

A FRAMEWORK FOR DEVELOPMENT
OF A PROVINCIAL HEALTH PLAN:
BRITISH COLUMBIA

by

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ABSTRACT

The purpose of this thesis was to develop a framework for a Provincial Health Plan in British Columbia. A number of factors argue for the necessity of a clear, comprehensive statement of the goals and objectives for the health care system: complexity of the health care system; rising health care costs; rising consumer expectations; and pressures from special interest groups.

The development of the framework for a Provincial Health Plan is based, firstly, on an understanding of the planning process; and secondly, on an appreciation of the components (and their relationships) of the health care system. Accordingly, the literature on these two areas is reviewed in some detail. The planning process can best be understood by reference to a matrix, where planning can take place at levels ranging from the long-term and philosophical to the day-to-day delivery of health services. Planning can also be done in a variety of modes or approaches, ranging from the strictly rational to incremental, ad hoc measures. Components of the health care system are, in general terms, "health resources", "health status", "requirements for health services", and some "process of resource allocation".

A provincial Health Plan, as proposed by this thesis, addresses a specified planning level ("policy planning"), and employs a variety of planning modes in developing objectives for the components of the health

care system. Certain assumptions are made in this thesis regarding the definition of "health", the role of the Ministry of Health, and the regionalization of the health care delivery system for planning purposes. Within these constraints and assumptions, the framework for a Provincial Health Plan comprises the following hierarchy of elements: Values about the health care system; Long Term Objectives; Baseline Objectives; Short Term Objectives. Values about the health care system are statements concerning general principles in four areas: (1) definition of health and the responsibility of the health care system; (2) social justice as applied to the health care system; (3) roles of government, professions, and individuals within the health care system; (4) effectiveness and efficiency of the health care system. Objectives (whether Long Term, Baseline, or Short Term) are specified levels describing the components of the health care system, and result from a judgemental process which considers factors of "legitimacy", "feasibility", and "support" for the issue under consideration. Long Term Objectives, with a three to five year timeframe, are determined by considering data about the present and projected states of the health care system in light of stated Values about the health care system. Baseline Objectives are those minimally acceptable levels for components of the health care system, below which there is general agreement in British Columbia that remedies should be instituted as an urgent priority. Short Term Objectives, with a one year timeframe coinciding with the government's fiscal year, are determined considering Values about

the health care system, specified levels of both Long Term Objectives and Baseline Objectives, data on the health care system, and community expression about health problems and priorities. Whereas Long Term Objectives and Baseline Objectives are arrived at by the central planning authority, Short Term Objectives are determined in large part by the regional planning authority. The Delphi method is explained and proposed as a relatively simple, but effective, approach to facilitate community input concerning health problems.

The development of each of the parts of the framework for a Provincial Health Plan is discussed, and a timeframe for development of a Provincial Health Plan is suggested (approximately 22 months). Further steps towards the development of a Provincial Health Plan for British Columbia are also outlined.

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Chapter I. RATIONALE FOR A PROVINCIAL HEALTH PLAN

A number of factors argue strongly for the necessity of a Provincial Health Plan. There is most obviously the sheer size and complexity of the health care system. Compounding this are rising health care costs in the face of an overall economic downturn. Moreover, despite budgetary constraints public expectations of the health care system remain high, and if anything are increasing. Special problem groups and interest groups in particular are demanding health services as "rights".

I.A. Complexity of the Health Care System

A more detailed outline of components of the health care system is presented in Chapter III. In general terms, there is in B.C. a wide array of health manpower, facilities and programs providing a range of health services to a diverse population of 2.7 million. There are over 28 different health occupational groups, including 5,000 physicians; 25,000 nurses; 1,600 dentists; altogether in this province there are over 50,000 people in health professional or allied professional groups. Additionally, many other persons staff health facilities and programs in support functions. For example, the Hospital Employees Union has a membership of 23,000. Overall, 10% of the provincial work force are in the health care system.

