points of focus for each of the two instruments developed for the study. Each questions within the patient interview schedule was justified by its reference to a particular component of the model, such as predisposing, enabling, or reinforcing factors, quality of life, or environment, for example. The model also directed the researcher in developing questions for the Home Care nurse questionnaire, and for informal interviews with the program coordinator of the Home Care Program and the unit manager of Two-South, at Richmond Hospital. Use of the model in instrument development enabled a priori categorization of questions to an extent; due to the open-ended nature of many of the questions, however, certain questions were categorized differently during data reduction, display, and analysis.

The PRECEDE-PROCEED model served as an appropriate framework for organization of data in categories which would facilitate parallel comparative analysis. Strengths and limitations of the programs in their focus on various factors which affect behavior change were recognized through use of the model. The model encompassed the factors which comprised the broad social context of behavior; this was the basis of choosing the PRECEDE-PROCEED model over others, such as the health belief model, the model of information-seeking, or social learning theory.

### Findings

The Richmond Health Department Home Care Cardiac Rehabilitation Program serves as a means to facilitate post-M.I. patients' movement from the sick role to an at risk role in the early transitional weeks of their recovery. Whereas the Hospital Program introduces information about the cardiac event to patients, providing a foundation upon which discussion between patients and health professionals can be based, the Home Care Program meets the needs of patients for specific answers to questions, and provides support during a time when patients feel vulnerable to recurrent cardiac problems. The program serves to teach skills to patients' spouses regarding food shopping and meal preparation, as well as any other aspects of care they might be responsible for during the recovery phase. The environment in which the program is offered emerged in the study as having central importance to how well predisposing, enabling, and reinforcing factors are addressed by the program. The environment, along with the personalized interactive approach of the Home Care nurses to education and support, were seen by patients as the greatest strengths of the Home Care Program, meeting needs that could not be met in the hospital setting through a standardized approach.

### Discussion

Through analysis of the four data sources for this study, the following issues considered to hold significant implications for practice and research were identified:

1. The importance of individualized discussion and cardiac education for post-M.I. patients, through interaction between patients and health professionals;
2. The involvement of spouses or support persons in the cardiac education programs as enablers or reinforcers of patients' behavior changes;

3. The significance of environment in determining the impact of cardiac education on patients' knowledge, beliefs, and behaviors;
4. The significance of the predisposing beliefs, attitudes, and perceptions of the health professional in the delivery of health education;
5. The importance of predisposing knowledge, beliefs, perceptions, motivation, and demographics, such as culture, age, and educational background in affecting patients' behavior and lifestyle changes; and
6. The importance of measurable process and outcome objectives for both cardiac education programs, upon which evaluation can be based. This would enable systematic evaluation processes (delivery of education, which addressed predisposing, enabling, and reinforcing factors, and effectiveness as hospital-community liaisons for mobilization of resources), immediate outcomes related to behavior and lifestyle changes among patients and their families, and ultimate outcomes relating to health and quality of life. A formalized evaluation process would identify such barriers to behavior change such as cultural values and conflicting belief systems, both of which have been identified in this study.

The issues identified above have been acknowledged and addressed within the literature review presented for this study. Much of the research and non-research based literature suggests the need to individualize patient education, tailoring it to each patient's needs, and offering it at a time of readiness, and in a conducive environment. The key role of the spouse or support person has also been identified in the research as beneficial in assisting post-M.I. patients to make recommended behavior changes, and to provide emotional support during the rehabilitation process.

Environment and cultural influences are presented in this study as important contextual forces affecting knowledge, beliefs, and behaviors. These factors are addressed by the PRECEDE-PROCEED model (Green & Kreuter, 1991); the experimental and quasi-experimental research relating to outcomes of cardiac education for post-M.I. patients does not present these factors as key influences on patient outcomes. The qualitative approach used for this study, as well as the theoretical framework, enabled analysis of these factors in a broad social context.

Preparation of health professionals, including physicians, nurses, physiotherapists, and others for their educative role has been discussed within the literature in relation to their personal level of familiarity and comfort with this role, and how it is facilitated by the health care agency in which they work (Gregor, 1985).

In this study, it was shown that although formal preparation by the Hospital for the educative role in a multi-cultural community did not exist at the time of data collection, the Hospital had established a plan to address this need. The influence of physicians' predisposition to educating patients about their cardiac condition and strategies for rehabilitation was identified by Home Care nurses as affecting patients' beliefs about their condition and necessary changes. Physician-patient interaction was viewed by the nurses as affecting the way in which information and support from the nurses was received and applied by patients.

Evaluation has been shown in the literature (Stanton, 1984) to be lacking in relation to education programs offered by health care agencies. In this study, neither of the cardiac education programs had been formally evaluated since their development in the 1980's.

## Conclusion

The issues identified within this study are in agreement with existing literature, which emphasizes the need to individualize patient education, based on assessment of patients' psychological and physical conditions, motivation, and other predispositions to behavior and lifestyle. In addition, the importance of patients' support systems, and the learning environment or social context have been identified. Despite agreement within the literature regarding these points, there has been a paucity of research which addresses the role of a program designed to meet the individualized needs of post-M.I. patients, at an appropriate point in their recovery, within the patients' social context. The Richmond Health Department Home Care Cardiac Rehabilitation Program is such a program; it has been explored within this study in relation to how it affects recovery and adaptation to a cardiac illness. Although the nurses involved in this study were unable to identify with certainty any specific outcomes of their program, patient interviews revealed that behavioral changes were being made primarily with regard to diet and smoking. The role of the program to mobilize community resources, as stated within the philosophical framework of the Richmond Health Department, appeared to be limited. Many of the Home Care nurses indicated that they were unaware of the use of community resources by patients and their families; the patients themselves indicated minimal awareness that any community resources existed, although an extensive resource list was provided in their educational booklets from the program.

The Home Care Program fulfils the needs of patients and their families for information which they can apply to their daily lives as they move from the sick role to the at risk role. The Home Care nurse provides professional support at a time when

patients feel vulnerable and anxious; the physician, who is perceived during the acute phase of the M.I. as a primary source of information or support, is later viewed as less approachable or accessible to the patient and family.

### Limitations of the Study

Limitations of the study have been identified and are presented in relation to (a) design and (b) the theoretical framework.

#### Design Limitations

A limitation in the design of the study was the small number of post-M.I. patients who participated in both the first and second interviews. A decision was made at the outset of the study to limit patient data collection to a four-month period, in order to contain the study according to available time and resources. The broad contextual approach to the research purpose yielded findings which provided insight regarding the community-based program from several perspectives; a larger group of patients may have provided greater breadth to the study of the role of the community based program. Due to the time-intensive nature of the data collection and analysis process, however, it was not feasible for the researcher to continue enlisting post-M.I. patients in the study after the pre-established for deadline data collection, nor was it possible to administer a third follow-up interview with patients at a later point in their recovery. Undertakings such as these would increase the magnitude of the study greatly, requiring more than one researcher, or an extended period of time for study.

A second design limitation was recognized in the relatively short time interval between patient interviews. As one nurse commented in response to the questions for Home Care nurses, it is difficult to know whether patients who reduce cardiac risk



factors in the early weeks of recovery maintain these new behaviors, or revert to old habits. As noted in the literature by other researchers, most significant behavior change is noted in experimental groups within the first three months after M.I.; an important question is "would this also be true of post-M.I. patients who have participated in a 12-week Home Care cardiac education program, which addresses many of the contextual barriers to behavior change in its design and implementation?" Unfortunately, the answer to this question is not available in the literature; in fact, as noted in Chapter 2, there has been minimal research literature on the outcomes of such programs as offered by the Richmond Health Department. Although further follow-up interviews of patients was beyond the scope of this study, it begs consideration.

The inability to determine the Richmond Hospital physician criteria for referral to the Home Care Program, as well as to the hospital program, could be viewed as a factor limiting the findings of the study. As was discovered in the data collection process, the physician plays a key role in the accessibility of both programs to the post-M.I. patient; a theme common to all data sources was that the physician was viewed by patients as an important source of information and support in the hospital setting; patients' views of the doctor in these roles changed during the six-eight week period, and the nurses identified contradiction between their own advice to patients and the physicians'. It is this researcher's belief that the physician-patient relationship, and the factors which predispose physicians to support and promote education for their patients, should be explored, perhaps as one aspect of another dimension to ways in which the education program influence health behavior. This dimension, or level, could have addressed the context of the health educators operating within the education program, to be used in

comparative analysis of patient findings. Within this study, the Home Care nurses' beliefs and perceptions were explored in a superficial way, through questionnaire administration. Open discussion in an interview format may have elicited more depth with regard to their perspectives; it was not an option within this study, however.

### Limitations of the Theoretical Framework

In general, the PRECEDE-PROCEED model was useful as a framework for instrument design and data analysis. It enabled a systematic approach to study of the role of the community based program in influencing behavior and lifestyle changes, using a number of data sources.

Two limitations of the model identified within this study were noted as follows:

1. Distinctions within components or categories of the model were difficult to make in some instances, requiring the researcher to make decisions without absolute certainty about the appropriateness of coding. For example, enabling and reinforcing factors appeared to be intertwined; from a patient's perspective, how much of what the Home Care nurse does is the teaching of skills, and how much is emotional and psychosocial support of the patient and family? For the purpose of the study, enabling factors were distinguished as skill and resource-related, as defined by Green and Kreuter (1991). It appeared during data analysis, however, that there were intangible forces beyond those explored within this study, which made the disentanglement of skill development and resources, and support difficult for patients in their responses, especially as many of them relied on the same person as the source of both.
2. The role of environment, in which patients received their education, and which provided the social context within which they interact, was interpreted by the researcher

as influencing behavior and lifestyle as a contributing factor. Within this study, environment appeared to play a central role in providing the context for behavior and lifestyle. Environment could perhaps be conceived as the setting in which predisposing, enabling, and reinforcing factors might be addressed by the education program. Diagrammatic representation of this would place environment between the education program and the three factors influencing behavior. Further study of this conceptualization would be required to explore its validity.

