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Department of Health Care and Epidemiology

The University of British Columbia
2075 Wesbrook Place
Vancouver, Canada
V6T 1W5

Date April 21, 1981
Abstract

The impact of introducing a new program into a public health unit was examined by introducing a lifestyle program, named HHA-PRHU, into the Peace River Health Unit in British Columbia. The program was initiated without sanction or direction from the Central Office controlling all the health units of the Ministry of Health of British Columbia in order (i) to investigate the fate of local innovation in health care delivery, (ii) to establish the impediments to such innovation and (iii) to determine ways to remove organizational obstacles in their paths.

The lifestyle program HHA-PRHU used the Health Hazard Appraisal method. This method is a popular major tool in the delivery of prospective medicine, a branch of medicine which stresses prevention. The urgent need in the community for such a lifestyle program was demonstrated.

An analysis of the organizational design of health units showed that they are not designed to foster innovation. Furthermore, it was shown that local initiative in health units is difficult to accomplish unless, during the planning process, consideration is given to political bodies and to the Central Office.
The evaluation of the impact of HHA-PRHU on the Peace River Health Unit was based on observations and perceptions of the Director of the Health Unit, and its staff. These observations confirmed that a new program is not readily incorporated into a public health unit when introduced at the local level.

Methods of successfully introducing new programs originating within a health unit were explored. These methods include ways of restructuring, as well as making better utilization of, the existing administrative design.
"The capacity of modern man to control his destiny in a changing organizational society hinges on his collective ability to change the key formal organizations."

Ronald G. Corwin (1)

"Innovation ... is not so much the adoption of objects by individuals as it is the acceptance of ideas by (people in) an organization."

Andrews and Greenfield (2)
DEDICATION

Dedicated to my wife Irene
and
to our children Hamish and Michelle
ACKNOWLEDGMENT

I wish to acknowledge the staff of the Peace River Health Unit, Peace River-Liard District British Columbia, who attempted to adopt a new program into their busy schedule realizing that the program originated at the local level with no central policy or legislative background. The handling of this conflict in an already strained and compromised situation is to be commended.

I would like to extend my thanks to the thesis committee, Dr. John Milsum, Dr. Charles Laszlo and Dr. Fred Bass for their comments, guidance and direction throughout the process of planning, implementation and evaluation of the study.
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1.0 Introduction

In 1979, in my capacity as Director and Medical Health Officer of the Peace River Health Unit (PRHU)* in British Columbia, I introduced the Health Hazard Appraisal (HHA) method of Lifestyle Modification into the existing system of health care delivery. My aim was to accomplish this without sanction or direction from the Central Office controlling all the health units in the Ministry of Health in order to investigate the fate of local initiative in health care delivery. In particular I set out to establish the impediments to such initiatives and ways to remove organizational obstacles to their paths.

In Chapter 2 the objectives, design and methodology of the study are presented. The method of introducing HHA into the PRHU as part of a new program, HHA-PRHU, is detailed. The items chosen for observing the impact

* A public health unit is a corporation, agency or government body staffed by professional health workers and support staff responsible for the provision of public health programs within a geographical jurisdiction. Historically, under the Provincial Health Acts, geographical entities were identified as "Public Health Units." In several provinces this term has been replaced by terms such as "region," "district," "municipal departments," etc. For the purpose of this study the term "Public Health Unit" is used solely for ease of interpretation (3).
of HHA-PRHU on the PRHU are described. These items are observed by recording perceptions made by myself as an observer, and by a questionnaire completed by the staff of the PRHU.

In Chapter 3 an overview of change is presented. First, organizational characteristics and the organizational ability to innovate are reviewed. Secondly, the effect of change on the individual is discussed. Thirdly, the planning process and relationship of planning to the implementation of change are examined. Finally, the organizational design of public health units with respect to their ability to innovate is discussed.

In Chapter 4 the Health Hazard Appraisal method for lifestyle modification is described. First the literature pertaining to lifestyle modification and the impact of such modification on the health of the individual are reviewed. Secondly, I demonstrate the contemporary nature of lifestyle modification and the reason why it is suitable for inclusion in an organization which stresses the delivery of preventive programs. Thirdly, I outline the new branch of medicine, prospective medicine, which uses lifestyle modification as an integral part of its presentation. Finally, the
literature pertaining to the HHA method, an important tool in the delivery of prospective medicine, is presented, particularly its scientific precepts and the method of delivery.

In Chapter 5 I describe the setting of the study. The staff composition of the Peace River Health Unit and the geographical and social setting is detailed. Furthermore, in this chapter I explore the organizational properties of the Ministry of Health in British Columbia and the Peace River Health Unit and how the Health Unit is related organizationally to Central Office in Victoria.

In Chapter 6 the observations perceived and recorded by myself, and the PRHU staff, about HHA-PRHU and the results of the introduction of HHA-PRHU into the PRHU are presented. These observations are summarized and discussed.

Chapter 7 contains the conclusions. First, the results of the study with respect to the overview of change presented in Chapter 3 are reviewed. Secondly, ways of facilitating the introduction of change into public health units in British Columbia are discussed. This
discussion includes ways of using the existing organizational design as well as the ways of restructuring the existing organizational design.
2.0 Study Design and Methodology

2.1 Introduction

Theoretically a bureaucratic structure such as the Peace River Health Unit, (PRHU), being part of the corporate structure of the British Columbia Ministry of Health, is not suited to adopting local innovation. In fact the PRHU is designed in such a way so as to preserve the existing delivery system at the expense of innovation (see Chapter 3).

Similarly, the individuals working in the Unit are inclined to resist change, and tend to be more comfortable with the routine and the familiar (see Chapter 3).

Fleshner and Drenk (12, Chapter 3) contend that the likelihood of change being accepted into public health units is increased by rendering an administrative change or restructuring. To study this relationship of organizational structure to innovation at the local level I chose to introduce a new program (HHA-PRHU) into the PRHU. I chose this method of studying change because Aiken and Hage (13) contend that the only change which can be considered of sufficient magnitude to elicit a measurable organizational response to innovation is the introduction of a new program. Changing techniques,
rules or even goals alone does not necessarily result in significant enough changes in the organizational system to elicit a measurable response. Introducing a new program, on the other hand, can necessitate changes in techniques, rules and even goals.

2.2 The Method of Introducing HHA-PRHU into the PRHU

Prior to the introduction of the task assignment, HHA-PRHU, (see time line in Figure 1) I introduced the subject of the HHA method and its relationship to lifestyle at the Senior Staff meeting of the PRHU. (Senior Staff are those staff with administrative duties in Nursing, Public Health Inspection, Long term Care, Clerical, Audiology Divisions as well as the Medical Officer of Health). I did this to acquaint the Senior Staff with these concepts and to collect their opinions about the feasibility of instituting HHA-PRHU into the PRHU.

Also, prior to the task assignment, I delivered an inservice lecture to the nursing staff of the PRHU on the HHA method and lifestyle.

Finally, prior to the introduction of HHA-PRHU, I asked all staff of the PRHU to complete a self-teaching questionnaire (Appendix A; pg. 85) on HHA and lifestyle modification.
TIME LINE FOR OVERALL PLANNING

January, 1978
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.

Planning at UBC with thesis committee
Senior Staff approached about lifestyle programs
Self Teaching Questionnaire to staff and staff HHA participation
Inservice education to nursing staff about the HHA method
Program Manager appointed and given task assignment

January, 1979
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.

Installation of HHA-PRHU in the Peace River Health Unit
Questionnaire to staff
Evaluation completed

Observations and progress notes by author

Figure 1
Additionally, I offered all staff an opportunity to participate in HHA with counselling being given by myself. I did this to familiarize all the staff with the HHA method and its relation to lifestyle and hopefully to engender interest in the staff on the subject of lifestyle and its relationship to health.

I offered all this information to the PRHU staff to ensure the smooth entry of HHA-PRHU into the Health Unit at a future date.

To introduce HHA-PRHU into the PRHU I issued a direct order, in writing, to the Supervisor of Nurses of the PRHU instructing her to be the Project Manager (PM) for a new task assignment in the Health Unit. Specifically I appointed her PM for the design, implementation, surveillance and evaluation of the effectiveness of a system for delivering a lifestyle modification program to the PRHU catchment area. Delivery would be by the PRHU staff using the HHA method. This program was called HHA-PRHU.

The PM was instructed to ensure that HHA-PRHU was in effect for at least five months and to integrate it permanently into the PRHU delivery system if possible.
To carry out this task the PM was given instructions to form any groupings necessary to deliver HHA-PRHU, including committees for decision making and information collecting. The PM was to use existing staff for the program. I was to be consulted for the resource materials and advice regarding HHA.

2.3 The Method of Studying HHA-PRHU in the PRHU

2.3.1 Introduction

It was my aim to study whether or not HHA-PRHU was adopted by the Health Unit and how the organizational design of the PRHU influenced this outcome. On the basis of this information I intended to draw conclusions about the present organizational design of the PRHU and to offer constructive suggestions for change if necessary.

However, the final outcome of HHA-PRHU in the PRHU is also dependent on the suitability of HHA-PRHU in the PRHU, the nature of the staff of the PRHU and the nature of the environment. The actual study of the impact of HHA-PRHU on the PRHU therefore includes an examination of these aspects in an attempt to eliminate them as confounding variables. In this way the concluding remarks can be more reasonably directed towards the organizational design of the PRHU.
2.3.2 **Items for Examination**

The following list was designed to facilitate the structure of the observer's notes and the staff questionnaire, to ensure the reasonable elimination of the confounding variables and to direct attention towards the organizational design of the Health Unit.

a) **The Outcome of HHA-PRHU**
   1. The HHA-PRHU Plan
   2. The Actualization of HHA-PRHU

b) **The Confounding Factors**
   1. The Suitability of HHA-PRHU
      (i) the amount of disruption to the PRHU
      (ii) the ease of delivery
      (iii) the ease of comprehension
      (iv) the goal congruence with respect to goals of the PRHU
      (v) the goal congruence with respect to the goals of the staff
      (vi) the suitability with respect to job descriptions
      (vii) the suitability of the HHA method
      (viii) the $2.00 charge
   2. The Experience and Attitudes of the Staff of the PRHU
      (i) length of service with the British Columbia Ministry of Health
      (ii) length of service with the PRHU
      (iii) attitudes to lifestyle modification
      (iv) attitudes to HHA
      (v) willingness to change
(vi) effectiveness in delivering established programs
(vii) ability to design new programs

3. The Nature of the External Environment
(i) the need for lifestyle change
(ii) the willingness of the social structure to change

c) The Organizational Characteristics
1. Leadership
2. The Intelligence System
3. The Decision Making Systems
4. Communication Systems
5. Motivation Techniques
6. Planning Techniques
7. Conflict and Conflict Resolving Techniques
8. Central Office Response

2.3.3 Methods of Observation

To observe the items chosen for examination I used two methods. First I kept detailed progress notes of my perceptions of particular items. Secondly I surveyed the PRHU staff perceptions of particular items by means of a questionnaire (Appendix B).

2.3.3.1 The Director's Observations

My observations were charted daily, weekly and monthly beginning at the initial planning stages of the study.
and following through to the planning of HHA-PRHU, the delivery of HHA-PRHU and for six months following the five month effective delivery of HHA-PRHU. Data were obtained by watching and listening. As well, I measured conflict by recording my own intuitive awareness and emotional responses of conflict noted in staff-staff relationships and staff-superior relationships.

In particular I recorded data on the following:

1. The method of designing the study
2. The method of designing HHA-PRHU
3. The written material outlining the plan for design, implementation methods, surveillance and HHA-PRHU effectiveness evaluation methods
4. The displacement of materials and other programs
5. The voiced opinions of the staff about the suitability of HHA-PRHU with respect to the goals of the staff and the goals of the PRHU
6. The amount of conflict engendered by HHA-PRHU
7. The voiced opinions about the suitability of HHA in changing lifestyle
8. The persons in the Health Unit who were regarded by the staff as being the leaders in the HHA-PRHU
9. The groupings of the staff formed for information collecting and decision making
10. The motivation techniques employed
11. The extent of reliance placed on me as a resource person
2.3.3.2 The Staff Questionnaire (Appendix B, pg. 88)

The staff questionnaire is made up of three sections designed to obtain information about the staff and their perceptions of the items for examination.

The first section was completed by all staff in the PRHU.

1. Questions 1-5 refer to personal staff data
2. Questions 6-8 refer to comprehension of HHA-PRHU
3. Questions 9-12, 30-32 refer to goal congruence
4. Questions 13-16 refer to conflict
5. Questions 17-20 refer to leadership
6. Questions 21-23 refer to the environment
7. Questions 24-29 refer to Health Unit disruption
8. Questions 32-34 are staff change indicators
9. Question 35 is the perception of the need and suitability of HHA-PRHU as a permanent program in the PRHU
10. Questions 36-39 refer to staff participation in HHA and reflect staff interest as well as involvement

The second section was completed by the nursing staff, the users of the HHA method.

1. Question 1 refers to actualization data
2. Questions 2-6 refer to the nature of HHA-PRHU with respect to ease of delivery
3. Question 7 refers to the environmental response
4. Questions 4,5,6,8 and 10 refer to the nature of the staff
5. Questions 7,11,12 refer to the suitability of HHA-PRHU in the PRHU
The third section was completed by the clerical staff.