Methods of payment of health manpower groups include wages or salaries, contracts, and fee-for-service payments, which further complicates the picture. As might be expected with so many health manpower groups, there is

often overlap of roles and responsibilities, with accompanying tensions and conflict. The historical pattern of ophthalmologists-optometrists-opticians, and dentists-dental mechanics-dental technicians are two prominent examples in B.C.

Facilities similarly display a great diversity. There are over 300 facilities in B.C., ranging from 10-bed Diagnostic and Treatment Centres to the 1000 bed Vancouver General Hospital. Functions span personal and intermediate care, extended care and acute care hospitals. In the acute care hospitals there is further specialization of services, e.g. Intensive Care Units, Burn Units, Paediatric Surgery Units. Associated with the facilities are numerous sophisticated and expensive pieces of equipment. Cooperation among hospitals, even in the same regional hospital district, may or may not exist. The importance of coordinating the acute hospital with other community facilities (e.g. long term care facilities) has resulted in a decision by the Ministry of Health to meld these two areas of responsibility under the Assistant Deputy Minister of Institutional Services.

Numerous programs could also be listed (e.g. Emergency Health Services, Public Health). These require combinations of health manpower groups in a variety of settings.

The above listed health manpower, facilities, and programs are provided to a diverse population. Each age grouping - infant, pre-school, school age, adult, senior citizen - has particular health problems unique to it. There are moreover different ethnic groups, such as the Native Indian or Chinese-Canadian population, who may have special needs because of cultural or language differences.

Unfortunately, it would seem that the various health manpower groups often are not coordinated; that health manpower in general is often not coordinated with facilities and programs; and that manpower, facilities, and programs are not related to the health needs of the population. Examples of this lack of coordination and integration are frequently cited. They can in general be categorized as statements that some service or activity is provided inefficiently, or that some service or activity is not the most effective approach to stated goals and objectives. Examples of "efficiency" type statements are:

- (1) use of highly skilled (and paid) health manpower for tasks which can be done by lesser trained manpower;
- (2) use of expensive acute-care beds for Long Term Care patients;
- (3) "unnecessary" laboratory tests, done routinely rather than for specific information;
- (4) in-patient surgery for cases that can be done on a day-care basis;
- (5) lengthy hospitalization (e.g. post-partum) when patients can be discharged to Home Care;
- (6) "unnecessary" surgery for elective procedures;
- (7) use of expensive brand name drugs instead of generic equivalents;
- (8) Canadian requirements for drug testing which may delay introduction of new products, used already for many years in other jurisdictions;
- (9) tendency to "high-tech" medical care in place of clinical examination and judgement.
- (10) maintenance of smaller hospitals with low occupancy rates;

Examples of "effectiveness" type statements are as follows:

- (1) shortage of skilled nurses to staff specialty units within the

acute hospital sector;

(2) expansion of the U.B.C. medical school in the face of probable "over-supply" of physicians in the province;

(3) maldistribution of health manpower, e.g. physicians, with a disproportionate concentration in urban areas;

(4) emphasis on curative, "crisis" oriented care (including the reliance on drugs) rather than screening, prevention, rehabilitation, and lifestyle changes in areas such as smoking, alcohol abuse and poor nutrition;

(5) tendency to professional and institutional care, rather than family and individual responsibility for health; lack of personal information on health care and use of existing services;

(6) duplication of resources instead of a tiered referral system.

The validity of these statements could be debated; the remedy for these efficiency and effectiveness problems may be much more complicated than these brief statements suggest. However, it still seems a reasonable presumption that the health care system in B.C., given these and many other problems, could be better coordinated and integrated. This is not meant to imply that B.C.'s health care system is inferior compared to other jurisdictions. Overall, it is probably as good, if not better than most. The United States, for example, suffers the same (if not more) criticisms. The preamble to PL 93-641, U.S. legislation establishing national guidelines for comprehensive health planning, stated that despite massive federal spending, equal access to health services had not resulted. Indeed, there continued to be a maldistribution of resources and less than optimally effective delivery systems in the face of increases in health care costs

(United States, Department of Health, Education, and Welfare 1979a). Fuchs (1974) noted that the United States' major health care problems related to cost of care, access to care, and relatively poor levels of health status compared to other jurisdictions and among subgroups within the U.S. Sweden is often taken as a country with a model health care system. Yet, it too is in "crisis", with rising health care costs, an emphasis on specialized technological medicine, twice the number of hospital beds per population as the United States, etc. (Diderichsen 1982).