#### Summary of Limitations

Within the limitation of time and relatively small sample of post-M.I. patients, the study design was considered workable in relation to exploring the role of the community-based cardiac education program, using the PRECEDE-PROCEED model as a theoretical framework for the contextual forces affecting program processes and outcomes. An argument could be made that the study was too broad to produce useful results; however, the exploratory nature of the study may be viewed as a basis for future research in this area.

#### Recommendations for Practice

The following section is dedicated to discussion of means through which both the hospital and community-based cardiac education programs might be enhanced.

As described by Stanton (1984), programs offered by hospitals often fall short of fulfilment of all the components of development, most notably in the areas of establishment of clearly-defined process or outcome measures, and evaluation. In addition, hospital-based patient education programs compete with many other patient care services, thus inhibiting their delivery as designed.

The existence as such programs as that offered by Richmond Health Department reflects a commitment to delivery of care to patients and their families in their own environment, where self-care and responsibility for health maintenance can be facilitated in ways which are meaningful to them. The allocation of resources to delivery of such a program in times of ever-growing economic concern for the future of health care in Canada, must be justified in order to ensure their ongoing availability. The British Columbia Royal Commission on Health Care and costs (Closer to Home, 1991) advocated spending more money on prevention of illness and injury and on protecting health. Strategies for change should include establishing a set of measurable health indicators with which to plan and evaluate public policies for health. According to the commission, "enabling people to make their own health care decisions is indeed healthy public policy" (p. 13). Health is not only influenced by the health care system, but related to social, environmental and other factors as well.

It is not sufficient, however, to base the delivery of a patient education program entirely upon the recommendation of the Royal Commission report. As health care costs escalate and resources become more scarce, even the programs directed at people in their own environments must be accountable for the expenditure of resources for which all services compete. It is on this basis that the following recommendations are made.

#### Recommendations for the Hospital-Based Program

There appears to be strong commitment to patient education at every level of practice within Richmond Hospital. This is evident through observation of the nursing staff on Two-South, who use every opportunity to provide what is available to their post-

M.I. patients, and to ensure that their patients are sent home with discharge guidelines, medication information, and some knowledge of the cardiac event. This commitment is evident at the management level whereby the unit manager of Two-South requires all nursing staff to be familiar with the content of the program and their role in its delivery, as well as through the Education and Research department, which in its infancy, is making strides towards establishing a comprehensive framework for staff development. At the Administrative and Board of Directors level, support and endorsement of this research study demonstrates a commitment to evaluation and ongoing enhancement of education as an important aspect of patient care delivery.

Recommendations for enhancement of the cardiac education program of Richmond Hospital are based upon conclusions drawn through triangulation of the data sources used for this study. These relate to (a) philosophical framework, (b) content, (c) methods of implementation, (d) organizational support for the health educator role, and (e) evaluation.

#### Philosophical Framework

Beginning with the program's philosophy and goal statements, health educators should be encouraged to collectively identify and articulate their values and beliefs relating to patient education as an integral component of quality care. These values and beliefs can be translated into goals which address the questions "what are we trying to achieve when we provide an educational intervention?" Objects of interest that can be impacted and measured include knowledge and beliefs relating to M.I., development of new skills, modification and improvement of previously acquired skills, knowledge of resource availability and means of access, and enhancement of the reinforcing factors for

post-M.I. patients. For the hospital-based cardiac education program, the focus of objectives and indicators of achievement should be process-oriented rather than outcome-oriented, unless evaluation of the program is to include quality of life and health status measurement of post-M.I. patients and their families.

The goal statement should reflect the objects of interest identified by the providers of the education program. An example, based on Green and Kreuter's (1991) examples of model standards for health education, is a statement which emphasizes what post-M.I. patients will achieve, such as knowledge, skills, ability, and opportunity to improve their level of health and quality of life, use resources appropriately, understand and participate in decision making concerning their post-M.I. rehabilitation, and understand and take responsibility for following a recommended regime (p.225). The focus of such a goal statement is process; it does not address whether health and quality and life are ultimately affected; rather that the requirements to facilitate changes in these areas have been met. Process objectives should provide time-limited guidelines of "who should do what by when" in relation to a process-related focus such as promotion of behavior and lifestyle changes for post-M.I. patients and their families. Objectives should state a point in the patient's recovery by when he is expected to demonstrate a certain level of knowledge and skills, as well as health beliefs which are conducive to taking responsibility for making necessary changes to live with the chronic illness. Health beliefs require careful assessment and modification, in some instances, because management of the cardiac regime must be incorporated into the context of daily life, rather than seen as a goal in itself. The objectives should identify what the patient is expected to do, such as assume greater responsibility for improving health and reducing

risk for a recurrent cardiac event by quitting smoking, modifying nutritional habits and enrolling in an exercise program. The objectives may state an expectation related to patients' and families' knowledge of how to access appropriate community resources, as well as their understanding of how to maintain or even enhance quality of life.

### Content

The availability of comprehensive audio-visual programs and written materials enables health care staff to provide an introduction to cardiac-related information for post-M.I. patients. Although the patients interviewed in this study indicated that these materials were useful, there was a need for more specific, detailed, practical information, such as guidelines for activity. In addition, the patients stated they wanted to know "where they were at and where they were going." On the basis of these comments, a review of the program content, and consideration of more individualized information for patients, depending upon assessment of their predisposing factors.

### Methods of Implementation

Methods of implementation of the Hospital Program should include more individual counselling and discussion between health personnel and post-M.I. patients and their support persons than presently occurs. This type of intervention serves the dual purpose of developing rapport and a trusting relationship between patient and staff, and a means of evaluating the impact of educational interventions on the predisposing, enabling, and reinforcing antecedents to behavior. Developing trust and rapport is important, as it enables the educator to gain insight about the individual's knowledge, beliefs, and perceptions relating to the cardiac event. In addition, the trusting relationship serves as a means of reinforcing the patient's efforts to learn new knowledge

and skills. The multi-cultural characteristics of the community should also be considered in program implementation, whereby non-English speaking patients and families can participate, and cultural factors which influence behavior can be addressed.

### Organizational Support for the Health Educator Role

In order for the nursing staff of Two-South to enhance their role as educators of post-M.I. patients and their support persons, the factors which antecede this role must be addressed by the organization. Firstly, the knowledge, values, and beliefs of the nursing staff in relation to their ability to educate must be assessed. Attitudes relating to the importance of behavioral risk factors may need to be examined. According to the Green and Kreuter (1991), physicians and other health professionals have been shown to doubt the importance of risk factors, or the patient's interest in following the professional's advice. The health provider's level of self-confidence, and perception of the patient's desirability to change may therefore predispose actions to support the patient in this area. Values relating to the health professional's role in patient education and health promotion may need to be explored in order to determine how these values influence the health provider's efforts to pursue an educator role (pp 409-410). Beliefs about the professional's ability and the patient's ability also need to be addressed and modified as appropriate. According to the director of the newly-established Education and Research Department at Richmond Hospital, the predisposing factors as discussed are to be explored within the continuing education framework for health care staff of the hospital. This process will provide a foundation upon which decisions to allocate resources to enable and reinforce professional growth can be systematically made.

Green and Kreuter (1991) state that many health care workers are professionally



prepared in the role of patient counselling and education; however, their work situations do not enable or reinforce this preventive role (p. 408). In order to foster this role, efforts must be made by the organization to put into place the required materials, space and human resources to enable staff to fulfil their patients' and support persons' needs for education and support within the context of available resources. Practically speaking, this may involve the following: (a) provision of self study modules, workshops, and other educational formats to address the health care providers learning needs; (b) availability of space for one-to-one consultation and group interaction; (c) materials such as charts, models, more copies of educational videos and audio-visual equipment; (d) development of a comprehensive cardiac education program which reflects the philosophy, goals, and objectives of the nursing department, dictates a variety of implementation methods, and lends itself to evaluation; and (e) adjustment of staffing as required, to allow time for nursing staff to participate in individual or group discussion with patients and their support persons.

Green and Kreuter (1991) state that due to the preventive nature of health education, and immediate reinforcement of efforts in this direction are often not appreciable. In contrast to curative treatment, the effects of preventative care which is a change in health status or quality of life is delayed or may never be apparent to the health care provider or consumer (p. 411). For this reason, it is important to foster and develop other means of reinforcement for staff. By enabling staff to participate in meaningful educational interventions, reinforcement of their performance can occur through support between colleagues and recognition by the organization, in the form of financial reward or acknowledgement as a role model for other staff. This

reinforcement, in turn, predisposes further professional growth and development.

### Evaluation

Evaluation of the Hospital Program should reflect its objectives, and indicators should be developed to measure patient satisfaction and changes in patients' and support persons' knowledge, beliefs, and skills, prior to discharge from hospital. Feedback in these areas should be directed to the providers of the program, in order that they can contribute to enhancements or changes in the program. In this way health care providers assume ownership for its ongoing development and implementation, and can apply what they have learned through involvement with the cardiac education program to other educational projects.