1. Questions 1-3 relate to the suitability of HHA-PRHU in the PRHU
2. Question 4 asks for suggestions for improvement

2.4 Concluding Remarks

The purpose of the study, the items for observation and the method of examination have been described. Besides this material the following chapters could be considered as part of the method for examining the confounding variables; in particular the suitability of the HHA method and the nature of the staff and the environment are examined. Thus Chapter 4 describes the Health Hazard Appraisal Method and its relation to lifestyle modification; in particular it describes the relevance of lifestyle modification and its qualities which relate to the needs of the social environment. Furthermore Chapter 5 describes in part the nature of the environment as well as the organizational setting including some of the components of the nature of the PRHU staff.
3.0 Organizations and Innovation - An Overview

3.1 Introduction

Innovation is the act of innovating or the effecting of change in the established order or the introducing of something new (4).

The established order or system that has been chosen for study is the Peace River Health Unit component of the British Columbia Ministry of Health. The change being introduced is the new program, HHA-PRHU.

In the overview presented in this chapter the relationship of organizational change to organizational structure and some of the individual obstacles to change are discussed. The overview also explores some of the planning strategies necessary for successful innovation. As well, a critique of the health unit design in relationship to its ability to innovate is reviewed.

References quoted in the overview are from material I found particularly helpful in understanding the organizational topics of organizational design, innovation, planning, and health unit structure.
3.2 Organizational Structure

There are two classical types of organizational structures. The first is the **mechanistic type** and the second is the **organistic type**.

Weber (6) is the historical proponent of the **mechanistic organization**. He describes bureaucratic organizations as being monocratic. He contends that this type of administration is capable of attaining the highest degree of efficiency and is the most rational means of control over human beings. The mechanistic organization is predictable and is applicable to all kinds of administrative tasks.

The mechanistic organization is characterized by formalism, the line of least resistance and the tendency for officials to treat their official function from a utilitarian point of view in the perceived interest of the welfare of those under their authority. Weber continues that in such organization there is centralization of authority, clear lines of authority, clear line of command, specialization and expertise, marked division of labour, rules and regulations and clear separations of line and staff.
According to McGregor (7) and Likert (8), *organistic organizations* are characterized by pooling of special knowledge in a contributive type of framework with attention being directed to the common task of concern. There is continual re-definition and adjustments of tasks through interactions with others. There is spread of commitment beyond technical definition and a network structure of control, authority, and communication, with individuals.

As well, in the organistic organization there is conduct derived from presumed community of interest with the rest of the working organization. There is a lateral rather than a vertical direction of communication and communication being one of information and advice rather than instructions and decisions. There is a tendency to place commitment to tasks before loyalty and obedience to authority. Finally there is delegation of authority, employee autonomy, trust and openness, concern with the "whole individual", and interpersonal dynamics.

Likert says that to the mechanistic school the organistic school represents a system which is disordered and inefficient. Chaos seems to them evident and the resultant inefficiency does not offset the increased ability to innovate.
Scott (9) states that modern organizational theory has developed methods for the dynamic examination of the classical organizational theories as well as providing an opportunity for uniting what is valuable in classical organizational theory with what is valuable in the organistic organizational theory into a systematic and integrated concept of human organization.

Scott continues that modern organization theory has the distinctive qualities of a conceptual analytical base, a reliance on research data, and, above all an integrating nature. These qualities are framed in a philosophy which accepts the premise that the only meaningful way to study an organization is to study it as a system.

According to Scott, modern organization theory addresses a range of interrelated questions. What are the strategic parts of the system? What links the parts together and what are the goals? This leads to systems analysis where component parts of the system are considered to be the individual, the formal structure, the informal organization, status role patterns and the physical environment of work. The links between these parts are communication and decision making.
Finally Scott says that modern organizational theory has tools of analysis and a conceptual framework uniquely its own, but it must also allow for the incorporation of relevant contributions of many fields such as decision theory, information theory and cybernetics.

3.3 The Organization and Innovation

According to Thompson (11) the responsiveness of an organization to change is a function of a complex set of variables.

Hasenfeld et al. (10) contend that the dilemma between change and stability is ubiquitous in formal organizations. At all times organizations encounter continuous stimuli to change both from the external and the internal environment. However, change always involves costs to the organization in terms of its inability to recover past investments made to attain the existing modes of operations. The costs of innovation coupled with the costs of the potential loss of past investments generally result in a notable resistance to change on the part of the organization.

Hasenfeld et al. continue to say that to effect change the organization must have an organizational
intelligence system which will determine whether the need for change is perceived by the members of the organization. Furthermore organizational goals and ideologies also act as filtering devices for new ideas; and executive leadership can act as a change agent. Every significant organizational innovation requires the availability of uncommitted organizational resources in the form of money, personnel, time, skill and tolerance for initial failure. The administrative structure is a determinant in organizational change.

Rates of change in organizations are negatively correlated with the degree of organizational formalization and centralization according to Thompson (11). He says that decentralization and a low degree of formalization are conducive to innovativeness in the sense that they provide workers with a certain amount of autonomy, thereby allowing such workers to be innovative and creative. Flashner and Drenk (12) state that innovation is also enhanced by freer communications, project organization, rotation of assignment, a greater reliance on group processes and a continual restructuring and modification of the incentive system.

The need for innovation arises when adaptation to change is outside the scope of existing programs for the purpose
of keeping the system in balance, according to Scott (9). New programs have to evolve in order for the system to maintain internal harmony. New programs are often, then, a trial-and-error search for feasible alternatives to cope with a need for a given change.

Scott summarizes by saying that the successful introduction of innovation depends on the potential of the system to supply information, the range of available information in the memory of the system, the operating rules governing the analysis and flow of information within the system, and the ability of the system to forget previously learned solutions to change.

3.4 The Individual and Innovation

According to Toffler (14), as a rule many individuals feel threatened and uncomfortable by change to the extent that they will usually try to avoid it if possible. At times this resistance to change by such individuals borders on irrationality. The corporate head who wants to reorganize a department, the educator who wants to introduce a new teaching method, the mayor who wants to achieve the peaceful integration of the races of his city - all, at one time or another face this blind resistance.
Perrow (5) states that change involves conflict. Decisions must be made to let go of the old and accept the new, and priorities must be rearranged. There are limits on man and his ability to handle this conflict. Because man is generally limited in intelligence, reasoning powers, information at his disposal, time available and means of ordering his preferences clearly he will usually seize on the first acceptable alternative when deciding rather than looking for the best ideas. Thus he is inclined to remain with routine, thus preventing innovation.

Pondy (15) believes that conflict and conflict resolution are essential to successful organizations. Scientific management theory overflows with such terms as conflict behaviour, goal congruence, conflict relationships, conflict episodes, conflict traits, conflict potential and conflict management, latent conflict, perceived conflict, felt conflict, manifest conflict and conflict aftermath. The concepts embodied in these are now discussed briefly.

According to Freeman (16) conflict in individuals can result in constructive or destructive behaviour. Furthermore conflict in itself is not bad. In fact if there is no conflict it is likely that the organization has reached a dangerous degree of complacency.
A good manager does not try to eliminate conflict, although he tries to keep it from wasting the energies of the people involved.

Galbraith (17) says that conflict often arises when the goals of the organization differ from the goals of the individual. This conflict centres on different sets of values held by individuals which are incongruent with the objectives of the organization.

Toffler says that if the conflict is beyond the individual's coping mechanism he/she may exhibit abnormal behaviour and become incapable of functioning. This can be overtly recognized in a number of forms. The individual may demonstrate an anxiety neurosis, hostility to authority, senseless violence, physical illness, depression, apathy, erratic behaviour with swings in lifestyle, social withdrawal and in some cases psychotic paranoia.

To handle conflict, management has attempted a variety of solutions. Cooper (19) stated that the early approaches to changing organizations naively assumed that human behaviour was based on the legal and moral obligation that people, having contracted to work, would then carry out the terms of their contract and that
people, when informed of the organization's goals, would strive wholeheartedly to achieve these goals.

Hasenfeld et al. (10) are of the opinion that these early approaches were replaced by the human relations approach to organizations. Organizational change can be achieved mainly through changing the behaviour of the members of the organization. This, they continue, is accomplished by power equalization whereby management shares its power with those who must implement the innovation. In addition, the lower level staff are encouraged to participate in the decisions about the proposed change.

Massie et al. (18) say that conflict may be resolved by the individual in a number of ways. He/she may accommodate and suffer, accommodate and gain, fight and lose, fight and win, create a support group, overreact or go outside for rewards.

The selection of staff can be important in predisposing an organization towards the ability to more readily accept innovative ideas. Corwin (1) states that staff members are more likely to accept and participate in innovation if they are liberal, creative and unconventional outsiders with fresh ideas and perspectives.
Furthermore, these staff members should be young and flexible and have positions that are secure and protected from the status risks involved in change.

3.5 Planning and Innovation

Before and during the process of effecting change some type of planning takes place. Planning is defined by Friedman (20) as the guidance of change within the social system.

There is no formula to guarantee successful innovation. The conceptual model for planning as shown in Figure 1 depicts the ingredients which can be used in the planning process. Many combinations are possible.

There are different methods of planning just as there are different methods of implementation. Implementation is dependent on existing technologies, resources and the internal and external environment. Friedman states that planning is dependent on the philosophy and skills of the planner and the existing tradition, wisdom and intuition of the social setting.

Friedman believes that thought can determine innovative outcomes. If the thought is bounded and rational with respect to the social setting innovation is more
A Conceptual Model for the Analysis of Planning Behaviour
from Freidman (20,p. 228)

Figure 2
likely to take place smoothly. If the innovation is a result of unbounded or ideological thought, great forces may be required to effect change.

According to Friedman, planning can have varied characteristics. Firstly, planning can be developmental with no account being taken of others external to the planning system when setting ends and means. Developmental planning is dependent on political institutions for resolution of conflict.

Secondly, planning can be adaptive in which case decisions are heavily contingent on the actions of others external to the planning system. Adaptive planning tends to adapt to what is, with reliance on political manipulation to achieve ends and means.

Thirdly, planning can be innovative and tend to ignore the total value spectrum of society. Innovative planners have more interest in mobilizing resources than in the optimal allocation among competing uses. This type of planning is disruptive to existing balances and is uncoordinated and competitive.

Fourthly, planning can be allocative where account is taken of competing resources and the need of their
distribution on the basis of established priorities.

Over time, and as the pace of change slows down, allocative planning tends to replace innovative planning in the management not only of the organization but also in the social system as a whole.

Planning includes "actors" who will be implementing change. They can be involved by command, inducement, negotiation, participation or competition.

Friedman summarizes the planning process:

"If planning is accepted as the attempted intervention of reason in history, then it is clear that such intervention cannot be immediate and direct, but must be filtered through a series of complex structures and processes to be effective. It is not the great mind that intervenes, but a multitude of individual actors, each playing his role in a collective purpose that he does not fully comprehend because he is involved in it himself and lacks perspective. Reason, therefore, ... is a 'collective representation' ... whose functioning is contingent on structure and forces which are independent of itself." (20,p.369)

3.6 Public Health Units and Innovation

Flashner and Drenk (12) contend that the present traditional organizational design and administrative procedures found in many public health agencies are counterproductive to the successful accomplishment of rapidly changing tasks.
They continue by saying that the present organizational design tends to create significant internal operating problems which hinder our efforts to deliver services efficiently.

The main problem, they claim, is a misunderstanding and misuse of specialists and generalists. Professional and management roles have been blended without benefit to either people in the professions, the program delivery or the organization.

As a result administration is delivered by technically trained personnel and there is little time for program development and the evaluation of goals. Consequently the working emphasis in health units tends to be oriented towards alleviation of crises and the enforcement of regulations.

To solve these difficulties Flashner and Drenk suggest the creation of a dual system of organizational design.

Administration should be delivered by generalists who are trained to be administrators and who are comfortable and satisfied with this occupation. The administrator would be referred to as a Management Program Co-ordinator who would be responsible for the selection
of division and program managers and the co-ordination of these managers in order to provide better use of present programs.

The design, delivery and surveillance of the programs on the other hand would be under the direction of specialists who would be utilized for such professional tasks as, technical consultants, program advisors and monitors of the success in reaching goals.

A Medical Program Co-ordinator would be the head of the professional pool and would be responsible for the assignment of individuals to designated task teams as well as for the creation of the task teams responsible for specific programs.

All these professionals and the Medical Program Co-ordinator are management personnel rather than line staff.

In summary Flashner and Drenk contend that public health departments are bureaucratically structured in such a fashion that innovation, goal setting and objectives are not an integral part of program operations.

They are of the opinion that if programs in health units were task oriented and administered by specialists, free
of the administrative duties of the generalists, the organizational structure would be less bureaucratic and more adaptive to the changing needs of the community. As well they say that health units would have a better quality of programs as a result of continual monitoring and restructuring of the program content.
4.0 Health Hazard Appraisal, Lifestyle Modification and Prospective Medicine

4.1 Lifestyle and Disease

The extent of preventable disease today is significant (27,28,29). The relationship of death to health risks is presented in Figure 3. According to figures acquired by Lauzon (30), deaths due to motor vehicle accidents, ischaemic heart disease, other accidents, respiratory disease, lung cancer and suicide account for 59.8 percent of the loss of productive life years in Canada. In addition, these diseases and mental illness account for the majority of days spent in acute care hospitals (30). The costs of certain identifiable consequences associated with cigarette smoking were estimated to be 53.9 million dollars in 1971 (30). Similar cost estimates have suggested figures of 1.23 billion dollars for alcohol related problems and in excess of one billion dollars for deaths due to motor vehicle accidents (30).