Past studies and reports in B.C. have focused upon particular aspects of the health care system, e.g. the Hospital Role Study by the Ministry of Health, and the Post-Basic Nursing Study by the Health Manpower Research Unit at the University of British Columbia. However, to achieve the coordination and integration of various components of the health care system, a more global approach is needed. In large part, this is due to the unique characteristics of health care delivery. One cannot rely on the "market" to regulate the complexity of the health care system. There are distinctive economic features of health care which distort market forces: (1) health care is a mixture of consumption and investment elements, (2) provider induced demand and the third party insurance system are of major importance in health care, (3) externality effects and indivisibility effects exist, (4) consumer ignorance, or relative information asymmetry between the consumer and provider, is the general rule, (5) health care may be considered a "right" rather than a commodity, (6) health and medical education and research often cannot be readily separated from service costs (Berman 1977; Klarman 1975). Of particular importance is consumer ignorance. Patients are atypical consumers since, despite the trend towards

greater public information on health matters, generally the patient lacks the information necessary to make an informed judgement as to either quality or quantity of health care to be purchased. Parsons (1952) noted that asymmetry in the patient -practitioner relationship exists not only in information available, but also in class, culture, and site of interaction. These factors give the health practitioner a marked advantage and dominant role. For the patient the perceived threat to personal safety, not to mention physical and mental dysfunctions, makes informed judgement difficult at precisely the time services are required. Because of this, health practitioners -- most notably physicians, but certainly others too -- are called upon to act on behalf of the patient, i.e. an agency relationship. However, there is an inherent conflict of interest in simultaneously providing a paid service to the patient and judging the quality and appropriateness of that service. Evans (1974) suggests that a fee-for-service setting (for physicians) "creates strong economic incentives for the physician to overemphasize the supply of his own services to the exclusion of substitutes and to bias patient's 'choice' of services towards those which yield the highest net revenue per time unit for the physicians" (p. 163). Moreover, there is little competition in the health care system, with most professional groups specifically proscribing advertising. Many others, e.g. Abel-Smith (1976), have come to similar conclusions about the functioning of the health care system "market". Thus, left to itself, the health care system has little likelihood of self-adjustment and regulation.

It would be misleading optimism to suggest that development of a Provincial Health Plan would in itself automatically ensure a better health

care system for B.C. However, it is abundantly clear that any large complex system requires directions and objectives if it is to achieve its overall goals. Development of a Provincial Health Plan provides this direction. The urgency and timeliness of developing such a plan result from a number of pressures on the health care system. Perhaps the most important of these, certainly the one most often cited, is the increasing cost of health care.

I.B. Rising Health Care Costs

Canada, spending approximately 7% of its GNP on health care, devotes proportionately less than countries such as the U.S., Sweden, the Netherlands, and Germany, who spend about 10% of their GNP. On the other hand, countries such as Great Britain at 6% of GNP, devote a smaller proportion (Abel-Smith 1981). B.C.'s health care costs can be estimated by reviewing the budget of the Ministry of Health over the past few years (British Columbia, Ministry of Health Annual Reports).

1975/76	\$ 892.3 million
1976/77	\$ 976.0 million
1977/78	\$ 1,094.4 million
1978/79	\$ 1,315.0 million
1979/80	\$ 1,490.6 million
1980/81	\$ 2,000.0 million

Health care costs are growing faster than the provincial economy, as is seen by comparison with the GDP data below (British Columbia, Ministry of Finance 1981).