An assessment of the patient's knowledge, skills, and health beliefs before and after the cardiac education program could be made by the nursing staff through discussion, and documented. Documentation of nursing observations regarding patient responses to education serves as a useful source of retrospective evaluation of interventions. In order to be useful, however, it must occur in more detail than can be provided on a flow sheet. For this reason, the documentation system should be modified as necessary, to enable systematic evaluation of nursing observations and patient response to interventions. Nursing staff and others involved in patient education require documentation tools which enable them to be accountable for their actions, as well as the observations of the effects of their actions. These health care providers should be involved in development of such tools, through a collaborative effort with the Education and Research Department and Quality Management Program of the Hospital.

### Summary of Recommendations: The Hospital Program

Recommendations for enhancement of the cardiac education program have been made in relation to philosophy, goals, and objectives, as well as content, methods of implementation, organizational support, and evaluation. Analysis of the program has been done using the PRECEDE-PROCEED model (Green & Kreuter, 1991) for health promotion and education. Within this framework, the researcher has focused on predisposing, enabling, and reinforcing antecedents to behavior as they apply to both post-M.I. patients and their support persons, and to the providers of the cardiac education program; the nursing staff of Two-South at Richmond Hospital. In addition, the significance of the environment has been addressed.

### Recommendations for the Home Care Program

Recommendations for the Home Care Program relate to (a) philosophical framework, (b) implementation within a multi-cultural community, and (c) evaluation.

#### Philosophical Framework

As was suggested for the Hospital Program, the establishment of measurable program objectives, as well as patient-specific behavioral objectives should be done, in order to enable systematic evaluation of the Home Care Program from the perspectives of both the post-M.I. patient and family, and those responsible for planning and providing cardiac education. These objectives should state the "how much by when and by whom," and should be individualized, thus enabling a criterion-based decision-making process for visitation of post-M.I. patients and their families or support persons. In other words, high-risk patients requiring intensive education and support might require visits by the Home Care nurse for the full 12 weeks presently allocated to each post-M.I. patient. A

decision to provide this period of coverage could be based on needs and concerns identified by the patient and spouse or support person, in collaboration with the Home Care nurse and other health professionals involved in the patient's rehabilitation. Patients considered to be at low risk for recurrent M.I. or other cardiac problems might require less frequent Home Care nurse visitation, or for a limited period of time following discharge from hospital. A decision-making or risk stratification algorithm could be developed as a framework for allocation of resources to delivery of the program. In addition, this process, based on objectives for each patient, could include liaison between the Home Care nurse and other community resources, depending on the patient's and family's needs. Cultural barriers, identified in the objective-setting and planning process, could also be addressed through use of community resources as appropriate.

#### Implementation Within a Multi-Cultural Community

The multi-cultural characteristics of Richmond, B.C. present challenges to a program which is primarily implemented using the English language, based on western values and cultural norms. As discussed in the previous section, cultural differences and considerations should be addressed by program and patient objectives. Through this approach, implementation of the program may involve use of translators, written materials provided in languages other than English, and members of the patient's social network, as appropriate.

#### Evaluation

The issue of inadequate program evaluation by health care agencies could be addressed by both the Hospital and the Home Care Program in such a way that both

programs complement each other. Based on both patient-specific and broader program objectives, program providers could obtain valuable feedback from patients, their families, and other disciplines regarding the processes and outcomes of the program. The Home Care nurses are in a position to observe efforts by patients and their families to make recommended behavior and lifestyle changes following discharge from hospital. Whereas it is difficult to determine whether behavior and lifestyle changes can be attributed directly to either the Hospital Program, the Home Care Program, or both, observations of the Home Care nurse, in addition to feedback from patients and families, may indicate whether the program has affected the transition from the acute to the rehabilitative phase, and if so, in what ways.

In addition, the development of process and outcome measures and an evaluation system would enable communication between the health disciplines, such as the nurse, dietitian, and physician, about specific issues relating to consistency of information, culture and language, use of resources, and the need to address predisposing antecedents to behavior, as well as to consider environmental factors in planning and delivery of cardiac education.

### Recommendations for Future Research

This study identified areas which warrant future research. These are presented as follows:

1. Further research should be done in relation to the role of community based cardiac education in affecting behavior and lifestyle changes in post-M.I. patients, as well as the intermediate and ultimate outcomes of health and quality of life. This type of study might address, specifically, the relationship between the Home Care Program and

Social well-being, using outcome measures relating to use of the health care system (including visits to the doctor's office), return to work, and other indicators of social health and quality of life. As cited in Chapter 1, reduced mortality rates due to cardiovascular disease means increased long-term use of the health care system. How does a Home Care cardiac education program affect this, if at all? In view of ever-rising health care costs and consumer demands, this question is both practical and timely.

2. Study of the effect of traditional or current approaches to health education on individuals or groups for whom different cultural norms, beliefs, and values apply warrants further study; in other words, the relationship between education and outcomes for those whose social context differs from that of the provider of education. In this study, multi-culturism emerged as a challenge to be addressed by both the Hospital and Home Care Programs. Cultural characteristics were shown not only to serve as predisposing antecedents to behavior, but also as enabling and reinforcing factors, as well as providing the immediate environment or social context in which behavior occurred.

3. The role of the physician-patient relationship in fostering behavior and lifestyle changes in post-M.I. patients, in order to reduce cardiac risk, warrants further study. The physician's criteria for referral to the cardiac education program, and relationship with the patient emerged in this study as questions, and appear to be of central importance to the patient's perception of severity of the M.I. and need to take responsibility for reduction of cardiovascular risk factors.

4. Finally, further research should be conducted with the group of patients who participated in this study, at intervals of three or six months, in order to examine the

role of education in facilitating long-term changes in health behaviors. Although research of behavioral outcomes has been conducted in the past, it has related to hospital-based or hospital-community based programs rather than on programs such as that offered by Home Care. This expansion of the present study could address health and quality of life; outcomes not realistically measurable for this study.

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## APPENDIX 1

### Definition of Terms

The following terms are defined for the study as follows:

#### Myocardial infarction

M.I., or "heart attack," occurs when a portion of heart tissue ceases functioning as a result of oxygen lack, and as evidenced by abnormal cardiac enzyme levels in the serum and permanent electro-cardiographic abnormalities.

#### Convalescence

Convalescence is the stage during which the patient moves from a 'sick' role to an 'at risk' role which demands permanent changes in nearly all aspects of the patient's and family's life (Baric, 1969) as cited by Dracup et al, 1984, p. 115).

#### Rehabilitation

Rehabilitation includes maximal functional restoration following disability, including physical, social and vocational functioning within family and community (Christopherson, 1974, p. 6).

#### Antecedents to Behavior

##### Predisposing Factors

Predisposing factors are those antecedents to behavior that provide the rationale or motivation for the behavior (including demographic factors) (Green and Kreuter, 1991).

##### Enabling Factors

Enabling factors are the antecedents to behavior that enable a motivation to be realized; andy characteristic of the environment that facilitates action and any skill or

resource required to attain a specific behavior (Green & Kreuter, 1991).

### Reinforcing Factors

Reinforcing factors are those factors subsequent to a behavior that provide the continuing reward or incentive for a behavior and contribute to its persistence or repetition (Green & Kreuter, 1991).

### Behavior

Behavior is a function of the corrective influence of these three types of factors; an action that has a specific frequency, duration, and purpose, whether conscious or unconscious (Green & Kreuter, 1991).

### Categories of Behavior

#### At Risk Behavior

At risk behavior is any activity undertaken by an individual, who believes himself to be healthy but at greater risk for developing a specific health condition, for the purpose of preventing that condition or detecting it in a asymptomatic state (Green & Kreuter, 1991).

#### Illness Behavior

Illness behavior is any activity undertaken by an individual, who considers himself to be ill, to define the state of his health and discover a suitable remedy (Green & Kreuter, 1991).

#### Self-Care Behavior

Self-care behavior is any activity undertaken by an individual, who considers himself to be ill, for the purpose of getting well. It includes minimal reliance on appropriate therapists, involves few dependent behaviors, and leads to little neglect of

one's usual duties. (Green & Kreuter, 1991).

### Lifestyle

Lifestyle is the culturally, socially, economically, and environmentally conditioned complex of actions characteristic of an individual, group, or community as a pattern of habituated behavior over time that is health related but not necessarily health directed (Green and Kreuter, 1991).

### Prevention

Primary prevention consists of actions taken in the absence of signs or symptoms.

Secondary prevention is directed toward early detection and treatment of illness (Green and Kreuter, 1991). Tertiary prevention is defined for this study as prevention behaviors which are directed towards ongoing treatment and management of illness.

### Health Promotion

Health promotion is defined as any combination of educational and environmental supports for actions and conditions of living that are conducive to health. These actions may be the personal health behavior and lifestyle adaptations of individuals and families, the advocacy of policy to assume healthful living conditions, or direct intervention by individuals or groups to improve environmental living conditions (Green and Kreuter, 1991).

## APPENDIX 2

### A Study of the Role of a Community-Based Education Program for Post-Myocardial Infarction Patients Questionnaire for Home Care Nurses

Thank you for taking a few minutes to answer this questionnaire. The information provided by yourself and your colleagues will contribute to the study described in the cover letter.

The purpose of my study is to examine the role of a community-based education program for post-M.I. patients, by addressing any changes in health knowledge, changes in health behaviors and health beliefs about M.I. during this period, and patients' perceptions of the cardiac education programs in which they participate.

1.0 What do you feel are the intended outcomes of the Continuing Care Cardiac Education Program?

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2.0 Which of these intended outcomes are:

2.01 Achieved?

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2.02 Not Achieved?