According to Lalonde (31), self-imposed risks and the environment are the principal or important factors in each of the five major causes of death between age one and seventy. For example for the age 35 male the top three killers are motor vehicle accidents, other accidents and suicide. The most rational strategy to
Causes of Death by Health Risks

<table>
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<tr>
<th>Cause of Death</th>
<th>Health Risks</th>
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<tr>
<td>Motor vehicle accidents</td>
<td>Alcohol habits</td>
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<td>Drugs and medication</td>
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<td>Seatbelt use</td>
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<td>Exercise habits</td>
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<td>Weight</td>
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<tr>
<td>Cancer of the cervix</td>
<td>Economic and social status</td>
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<td>Marriage or onset of intercourse</td>
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<tr>
<td>Cancer of the lungs</td>
<td>Smoking habits</td>
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<tr>
<td>Cirrhosis of the liver</td>
<td>Alcohol habits</td>
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<tr>
<td>Emphysema</td>
<td>Smoking habits</td>
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<tr>
<td>Hypertensive heart disease</td>
<td>Blood pressure</td>
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<td>Weight</td>
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Adapted from Lauzon (30, p.2)

Figure 3
minimize the incidence of these disease states, says Lalonde, is the discovery and modification of those precursors which seem in practice to be modifiable. Such a strategy has conclusively implicated the individual's lifestyle among the most important factors contributing to the major causes of health and disability.

Despite this knowledge, programs aimed at reducing disease by abatement of known contributing factors are generally weak or non-existent in our society. According to Milsum (32), there is, unfortunately, an expectation by the general public that health technology has the inherent capability to develop the appropriate "technological fix" for any of the illnesses that befalls the human body. Health technology has been the controlling influence in the development of the present pattern of health delivery in the industrialized world. Because technology is administered by institutions in order to make the technology more cost effective this system is hospital rather than community-oriented. Canadians traditionally now equate their level of health with the availability of physicians and hospitals. Future improvements in the level of health of Canadians lie mainly in improving the environment, moderating self-imposed risks and adding to our knowledge of biology(31).
Health Hazard Appraisal is an important component in the delivery of those health services which are directed at reducing lifestyle risks and subsequent lifestyle induced death and disease. Health services of this nature are included in the field of Prospective Medicine (33,34).

4.2 Prospective Medicine

Prospective medicine is concerned with disease before it reaches clinical stages; precursors such as smoking and high blood pressure are identified. For example refer to Figure 4. By examining disease states in this fashion precursors may be eliminated with the possibility of preventing or at least delaying or minimizing the stages of clinical disability or even death. Secondly, prospective medicine is concerned with slowing the progress of disease and conserving maximal function (33).

Prospective medicine, in contrast to preventive medicine, is comprehensive and not fragmented by specialties. The individual is treated as a whole person, being in a complex social setting with concern being given to total risk, not just risk from one cause (26). Furthermore, prospective medicine is concerned with


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<th>BIRTH</th>
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<tbody>
<tr>
<td>NO RISK</td>
<td>AT RISK: VULNERABLE TO PRECURSOR</td>
<td>AGENT, PRECURSOR PRESENT</td>
<td>SIGNS</td>
<td>SYMPTOMS</td>
<td>DISABILITY</td>
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- HEALTH HAZARD APPRAISAL
- MULTIPHASIC TESTING
- TRADITIONAL MEDICAL CARE

EXAMPLE: HEART ATTACK (ARTERIOSCLEROTIC HEART DISEASE)

| AGE (e.g., above 45 years) | HIGH BLOOD PRESSURE | HIGH CHOLESTEROL, CIGARETTE SMOKING | ABNORMAL ELECTROCARDIOGRAM (ECG) | CHEST PAINS | HEART ATTACK (MYOCARDIAL INFARCTION) |

HEALTH HAZARD APPRAISAL AND THE NATURAL HISTORY OF DISEASE

Taken from Prince et al (26 p.3)

Figure 4
the identification of the individual's changing risks of disease and the recognition of his earliest deviations from a state of health. By promoting health and preventing disease it complements the art of medical care (25).

4.3 Health Hazard Appraisal

Health Hazard Appraisal (HHA) is a major tool of prospective medicine whose goal is to enrich and extend the span of life of individuals by reducing disability and death due to preventable risk (22,23). It shows the quantitative and interactive nature of risk-taking behaviour and the personal relevance and immediacy of threats to health. Through the HHA method individuals become aware of risk groups to which they belong for leading health problems. Subsequently potential benefits are shown to emerge if certain lifestyle improvements are made (24).

HHA provides an efficient and highly effective means for age-specific screening and identifying high risk individuals requiring medical intervention. The means is provided for reaching large groups of people for promoting lifestyle changes, and thus of approaching the effective control of accidents and the major non-communicable diseases (25).
The HHA method of lifestyle modification is usually employed by health professionals or health para-professionals interested in prospective medicine (Figure 5). Using the HHA questionnaire (Appendix C) as a vehicle for discussion, the health counsellor and the client enter a prospective health education process. After completing the questionnaire and receiving the HHA computer printout (Appendix C) a counselling session is held, focusing on the individual's lifestyle risks, on the encouragement of continuing appropriate behaviour and of modifying risk taking behaviour. A keystone of success in compliance is the recognition by the individual of his/her own responsibility for his/her health and acceptance that he/she has the power to effect and maintain changes. It is helpful if counsellors convey the belief that there is a large volume of accessible knowledge about health and lifestyle and that there are facilities to back up the client's attempt to change (26).

Milsum (37) states that the counselling between client and professional is in many respects similar to the student-teacher and child-parent relationships. In particular, clients are typically more motivated by what the counsellors do than what they say.
UBC HEALTH HAZARD APPRAISAL SYSTEM
From Milsum (49,p.110)

Figure 5
Indeed, Milsum continues, all clients will presumably assess their counsellors regarding whether they believe in the concepts and information they are transmitting.

With the counsellor having the knowledge of the importance of this exemplar effect in inducing change in the client, the onus would be on the counsellor to "live as he/she preaches if he/she desires to be effective."

Therefore if the counsellor changes his/her own lifestyle when involved in the HHA method it would indicate a desire to participate actively in the HHA method. That is, a change in the counsellor would indicate a desire to change the client. This clearly has implications for the particular HHA-PHRU program being studied here.

In summary, lifestyle modification is an important approach in reducing many of today's most prominent diseases. The relationship of lifestyle modification to disease is the subject of a new branch of medicine termed prospective medicine. An effective tool in the practice of prospective medicine is the HHA method.
5.0 The Organizational Setting and Administrative Design

5.1 The Peace River Health Unit

The Peace River Health Unit (PRHU) is a provincial government body of health professionals and support staff responsible for the provision of public health programs to the Peace River-Liard district of British Columbia (Map 1).

The PRHU staff are located in six offices which are located in Dawson Creek, Fort St. John, Chetwynd, Hudson's Hope, Fort Nelson, and Cassiar (Map 2).

During this study the Health Unit was staffed by a complement of forty-two persons, comprising a director, sixteen preventive health nurses, three home care nurses, two nurse's aides, three public health inspectors, four long term care nurses, ten clerical workers, one audiologist, one audiometric aide and a speech pathologist. The distribution of staff was concentrated in Dawson Creek and Fort St. John which between them employed thirty-four persons. The remaining staff members were divided between the other four offices.
BRITISH COLUMBIA HEALTH UNITS

Map 1
Cassiar

To Alaska

Fort Nelson

250 miles

Hudson's Hope

60 miles

Fort Saint John

50 miles

To Prince George and Vancouver

Gretwynd

60 miles

Dawson Creek

To Alberta

To Edmonton

TERRITORIAL MAP WITH DISTANCES BETWEEN SUBUNITS

Map 2
5.2 The Geographical Setting and the Economy

The Peace River-Liard District covers 100,000 square miles. Most of this is unorganized territory. The major centres are Dawson Creek and Fort St. John which have populations of 13,000 and 15,000 persons, respectively. Chetwynd and Fort Nelson each has 4,000 persons, Hudson's Hope and Cassiar each has about 2,000 persons (38). There are another 18,000 persons in rural areas and in the small hamlets of Taylor, Pouce Coupe, Progress, Swan Lake, Rolla, Farmington, Buick Creek, Deas Lake, Good Hope Lake, Telegraph Creek and Atlin, to name some of the small settlements. This total of 58,000 persons accounts for the official population of the area. In addition, there are an estimated 20,000 persons in the unorganized territories engaged in exploration and related work (38).

The Peace River-Liard District has a mixed economy. In the southern parts of the district, farming and logging are major industries, whereas in the north, mining and logging are important. The whole area is rich in energy resources as a result of gas, oil and coal deposits and fast flowing rivers. Major corporations such as B.C. Hydro, West Coast Transmission, and Canadian Forest Products and B.P. Gas provide employment
and a strong tax base for some communities. Presently, extensions to the Peace River Dam electric projects and the development of large coal and gas deposits are under way.

Signs of rapid economic growth are evident in the recent appearance of many new restaurants and the issuing of an increasing number of building permits. Support businesses such as shopping malls, trucking firms, motels, repair shops of all types, hobby shops and the like have commenced trading in the past year.

Despite such economic growth there is little display of wealth. The farmers are dependent on climatic conditions and they claim to be earning minimal incomes. Further, while large sums of money are presently being made by developers, many residents are without phones and many city and country roads are not paved. As an interesting side note, the funding bodies of the local churches still classify the area as a missionary zone.

5.3 Social Setting and Lifestyle

The ethnic origins of the inhabitants are mixed. The major centres have a large Anglo-Saxon component. In the rural areas many European countries are represented with large populations of Sudetans and Hutterites in the
south. Indians and Metis are scattered throughout the district.

Elementary and secondary education are both available throughout the district, but remote areas use the facilities of the larger centres for higher education. There are community colleges in Dawson Creek, Fort St. John and Chetwynd providing core academic programs and a variety of community education courses. Satellite teaching is a feature of their curriculum. A large number of students drop out of school in grades seven, eight and nine (39).

The Peace River-Liard district has a full complement of government and community resources. Agencies such as the Government Agent, Human Resources, Agriculture, Environment, Highways, Child Development Centres, Attendance Centres and Woman's Centres are represented. There is excellent communication between agencies.

Various health programs are available in addition to Health Unit activities. Though there are general physicians and specialists, complex problems are frequently referred to major medical centres in Edmonton and Vancouver. Dentists are available but they are not numerous and there is only one orthodontist in the area. Nutritional practices are in need of improvement as
evidenced by extensive dental caries (40) and low-birth-weight babies (41). Self-breast examination clinics are conducted annually in the major centres.

Alcohol-related diseases are common in this area (42). At social functions there are appreciable numbers of smokers. Seat belts are seldom used (43). Mortality figures (44) demonstrate an increase in violent deaths, including suicides, motor vehicle accidents and industrial accidents over the past five years. In particular, suicide rates are above those for the rest of the province (45). Nevertheless there is a possibility that some stress factors are lower in this area since people appear to move at a slower pace compared with the Vancouver area, and appear to be more relaxed and easygoing.

Community spirit appears to be positive and supportive throughout. Close friends and frequent social gatherings seem to be the rule rather than the exception. An appreciable number of the community engage in outdoor activities such as hunting, fishing, snowmobiling, skiing, golfing, hiking and motorcycling. The major centres have public swimming pools and skating and curling rinks. There is, however, little evidence of jogging or cycling activity.
5.4 Organizational Design

The British Columbia Ministry of Health is a large corporate body responsible for the delivery of the public sector component of health services to the people of British Columbia. The organizational chart as it existed at the time of the study in 1979 is depicted in Figure 6. The Ministry is a formalized structure of the bureaucratic type with central offices in Victoria, B.C.

The branch of the Ministry of Health that delivers community health programs has a diversified and highly competent staff in the central office responsible for administrative and consultative duties with respect to field activities (Figure 7). It operates in the field by directing seventeen health units spread throughout the province. The lines of authority are vertical starting with the Minister of Health and ending with the line staff in the field. The span of control, that is the number of staff accountable to a superior officer, increases down the line and is greatest in the field.

The intelligence system converges on the central office. All information from the field is compiled and entered into data banks including perceived needs, vital statistics and program-performance data. Personnel records
MINISTRY OF HEALTH
From 1979 Annual Report (47.p.VII)

Figure 6
COMMUNITY HEALTH ORGANIZATION

Figure 7
are also stored centrally. Program planning for the province is one of the functions of central office. Also the central office writes the acts, policies and regulations used in the daily operations of the peripheral health units. Identical operative instructions are sent to all health units, which are thus operationally similar.

Each public health unit in British Columbia is structured according to policy manuals received from the central office (45). The divisional heads in each health unit are responsible for delivering an ordered set of health programs. The local divisional leaders are accountable to dual authority as they report to the health unit director in the field and to the divisional head in central office. This type of organizational structure dilutes the power of the health unit director as well as that of the divisional head. However the dual accountability ensures the adherence to established policy as it minimizes "individualism" on the part of the director.

Line staff, that is those staff delivering primary care and supportive services such as the public health nurses and the secretaries, are expected to conduct all programs of their division as detailed in the policy manuals. There is very little rotation of assignments.
Only rarely does any organizing of projects occur strictly at the local level and when it does it is usually in response to a request by the central office. However, there is some encouragement of innovation in principle since the policy manuals mention that adaptation of programs to local conditions is occasionally necessary (46).

The group process is encouraged by having divisional and mixed divisional meetings both at the central and the local level. Regional meetings are also held. These meetings usually are intended to promote information exchange, face-to-face encounter, and the tabling and discussion of problems arising from the delivery of established programs. On rare occasions local, regional and central discussion can influence central policy through the promotion of resolutions which are presented to higher levels of government.