Gross Domestic Product

1977	\$ 25,137 million
1978	\$ 27,894 million
1979	\$ 32,264 million
1980	\$ 36,635 million

The percentage increase in the Ministry of Health budget was 1.8 times that of the increase in gross domestic product over the period 1977 to 1980. In the five years following 1976/77, the percentage increase in the Ministry of Health budget was 1.4 times that of the increase in the total government budget. The Ministry of Health will have spent in excess of \$2.3 billion during fiscal 1982/83, over \$6 million per day! Economic forecasts for the next few years are gloomy, suggesting that increase of government revenues will continue to lag behind increases in health expenditures.

Negotiations are taking place on the Established Program Financing (EPF) agreement, the federal contribution to the provinces for health and post-secondary education. There is an avowed Federal intention to slash its EPF contributions by \$1.5 billion. If this occurs, the pressure on provincial revenues will be intensified. The government of B.C. estimates that federal initiatives to reduce EPF expenditures would result in loss of some \$100 million to B.C.

Abel-Smith (1976) notes the main causes for growth, in real terms, of health service expenditures in western nations: increase in government health insurance and services; rising consumer expectations; labour intensive nature of health care; expansion of medical technology; increasing elderly population; changing disease patterns (with more chronic and

degenerative diseases); and inappropriate use of health services. The extensive government involvement in provision of health services is discussed in Section IV.B.1., and consumer expectations in Section I.C.

The labour intensive nature of the health care industry makes it particularly sensitive to wage and salary increases. There appears to be a correlation between the number of physicians and total health care costs, and B.C. has the highest number of doctors per capita in Canada. Directly these costs stem from the approximately \$100,000/year earnings per physician in B.C. Indirectly, these costs arise from the diagnostic and therapeutic interventions initiated by physicians. In total, it has been estimated that a physician generates \$250,000 to \$500,000 in health care costs annually. B.C. has recently seen an increase of the physicians' fee-schedule of 40% spread over two years. Other health manpower groups have also within the past one or two years won substantial wage hikes, e.g. the registered nurses' last contract was for 44% over a two year period. The Hospitals Employees Union, the Health Sciences Association are other major negotiating groups pressing for higher wages and salaries. Groups that previously were not organized are becoming so, resulting in higher wage demands. For example, one reason for the increase in Long Term Care costs is the increasing wage scales won by workers. The provincial government's wage restraint program (Compensation Stabilization Program) should temper wage settlements over the next two years. However, since the total dollars spent on health care are already substantial, and given that 75-85% of these relate to wages and salaries, even modest percentage increases will translate into significant increases in absolute dollar amounts.

The increasingly sophisticated technology of the health care system

also carries an expensive price tag. CT scanners are the most notorious example of expensive technology (up to \$1 million capital and \$200-300,000 per year operating costs). B.C. has about a dozen head and body scanners. Additionally, open heart surgery, renal dialysis/transplant, intensive care units, etc., all contribute to the cost. As Cohen and Cohode (1982) point out, even low capital cost items such as fetal monitoring units often have significant cost implications, either in the operating costs or in the generation of other more expensive health services. Unlike industry, technology in the health care system tends not to substitute capital for labour, with resulting increase in productivity. Rather, higher "quality" of service is provided and somewhat paradoxically, new technology often requires additional health manpower. Less publicized, less expensive procedures are significant cost factors if done on a widespread basis. For example, a study of laboratory costs at Vancouver General Hospital indicates a five-fold increase in costs, the overriding factor being increased utilization of services per capita over the past ten years. The laboratory costs per acute care admission have increased 253% between 1972 and 1979. About half of this increase can be attributed to inflation. Of the remaining factors, the major impact is increased intensity of testing. Thus, in CPI adjusted dollars, the cost per acute care admission increased from \$42.80 to \$101.50 (Hardwick 1981). The United States experience with rising hospital costs is instructive. Over the period 1955-1968 the 265% increase in cost could be attributed to population increase (32%), increased utilization (38%), increased wages (80%), increased labour and supplies or services input per patient day (30% and 76% respectively) (Maxwell 1975).

Costs associated with capital construction will also continue. New

acute care facilities and renovations/additions will cost hundreds of millions of dollars over the next few years, (over \$400 million for 1981/82). Long term care facilities similarly will see new construction in the hundreds of millions of dollars in B.C.