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3.0    What factors facilitate the intended outcomes being achieved?

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4.0    What factors act as barriers to achieving these outcomes?

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5.0    Do you feel the program has any outcomes other than those intended? If so,  
what are these?

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- 6.0 What changes do you observe most frequently in your post-M.I. patients during the course of the program, with regard to knowledge, health beliefs, and health behaviors?

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- 7.0 To what or to whom would you attribute these changes?

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- 8.0 What is least likely to change with regard to patients' knowledge, health beliefs, and health behaviors?

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- 9.0 To what or to whom would you attribute this?

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10.0    What changes do you observe most frequently in patients' spouses or support persons during the course of the Home Care program?

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11.0    To what or to whom would you attribute these changes in patients' spouses or support persons?

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12.0    What is least likely to change?

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13.0 To what or to whom would you attribute this?

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14.0 To what extent do patients and their spouses or support persons utilize the community resources suggested to them?

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15.0 What factors prevent them from using these resources?

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16.0 What role does the patient's spouse or support person play in facilitating changes in the patient's knowledge, health beliefs, and health behaviors?

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Thank you for your valuable contribution to my study. A questionnaire drop-off box is located at the reception desk at Richmond Health Department.

Catherine Weir, B.N., R.N., C.C.N., Masters Candidate

Adult Education

The University of British Columbia

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APPENDIX 3

A Study of the Effectiveness of a Community-Based  
Education Program for Post-Myocardial Infarction Patients

Interview Schedule

RESPONDENT NUMBER

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LOCATION:

- \_\_\_\_(1) Hospital Room  
\_\_\_\_(2) Patient's Home  
\_\_\_\_(3) Other \_\_\_\_\_

INTERVIEW NO:

- \_\_\_\_(1) Hospital  
\_\_\_\_(2) Home

SECTION 1: DEMOGRAPHICS (*Hospital Visit*)

1. On what date did you have your heart attack?
- 

2. Have you ever had a heart attack prior to this one?

- \_\_\_\_(0) Don't know  
\_\_\_\_(1) No (Go to 4)  
\_\_\_\_(2) Yes (Go to 3)

3. When was that?
- 

4. Do you live alone?

\_\_\_\_(1) No (Go to 5)

\_\_\_\_(2) Yes (Go to 6)

5. Who do you live with?

\_\_\_\_(1) Spouse

\_\_\_\_(2) Spouse and child(ren)

\_\_\_\_(3) Parent

\_\_\_\_(4) Child

\_\_\_\_(5) Sibling

\_\_\_\_(6) Friend

\_\_\_\_(7) Relative

\_\_\_\_(8) Caregiver

\_\_\_\_(9) Other \_\_\_\_\_

6. Who prepares the meals in your household? (Prompt: relationship)

\_\_\_\_\_

7. What is your occupation?

\_\_\_\_\_

8. Are you presently employed?

\_\_\_\_(1) No (Go to 9)

\_\_\_\_(2) Yes (Go to 10)

9. Why are you not employed at present?

\_\_\_\_(1) Looking for work

\_\_\_\_(2) Voluntary retirement

\_\_\_\_(3) Sick leave

- \_\_\_\_(4) Seasonal work
- \_\_\_\_(5) Laid off
- \_\_\_\_(6) On disability pension or insurance
- \_\_\_\_(7) Forced retirement
- \_\_\_\_(8) Homemaker
- \_\_\_\_(9) Other \_\_\_\_\_

10. What is the highest level of education you have completed?

- \_\_\_\_(1) Some elementary completed
- \_\_\_\_(2) Elementary completed
- \_\_\_\_(3) Some Secondary
- \_\_\_\_(3) Secondary Program
- \_\_\_\_(4) Some Post Secondary
- \_\_\_\_(5) College or Technical Diploma
- \_\_\_\_(6) University Undergraduate Degree
- \_\_\_\_(7) University Graduate Degree
- \_\_\_\_(8) Other

11. What year were you born?

\_\_\_\_\_

For interviewer use: \_\_\_\_\_ (years of age)

12. What is your marital status?

- \_\_\_\_(1) Unmarried
- \_\_\_\_(2) Married
- \_\_\_\_(3) Common-law

\_\_\_\_(4) Separated

\_\_\_\_(5) Divorced

\_\_\_\_(6) Widowed

13. Ethnic origin - (From Patient's Record)

\_\_\_\_\_

14. Gender (From Patient's Record)

\_\_\_\_(1) Male

\_\_\_\_(2) Female

**SECTION 2: PREVIOUS HEALTH BEHAVIORS** (*Hospital Visit*)

The following questions are designed to help me learn about your health habits before your heart attack.

15. Were you a smoker at the time of your heart attack?

\_\_\_\_(1) No (Go to 17)

\_\_\_\_(2) Yes (Go to 16)

16. What is the average number of cigarettes you smoked per day at the time of your heart attack?

Average number of cigarettes per day \_\_\_\_\_

(Interviewer use: - calculated from packs per day \_\_\_\_\_)

17. Did you ever consume alcohol prior to your heart attack?

\_\_\_\_(1) No (Go to 19)

\_\_\_\_(2) Yes (Go to 18)

18. What is the average number of drinks you consumed per week at the time of your heart attack?

Each type:

Bottles of beer \_\_\_\_\_

Glasses of wine \_\_\_\_\_

Shots of spirits \_\_\_\_\_

- 19 a) Can you describe your usual daily physical activity on weekdays or working days prior to your heart attack? (Prompt: Work and leisure activities such as housework, gardening, yard work, walking briskly, cycling, running, or lifting and carrying.)

\_\_\_\_\_

*(For Interviewer use)*

\_\_\_\_\_(1) Little or none

\_\_\_\_\_(2) Occasional

\_\_\_\_\_(3) Regular (Sustained physical exertion at least 3 times per week.)

(Note: Physical activity includes work and leisure activities that are sustained physical exertion.)

- 19 b) Can you describe your usual physical activities on weekends, or days off from work, prior to your heart attack?

(Prompt: work and leisure activities such as housework, gardening, yard work, walking briskly, cycling, running, or lifting and carrying.)

\_\_\_\_\_(1) Little or none

\_\_\_\_\_(2) Occasional

\_\_\_\_\_(3) Regular (Sustained physical exertion at least 3 times per week).



- 20 a) Considering the fact that stress is part of life, what do you feel are the main causes of stress in your life?

---

- 20 b) What did you do to minimize stress prior to your heart attack?

---

21. Is there anything specific that you were doing around the time of your heart attack in an effort to control your salt intake?

\_\_\_\_(1) No (Go to 23)

\_\_\_\_(2) Yes (Go to 22)

22. Could you describe what you did?

---

23. Is there anything specific that you were doing around the time of your heart attack to control your cholesterol intake?

\_\_\_\_(1) No (Go to 25)

\_\_\_\_(2) Yes (Go to 24)

24. Could you describe what you did?

---

25. Is there anything specific that you were doing around the time of your heart attack to control your blood pressure?

\_\_\_\_(1) No (Go to 27)

\_\_\_\_(2) Yes (Go to 26)

26. Could you describe what you did?

---

**SECTION 3: HEALTH BELIEFS** (*Hospital Visit*)

**Susceptibility:**

27. Do you feel you're likely to have another heart attack?
- \_\_\_\_(0) Don't know (Go to 29)
- \_\_\_\_(1) No (Go to 29)
- \_\_\_\_(2) Yes (Go to 28)
28. What, do you feel, makes you likely to have another heart attack? (Prompt: difficulty making changes in your life recommended by your doctor.)
- 

**Severity:**

29. Do you feel the heart attack will affect your quality of life?
- \_\_\_\_(0) Don't know (Go to 31)
- \_\_\_\_(1) No (Go to 31)
- \_\_\_\_(2) Yes (Go to 30)
30. How do you feel the heart attack will affect your quality of life?
- (Prompt: such as physical activities, your energy level, return to work or social activities; financial security.)
- 

**Cue to Action:**

31. Do you think you will make changes in your life now that you've had a heart attack?
- \_\_\_\_(0) Don't know (Go to 36)
- \_\_\_\_(1) No (Go to 36)

\_\_\_\_(2) Yes (Go to 32)

32. What will motivate you to make changes in your life following the heart attack?

---

**Preventive Action:**

33. What part or parts of your life will you make an effort to change? (Prompt: such as smoking, alcohol consumption, diet, level of stress, level of activity, amount of work, amount of leisure.)

---

34. In order to make these changes, what will you need to know or be able to do?

---

35. How will you learn these things? (Prompt: From what or whom.)

---

36. Do you feel the benefits of making changes in your life outweigh the costs, the inconvenience, or disruption they might cause in your life?

\_\_\_\_(0) Don't know

\_\_\_\_(1) No

\_\_\_\_(2) Yes

37. (If yes), in what way?

---

38. (If no), why not?

---

39. What part or parts of your life will stay as they are now? (Prompt: such as hobbies, amount of leisure, recreational activities.)

---

40. What would you expect your spouse/support person to do to help you learn to live with a heart condition?

---

41. Will your spouse/support person be able to do that?

\_\_\_\_(0) Don't know (Go to 46)

\_\_\_\_(1) No (Go to 42)

\_\_\_\_(2) Yes (Go to 43)

42. (If not) why not?

---

43. (if yes) how will (s)he learn what (s)he needs to know or be able to do?

---

44. What changes, if any, will (s)he need to make in his/her own life in order to help you in your recovery from the heart attack?