The Ministry of Health places emphasis on professionalization and education in structuring authority levels and pay scales. The Ministry of Health is of course highly centralized with attendant formalization and regulation.

Time, money, material, and personnel are resources that are allocated primarily by the central office with very
little local control over and above the routine needs. Budgeting relies heavily on the evaluation of the needs of previous years. Any attempt to achieve some reassignments of resources requires the invocation of intensive lobbying and political pressure. Although political systems and processes are an integral part of the changes which take place in the health delivery process even they have difficulty in changing the routine program delivery as set down by established policy.

Finally, the organizational design of the Ministry of Health is seldom characterized by any definite incentive system for encouraging motivation to change or innovate. The primary reward systems are long term in the form of pensions and salary increments. These latter are usually awarded by seniority and/or through reclassification obtained by winning competitions and by additional educational efforts.
6.0 Results

6.1 Introduction

The progress notes made by myself during the study are lengthy and not reproduced here. The staff questionnaire with responses is reproduced in Appendix B. All forms and communications used in the program design, implementation and evaluation of effectiveness are available on request; a sampling of these are reproduced in Appendix D. The completed questionnaires are not reproduced as they must be protected by confidentiality considerations.

The following observations are labelled to coincide with the labelling used for 2.3 of the methodology section where the items for examination are listed.

My personal observations, in most cases, were coincidental with the perceptions of the staff as answered in the questionnaire.

Thirty out of the thirty-five who were sent questionnaires responded. This is a response rate of 85.7%. The reason that forty-one questionnaires were not distributed is that during the five months HHA-PRHU was
in effect there were staff changes. Only those staff reasonably active in the HHA-PRHU were contacted.

6.2 The Outcome of HHA-PRHU

6.2.1 The HHA-PRHU Plan

The plan as presented to me by the Program Manager (PM) was set down as follows:

"HHA will be presented to the community in a number of ways. First HHA will be shown to clients in the Health Unit by waiting room displays and individual approaches by Health Unit staff. Secondly HHA will be presented to community groups such as TOPS, college groups and athletic groups. Thirdly there will be mall displays in shopping centres with presentations by Health Unit personnel. Finally there will be newspaper, radio and television advertising of HHA with encouragement to come to the Health Unit and participate in HHA.

Completed HHA forms will be placed in HHA receiving boxes. These boxes will be placed in strategic locations such as the Health Unit waiting rooms, shopping mall, medical clinics and physicians' waiting rooms, and wherever else it appears opportune. Health Unit personnel will empty the boxes periodically and send HHA forms in batches to the Division of Health Systems, UBC for processing.

Returned printouts will be summarized by Health Unit personnel, in writing, and mailed to clients. With the summary a resource list will be included directing clients to resources capable of meeting the needs indicated by the printout. In addition, the client will be encouraged to seek personal counselling by the Public Health Nurses at the Health Unit, either individually or in groups.

The staff of the Health Unit will be given in-service training about the HHA method in the form of HHA literature handouts. A resource person
from the Division of Health Systems, UBC, Vancouver will be invited to deliver an in-service lecture on the HHA method.

HHA-PRHU will be delivered for one month, on a pilot project basis, in Dawson Creek. After that it will be extended to all Health Unit offices for a further four months. If HHA-PRHU enters the present delivery system smoothly it will remain as a Health Unit program.

Evaluation of the effectiveness of the HHA method in changing lifestyle, as delivered by the PRHU, will be carried out by hiring a summer student to interview participants in the HHA method. The evaluation method will be modeled after that of Prince et al. at UBC (26). To assist in this evaluation there will be a form attached to all HHA forms requesting data necessary to ensure further contact.

The public health nurses will be the prime users of HHA although all staff will be encouraged to deliver HHA. Support staff such as the clerks will be used to distribute information and questionnaires and to promote participation in HHA.

There will be a form for recording data about the number of HHA's performed as well as the number of lifestyle changes recommended.

The objective of the HHA-PRHU will be to perform 1000 HHA's in the five month interval."

Note that the plan proposed by the PM did not include methods for surveillance of the delivery system with respect to ease of delivery, methods of delivery, obstacles to delivery, community compliance and so forth. Nor did the plan include methods to be used for decision making with respect to altering plans to adjust to imperfections in the delivery system. That is, there were no feedback or governing mechanisms in the plan, allowing for in-course modifications.
6.2.2 The Actualization of HHA-PRHU

Actual implementation of the HHA-PRHU program was different from the plan presented in the previous section. Waiting room displays were present in all the Health Unit offices. There were no mall displays. There was no radio or T.V. advertising but there were two newspaper articles on HHA-PRHU in Dawson Creek and two in Cassiar. However, there was very little individual contact about HHA in the larger centres. In the smaller centres, however, the HHA method was discussed between the clients and professionals quite frequently. HHA was presented to the leaders of TOPS, the Smoking Cessation Program, Alcohol and Drug Services, the Ski Club, the Bowling Alley and the Speed Skating Club at a lecture in the Dawson Creek office one evening. This was not done in any other communities.

The HHA receiving boxes were placed in Dawson Creek and Fort St. John in the waiting rooms. They were not placed in the other centres or in clinic or physicians' waiting rooms, or in any shopping malls. The receiving boxes in Dawson Creek and Fort St. John were not used.

The first set of computer printouts for Dawson Creek and Fort St. John were summarized by Health Unit nurses and mailed to the clients. However, this was soon
stopped as the staff felt it was too expensive and lacked personal client contact. The smaller centres never tried the mailing method. There was some personal counselling in Dawson Creek and Fort St. John; in the smaller offices there was considerable personal counselling. There were no group sessions held in any offices.

The in-service education took place as planned. HHA literature was circulated to the staff. Dr. John Milsum, Director, Division of Health Systems, UBC came to the PRHU and delivered a lecture on the HHA method to the nursing staff.

The total number of HHA forms processed in the five month period was 108, broken down as follows: Dawson Creek, 8; Fort St. John, 9; Chetwynd, 11; Fort Nelson, 27; and Cassiar, 53. Personal counselling was performed on a few clients in Dawson Creek and Fort St. John. Personal counselling was performed on all clients in Chetwynd, Fort Nelson and Cassiar. The data sheet for recording the number of HHA's done and the number of lifestyle changes suggested was not used.

An evaluation of the effectiveness of the HHA method in inducing change in lifestyle was performed by the
nurses three months after the cessation of the delivery of HHA-PRHU.

At no time were there any specific task groups or committees formed to monitor the delivery or help in the decision making. The already established senior staff meeting and the regular weekly nurses' meetings were used as vehicles for communication.

6.3 The Confounding Factors

6.3.1 The Suitability of HHA-PRHU

(i) I did not see signs of disruption of health unit routine as a direct result of the delivery of HHA-PRHU. The staff, in question 24 to 29 of section 1 of the questionnaire, also indicate that there was no disruption. Only 7/30 perceived more time spent with other staff members. 23/30 perceived no time lost from other programs. Only one person perceived a disruption in the normal routine of the office and 5 indicated they worked harder and longer as a result of HHA-PRHU. Some of the clerical staff (questions 1-3, part 3) perceived an increase in time spent talking with clients but most of them noted no increase in typing, answering the
telephone or in photocopying. None of the staff perceived an increase in patient waiting time or the displacement of other duties.

(ii) In questions 2-5, part 3 of the questionnaire, the nurses indicate that there was only little difficulty in delivering HHA-PRHU. 3/11 had difficulty prioritizing HHA with respect to other programs. Only 1/11 of the nurses found HHA difficult to use. None of the nurses felt uncomfortable opening the subject of HHA to clients. However, 5/11 of the nurses forgot to mention HHA to clients because they were concentrating on other tasks. In addition, 5/11 of the nurses felt they would like more training in the use of HHA perhaps indicating they were not as comfortable with the use of HHA as they apparently believed by their response to question 3, part 2 (10/11 did not have any difficulty using HHA).

(iii) The answers to questions 6-8, part 1 (30/30, 30/30 and 29/30) state that the staff members perceived that they were aware of the new program and comprehended the HHA method and the method of delivery.
(iv) In question 9, part 1, a little less than half of the respondents felt that HHA-PRHU met the goals of the PRHU. However, questions 10 to 12 indicate that the staff were quite clear about the objectives of the HHA-PRHU in the PRHU. 25/30 stated that the objectives of HHA-PRHU were clearly defined, while 22/30 felt the objectives of the PRHU were clearly defined. Also 19/30 realized that one of the objectives of HHA-PRHU was to do as many HHA's as possible.

(v&vi) In response to question 30, part 1, more than half of the staff (17/30) perceived HHA-PRHU as compatible with their job descriptions. Of the rest, 5 were undecided and only 8 felt HHA-PRHU was incompatible. In question 31, part 1, some of the staff (7/30) felt that HHA-PRHU had actually made their job more enjoyable. Question 32 shows that 23/30 found they were more aware of the relationship of lifestyle to health. It is interesting to note that 7/30 counselled, which would be more than half of the public health nurses, while 10 out of 30 processed forms and 13 handed out forms. So although the program was compatible with job descriptions the majority of the personnel of the Health Unit
was not involved in the delivery of the program. Question 36, part 1 shows that only one staff member counselled more than fifteen clients.

(vii) The suitability of the HHA method as a method for inducing lifestyle change and as a "fit" for the Public Health Unit is reviewed in chapter 4.

(viii) The staff felt that the $2.00 charge for processing the HHA form was a deterrent to the successful implementation of HHA. See question 7, part 2 and comments by the nurses and by the clerks.

6.3.2 The Experience and Attitudes of Staff of the PRHU

(i) The average length of stay with the British Columbia Ministry of Health was 5.6 years. However, the line staff, especially the nurses, on the average had between one and two years' experience.

(ii) The average length of service with the PRHU was 4.8 years.
(iii) Questions 33 to 39 of part 1 would indicate an interest in lifestyle modification by the staff. 20 out of 30 talked about HHA to clients. About half of the staff talked about HHA at social functions and offered HHA to friends and family. The fact that 24/30 of the staff made lifestyle changes themselves indicated an interest in lifestyle modification.

(iv) The attitudes about HHA-PRHU I would consider excellent as far as the philosophy of the program is concerned. 24/30 indicated they would like to see the HHA-PRHU stay in the Health Unit (see question 35, part 1). 6 were undecided and no one wanted it dropped. I observed good attitudes about HHA itself. Many of the staff expressed interest in knowing about themselves with respect to HHA. However, at least four senior staff asked me for proof that HHA was effective in inducing lifestyle change.

(v) The staff appeared willing to change as indicated by the fact that question 33 shows that there were 48 lifestyle changes reported in a staff of 30 during the operation of HHA-PRHU. As well, at the beginning of HHA-PRHU the majority of the
staff expressed a desire to participate in HHA-PRHU. The staff who seemed the most reluctant to participate in HHA-PRHU were the senior staff especially the PM.

(vi) The PRHU staff as a whole are quite effective in delivering programs as indicated by their excellent performance in their mandatory programs. The level of education of the staff in itself would predict effective performance.

(vii) The staff has had little training in designing new programs. Except for the director, none of the staff had been trained in planning, design, or methods of evaluating the effectiveness of programs.

6.3.3 The Nature of the External Environment

(i) The need for a lifestyle modification technique for the community is evidenced in the material discussed in chapters 4 and 5 of this study.

(ii) The staff (question 22, part 1) indicate that 8/30 perceived the program being accepted by the clients and community, 12 were undecided and 10 perceived it as not being accepted. Although
this indicates a reluctance on the part of the community to change, it does indicate at least some interest in the topic of lifestyle change. Question 23 indicated that HHA was offered by other organizations in the PRHU catchment area during the operation of HHA-PRHU. Investigation showed that indeed Action B.C. was offering HHA as part of their program for a short time in a few northern communities. Staff also indicated that community interest was lagging because there was not enough advertising about HHA-PRHU (see question 21, part 1, and the comments of the clerks and nurses in parts 2 and 3).

6.4 The Organizational Characteristics

6.4.1 Leadership

It was my observation that leadership was not clearly defined in the HHA-PRHU. The staff, although told the PM was in charge, were at times confused and looked to myself for guidance and direction. I tried to discourage any reliance on my participation except for consultative services. Nineteen of the 30 respondents to question 20 of the questionnaire indicate that leadership was clear, 6 were undecided and 5 perceived leadership as not being clear. Although question 17 indicates that
29 of 30 thought (correctly) that I introduced HHA-PRHU, only 21 or 66% knew that the PM was in charge of implementing the program and only 12 or 32% knew that the PM was in charge of supervising the program (see questions 18, 19, part 1).

6.4.2 The Intelligence System

I did not observe any system for gathering or storing data. There was communication of results between staff verbally but I observed this infrequently. No records were kept and no feedback from the community was collected. Probably the largest amount of recording was done by myself in the form of progress notes. However, I did not show these to the staff.

6.4.3 The Decision Making Systems

There were no formal new groups established or technical apparatus used for decision making. Decisions were of an incremental character and usually made either by the PM herself or by the PM in occasional consultation with the already established committees of the senior staff or the nurses' meetings, or with myself.
6.4.4 The Communication Systems

There were no formal structures for communicating except verbal, either by direct conversation or telephone. There were no information exchange meetings except the established ones, i.e. senior staff and nurses' weekly meetings.

6.4.5 Motivation Techniques

There were no motivation techniques used to encourage the participation in HHA-PRHU except the nebulous one of pleasing the director and the PM. If anything, the participation in HHA-PRHU was actually discouraged by senior staff and central office with direction being given to put emphasis on the established programs.