The costs noted above will be required just to maintain existing service levels given the increase of population. Estimates by the Central Statistics Bureau show the following population projections for British

Columbia:	1980	2,640,116
	1985	2,975,176
	1990	3,307,133
	1995	3,625,063

Importantly however, the population increase will be selective. It has been estimated that 8.6% of the Canadian population was over age 65 in 1977, and that by 1996 there will be 3.2 million Canadians over age 65 (Bennett and Krasny 1977). Historically, B.C. has had a higher proportion of elderly than the Canadian average. Projections suggest that the 65+ population will increase by 33% between 1981 to 1991 in B.C., from 290,000 to 385,000 (Lawrence 1982). An even larger increase in the over age 65 will occur after 2011 when the post war "baby boom" enters that age group. The increased demand for health services will be greater than simply extrapolating total population increases. The elderly tend to have not only a greater number of health problems, but also health problems requiring more treatment. They require one and one-half to two times the medical treatment as compared to a younger population (e.g. age 15-24), and require eight times the number of hospital bed days, compared to a population under age 45 (United States, Department of Health, Education and Welfare 1976a). In

B.C., during the fiscal year 1980/81, the Ministry of Health spent \$666 million on health care services for those 65 years and older, i.e. 10.7% of the population accounted for 34.7% of the budget (Lawrence 1982). The growth of the Long Term Care program gives some sense of the costs of caring for the elderly. In the five years since its inception, the program increased its client load from 17,000 to 43,000. The costs in 1978 were \$75 million, compared to over \$210 million in 1981.

At present, it seems unlikely that scientific or technological breakthroughs will be made which would dramatically diminish the need for health services. In B.C. the leading causes of mortality are cardio-vascular problems, neoplasms, accidents (almost 40% being motor vehicle), respiratory, and digestive problems (B.C. Ministry of Health 1979). There are no ready "cures" for these problems and the existing state of scientific knowledge holds no promise of simple solutions. Many of these problems are related to lifestyle and individual behaviour. Although there are encouraging trends (e.g. decrease in cardiovascular mortality), unfortunately, judging from past performance there will be no significant changes in the near term. It is worth noting also that improvements in mortality may lead to increased demand for health services, e.g. the prevalence of cardiovascular disease has increased. Not only will there be increased demand for health services provided traditionally by the health care system, but areas previously neglected or which may have been considered under another responsibility (e.g. "custodial" or "social problems") are now being seen as "health" problems: drug and alcohol abuse, mental illness, suicide, homicide, venereal disease, etc.

The gravity of the budgetary constraints on the health care system is

reflected in a number of changes undertaken by the Ministry of Health in recent years. There have been, for example, increases in Medical Plan premiums, daily hospital rates (paid by the patient), and in the "deductible" portion of a number of insured benefits. The growth of budgets of hospitals and programs receiving government funding has been restrained, resulting in bed closures and staff layoffs. The organizational structure of the Ministry of Health can be analysed in the shifting emphasis from a professional to a managerial/ administrative form. Campbell et al (1981) suggest that because of declining provincial revenues and rising costs, there was a shift in the Ministry of Health from "medical administration" to "health management". This was seen in the replacement of Dr. Key by Mr.P. Bazowski as Deputy Minister. Moreover, Campbell et al observed that "the Ministry of Health has quickly become dominated by professional managers with a strong commitment to cost containment and financial control and the new Deputy Minister (Bazowski) is recruiting into the Ministry more senior personnel who share his managerial and administrative orientation" (p.33).

I.C. Rising Consumer Expectations

Not only will more health services have to be provided -- for reasons cited above -- but there will be increasing pressure for higher quality health services. McGregor (1981) sees this factor as the "first and most important" cause of increasing health care costs. It is not that the absolute level of health expenditures are (or will be) inadequate compared to other parts of the world. Canada, and B.C., will continue to have a health care system which is the envy of many other nations. However, as

Hirsch (1976) has noted, the demand for public ("social") goods increases with affluence; and health services are one such public good. In times of resource development, pressures for redistribution may be dissipated by the expectation that everyone's piece of the pie will be increasing. This is not so in times of budgetary constraint; hence the pressures in B.C. despite \$2+ billion being spent on health care services.