---

45. Will this affect your family's quality of life?

\_\_\_\_(0) Don't know (Go to 47)

\_\_\_\_(2) No (Go to 47)

\_\_\_\_(3) Yes (Go to 46)

46. (If yes) in what ways?

---

47. From whom (or what) do you anticipate getting support during your recovery from the heart attack?

---

48. From whom (or what) you have mentioned, where will you get the most support?

---

49. What other sources of support do you know of for people who are recovering from a heart attack?

---

**SECTION 4: HEALTH BELIEFS (*Home Visit*)**

**Susceptibility:**

50. Do you feel you're likely to have another heart attack?

\_\_\_\_(0) Don't know (Go to 52)

\_\_\_\_(1) No (Go to 52)

\_\_\_\_(2) Yes (Go to 51)

51. What, do you feel, makes you likely to have to another heart attack? (Prompt: difficulty making changes in your life recommended by your doctor.)

---

**Severity:**

52. Do you feel the heart attack has affected your quality of life?

\_\_\_\_(0) Don't know (Go to 54)

\_\_\_\_(1) No (Go to 54)

\_\_\_\_(2) Yes (Go to 53)

53. How do you feel the heart attack has affected your quality of life?

(Prompt: such as physical activities, your energy level, return to work or social activities, financial security.)

---

Cue to Action:

54. Do you feel you've been making changes in your life since the heart attack?

\_\_\_\_(0) Don't know (Go to 59)

\_\_\_\_(1) No (Go to 59)

\_\_\_\_(2) Yes (Go to 55)

55. What has motivated you to make changes in your life following the heart attack?

---

Preventive Action:

56. What part or parts of your life have you been making an effort to change?

(Prompt: such as smoking, alcohol consumption, diet, level of stress, level of activity, amount of work, amount of leisure.)

---

57. In order to make these changes what have you had to know or be able to do?

---

58. How have you learned these things?

---

59. Do you feel the benefits of making changes in your life outweigh the costs, the inconvenience, or disruption they might cause in your life?

\_\_\_\_(0) Don't know (Go to 62)

\_\_\_\_(1) No (Go to 61)

\_\_\_\_(2) Yes (Go to 60)

60. (If yes) in what way?

---

61. (If no) why not?

---

62. What part or parts of your life have stayed the same as they were before your heart attack? (Prompt: such as hobbies, amount of leisure time, recreational activities.)

---

63. What have you expected your spouse/support person to do to help you learn to live with a heart condition?

---

64. Has your spouse/support person been able to do that?

\_\_\_\_(0) Don't know (Go to 67)

\_\_\_\_(1) No (Go to 65)

\_\_\_\_(2) Yes (Go to 66)

65. (If not) why not?

---

66. (If yes) how has (s)he learned what (s)he needed to know or be able to do?

---

67. What changes, if any, has (s)he needed to make in his/her own life in order to help you in your recovery from the heart attack?

---

68. Has this affected your family's quality of life?

\_\_\_\_(0) Don't know (Go to 70)

\_\_\_\_(1) No (Go to 70)

\_\_\_\_(2) Yes (Go to 69)

69. (If yes) in what ways?

\_\_\_\_\_

70. From whom (or what) did you anticipate getting support during your recovery from the heart attack?

\_\_\_\_\_

71. From whom (or what) have you received the most support during your recovery from the heart attack?

\_\_\_\_\_

72. What other sources of support do you know of for people recovering from a heart attack?

\_\_\_\_\_

#### SECTION 4: HEALTH KNOWLEDGE (*Hospital and Home Visit*)

##### (Part I:) Factual Knowledge

Now I would like to ask you some questions that relates to knowledge about heart attacks.

73. What is a heart attack?

- |         |                    |                               |
|---------|--------------------|-------------------------------|
| ____(0) | Don't know         | (An answer of one of the      |
| ____(1) | Incorrect          | following will be considered  |
| ____(2) | Partially correct  | correct: part of heart muscle |
| ____(3) | Completely correct | damaged; dead heart muscle.)  |

74. What does hardening of the arteries mean?



- |         |                    |                             |
|---------|--------------------|-----------------------------|
| ____(0) | Don't know         | (The following will be      |
| ____(1) | Incorrect          | considered correct: fatty   |
| ____(2) | Partially correct  | patches or plaque on inner  |
| ____(3) | Completely correct | lining of arteries, causing |
|         |                    | rough, narrowed arteries.)  |

75. How does hardening of the arteries influence a heart attack?

- |         |                    |                                 |
|---------|--------------------|---------------------------------|
| ____(0) | Don't know         | (An answer indicating that      |
| ____(1) | Incorrect          | narrowed coronary arteries      |
| ____(2) | Partially correct  | allow blood flow to a portion   |
| ____(3) | Completely correct | of the heart to be cut off,     |
|         |                    | resulting in muscle damage will |
|         |                    | be considered correct.)         |

76. What is angina?

- |         |                    |                                |
|---------|--------------------|--------------------------------|
| ____(0) | Don't know         | (An answer of one of the       |
| ____(1) | Incorrect          | following will be considered   |
| ____(2) | Partially correct  | correct: pain or uncomfortable |
| ____(3) | Completely correct | sensations in the chest, neck, |
|         |                    | arms; chest pain.)             |

77. How do you know if you are having a heart attack?

- |         |                    |                               |
|---------|--------------------|-------------------------------|
| ____(0) | Don't know         | (An answer of two of the      |
| ____(1) | Incorrect          | following will be considered  |
| ____(2) | Partially correct  | correct: pain, pressure,      |
| ____(3) | Completely correct | squeezing in centre of chest, |

radiating pain, shortness of  
breath, sweating, nausea,  
palpitations.)

78. What are the factors that increase risk of a heart attack that can be changed?

____(0)	Don't know	(An answer of two of the
____(1)	Incorrect	following will be considered
____(2)	Partially correct	correct - diet, obesity high
____(3)	Completely correct	blood pressure, lack of
		exercise, smoking, stress)

79. What dietary precautions are usually recommended for heart patients?

____(0)	Don't know	(An answer of two of the
____(1)	Incorrect	following will be
____(2)	Partially correct	considered correct - a diet
____(3)	Completely correct	low in cholesterol, saturated
		fats, reduced sodium and sugar
		intake, small meals, restricted
		alcohol intake.)

80. Why should people who have had a heart attack participate in regular activity?

____(0)	Don't know	(Answers which contain <u>two</u> of
____(1)	Incorrect	following will be considered
____(2)	Partially correct	correct: increase circulation,

\_\_\_\_(3) Completely correct benefits general well being,  
lowers heart rate, and improves  
work of heart and blood vessels.)

81. Once the doctor has said it's okay to resume sexual relations, under what circumstances should a heart patient avoid sexual relations?

\_\_\_\_(0) Don't know (Answers of two of the  
\_\_\_\_(1) Incorrect following will be considered  
\_\_\_\_(2) Partially correct correct: immediately after a  
\_\_\_\_(3) Completely correct large meal or drinking alcohol;  
extreme temperatures (hot &  
humid), anxiety provoking  
situations, strenuous activity  
expected afterwards or when  
feeling tired.)

82. Why is high blood pressure, or hypertension, a risk factor for the heart?

\_\_\_\_(0) Don't know (Answers which contain one of  
\_\_\_\_(1) Incorrect the following will be considered  
\_\_\_\_(2) Partially correct correct: heart must pump with  
\_\_\_\_(3) Completely correct more force, blood vessels can  
overstretch, walls of the  
heart can thicken and cause  
the heart to enlarge, adds to the  
workload of the heart.)

83. Why are people who have had heart attacks encouraged to stop smoking?

- |         |                    |                                 |
|---------|--------------------|---------------------------------|
| ____(0) | Don't know         | (An answer of <u>one</u> of the |
| ____(1) | Incorrect          | following will be considered    |
| ____(2) | Partially correct  | correct: speeds heart rate,     |
| ____(3) | Completely correct | increases blood pressure,       |
|         |                    | affects fatty plaques.)         |

84. How would you decide when and for how long to take the prescribed medicine?

- |         |                    |                                   |
|---------|--------------------|-----------------------------------|
| ____(0) | Don't know         | (An answer that indicates         |
| ____(1) | Incorrect          | prescribed medication(s)          |
| ____(2) | Partially correct  | should be taken exactly as        |
| ____(3) | Completely correct | recommended by the doctor or      |
|         |                    | nurse will be considered correct. |

(Part II:) Practical Knowledge

85. What things can you do to 'pace' yourself in your daily activities?

- |         |                    |                                |
|---------|--------------------|--------------------------------|
| ____(0) | Don't know         | (An answer of two of the       |
| ____(1) | Incorrect          | following will be              |
| ____(2) | Partially correct  | considered correct: space      |
| ____(3) | Completely correct | activities during the day      |
|         |                    | with rest periods in between;  |
|         |                    | don't hurry; get 6-8 hours of  |
|         |                    | sleep every night; when tired, |
|         |                    | stop and rest 15-30 minutes;   |

plan a 20-30 minute rest period

twice a day.)

86. What kinds of things can you do to stop smoking? (Prompt: any technique you know of.)

____(0)	Don't know	(An answer of two of the
____(1)	Incorrect	following will be considered
____(2)	Partially correct	correct: get a buddy to stop
____(3)	Completely correct	with you; don't carry matches
		or a lighter; put cigarettes in
		inconvenient place; try to
		break smoking-linked
		associations; set achievable
		goals for cutting back; make
		plans for the money you save by
		stopping; do something else when
		you get the urge to smoke.)