6.5.6 Planning Techniques

The planning was done mainly by the PM in consultation with myself, the nurses and the senior staff occasionally. Planning was incremental, innovative, developmental and not involving political or traditional structures. Planning was a result of unbounded rationality of thought despite the demonstrated need for change. The community did not indicate a desire to change at this time.
6.4.7 Conflict and Conflict Resolution

I observed a considerable amount of conflict particularly in the differing opinions as to whether or not HHA-PRHU should be in the Health Unit at this particular time. Conflict situations arose both within staff members as individuals, between staff and the PM, and between the health unit director and the PM. There was also conflict between the health unit and central office. Although there was agreement that programming should reflect local issues the opponents to the program were insistent that existing programs must be preserved before trying new ones. Many staff members told me that there was not enough time to fit HHA-PRHU into their busy schedules. They felt that the established programs would suffer if they spent a lot of time on HHA-PRHU.

In question 13, part 1, 13 of 30 of the staff perceived conflict within themselves when HHA-PRHU was introduced into the PRHU. In question 15, 14/30 perceived conflict within the rest of the PRHU staff. There were not any established groups for reporting this conflict specifically. If it was done at the nurses' meetings or senior staff it was not when I was there. Questions 14 and 16 were answered indicating that the staff perceived
a resolution of this conflict through informal meetings in most cases, although some perceived the passage of time, discussion with senior personnel and better understanding of the program as being of help. One individual sought outside counselling. I felt that all the conflict was not resolved until all participation in HHA-PRHU had been stopped. HHA-PRHU continued to be a controversial issue throughout and never completely accepted by the staff. Conflict disappeared with time especially after the abandonment of the program.

6.4.8 The Central Office Response

Central office response was elicited early in the program by the staff. We did not receive any written advice or comments about the program in response to written requests for guidance. However, I had two phone calls from my direct superior asking me what I was doing and why. Although my superior agreed that lifestyle modification was important and that there should be local initiative to adapt to regional conditions, he felt that existing programs and harmony should have priority in program considerations. At no time, however, was I advised to direct the PM to stop delivery of HHA-PRHU.
6.5 Discussion

The Peace River Health Unit failed to accept the innovative task assigned to it. Although the initial response of the staff was enthusiastic, there were reservations regarding the use of HHA-PRHU in the health unit. There was considerable conflict and the actual output of 108 HHA forms was far below the objective of 1000 forms.

The health unit formulated a plan of action, not sophisticated, but indicative of a response as assessed by the displays and the newspaper articles and the formulated plan, in writing, as well as the interdepartmental memorandums and the 108 completed HHA forms.

The initial response of the health unit was short-lived, however, and as enthusiasm waned and as pressures mounted, both from senior staff to maintain existing programs and from the daily operative problems, the program priority dropped until finally it was abandoned.
The question I am attempting to answer is: Of the following factors, which contributed most to the innovative failure?

1. The suitability of HHA-PRHU
2. The experience and attitudes of the staff of the PRHU
3. The nature of the external environment
4. The organizational characteristics

6.5.1 The Suitability of HHA-PRHU

My observations, the staff perceptions and the literature overview in chapter 4 all agree that HHA-PRHU is suitable for use in the PRHU. It was not a disruptive program, it had goal congruence with the PRHU and the staff, it is easy to understand and deliver, and is suitable with respect to job descriptions. Most of the staff perceived it as being a program that merited permanent inclusion in the PRHU delivery system. One major objection was the $2.00 charge for processing the form. However, Kane (48) has observed that even at zero cost, many health services are not consumed. Another strong objection is that HHA-PRHU did not include a strong enough advertising campaign. However in Chetwynd and Fort Nelson there was no advertising but a significant number of HHA's performed. This
would indicate that word of mouth and professional-client advertising are effective tools in the promotion of HHA.

6.5.2 The Experience and Attitudes of Staff of the PRHU

The staff were adequately educated to deliver HHA and the senior staff were experienced. However, the line staff did not have a working knowledge of all existing programs to the extent that they were able to easily prioritize the HHA-PRHU program. This could have been overcome with senior staff guidance and direction and encouragement coupled with a few "think tanks" on HHA. The most inexperienced and the least educated line staff nurse was the nurse in Cassiar, where the most HHA's were performed. This is compatible with Corwin's statements (1), that staff members are more likely to be innovative if they are liberal, creative and unconventional outsiders with fresh ideas and perspectives. However, it became apparent at a later date that the delivery of existing programs in Cassiar suffered considerably during the time HHA-PRHU was in effect; to the extent that the particular staff member was eventually replaced by a more experienced and more highly trained nurse.
The attitudes of the staff favoured the HHA-PRHU. There was a definite interest in lifestyle modification as evidenced by the lifestyle changes of the staff. This could also indicate a willingness to change and participate in the delivery of HHA-PRHU as it could mean the staff were using the exemplar technique in counselling clients.

6.5.3 The Nature of the External Environment

The external environment demonstrated a need for change (see chapters 4 & 5). However the staff did not perceive a willingness on the part of the clients of the PRHU to change (see comments part 2 of questionnaire by the nurses). In addition they felt the clients were afraid of the results and did not want to change their lifestyle. They thought there was low motivation on the part of the clients.

I find this a difficult item to resolve. In particular I have difficulty assessing the willingness of a community to change especially where there is no motivation such as pain or discomfort affecting the members of that community. Many clients probably have the "it can't happen to me" attitude; some clients can be labelled as the "worried well", which is a motivating factor.
I believe, however, that the onus is on a new program to reach out to the community and although, on occasion, a program failure can be attributed to a disinterested clientele, I think it is more appropriate to examine the program itself with respect to its effectiveness in reaching the community.

6.5.4 The Organizational Characteristics

I believe the failure of the PRHU to adopt HHA-PRHU into the PRHU was a result of failure of the organizational design and the planning methods. Either the existing organizational design was not used properly or the present organizational design is not conducive to innovation.

Significant deficiencies noted in the organizational design were:

(i) The leadership was poor because of the lack of technical staff free of administrative duties.

(ii) There were no intelligence or decision making systems at the local level.

(iii) The communication between staff was inadequate.

(iv) There were no motivating techniques.
(v) There were no methods for resolving conflict.

(vi) There were no task orientated groups for monitoring and redirecting program direction through adequate replanning.

(vii) Although we are dealing with a mechanistic organization the power of the director is usurped by the fact that senior staff can report directly to senior personnel in central office and bypass the director.

(viii) Planning was adaptive, innovative and a result of unbounded, albeit rational, thought. To be properly instituted the program needed, therefore, the support of political forces and the support of central office to overcome the turbulence created by this disruptive type of planning (see chapter 3).

6.5.5 The Role of the Director

The fact that the Director and Medical Health Officer for the Peace River Health Unit was, as well, the evaluator of the eventual outcome of HHA-PRHU should not have influenced this innovative attempt unfavourably.

The director in a health unit co-ordinates, and acts as a resource for, the various programs. As such he/she
does not become a leader in specific programs except in unusual circumstances.

The staff are aware of my interest in lifestyle modification programs as well as my concern that these programs are not actively pursued in the public health units, despite the urgent need. Therefore, although I maintained a passive role in the leadership and delivery of HHA-PRHU, there were few staff members who did not know that I was anxious to have HHA-PRHU become a permanent part of the PRHU health care delivery system.
7.0 **Conclusions**

7.1 **Introduction**

This study has demonstrated that a new program, HHA-PRHU, when introduced into the Peace River Health Unit, was not accepted into the existing delivery system of health care services offered by the Health Unit.

HHA-PRHU was shown to be a program which is a suitable "fit" into the Peace River Health Unit. As well, HHA-PRHU is a program designed to meet an urgent need in the community. Finally the staff of the PRHU were shown to have the skills necessary to adequately deliver the active component of the delivery system of HHA-PRHU; that is, the HHA method.

The HHA-PRHU was not accepted because of the nature of the organizational design of the PRHU and the nature of the planning methods used in the context of this existing organizational design.

7.2 **Organizational Design of the PRHU-Deficiencies**

7.2.1 The PRHU is a part of the British Columbia Ministry of Health which has been shown to be a mechanistic organization. However, innovation requires such
organizational aspects as decentralization, a low degree of formalization, free communication, project organization, rotation of assignment, a greater reliance on group processes and a continual restructuring of the incentive system (11, 12). These aspects are the characteristics of organistic, not mechanistic, organizations.

7.2.2 There are few of the characteristics of modern organizational design present at the local level to enhance innovative attempts. There are no established intelligence, data collecting or sophisticated decision making systems. As well, the strategic components of the health unit (the divisions) are only loosely integrated by ill-defined committees.

7.2.3 There is no method for the allocation of resources at the local level. Budgets, personnel, building and vehicle allotment are done at a central level.

7.2.4 There are no incentives at the local level. The goals and ideologies of the Ministry of Health outline a need to adapt to changing conditions in the external environment. However, the rules and regulations and policy manuals dictate that the staff adhere to existing programs. This encourages the staff to follow their
inherent tendency to avoid innovation. Instead of proceeding with innovation the staff try to protect the present delivery system to avoid the loss of past investments.

The staff, with no incentive system, no access to resources, no available information with respect to the skills necessary to adapt to change, no operating rules governing the analysis and flow of information within the system and finally, an emphasis to remember rather than forget previously learned solutions, is very resistant to change.

7.2.5 There are few methods formally established at the local level to handle the conflict which arises in the case of local initiative. As well, the methods that are available, mainly through senior staff and divisional meetings, and access to local supervisors are not properly used in the Peace River Health Unit for conflict resolution. Conflict situations are usually avoided at these meetings. The present methods used to resolve conflict are to appeal to central office and political bodies for direction, and for regulations and orders which will hopefully resolve this conflict. These orders and directions do not arrive quickly. As a result conflict is often not resolved.
7.2.6 Finally, planning at the local level is not feasible because the PRHU is part of a larger system. The British Columbia Ministry of Health is a functioning unit and for the health unit to disregard the other parts of the larger system is to court disaster, i.e. local plans will not be implemented. As well, a governmental structure such as the PRHU is closely allied to the political systems involved in the social and economic structure of the province of British Columbia and thus the PRHU should involve political bodies in the plans for change. Particularly is this true if the introducing of change is done in an innovative and developmental fashion such as was the case with HHA-PRHU. As well, the fact that many health programs may meet the needs of the social structure but not necessarily the wants of the community, warrants a need for political involvement in the decision making processes when planning for change.

7.3 Organization Design – How to Innovate in the PRHU

7.3.1 Using the Present Organizational Design

7.3.1.1 The leadership of the program should be established so that the PM is recognized by all staff as being in charge of planning, implementation, evaluation, of the effectiveness of and the surveillance of the HHA-PRHU.
As well, the desire of the PM to accept the new program and the degree of motivation on the part of the PM must be favourable towards HHA-PRHU. The selection of the PM must be done after considerable reflection.

7.3.1.2 There should be established intelligence, decision making, and communication systems. This, I would suggest be based in a task force committee defined as to membership, structure and periodicity of meetings. This task force would generate decision making methods, data collecting methods and forms, and established lines of communication, and feedback mechanisms.

7.3.1.3 There would be motivation techniques to induce change. The task force could establish these incentives in the forms of awards for individuals and offices generating the most lifestyle changes in a community in a given period of time.

7.3.1.4 Planning should be adaptive and allocative. Planning should involve the co-operation and consultation of central office for decision making, resource allocation and data collecting. Political bodies such as the Local and Union Boards of Health would be involved in the planning. This political involvement could be extended to a legislative level by involving higher level
committees such as the Health Officers' Council, a council of all the provincial health unit directors. This council can present resolutions to the Minister of Health of British Columbia. These resolutions can ultimately become policy with enforcing regulations if the resolutions are politically acceptable.

7.3.1.5 There should be established methods of conflict resolution. Involving the line staff, central office and political bodies in the planning process would reduce the amount of initial conflict. The task force should outline ways of reducing conflict as it appears during program operation. For example, the task force could hold extra-ordinary meetings of groups in which the conflict appears. The specific purpose of these meetings would be to table and discuss the conflict and arrive at a method of resolving the conflict.

7.3.2 Restructuring the Organizational Design

7.3.2.1 Decentralization is necessary to allow local health units more control of resource allocation and to give the director more power. This would mean that central office would have to give health units a global budget. The health unit would be accountable to the Union Board of Health.
7.3.2.2 Apart from core programs designated by provincial legislation there would need to be directions to staff to ensure that occasional assignment of new tasks was "legitimate" and part of the job description of all staff.

7.3.2.3 Technical staff such as the medical director and divisional heads should be relieved of a considerable amount of administrative duties. This would mean an increase of staff who were trained in administrative duties and who were prepared and specifically hired to perform administration.

7.3.2.4 As well as technical training in medical fields, senior staff in charge of program design and delivery, planning and surveillance, should be suitably trained to perform these tasks.

7.3.2.5 The health unit should have a dual organizational structure. The first structure should be administrative, and responsible for budgeting, resource allocation, employee appraisal and public relations and so forth. The second structure should be responsible for the technical nature of the programs; this structure would assess the needs of the external environment and restructure program delivery accordingly.
7.4 Conclusions

This study evaluated an attempt to induce change in a provincial health unit. The literature indicates that to effect change within such a system is a complex task.