Consumer expectations are rising as part of a larger movement involving many services, but including health care. Questions of iatrogenesis raised by Illich, and less polemically by many other researchers, have resulted in closer scrutiny of the health care system. For example, the effectiveness of coronary care units in reducing mortality associated with myocardial infarction has been seriously questioned (United States, Department of Health, Education and Welfare 1976a). Widely disparate rates for certain surgical procedures (on the basis of geography) have suggested that much "unnecessary" surgery is being performed. The rising number of malpractice cases in Canada reflects this tendency to increased expectations. Certainly some of these expectations are misplaced. A major factor is still the myth of the omnipotence of medical science. Regardless of the validity of these expectations, they exist and translate into pressures to provide health services. This may occur to the extent that these services are spoken of as "rights": "Health care is increasingly regarded not as a privilege of the more prosperous, but as a right of all" (United States, Department of Health, Education and Welfare 1976a, p. 26).

I.D. Special Interest Groups

In B.C., rising expectations are voiced in a number of ways. There are demands from rural communities for better health care services. The geographic and regional disparities of health care services are linked to the distribution of the population, with more services and more specialized services by virtue of the larger population and referral centre status of the Lower Mainland, and to a lesser extent the Capital Regional District. By comparison, services to rural areas are less; however, given the ease of communication and a philosophy which assumes health care is a "right", demands from rural communities are for equal services -- or at least for more than they presently have.

Certain groups are becoming more vocal and organized to obtain specific health care services and benefits. They have progressed from "social movements" to become more or less legitimate interest/pressure groups, e.g. the physically disabled and advocates for the mentally retarded. The list of disease groups (e.g. Multiple Sclerosis Society and Stroke Association of B.C.) and various advocacy associations (e.g. Social Planning and Review Council of B.C. and Mental Patients Association) in B.C. is lengthy. The Directory of Services for Greater Vancouver lists over 40 pages of "services", a large proportion of which are sponsored by special interest groups.

I.E. Purpose of Thesis

To recapitulate, increasing demands for health care translating into increased health care costs on the one hand, and economic and budgetary constraints on the other, provide the impetus to address fairly urgently

the complexities of the health care system. The concept is not a new one; the Report of the Ontario Health Planning Task Force (1974) made a similar statement:

"Unless the allocation of the resources available for health care is carefully planned and controlled, these resources will soon become inadequate to meet many of the health needs of Ontario's citizens. This means that priorities will have to be set for the use of all health care resources - human and physical, as well as financial. Viewed in combination, these factors point to the need to develop an integrated, coordinated system of health services that will provide high quality health care on an accessible basis throughout the province. Duplication of services will have to be eliminated, and coordination of programmes must be achieved to avoid further fragmentation and wasteful resource use" (p. 4).

Development of a Provincial Health Plan would be a major step towards an integrated and coordinated health care system. Weiss et al (1975) discuss the many advantages arising from both the process of developing a health plan, and the usefulness of the plan itself: programs and activities are linked to outcomes; longer timeframes are used for decision-making; inefficiencies are documented; values are integrated into the planning process; participation is broadened; communication is increased through discussion; terminology is standardized; beliefs are tested; accountability is increased; data is better organized; and evaluation is facilitated.