87. In what ways can you control salt intake? (Prompt: any techniques you know of.)

____(0)	Don't know	(Answers which contain two of
____(1)	Incorrect	following will be considered
____(2)	Partially correct	correct: avoid fast foods,
____(3)	Completely correct	remove salt shaker from the
		table; use pure seasonings and
		herbs instead of seasoning

salts; reduce salt in cooking,  
put salt in a pepper shaker, use  
fresh foods, avoid canned foods,  
processed meats, shellfish.)

88. What can you do to maintain your ideal weight?

- |         |                    |                                  |
|---------|--------------------|----------------------------------|
| ____(0) | Don't know         | (Answers which contain two of    |
| ____(1) | Incorrect          | the following will be            |
| ____(2) | Partially correct  | considered correct - selecting   |
| ____(3) | Completely correct | food containing fewer calories;  |
|         |                    | eating less fat and fatty foods; |
|         |                    | less sugar and snacks; alcohol   |
|         |                    | in moderation, and increased     |
|         |                    | activity will be considered      |
|         |                    | correct.)                        |

89. What kinds of things can you do to help keep your blood pressure down?

- |         |                    |                                  |
|---------|--------------------|----------------------------------|
| ____(0) | Don't know         | (Answers which contain two of    |
| ____(1) | Incorrect          | the following will be considered |
| ____(2) | Partially correct  | correct: decrease salt intake;   |
| ____(3) | Completely correct | decrease coffee intake, decrease |
|         |                    | smoking, rest frequently, daily  |
|         |                    | exercise, avoid stressful        |
|         |                    | situations.)                     |

90. How can you reduce excessive stress?

- \_\_\_\_(0) Don't know (Any two answers will be  
\_\_\_\_(1) Incorrect considered correct: realistic  
\_\_\_\_(2) Partially correct goal setting; delegate to others;  
\_\_\_\_(3) Completely correct balance leisure/work; leave job  
tensions at work; simplify life;  
pace activities; involve family/  
support persons in your life  
as appropriate.)

91. How can you minimize workload for the heart during sexual activity?

- \_\_\_\_(0) Don't know (Any two answers will be  
\_\_\_\_(1) Incorrect considered correct: wait 3 hours  
\_\_\_\_(2) Partially correct after a heavy meal or alcohol  
\_\_\_\_(3) Completely correct consumption; rest prior to sexual  
\_\_\_\_(4) Completely correct activity; choose comfortable  
relaxing positions; comfortable  
room temperature; take time to  
enjoy.)

(Separate Item)

92. Do you take medication for your heart?

- \_\_\_\_(0) Don't know (Go to next section)  
\_\_\_\_(1) No (Go to next section)  
\_\_\_\_(2) Yes (Go to 93)

93. Please tell me about each medication you take for your heart. (Prompt: name of

medication, what it is for, dosage, frequency, any special instructions.)

- |    |                        |                             |
|----|------------------------|-----------------------------|
| 1. | Name of medication     | Response:                   |
|    | from bottle label.     | for:                        |
|    | _____                  | _____(0) Doesn't know       |
|    | _____                  | _____(1) Incorrect          |
|    | Patient's description: | _____(2) Partially correct  |
|    | _____                  | _____(3) Completely correct |

If respondent correctly names  
the medication and its purpose,  
dosage and frequency, this is  
considered completely correct.

- |    |                        |
|----|------------------------|
| 2. | Name of medication     |
|    | from bottle label.     |
|    | _____                  |
|    | Patient's description: |
|    | _____                  |
| 3. | Name of medication     |
|    | from bottle label.     |
|    | _____                  |
|    | Patient's description: |
|    | _____                  |

#### SECTION 6: CURRENT HEALTH BEHAVIORS (*Home Visit*)

The following questions are designed to help me learn about your current health habits,  
since your heart attack.

94. Do you smoke at present?
- \_\_\_\_\_(1) No (Go to 96)



\_\_\_\_(2) Yes (Go to 95)

*(Interviewer use: evidence of smoking; ashtray, smoke odor in house.)*

95. What is the average number of cigarettes you smoke since your heart attack?

Average number of cigarettes per day

\_\_\_\_\_

96. Is this a change from your smoking habits before your heart attack?

\_\_\_\_(1) No (Go to 98)

\_\_\_\_(2) Yes (Go to 97)

97. What has caused this change to occur?

\_\_\_\_\_

98. Do you consume alcohol at present?

\_\_\_\_(1) No (Go to 100)

\_\_\_\_(2) Yes (Go to 99)

99. What is the average number of drinks you consume per week?

Each type:

Bottles of beer \_\_\_\_\_

Glasses of wine \_\_\_\_\_

Shots of spirits \_\_\_\_\_

100. Is this a change in your drinking habits before your heart attack?

\_\_\_\_(1) No (Go to 102)

\_\_\_\_(2) Yes (Go to 101)

101. What has caused this change to occur? (Prompt: In what way?)

- 
- 102 a. Can you describe your usual daily physical activity on weekdays, or work-days since your heart attack? (Prompt: work and leisure activities such as housework, gardening, yard work, walking briskly, cycling, running, or lifting and carrying.)
- 

*Interviewer Use:*

- \_\_\_\_(1) Little or none  
\_\_\_\_(2) Occasional  
\_\_\_\_(3) Regular

(Note: Physical activity includes work and leisure activities that are sustained physical exertion.)

- 102 b. Can you describe your usual physical activity on weekends or days off from work, since your heart attack? (Prompt: work and leisure activities such as housework, gardening, yard work, walking briskly, cycling, running, or lifting and carrying.)

*Interviewer Use:*

- \_\_\_\_(1) Little or none  
\_\_\_\_(2) Occasional  
\_\_\_\_(3) Regular

(Note: Physical activity includes work and leisure activities that are sustained physical exertion.)

103. Is this a change from your level of activity before your heart attack?

- \_\_\_\_(1) No (Go to 105)

\_\_\_\_(2) Yes (Go to 104)

104. What has caused this change to occur?

---

105 a. Considering the fact that stress is part of life, what do you feel are the main causes of stress in your life?

---

105 b. What do you do to minimize stress since your heart attack?

---

106. Is this a change from what you did to minimize stress before your heart attack?

\_\_\_\_(1) No (Go to 108)

\_\_\_\_(2) Yes (Go to 107)

107. What has caused this change to occur?

---

108. Is there anything that you do, at present, in an effort to control your salt intake?

\_\_\_\_(1) No (Go to 112)

\_\_\_\_(2) Yes (Go to 109)

109. Please describe what you do.

---

110. Is this a change from your use of salt before your heart attack?

\_\_\_\_(1) No (Go to 112)

\_\_\_\_(2) Yes (Go to 111)

111. What has caused this change to occur? (Prompt: In what way?)

---

112. Is there anything you do, at present, to control your cholesterol intake?

\_\_\_\_(1) No (Go to 116)

\_\_\_\_(2) Yes (Go to 113)

113. Please you describe what you do.

---

114. Is this a change from your cholesterol intake before your heart attack?

\_\_\_\_(1) No (Go to 116)

\_\_\_\_(2) Yes (Go to 115)

115. What has caused this change to occur? (Prompt: In what way?)

---

116. Is there anything specific that you do, at present, to control your blood pressure?

\_\_\_\_(1) No (Go to 118)

\_\_\_\_(2) Yes (Go to 117)

117. Please you describe what you do.

---

118. Is this a change from your efforts to control blood pressure before your heart attack?

\_\_\_\_(1) No (Go to 120)

\_\_\_\_(2) Yes (Go to 119)

119. What has caused this change to occur? (Prompt: In what way?)

---

120. Are there any special precautions you take when engaging in sexual activity, in order to prevent excessive workload for your heart?

\_\_\_\_(1) No (Go to 124)

\_\_\_\_(2) Yes (Go to 121)

121. What precautions do you take?

---

122. Is this a change from what you did before your heart attack with regard to sexual activity?

\_\_\_\_(1) No (Go to 124)

\_\_\_\_(2) Yes (Go to 123)

123. What has caused this change to occur? (Prompt: In what way?)

---

124. Have you used any resources in your community to help you make the changes you've mentioned? (Prompt: library, Y.M.C.A. program, stop smoking program.)

\_\_\_\_(1) No (Go to 126)

\_\_\_\_(2) Yes (Go to 125)

125. (If yes) which resources have you used?

---

126. Has there been anything that has prevented you from making changes you had intended to make?

(1) No (Go to 153)

(2) Yes (Go to 127)

127. If yes, what has prevented you from making changes you had intended to make?

---

**SECTION 7: PERCEPTION OF HEALTH EDUCATION PROGRAM** (*Hospital Visit*)

The following questions address your perception of how helpful the hospital cardiac education program was for you.

128. What has the hospital cardiac education program consisted of? (Prompt: videos, models, pictures, discussion, pamphlets.)

---

129. What do you recall the goals of the education program were?

---

130. Which of these goals did the program fulfill?

---

131. In what way(s) were these goals fulfilled?

---

132. Which of the goals did the program not fulfil?

---

133. Why were they not fulfilled?

---

134. What, from your point of view, are the education program's major strengths?

---

135. What do you feel are the weaknesses of the program?

---

136. With regard to the factual information provided, what did you find most useful?

---

137. What factual information did you find least useful?

---

138. With regard to the practical information provided, what did you find most useful?

---

139. What practical information did you find least useful?

---

140. What information would you like more of?

---

141. What information would you like less of?

---

142. What method(s) of presentation was most meaningful to you? (Prompt: video, written material, discussion, pictures or models.)

---

143. What method(s) of presentation was least meaningful to you? (Prompt: video, written material, discussion, pictures or models.)