The results of this study demonstrate that:

(i) the organizational design of public health units in the British Columbia Ministry of Health appears to be counterproductive to the successful accomplishment of locally initiated innovation

(ii) the entire system, especially the Central Office, must be included in the planning and delivery system for new programs in British Columbia public health units

(iii) innovation would seem to be enhanced by having administrators as well as medical co-ordinators in British Columbia health units

In closing I would propose that perhaps innovation would be enhanced by decentralization of the present British Columbia Ministry of Health organizational design.
APPENDIX A

INTRODUCTORY STAFF QUESTIONNAIRE
Self-Teaching Questionnaire

LIFE-STYLE MODIFICATION PROGRAMS

Name: __________________________

Occupation: __________________________

Education: __________________________

PLEASE ANSWER QUESTIONS AS BEST YOU CAN

1) What is a Life-Style Modification Program?

2) What is the Health Hazard Appraisal Form?

3) Do you think life-style affects health?

4) Do you think life-style patterns influence quality of life?

5) Do you think life-style patterns influence length of life?

6) Would you be interested in a Life-Style Program for evaluation of yourself?

7) Would you participate in a Life-Style Program which included evaluation of clients you meet in the course of your work?

8) If you wish to participate indicate to what degree you are willing to be involved

   ____ (A) Present forms
   ____ (B) Present forms with instructions
   ____ (C) Present forms with instruction and follow up counselling
9) If you participate in the program do you think the added responsibility will affect your job (check one)
   ______(A) A little
   ______(B) Some
   ______(C) A great deal
   ______(D) Do not know

10) If you do not participate in the program do you think having the program in the unit will affect your job?
    (Check one)
    ______(A) A little
    ______(B) Some
    ______(C) A great deal
    ______(D) Do not know

11) If you do not wish to participate please indicate the reason. (Check one)
    ______(A) Not interested
    ______(B) Do not feel this is an area for which I am responsible
    ______(C) Do not have the time

12) Do you think the community would accept a Life-Style Modification Program?

   Yes ______
   No. ______
APPENDIX B

FINAL STAFF QUESTIONNAIRE
POST-IMPLEMENTATION QUESTIONNAIRE

SECTION I (General)  Respondents = 30

1 - 3. Demographic data.
4. Length of service with B.C. Ministry of Health: Average = 5.6 years
5. Length of service with PRHU: Average = 4.8 years

6. Are you aware that a new programme in Life Style Modification has been introduced into the Peace River Health Unit?
   Yes 30  No 0

7. Do you understand the HHA form?
   Yes 30  No 0

8. Do you understand the method of delivery and follow through of the HHA programme to the public?
   Yes 29  No 1

9. Which of the following goals of the Peace River Health Unit were satisfied by the HHA programme? Circle one or more.
   a) Good health of the community 13
   b) Good health of the PRHU staff 11
   c) Good relationships with the community 15
   d) Good relationships within the health unit 5
   e) Other (please specify) 1

10. The objectives of the HHA programme were clearly defined:
    Yes 25  No 0  Undecided 5

11. The objectives of the PRHU are clearly defined:
    Yes 22  No 2  Undecided 6

12. One of the goals of the HHA programme was to do as many HHA forms as possible:
    Yes 19  No 7  Undecided 4

13. When it was announced that the HHA programme was to be tried in the Health Unit did you feel conflict? i.e. angry, imposed upon, or unsettled.
    Yes 13  No 17  Undecided 0
14. How was this conflict resolved, looking back over the time the programme was in operation? Please circle one or more of the following.

a) Outside help, i.e. self help groups, counselling, etc.  
   b) Passage of time  
   c) Talking informally with others in the Health Unit  
   d) Formal group meetings  
   e) Discussion with senior personnel  
   f) Disregard of the programme  
   g) Not resolved

15. When it was announced that the HHA programme was to be tried in the Health Unit did you see evidence of conflict within the Health Unit? i.e. persons or groups angry or upset or an unsettled atmosphere overall?

   Yes 14  No 14  Undecided 2

16. How was this conflict resolved looking back over the time the programme was in operation? Please circle one or more of the following.

   a) Passage of time  
   b) Formal meetings in groups  
   c) Informal meetings within the Health Unit  
   d) Informal meetings outside the Health Unit  
   e) Arbitration by senior personnel  
   f) Better understanding of the programme  
   g) Disregard of the programme  
   h) Not resolved

17. Who introduced this programme into the Health Unit? Choose one of the following.

   MHO 29  Nursing Supervisor 0  Office Supervisor 0
   Senior Staff 1  Nurses 0  Other 0

18. Who was in charge of the setting up of the implementation of the HHA programme? Choose one of the following.

   MHO 7  Nursing Supervisor 21  Office Supervisor 0
   Senior Staff 1  Nurses 0  Other 1
19. Who was supervising the program during the five months it was in effect? Choose one of the following

MHO 11  Nursing Supervisor 12  Office Supervisor 0

20. Was the leadership clear in this new program?

Yes 19  No 5  Undecided 6

21. Was HHA well advertised in the community?

Yes 9  No 5  Undecided 6

22. Did clients and the community readily accept this new programme?

Yes 8  No 10  Undecided 12

23. Are you aware of any other organizations that offered the HHA programme in the PRHU from January to May of this year?

Yes 3  No 27  Undecided 0

24. HHA resulted in more time spent with other staff members.

Yes 5  No 23  Undecided 2

25. HHA took time away from my other programmes.

Yes 6  No 23  Undecided 1

26. HHA disrupted the normal routine of the office.

Yes 1  No 27  Undecided 2

27. HHA and displays displaced other displays and equipment.

Yes 5  No 23  Undecided 2

28. HHA resulted in me working more hours, i.e. overtime.

Yes 3  No 27

29. HHA resulted in more labour intensive work during hours worked, i.e. I worked harder.

Yes 5  No 22  Undecided 3

30. HHA was in keeping with my job description.

Yes 17  No 8  Undecided 5

31. The HHA programme made my job more enjoyable.

Yes 7  No 9  Undecided 14
32. The HHA program resulted in my becoming more aware of the relationship of lifestyle to health.

   Yes 23  No 6  Undecided 1

33. My personal habits changed in the following areas while the HHA programme was in the Health Unit, i.e. in the months of January to May, 1979.

<table>
<thead>
<tr>
<th>Area</th>
<th>Improved</th>
<th>Deteriorated</th>
<th>Unchanged</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Diet</td>
<td>9</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>b) Smoking</td>
<td>3</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>c) Alcohol</td>
<td>3</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>d) Seat belt usage</td>
<td>10</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>e) Exercise pattern</td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>f) Breast care (women)</td>
<td>8</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Comments: 1) There were 48 changes made in all. 2) There were twenty-four of the thirty staff who made changes.

34. If you completed an HHA form:

   How many months ago did you do so?  Average = 10.8 months
   How many changes were recommended?  Average = 2.3 changes
   How many changes have you made?    Average = 1.6 changes

35. I would like to see HHA stay in the Health Unit.

   Yes 24  No 0  Undecided 6

36. I actively participated in the following number of HHA forms.

<table>
<thead>
<tr>
<th>Handing out forms:</th>
<th>0</th>
<th>1 - 5</th>
<th>5 - 10</th>
<th>10 - 15</th>
<th>More</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>6</td>
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<td>Processing forms:</td>
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<td>20</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Counselling:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

37. I talked about HHA to clients:

   Yes 20  No 10

38. I talked about HHA at social functions.

   Yes 12  No 18

39. I gave HHA forms to friends and family.

   Yes 14  No 16
SECTION II (Nurses)  
Respondents = 11

1. I used HHA in:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prenatal classes</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Schools</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>On house calls</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>With local groups</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>In home care</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Crisis intervention</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Hospital liaison</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Maternal child conferences</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>On individual clients</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>During travelling clinics</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>During special community events</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Please comment briefly where HHA was used most easily and effectively and comment on problems in using in other areas. (see the list at the end of Section II)

2. HHA was difficult to rank in terms of priorities with relation to other programmes.
   
   Yes 8  No 3

3. HHA was difficult to use in most situations.
   
   Yes 1  No 10

4. Because of concentration on other job skills I forgot about HHA.
   
   Yes 5  No 6

5. I felt uncomfortable about opening the subject of lifestyle with clients.
   
   Yes 0  No 9  Undecided 2
Nurses (Continued)

6. I would like more training in the use of HHA.
   Yes 5  No 6

7. The $2.00 fee was a deterrent to clients using the HHA.
   Yes 8  No 3

8. Do you feel you have an adequate knowledge of community resources in counselling with the HHA?
   Yes 11  No 0  Undecided 0

9. Was the programme presented to clients and the public satisfactorily?
   Yes 8  No 1  Undecided 2

10. I would like to see more planning and elaboration on the presentation and use of the HHA programme.
    Yes 4  No 4  Undecided 3

11. Were the displays satisfactory?
    Yes 8  No 1  Undecided 2

12. Was the box idea a good one?
    Yes 8  No 3  Undecided 0

Comments by Nurses
Would have liked more advertising.
Many people were afraid of the results and did not want to change their lifestyle.
Over 30 population with middle class incomes were the most interested.
Most appropriate in special events and local groups.
HHA is best advertised by word of mouth.
Participants were hesitant to pay the $2.00 client fee
Tended to forget about it.
Motivation low in this area.
Health unit too hectic to get client's attention.
e.g. Mother is interested in children not HHA.
Needs personal contact to get results.
SECTION III (Clerical Staff)  Respondents = 9

1. HHA programme resulted in an increased work load in the following areas.
   Yes | No
   a) Typing  2  7
   b) Copying  3  6
   c) Answering the telephone  1  8
   d) Talking to clients  4  5

2. The HHA programme increased patient waiting time.
   Yes 0  No 9

3. The HHA programme displaced other duties.
   Yes 0  No 9

4. Please comment on ways in which the HHA programme could be more effectively presented to the public.
   - More advertising needed.
   - Medical Clinics should pass out forms.
   - $2.00 fee is a deterrent.
   - Strong promotion in the community needed.
   - More exposure on bulletin boards and newspapers needed.
   - More intense and continuous publicity needed.
   - Much more publicity needed.
APPENDIX C

HEALTH HAZARD APPRAISAL FORM AND COMPUTER PRINTOUT
**HEALTH HAZARD APPRAISAL**

Processed By:
Division of Health Systems
Health Sciences Centre
University of British Columbia
Vancouver, B.C. V6T 1W5
Phone: (613) 228-2258

Enter all numbers corresponding to correct responses in these columns:

1. Have you ever completed a HEALTH HAZARD APPRAISAL questionnaire?  
   | 1 yes | 2 no |

2. LANGUAGE  
   | 1 english | 2 french |

3. SEX  
   | 1 male | 2 female |

4. AGE

5. MARITAL STATUS  
   | 1 single | 2 married | 3 separated | 4 widowed | 5 divorced | 6 other |

6. HEIGHT (without shoes)  
   | feet and inches | OR | centimeters |

7. WEIGHT (naked)  
   | pounds | OR | kilograms |

8. SMOKING  
   a) | 1 smoker | 2 ex-smoker (stopped) | 3 non-smoker (never smoked) |
   b) Enter average amount smoked per day in the last five years OR in the last five years before quitting  
      Average number of cigarettes per day  
      Average number of pipes / cigars inhaled per day  
      Average number of pipes / cigars not inhaled per day  
   c) Enter number of years stopped smoking (Note: enter 1 for less than one year)

9. ALCOHOL  
   a) | 1 does drink | 2 ex-drinker (stopped) | 3 non-drinker (never drank) |
   b) If you drink alcohol, enter the average number of drinks per week  
      bottles of beer (12 oz)  
      glasses of wine (4 oz)  
      shots of spirits (1-1 ½ oz)

10. DISABLING DEPRESSION  
    | 1 often | 2 seldom or never |

11. DISTANCE per year as driver of a motor vehicle and / or passenger of an automobile  
    | miles | OR | kilometers |

12. SEAT BELT USE (% of time used)
**ENTER ALL NUMBERS CORRESPONDING TO CORRECT RESPONSES IN THESE COLUMNS**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Have you taken the CANADIAN HOME FITNESS TEST?</td>
<td>1</td>
<td>yes</td>
<td>2</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If YES, indicate level achieved</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>undesirable personal fitness level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>minimum personal fitness level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>recommended personal fitness level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If NO, indicate activity level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>little or no physical activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>occasional physical activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>regular physical activity at least 3 times per week</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NOTE:</strong> Physical Activity includes work and leisure activities that are sustained physical exertion such as walking briskly, running, lifting and carrying.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 14. Did your parents die of a HEART ATTACK before the age of 60? | 1 | yes | 2 | no |
| 15. Do you have a family history of SUICIDE? | 1 | yes | 2 | no |
| (mother, father, sister, brother) |
| 16. Do you have a family history of DIABETES? | 1 | yes | 2 | no |
| (mother, father, sister, brother, child) |
| 17. Do you have DIABETES? | 1 | yes | 2 | no |
| 18. Do you have a history of RECTAL DISORDERS? (other than hemorrhoids) | 1 | yes | 2 | no |
| 19. Has your physician ever said you have CHRONIC BRONCHITIS and/or EMPHYSEMA? | 1 | yes | 2 | no |

| 20. BLOOD PRESSURE | SYSTOLIC mm mercury |
| to be measured - otherwise leave blank |
| 21. FASTING CHOLESTEROL LEVEL | CHOLESTEROL mg / dl |
| to be measured - otherwise leave blank |