144. What or whom was the most valuable source of information or support for you?

---

145. Has your spouse/support person participated in the hospital cardiac education program?

\_\_\_\_(1) No (Go to 147)

\_\_\_\_(2) Yes (Go to 146)

146.(If so) in what ways?

---

147. (If not) why not?

---

148. Has your spouse/support person done anything specific to prepare for your return home from hospital? (Prompt: such as reading about the heart attack, purchased cookbooks, changed work schedules or other commitments.)

\_\_\_\_(0) Don't know (Go to 150)

\_\_\_\_(1) No (Go to 150)

\_\_\_\_(2) Yes (Go to 149)

149. (If yes) what has (s)he done?

---

150. Do you know of any other health resources in the community that offer programs or information for quitting smoking, or for exercise, nutrition, or stress management?

\_\_\_\_(1) No (Go to 152)

\_\_\_\_(2) Yes (Go to 151)

151. (If yes) what are these?

---

152. If you need additional information to help you in your recovery from the heart attack, where will you look for it?

---

*Closing Comments:*

That's all the questions I have. I'd like to thank you for taking the time to talk with me; I value your contribution. I look forward to our next visit in 6 weeks.

**SECTION 8: PERCEPTION OF CARDIAC EDUCATION PROGRAM (*Home Visit*)**

The following questions address your perception of how helpful the Home Care Cardiac



Education Program was for you.

153. What has the home care cardiac education program consisted of? (Prompt: videos, discussion, pictures, models, pamphlets.)

---

154. Do you recall what the goals of the home care education program were?

---

155. Which of these goals has the program fulfilled?

---

156. In what way(s) have these goals been fulfilled?

---

157. Which of the goals have not been fulfilled?

---

158. Why have they not been fulfilled?

---

159. What, from your point of view, are the home care cardiac education program's major strengths?

---

160. What do you feel are the weaknesses of the program?

---

161. With regard to the factual information provided, what have you found most useful?

---

162. What factual information have you found least useful?

---

163. With regard to the practical information provided, what have you found most useful?

---

164. What practical information have you found least useful?

---

165. What information would you like more of?

---

166. What information would you like less of?

---

167. What method(s) of presentation has/have been most meaningful to you?  
(Prompt: video, written material, discussion, pictures or models.)

---

168. What method(s) of presentation has/have been least meaningful to you?  
(Prompt: video, written material, discussion, pictures or models.)

169 a. What or whom has been the most valuable source of information for you?

---

169 b. What or whom has been the most valuable support for you?

---

170. Has your spouse/support person participated in the home care cardiac education program?

\_\_\_\_ (1) No (Go to 172)

\_\_\_\_ (2) Yes (Go to 171)

171. (If so) in what ways?

---

172. (If not) why not?

---

173. Do you feel the home care cardiac education program has affected your recovery from the heart attack?

\_\_\_\_(0) Don't know (Go to 176)

\_\_\_\_(1) No (Go to 175)

\_\_\_\_(2) Yes (Go to 174)

174. If so, in what ways?

---

175. If not, why not?

---

176. Has your spouse/support person done anything specific to prepare for your return home from hospital? (Prompt: such as reading about the heart attack, purchased cookbooks, changed work schedules or other commitments.)

\_\_\_\_(0) Don't know (Go to 178)

\_\_\_\_(1) No (Go to 178)

\_\_\_\_(2) Yes (Go to 177)

177. (If yes) what has (s)he done?

---

178. Have you used any health resources in the community or participated in any programs for quitting smoking, or for exercise, nutrition, or stress management?

\_\_\_\_(1) No (Go to 180)

\_\_\_\_(2) Yes (Go to 179)

179. (If yes) please tell me about what community resources/programs you have used.

---

180. If you have needed additional information to help you in your recovery from the heart attack, where have you looked for it?

---

*Closing Comments:*

That's all the questions I have. I'd like to thank you for taking the time to talk with me today and while you were in hospital. Your contribution to this study is valuable. I would like to wish you well as you continue to recover.

## APPENDIX 4

### Letter to Home Care Nurses

Dear Nurses:

I am a Masters student in Adult Education at the University of British Columbia, and I am currently conducting research entitled "A Study of the Role of a Community-based Cardiac Education Program for Post-myocardial Infarction Patients". My goal is to interview 20 to 30 patients who have been exposed to an in-hospital education program, and who have received home care teaching in addition to the hospital-based program.

The main purpose of the study is to determine the role of a community-based cardiac education program for post-myocardial infarction patients in affecting their health knowledge, health beliefs, and health behaviors.

The research study will address: 1.0 health knowledge relating to M.I. from the time of discharge from hospital to a home visit six weeks post-discharge; 2.0 health behaviors during this period; 3.0 health beliefs about M.I.; and 4.0 patients' perceptions of the cardiac education programs in which they participated. A pre-test interview, conducted prior to patients' discharge, will provide a baseline against which changes in knowledge, beliefs, and behaviors will be explored. Patients to be excluded from the study are: those unwilling to participate; those unable to provide oral information in English, those unable to read the consent form in English; those who are not physically or mentally competent; those who live outside the Lower Mainland of B.C.; and those who have suffered one or more M.I.'s previous to the present M.I.

The study will involve conducting two one-hour interviews with each research

participant; the first one being conducted in the patient's hospital room, and the following interview six to eight weeks post-discharge in the participant's home. Health personnel involved in conducting cardiac patient education in the home setting will be asked to complete a short questionnaire relating to changes they have observed in patients' knowledge, health beliefs about M.I., and health behaviors between time of discharge and the six-week visit, as well as the role of spouse/support person in facilitating these changes.

I have received written approval from the Director of the Continuing Care Division, Richmond Health Department, to conduct the home visit portion of my thesis research through the Continuing Care Division. Patients who, prior to discharge from Richmond Hospital, have consented to participate in the study, will be contacted to arrange an appointment approximately six to eight weeks after discharge.

Should you agree to complete this questionnaire as part of my study, your contribution as a health educator will be most appreciated. A copy of the research report, when completed, can be made available to you upon request.

If you have any questions or concerns relating to the conducting of this study, please do not hesitate to contact me, either in writing, care of Nursing Unit Two South at Richmond Hospital, or by phone through the Department of Administrative, Adult, and Higher Education, University of British Columbia - 822-5881. My Faculty Advisor and Thesis Chairman, Dr. Kjell Rubenson, can be reached at 822-4406.

Thank you for your support in relation to this study.

Sincerely,

Catherine Weir, Masters Candidate

Adult Education Program

University of British Columbia

## APPENDIX 5

### Letter to Nurses of Two-South

Dear Nurses:

I am a Masters student in Adult Education at the University of British Columbia, and I am currently conducting research entitled "A Study of the Role of a Community-based Cardiac Education Program for Post-myocardial Infarction Patients". My goal is to interview 20 to 30 patients who have been exposed to an in-hospital education program, and who have received home care teaching in addition to the hospital-based program.

The main purpose of the study is to determine the role of a community-based cardiac education program for post-myocardial infarction patients in affecting their health knowledge, health beliefs, and health behaviors.

The research study will address: 1.0 health knowledge relating to M.I. from the time of discharge from hospital to a home visit six to eight weeks post-discharge; 2.0 health behaviors during this period; 3.0 health beliefs about M.I.; and 4.0 patients' perceptions of the cardiac education programs in which they participated. A pre-test interview, conducted prior to patients' discharge, will provide a baseline against which changes in knowledge, beliefs, and behaviors will be explored.

Patients to be excluded from the study are: those unwilling to participate; those unable to provide oral information in English, those unable to read the consent form in English; those who are not physically or mentally competent; those who live outside the Lower Mainland of B.C.; and those who have suffered one or more M.I.'s previous to the present M.I.



The study will involve conducting two one-hour interviews with each research participant; the first one being conducted in the patient's hospital room, and the following interview six weeks post-discharge in the participant's home. Health personnel involved in conducting cardiac patient education in the home setting will be asked to complete a short questionnaire relating to changes they have observed in patients' knowledge, health beliefs about M.I., and health behaviors between time of discharge and the follow-up visit, as well as the role of spouse/support person in facilitating these changes.

I have received written approval from the Hospital's Nursing Education and Research Committee, the Department of Medicine, and Hospital Executive Committee to conduct the hospital visit portion of my thesis research at Richmond Hospital. I have also received written approval from the Continuing Care Division of Richmond Health Department, to conduct the home visits through the Home Care Program. Patients who prior to discharge consented to participate in the study, will be contacted to arrange an appointment approximately six weeks after discharge.

As a requirement for the Behavioral Sciences Screening Committee for Ethical Reviews at the University of British Columbia, I must request that persons unassociated with my study make the initial contact with patients. This is in order to facilitate the patient's right to confidentiality of health information in the event that he or she does not wish to be included in the study.

I would like to request that the R.N. caring for a patient who has been registered in my log book as eligible for the study, approach the patient to ask if I may visit him or her. This introduction should be presented in the following way: a Master's student

from the University of British Columbia is conducting a study for her thesis on an education program for patients and their families following a heart attack. Her name is Catherine Weir. With your permission, she would like to meet you to explain the study to you and request your participation. Would you be willing to speak with her briefly?

In the log book on 2-South there is a column beside the patient's name entitled 'Patient Consent to Meet With Researcher' please check whether consent was obtained or declined. This will enable me to identify patients' who meet the eligibility criteria who have also been approached by the nursing staff prior to my visit with them.

If you have any questions, please do not hesitate to contact me, either in writing, care of Nursing Unit Two South at Richmond Hospital, or by phone through the Department of Administrative, Adult, and Higher Education, University of British Columbia - 822-5881. My Faculty Advisor and Thesis Chairman, Dr. Kjell Rubenson, can be reached at 822-4406.