**FEMALES ONLY**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22. If you have had a hysterectomy (cervix removed), please leave blank PAP SMEAR</td>
<td>1</td>
<td>Have never had a pap smear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Have had 1 pap smear - more than 1 year ago - but less than five years ago - negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Have had 1 pap smear within the past year - negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Have had 3 or more pap smears within the past 5 years - all negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. REGULAR SEXUAL INTERCOURSE began</td>
<td>1</td>
<td>in teen years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>at age 20-25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>at age 26+ or never</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Did your mother or sister have BREAST CANCER?</td>
<td>1</td>
<td>yes</td>
<td>2</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>25. MONTHLY BREAST SELF EXAMINATION</td>
<td>1</td>
<td>yes</td>
<td>2</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

**HEALTH HAZARD APPRAISAL FORM (Continued)**
<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Weight</th>
<th>Height</th>
<th>Blood Pressure</th>
<th>Cholesterol</th>
<th>Smoking</th>
<th>Alcohol</th>
<th>Physical Activity</th>
<th>FH</th>
<th>Rectal Disorder</th>
<th>Seat Belt</th>
<th>Driving</th>
<th>Depression</th>
<th>Suicide</th>
<th>Ulcer or Perforation</th>
<th>Stomach Ulcer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Attack</td>
<td>615</td>
<td>71</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>316</td>
<td>203</td>
<td>127</td>
</tr>
<tr>
<td>Lung Cancer</td>
<td>925</td>
<td>119</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>435</td>
<td>475</td>
<td>477</td>
</tr>
<tr>
<td>Stroke</td>
<td>575</td>
<td>131</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>925</td>
<td>119</td>
<td>116</td>
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<tr>
<td>Cirrhosis of Liver</td>
<td>362</td>
<td>105</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>842</td>
<td>855</td>
<td>855</td>
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<tr>
<td>Intestinal Cancer</td>
<td>342</td>
<td>85</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>227</td>
<td>791</td>
<td>360</td>
</tr>
<tr>
<td>Intestinal Cancer, including Rectum</td>
<td>227</td>
<td>791</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>227</td>
<td>791</td>
<td>360</td>
</tr>
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<td>Motor Vehicle Accident</td>
<td>327</td>
<td>791</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>327</td>
<td>791</td>
<td>360</td>
</tr>
<tr>
<td>Suicide</td>
<td>316</td>
<td>316</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>316</td>
<td>316</td>
<td>316</td>
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<tr>
<td>Ulcer or Perforation</td>
<td>263</td>
<td>402</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>263</td>
<td>402</td>
<td>264</td>
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<tr>
<td>Stomach Ulcer</td>
<td>327</td>
<td>791</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
<td>No</td>
<td>327</td>
<td>791</td>
<td>360</td>
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<tr>
<td>Depression</td>
<td>127</td>
<td>127</td>
<td>160/90</td>
<td>280</td>
<td>30</td>
<td>16</td>
<td>Little to None</td>
<td>Yes</td>
<td>None</td>
<td>No</td>
<td>13,000</td>
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<td>Diseases of Anterior</td>
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</tr>
<tr>
<td>Smoking</td>
<td>STOPPED SMOKING</td>
<td>1.00</td>
<td>RECHECK-SEE YOUR OR.</td>
<td>1.30</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Systolic BP</td>
<td>160 MM MERCURY</td>
<td>1.30</td>
<td>RECHECK-SEE YOUR OR.</td>
<td>1.30</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Diastolic BP</td>
<td>96 MM MERCURY</td>
<td>1.45</td>
<td>RECHECK-SEE YOUR OR.</td>
<td>1.45</td>
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<tr>
<td>Cholesterol</td>
<td>280 MG/CL</td>
<td>1.50</td>
<td>280 MG/CL</td>
<td>1.50</td>
<td></td>
<td></td>
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<td>Diabetes</td>
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</tr>
<tr>
<td>All other causes</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>All causes of death</td>
<td>2,672</td>
<td>18,222</td>
<td>2,593</td>
<td>1,480</td>
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<td></td>
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</tbody>
</table>

**Actual Age**: 50

**Achievable Age**: 62

**Computer Printout (Continued)**
**Actual Age:** 50  
**Appraised Age:** 62  
**Achievable Age:** 55

Your achievable age is based on the following modifications of your condition/lifestyle:

<table>
<thead>
<tr>
<th>Condition/Life Style</th>
<th>Present</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity</td>
<td>Little or None</td>
<td>Gradually and progressively increase regular physical activity</td>
</tr>
<tr>
<td>Smoking</td>
<td>30 cigarettes/day</td>
<td>Step - best to quit - try to cut down and switch to lower tar</td>
</tr>
<tr>
<td>Alcohol</td>
<td>16 drinks per week</td>
<td>Moderate - reduce to 3-6 drinks per week</td>
</tr>
<tr>
<td>Seatbelt Use</td>
<td>Buckle 171 of time</td>
<td>Buckle up always - 100% of time</td>
</tr>
<tr>
<td>Weight</td>
<td>180 pounds</td>
<td>Reduce to approximately 160 pounds</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>160/96</td>
<td>Recheck - if still elevated consult your physician</td>
</tr>
</tbody>
</table>

**COMPUTER PRINTOUT (Continued)**
<table>
<thead>
<tr>
<th>Cause</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heart Attack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Lung Cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Stroke</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Cirrhosis of Liver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Intestinal Cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Motor Vehicle Accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Suicide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Chronic Bronchitis and Emphyema</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Stomach Cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Cancer of Palmaris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Diseases of Arterial System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Lymphoma-Lymph, Leukemia EXCEPT LEUKEMIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Health Hazard Appraisal Chart**

The number of pegs shows the relative magnitude of the average Canadian Risk for each cause of death. The length of each row shows your risk relative to the Canadian average risk. The reducible part of your risk is indicated by letters (Legend at bottom right).
APPENDIX D
FORMS, COMMUNICATIONS AND ILLUSTRATIONS
DAWSON CREEK OFFICE

FORT ST. JOHN OFFICE

Illustration 1
CHETWYND OFFICE (Foothills Building)

FORT NELSON OFFICE (Provincial Building)

Illustration 2
CASSIAR OFFICE (Government Building)

Illustration 3
Re: Pilot Project - Life Style Modification  
January - May/79  
Peace River Health Unit

From January 1979 to May 1979 I would like you to be Program Manager for the planning, implementation and surveillance of a pilot project in Life Style Modification. This will be a major project in the delivery of preventive health to the Peace River Health Unit area.

The program should make use of the Health Hazard Appraisal form. I will be glad to act as a resource person in this area, not only in the use of HHA but also in the general principle of life style modification as a tool in the reduction of morbidity and mortality of the general public. As Health Hazard can be offered to groups as well as individuals, I would suggest that the nurses be the major individuals in the delivery of the program. Although any one in the Unit could probably offer the HHA forms to the public, the counselling and follow through should probably be carried out by the nurses; this means they will need instructions in this area as well as lists of resources in the community such as groups that offer self help with smoking, drinking and eating problems.

It is my hope that each nurse can counsel 2 to 3 persons per week for the five month period resulting in about 50 appraisals and counselling per nurse with hopefully a unit load of between 750 and 1000 persons being handled in the five month period. This may sound like a large number and it is, and will require all our energies to carry out. I would like to stress that the morbidity and mortality related to life style malpatterns has reached epidemic proportions and we are obligated to get heavily involved in this area. Please keep statistics as to the numbers counselled and the time spent by the Unit in carrying out this new programme. I mentioned to you in conversation that we will form any committees in or outside the Unit as necessary to carry out this programme.

The health gain of such a program is very positive to the public health and I hope this type of preventive program will become part of the Health Unit routine and this depends greatly on the success of the pilot project. My main job will be to assess the impact of the program on the Unit. Good luck.

JGL/at  
bcgeu  

Dr. James Lugsdin  
Director.
MEMORANDUM

To: Senior Director
   Public Health Programs

Date: January 3, 1979

Re: Lifestyle Modification Program

The Peace River Health Unit is implementing a pilot project in lifestyle modification from January to May of 1979 using the Health Hazard Appraisal form and printout offered by the Division of Health Systems at UBC.

The program has been designed by the Project Manager of the Peace River Health Unit. She will be responsible for the ongoing use of the program in the Unit. I have enclosed a copy of my original correspondence to her and the response she has outlined.

The Project Manager (PM) would like to have an in-service session in Dawson Creek towards the end of January with Dr. Milsum, the Director of the Division of Health Systems at UBC. With this in mind I would like to request direction in the acquisition of the funds to help in the project. Stationery, postage and presentation materials will cost in the neighbourhood of $200. The cost of Dr. Milsum's visit would be about $250. Allowing $150 for unexpected expenses this would make a request of $600 for the pilot project.

In the north, as in other areas in Canada and the world, there is an epidemic of lifestyle related diseases, in particular cardiovascular, respiratory, hepatic and MVA diseases. In our Health Unit there is no specific program directed towards the alleviation of these diseases. If this pilot project enters the Unit without excessive disruption of other programs it is hoped that we could keep HHA as a part of the preventative armamentarium of the Health Unit.

There are two offshoots of this pilot project. Firstly I will be studying the ability of the Health Unit to absorb a new program such as this and presenting the results of my studies to a UBC thesis committee in order to complete my Master's Degree and thus meet the standards of my present position.

Secondly, the PM is planning to study the effectiveness of HHA in the Health Unit in regard to changing the behaviour pattern of those participating. She plans to do this by doing a follow-up study on participants, probably by using a summer student.

By the time you receive this memo the project will be well underway. Could you please give me constructive comments and help me with the expense? Please let me know if you require more information. I will keep you posted of progress on a monthly basis and more frequently if necessary.

JGL/at

James G. Lugsdin, M.D.,
D/Peace River Health Unit #17
MEMORANDUM

To: All Staff

Date: Jan. 9/79

Re: Life Style Modification Program

The current epidemic of life style related diseases, specifically chest, heart, liver and motor vehicle accident diseases, is startling. I feel that if any area of health care delivery should be involved in reducing the mortality and morbidity of these diseases it should be Public Health Programs. We are continually boasting to the public about our belief in prevention and most of the above mentioned diseases are preventable. To date we have had no involvement in Life Style Modification.

To rectify this I would like to see if we can institute a Life Style Modification Program as part of the "preventative medicine" offered to the Peace River Health Unit population.

Presently a pilot project in Life Style Modification has begun in the Dawson Creek office and this will spread to all other offices in the next month or two. The project uses the Health Hazard Appraisal form as a motivating tool to encourage individuals to adopt healthier life styles. The project is intended to stimulate the public to take some responsibility for their own health.

, the Peace River Health Unit Nursing Supervisor, is in charge of the project and is responsible for the successful implementation of the present Dawson Creek program. Although clerical and nursing staff are presently the main users of the HHA form and follow-up counselling, I feel we will all be touched by this program in one way or another. Would you please co-operate with and her delegates on this project and give her all the support you can.

Probably the decision of keeping this program will depend on how easily the Units can adopt this program using the present staff. I would expect in the short term it might be burdensome but hope in the long run it would be a small but important part of our armamentarium in the fight against disease, thus the pilot project.

The saving of a child's life through the use of a seat belt is but one example of the possible benefits of this program. Other examples are reduction in emphysema and cirrhosis. Women will be encouraged to examine their breasts resulting in earlier detection of breast cancer. The list is extensive as you will probably learn as the program progresses.

Finally I would like to mention that any group entering the area of life style modification is considered a pioneer. There are many unanswered questions and unexplored areas. Please keep the questions and ideas flowing and we can all learn together. Thank you in advance for your co-operation.

JGL/at

bcgeu

James G. Lugsdin, M.D.,
D/Peace River Health Unit.
February 8, 1979

Dear Doctor

Re: Health Hazard Appraisal

The Peace River Health Unit has introduced a new program in Lifestyle Modification which is available to the general public at the local Health Unit office.

Essentially the program demonstrates the relationship between health and lifestyle risks such as smoking behaviour, alcohol usage, seat belt usage, exercise pattern, breast care (women), body weight and blood pressure. The hope is that increased awareness of this relationship will lead to further attempts at moderation and alteration of lifestyle risks. In turn there would be a decrease in lifestyle related diseases such as accidents and violence, heart attacks and certain chest conditions such as bronchitis.

Attached to this letter is a sample of the Health Hazard Appraisal (HHA) form available at the local Health Unit office. After an individual completes this form it is sent to Vancouver for processing by a computer which returns a printout giving body age as calculated by lifestyle risk. Also on the printout is a prescription age which can be attained if the individual follows the changes in lifestyle prescribed. The Health Unit staff will guide the individual to helpful resources and offer counselling if desired.

The Health Unit staff will gladly try to answer any questions that arise with respect to this new program and will keep you informed of the progress made.

Yours truly,

James G. Lugsdin, M.D.,
Director.

JGL/at
Encl.
DAWSON CREEK HHA WAITING ROOM DISPLAY
Illustration 4
FORT ST. JOHN HHA WAITING ROOM DISPLAY

Illustration 5
CHETWYND HHA WAITING ROOM DISPLAY

Illustration 6
DAWSON CREEK FITNESS WEEK ACTIVITIES

Illustration 8
A METHOD OF FINDING OUT ABOUT YOUR HEALTH

Hi there!

Attached to this letter is a Health Hazard Appraisal Questionnaire. If you wish to participate then fill in the form as best you can; if there are questions you cannot answer then leave those blank and proceed to the next question.

In our present age there is an epidemic of heart disease, lung disease and motor vehicle accident diseases. If this epidemic was in the form of a polio epidemic everybody would see it and would be demanding that something be done. The heart, lung and accident epidemic is not as easy to see, but if you could study the statistics we have in the health department you could see this epidemic as easily as we do.

This questionnaire is designed to help you learn certain things about yourself which might encourage you to improve your health in certain areas. You supply relevant information about your lifestyle, exercise habits and family health history. The computer responds with a "Health Risk Profile" relating to the possibility of future health problems.

After you fill this form out put it in the H.H.A. box with $2.00 to cover the computer cost. You can pick up the computer printout with the interpreted results, in two weeks here at the Health Unit. At that time you can also make arrangements to see the Public Health Nurse if you desire further help in either understanding the results or in deciding how to follow the computer prescription.

The Public Health Nurse in the Health Unit will be available for taking blood pressure from 3:30 to 4:30 from Monday to Friday.

We would like you to help us to find out if this program is worth continuing in the Health Unit. To do this please fill out the yellow form and you will be contacted in a few months time by one of the Health Unit staff.
These are the Tabulated results of your Health Hazard Appraisal.

Attached are the findings of your Health Hazard Appraisal. This helps you to know ways in which you can improve your health. The Health Hazard Appraisal compares you to others your age and gives the likelihood of death in the next 10 years with your present lifestyle. It also gives you the age you could be if you follow certain recommendations which are pointed out below.

Your Present age is: ________

Your age based on your lifestyle is: ________
(See page 2 of the printout) (Appraisal age)

Your age could be: ________
(See page 2 of the printout) (Compliance age)

To improve your age the following are suggested recommendations:

Alcohol Usage: ____________________________

Seatbelt Usage: ____________________________

Exercise Pattern: ____________________________

Breast Care: (Women): ____________________________

Blood Pressure: ____________________________

Smoking Behaviour: ____________________________

Your Body Weight: ____________________________
To: All Offices

Date: January 9, 1979

PHN Staff Meeting

January 25 and 26
in
DAWSON CREEK

Tentative Agenda

Jan. 25 Thursday 9:30 a.m. Health Hazard Appraisal and Life Style Modification

Guest: Dr. John Milsum

If possible please bring your own HHA for your own use at this meeting.

1:30 p.m. Follow up of Problem Oriented Recording

Please bring two records in this with your comments.

2:30 Bits and Pieces

3:30 p.m. Union Business

Jan. 26 Friday 8:00 a.m.

12:00 noon "Family Therapy" by Art Chapell, Psychiatric Social Worker with Kelowna Mental Health Centre

held at Assembly Hall Dawson Creek and District Hospital

1:30 - 3:30 p.m. Preview Prenatal Films/slides
SECOND FRONT PAGE

What are your health risks?
Penny Tuthill is seen receiving a copy of the Health Hazard Appraisal form from Iris Scholz, secretary at Peace River Health Unit.
Hi! Have you ever wondered how you would be doing physically in twenty or thirty years from now? Would you be interested in seeing how you can improve your chances for a longer and healthier life?

This is now possible through a program called Health Hazard Appraisal (HHA), offered by the University of B.C., through the Peace River Health Unit. The HHA consists of a short questionnaire which interested participants fill out. The form covers age, sex, weight, physical fitness, smoking habits, alcohol consumption, driving habits and family health history.

The computer responds with a “Health Risk Profile” relating to the possibility of future health problems. You learn at what age you are functioning now and you receive a computer “prescription” on what areas you need to improve in and how to go about doing this.

It takes about three weeks to receive the computer printout with the interpreted results from the Health Unit. At that time arrangements can be made to see the Health Nurse if you require further help in either understanding the results or in deciding how to follow the computer prescription.

Interested? Watch for an upcoming display in the Recreation Centre or drop by the Peace River Health Unit located in Bunkhouse 81 for further information.

Planning a trip to Tahiti?

That’s great, but a recent news release from the Health Minister, Bob McClelland, has warned that travellers should be aware to take precautions against a mosquito-borne virus called ‘dengue’. (Pronounced den-gi)

Dengue is usually accompanied by high fever, headache, joint and muscle pain and occasionally a rash. The virus is usually mild, however, recovery may be prolonged for a week or more. If you are planning a trip to Tahiti, take along a reputable insect repellent and wear protective clothing. A vaccine is not currently available for protection against dengue.

Anyone having an illness with a fever, within two or three weeks of leaving Tahiti is advised to contact their physician.

Ref- Dr. A. A. Larsen, Dir. of Epidemiology
Victoria and Centre for Disease Control
Atlanta, Georgia

********

YELLOW FEVER VACCINATIONS

Prince George and Vernon have now become new centres for Yellow Fever vaccination. Prior to this, Vancouver and Victoria were the only centres in B.C.

The vaccine is supplied in a five dose vial which, when reconstituted, must be given within one hour. As the vaccine is quite costly, to avoid waste, appointments must be scheduled so that five people can be vaccinated within the hour.

Travellers to parts of Africa and South America are advised to call the local health unit at for information on Yellow Fever Centres.

Remember! Yellow Fever immunization only becomes valid ten days after it has been given. Please contact the Health Unit well before departure date.

Ref- A. F. Ross, M.B., Ch. B., M.Sc., F.R.C.P.,
Medical Health Officer and Director

********

LOVE IS NOT ENOUGH
IMMUNIZE YOUR FAMILY NOW!

Child Health Conferences coming up are as follows:

Thursday, February 22
Thursday, March 8
Thursday, March 22
Thursday, April 5
Thursday, April 19

Please try to call ahead to make an appointment. Health Unit No. is See you there!
New program at the Health Unit

The Peace River Health Unit has introduced a new program in Lifestyle Modification which is available to the general public at the local Health Unit office.

Essentially the program demonstrates the relationship between health and lifestyle risks such as smoking behaviour, alcohol usage, seat belt usage, exercise pattern, breast care (women), body weight and blood pressure. The hope is that increased awareness of this relationship will lead to further attempts at moderation and alteration of lifestyle risks. In turn there would be a decrease in lifestyle related diseases such as accidents and violence, heart attacks and certain chest conditions such as bronchitis.

The program centres around the Health Hazard Appraisal form which is available at the local Health Unit Office. After an individual completes this form it is sent to Vancouver for processing by a computer which returns a printout giving body age as calculated by lifestyle risk. Also on the printout is a prescription age which can be attained if the individual follows the changes in lifestyle prescribed. The Health Unit staff will guide the individual to helpful resources and offer counselling if desired.

The program is meant to compliment our existing programs and will not alter the present Health Unit scheduling with respect to Public Health Nursing services, Public Health Inspection and Long Term Care. For example, immunization and child and maternal health care will carry on as usual.
Fun for the whole family

Fitness Festival set to go this Sunday

Dawson Creek's first annual "Fitness Festival" is all set for Sunday with fun and games for the whole family.

Opening ceremonies will be held in Kin Park at 9:30 a.m., followed by the Fun Run at the Kin Park Bandshell, beginning at 10:00 o'clock. Fun Run refreshments will be available and prizes will be awarded.

The bicycle safety and registration clinic will be held at the Kin Park Bandshell at 11:00 a.m., so bring your bike and get it inspected and registered. Free reflector stickers will be available.

All other events will be held: in the Arena, Centennial Pool, Soccer field behind the arena or at the Central Soccer Field.

Free T-shirts and buttons will be given to all participants.

12:00 noon - Soccer Fun - will take place at the soccer field behind the Arena. Don't worry about your ability, just come out and have some fun.

Health Hazard Appraisal & Fitness Testing - will be held behind the Centennial Pool. If you haven't filled in the computer form or if you haven't been tested for your fitness level, it's time you did. Results may surprise you.

12:00 Noon - Jazzercise - in the arena to music. Yes, exercise can be fun, come and participate.

Disco Dancing will be demonstrated by children, teens and adults, and lessons on the "L.A. Hustle" will be given.

Ballet will also be demonstrated by young children and all are welcome to join in the fun.

12:00 Noon - New Games - will be played behind the pool. These are total participation, non-competitive games such as earth ball, parachute, tug-o-war and also the famous "lap-sit." Come out and see what they're all about.

At 1:30 Tae Kwon Do will be demonstrated in the arena, and at 2:00 Ladies Fitness will also be demonstrated in the arena.

A tug-o-war challenge is set for 3:00 between members of City Council and the D.C.A.A. This will conclude the events for the Fitness Festival in and around the arena.

The Centennial Swimming Pool staff is offering exciting and free events, so take advantage of this opportunity and don't forget to bring your bathing suit.

From 7:00 a.m. until noon, the Dawson Creek Seals Interclub Swim Meet will be held and all are welcome to watch.

Demonstrations by the Seals Fun Races will go from 1:00 to 2:00, and from 2:00 until 4:00 a free swim will be held for all participants.

A free family swim will go from 4:30 to 6:30, so come and have a good time.

The Fitness Festival promises to be fun for the whole family, so come and enjoy yourself Sunday.
Cassiar Courier
the Voice of Cassiar Country
10 cents
March - April 1979

Page 6 Cassiar Courier

6 months........DPT
12 months..........Red Measles
13 months..........German Measles
18 months..........DPT, Polio
School entry (4 - 6 years)
............................DPT, Polio

Red Measles (Children not previously immunized)
Grade 5........German Measles (girls not previously immunized)
Grade 10........DT, Polio

The above schedule is now being used by the Peace River Health Unit. Parents of grade five students can set their children at ease. No more immunizations until grade 10!

Health Hazard Appraisal

Don't forget to have your Health Hazard Appraisals done. There has been a really good response from Cassiarites so far. Generally, most participants have benefited for their computerized results.
Forms are available from the Health Unit and Recreation Center.

For further information contact the Health Nurse.
From Project Manager to Director--January 20, 1979.

IN VIEW OF THE PILOT PROJECT - LIFE STYLE MODIFICATION

WHAT ARE THE PUBLIC HEALTH NURSING PROGRAM PRIORITIES?

WHERE DOES THE HEALTH HAZARD APPRAISAL FIT IN?

1. Communicable Disease Control (Regulatory service)
   a) Adult clinic
   b) CHC (90% of preschool completed, immunization is low at present.
   c) V.D.
   e) Immunization of schools.
   f) Home visits- particularly for I.H. and Skin Diseases.

2. Home Care Nursing if no Home Care Nurses.

   Pre-natal classes. Early class, series of four.
   Newborn visits. Average 2/family. Caseload analysis indicates number of births above average.
   Denver screening on "At Risk" Children.
   Home visits on children with Developmental delays.
   Child Community Care facilities

4. School Health Program
   Immunization
   Vision and Hearing Screening
   Medic Alerts
   Interviewing students re: health concerns
   Home visits on health concerns
   Resource on Health Education to teachers
   Teaching Health Education

5. Chronic Diseases
   Rheumatic Fever Program
   Visits to chronic diseases e.g. Cystic Fibrosis, Blind Deaf, C.P., Heart, etc.
   H.V. Accidental Poisoning from hospital:
      i) Children-Child safety
      ii) Overdoses
6. Crisis Intervention-Home visits
7. Hospital Liaison
   Doctor Liaison
   Adult Community Care Facilities
      Rotary Manor
      The Place
      Peace Lutheran
   Liaison with other agencies and organizations.
8. Time study done two years ago indicates that 40% of nurses' time spent in travel.
9. Health Hazard Appraisal????????????????

March, 1978 Case Load analysis indicates:
   We have more births and less prenatal classes/year than the provincial average.
   We also have more infants and preschool at the CHC per month than the provincial average.
   Tb-higher than the provincial average.
   Population in Fort St. John, and Fort Nelson above the provincial average.
   School population in Fort St. John and Fort Nelson above the provincial average.
To: Dr. Lugsdin  
Director  
PRHU  

Date: January 22, 1979

Re: Health Hazard Appraisal and Life Style Modification  
Pilot Project January 1979

A further update on previous memo dated December 22/78.

Observations noted in the 3 weeks HHA has been operating in the Dawson Creek office:-

1. The procedure outlined for dispensing the forms and giving results appears to be satisfactory.

2. It appears that those adults attending Child Health Conference are centered on their child's health and the Dawson Creek nurses have felt this is not an optimum time to suggest HHA though it should be available. They are presently using the pre-Denver questionnaire at CHC so feel two forms for the parents to deal with are too much.

3. The Dawson Creek nurses will now keep a few HHA on hand in all home visits and offer it where appropriate.

4. The Dawson Creek nurses see the greatest need is for publicity re: this program and suggest Radio, TV, and newspaper with the possibility of a Mall display.

5. The nurses are anxious to see groups approached but question how much time they have to do this. They liked our idea of approaching all groups named in our Dawson Creek Resources list to see if we could work through them in both presenting the HHA to them and possibly having the groups present it to the public with a back-up consultative committee.

6. The nurses feel the $2 fee is a deterrent.

7. The staff also feel only doing B.P. at Adult Clinic is also a deterrent.
REFERENCES


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29. Milsum, John H. A Report on the Preventive Medicine Course Given by John McAmy at Esalen Institute, Big Sur, California: UBC Co-ordinator's Office, Health Sciences Centre, UBC.


34. Milsum, John H. and Laszlo, Charles A. A Proposal for Provincial Funding: UBC Co-ordinator's Office, Division of Health Systems, Health Sciences Centre, University of British Columbia.

35. HSU, H.S. and Milsum, John, H. Implementation of Health Hazard Appraisal and Its Impediments. Division of Health Systems, Health Sciences Centre, University of British Columbia.


40. Personal Communication: Dental Hygienist, PRHU.


42. Dawson Creek Medical Clinic, Personal Communication.

43. Dawson Creek Chief of Police and Hudson's Hope Chief of Police, Personal Communication.


45. Peace River Health Unit Mental Health Centre, Personal Communication.