Thank you for your assistance in the conducting of this study. Your participation is greatly appreciated. A copy of the research report, when completed, can be made available to you upon request.

Sincerely,

Catherine Weir, Masters Candidate

Adult Education Program

University of British Columbia

## APPENDIX 6

### Research Consent Form for Patients

#### Research Study: The Role of a Community-Based

#### Education Program for Post-Myocardial Infarction Patients

I would like to request your participation in a research study which is aimed at determining the role of a community-based education program for individuals who have suffered a heart attack (M.I.). I am interested in finding out what information you have received about living with a cardiac illness, any changes you are making in your lifestyle, your beliefs about health, and your perceptions about the cardiac education program(s) in which you participated.

By examining the effectiveness of cardiac education program(s), health educators may increase their understanding of the information and support most needed by patients and their families, following an M.I. Insight about patients' and families' perceptions of the learning experience may also help to suggest concrete ways of improving the effectiveness of the cardiac education programs which presently exist.

My background in cardiac nursing, as well as my interest in health education, have led me to pursue a Masters' Degree in Adult Education at the University of British Columbia. I am particularly interested in the education of patients and their families related to living with a chronic health problem. Your participation in this study would be of great value, and the results of the study will be of benefit to others who experience an M.I.

You are asked to participate in an interview in your hospital room, or other suitable location in the hospital, before your discharge. This will take approximately one

hour, at a time convenient both to you and to hospital personnel. This initial interview will be followed by a similar interview at your place of residence. This interview will be arranged at your convenience six to eight weeks following your discharge from hospital. Each interview within this period will yield valuable information about the ability of the educational program(s) you attended to provide you with the information and support you needed as you recovered from your M.I. These interviews may be audio-taped, for the purpose of identifying any differences in interviewing technique between interviews (known as interviewer biases).

Your participation is voluntary, and all of your answers will be kept confidential. Your decision to participate or not participate in this study will not interfere with the care you receive from health personnel. Following the first interview, I request your consent to have hospital personnel provide me with information from your medical records, such as your medical history, diagnostic test results, and progress toward recovery. You may withdraw from the study at any time either during or after any of the interviews.

The results of this study will provide general conclusions and your identity will be protected. A summary of the results of this study will be provided to you if you so request. Should you have any questions about the study or interview procedures, please feel free to discuss them with me, either by contacting me in writing, care of Nursing Unit Two-South at Richmond Hospital, or by phone at the Department of Administrative, Adult, and Higher Education, University of British Columbia: 822-5881. My Faculty Advisor and Thesis Chairman, Dr. Kjell Rubenson, can be reached at 822-4406.

Your cooperation would be valued and greatly appreciated. If you agree to participate please read and sign the research consent form below. Thank you.

Sincerely,

Catherine Weir, Masters Candidate

Adult Education Program

The University of British Columbia

Research Consent

I, the undersigned, agree to take part in this research study. I understand that this study is designed to evaluate the role of a community-based education program for post-M.I. patients, in which patients and their families participate following the hospital education program at Richmond Hospital.

I also understand that this study is designed to address: 1.0 health knowledge relating to M.I. from the time of discharge from hospital to a home visit six weeks post-discharge; 2.0 health behaviors during this period; 3.0 health beliefs about M.I., and 4.0 patients' perceptions of the cardiac education programs in which they participated.

I have been assured that the results of this study will deal with general conclusions and my identity will be protected. I have also been assured that my answers will be kept confidential.

I understand that my decision to participate or not participate in this study will not affect the care given to me by hospital personnel in any manner. I have been informed that the interview will take approximately one hour of my time on two occasions, over a period of six to eight weeks.

I give the hospital, the physician's office (and the health unit as applicable) consent to provide information from my medical records for review by the researcher.

I understand I may withdraw from the study at any time. I have also been informed that, upon my request, I will be able to obtain a summary of the research report at the conclusion of the study. My questions concerning this activity have been answered to my satisfaction.

I, \_\_\_\_\_, have read the above information  
describing the research study, and agree to participate. I also acknowledge that I have  
received a copy of this consent form.

\_\_\_\_\_  
Signature of Research Study Participant

Signature of the Interviewer: \_\_\_\_\_

Catherine Weir,

The University of British Columbia

Please provide mailing address if a Summary Report of this Research Study is  
requested. (Please print)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## APPENDIX 7

### A Priori Codes Within Broad Descriptive

### Categories for Patient Interview Schedule

The following codes were established within each of the broad descriptive categories derived from the PRECEDE-PROCEED health promotion planning model (Green & Kreuter, 1991).

#### Behavior and Lifestyle

Questions with the sections of the instrument which addressed behavior related to the topics listed below:

1. smoking;
2. alcohol consumption;
3. physical activity;
4. stress source and management
5. dietary measures i.e. salt and cholesterol intake;
6. blood pressure measures;
7. sexual activity precautions (second visit only);
8. work adjustment (second visit only);
9. aspects of lifestyle unchanged; and
10. use of resources (second visit only).

#### Predisposing Factors

The predisposing factors addressed within the instrument were primarily related to knowledge and beliefs.

#### Knowledge

Knowledge questions were divided into two sections for scoring:

1. factual knowledge i.e. pathophysiology of M.I., physiological rationale for risk reduction;
2. practice knowledge i.e. skills for stress management, pacing activities, reducing cholesterol consumption.

#### Health Beliefs

Health belief questions were designed to address the patient's beliefs and perceptions of the following:



1. susceptibility to recurrent M.I. or cardiac problem;
2. severity of the M.I.;
3. perceived benefit of behavior and lifestyle changes; and
4. cue to action, or motivating factors to make changes.

#### Enabling Factors

The interview schedule explored factors which would relate to acquisition of knowledge and skills required to make recommended behavior and lifestyle changes.

These questions addressed:

1. meal preparation;
2. knowledge or skills required to make changes;
3. sources of learning;
4. expectations for spouse;
5. sources of learning for spouse;
6. changes required in spouse's life;
7. barriers to making change;
8. spouse's participation in the education program;
9. spouse's preparation for patient's return home from hospital; and
10. additional sources of information.

#### Reinforcing Factors

Interview items expected to reflect reinforcing factors were:

1. expectations by patient for spouse/support person; and
2. sources of support following M.I.

#### Perception of the Education Programs

The interview section relating to the patient's perception of the education programs addressed:

1. program goal statement and fulfilment;
2. content;
3. strengths and weaknesses;
4. usefulness of information;
5. methods of presentation; and
6. most valuable source of information.

## APPENDIX 8

### Additional Codes Within Broad Descriptive Categories for Patient Interview Schedule

Following first-level coding of patient interview items into the a priori codes listed in Appendix G, additional codes were developed within the broad descriptive categories derived from the PRECEDE-PROCEED model (Green & Kreuter, 1991). These codes are presented below, along with notes relating to early analysis within each category.

#### Behavior and Lifestyle

No additional codes were developed within this category; upon first-level coding, however, differences in patients' responses about their behavior and lifestyle were noted only with regard to:

1. smoking;
2. physical activity; and
3. dietary measures.

#### Predisposing Factors

##### Knowledge

In both interviews, factual knowledge scores were higher than practical knowledge scores. In both categories, knowledge scores in general improved by the time of the second interview. Certain items were noted as "low score items" at both the first and second interview, across respondents. Within these items, themes relating to rationale for low scores emerged based on comments and questions by respondents. These are presented below. Examples of comments are provided with the text.

##### Low Score Items

##### Theme

Pathophysiology

Clarity of information  
Belief-based

Strategies to quit smoking

Clarity of information  
Applicability of information  
Awareness of content  
Belief-based

Hypertension

Clarity of information  
Applicability of information

Stress Management

Clarity of information  
Awareness of content  
Belief-based

Sexual Activity

Content awareness

### Health Beliefs

In the process of displaying data within the a priori health belief codes, several additional codes emerged; they were identified through review of responses to questions in other sections of the patient interviews. These codes are presented below:

1. awareness of vulnerability to illness, particularly M.I.;
2. searching (for cause of the M.I.) -- this included spiritual reflections and inquiry regarding why the M.I. occurred;
3. belief in the doctor, as a source of information and support;
4. locus of control, relating to lifestyle, health, and quality of life; and
5. self-description.

Of all the health belief codes, only belief in the doctor was noted to change between interviews.

### Enabling Factors

Differences in responses to questions about enabling factors were nominal between the first and second patient interviews; however, themes emerged with regard to:

1. meal preparation;
2. sources of learning;
3. expectations for spouse;
4. sources of learning for spouse;

5. spouse participation in education program; and
6. additional sources of information.

These themes were:

1. reliance upon spouse to adopt necessary skills;
2. access of information to spouses;
3. language barriers; and
4. a change in views about professional sources of information.

#### Reinforcing Factors

No additional codes were established within this category; it was noted however, that in the initial interview, the physician was viewed as a source of support; in the second interview, however, the Home Care nurse was seen by patients as a main source of professional support.

#### Perceptions of the Education Program

Within the section of the interview schedule pertaining to the education programs, no additional codes were established. Themes within the a priori codes are noted as follows:

1. respondents had a sense of the goals of each program, although not provided to them in writing;
2. perception of goal fulfilment, strengths, and weaknesses of the program, were directly related to perception of methods of presentation;
3. videos not viewed as appropriate as primary method of presentation; and
4. individualized discussion of specific concerns in patients' home environment was viewed as most meaningful method of presentation.