The purpose of this thesis is to describe a framework for the development of a Provincial Health Plan. It is not to develop the plan itself. In other words, the thesis concerns itself with what Taylor (1972) has termed "planning the planning", and addresses what Dror (1971) has defined as "metapolicy" -- policy about policymaking. In order to formulate a framework that takes into account the complexities and difficulties of plan development, yet remains clear and understandable to

the planners and decision-makers who would use the framework, it is useful to first review certain concepts about the process of planning. This is done in Chapter II, following which Chapter III discusses specific aspects of health planning. The concepts developed in Chapters II and III provide the basis for a proposed framework, details of which are presented in Chapter V. However, since the term "Provincial Health Plan" may be viewed differently by various actors within the health care system, it is important to explain the scope of the proposed Provincial Health Plan; this is done in Chapter IV. Clearly, the framework for the plan's development is useful only to the extent that the resulting plan is thought to be useful. If, for whatever reason, it is felt that the scope of the Provincial Health Plan as outlined in Chapter IV is overly restrictive or comprehensive, then the proposed framework for development of the plan may have to be reviewed. Conclusions of the thesis are summarized in Chapter VI. As well, suggestions for future research and steps towards the development of a Provincial Health Plan within the proposed framework are presented.

Chapter II. REVIEW OF GENERAL PLANNING

The first chapter of this thesis has provided a rationale for a Provincial Health Plan, without specifying the form that it might take, or indeed what planning approach can be used to develop such a plan. To better understand the planning approach adopted, a review of general planning is now presented. Planning is but one of many approaches to social maintenance and change. Others, not addressed in this paper, include education, social movements, and even revolution (Etzioni and Etzioni-Halevy 1973).

Planning has been described in a variety of ways. Steiner (1978) suggests an easily remembered, but somewhat broad, definition: planning is the process by which decisions are made as to "what is to be done, when it is to be done, how it is to be done, and who is to do it" (p. 7). Others stress the future orientation of planning. For example, Newman (1958) states: "Speaking generally, planning is deciding in advance what is to be done; that is, a plan is a projected course of action" (p. 15). Dahl (1959) emphasizes the rationality of planning: "Planning is more and more regarded as equivalent to rational social action, that is, as social process for reaching a rational decision" (p. 340). Another aspect is highlighted by Friedmann (1959) - the purpose of planning as progress towards a better society: "Planning is nothing more than a certain manner of arriving at decisions and action, the intention of which is to promote the social good of a society undergoing rapid changes" (p. 327). On reviewing these and other definitions of planning, Dror (1973) has attempted a synthesis: "Planning is the process of preparing a set of decisions for action in the future, directed at achieving goals by preferable means" (p.330). Dror's

statement is not necessarily the one correct definition of planning, but it does express a common thread which underlies the great number of acceptable definitions. Banfield (1973) makes the same point: "The word 'planning' is given a bewildering variety of meanings...Nevertheless, it may be that there is a method of making decisions which is to some extent common to all these fields and others as well..." (p. 139). Cantley (1981) agrees that "although there are some differences of terminology between the various authors, there is a fairly high degree of consensus on the main features" (p. 5). He goes on further to quote Drucker's (1959) definition of long-range planning, stated over 20 years ago: "The continuous process of making present entrepreneurial (risk taking) decisions systematically and with the best possible knowledge of their futurity, organizing systematically the efforts needed to carry out these decisions, and measuring the results of these decisions against the expectations through organized, systematic feedback."

Although there does seem to be a common thread which allows a meaningful general heading of "planning", there seems also a great number of disparate activities which might be subsumed under this heading. For example, construction plans for a new hospital, preparation of a budget and any effort towards developing a provincial health plan, all involve "planning". The following sections build a framework for sorting out these various approaches and processes, which have all been labelled "planning".

II.A. Rational Planning

As the name implies, the rational planning approach is rooted in

"rational" or "scientific" methods of problem solving. It is a transposition to the social sciences of the methodologies of the engineer. Interestingly, the phrase "social engineering" has lost its popularity, but more neutral terms such as "systems analysis" and "operations research" convey essentially the same notion.

Banfield (1973) uses the concept of a "means-end" schema as a starting point for planning. This is a model of rational choice, where an actor (either an individual or an organization) is assumed to have certain goals or "ends", and planning is the process by which he rationally selects the "means" to attain those ends. The means generally entail some course of action. Banfield lists four steps in this planning process:

- (1) analysis of the situation,
- (2) end reduction and elaboration,
- (3) design of course of action,
- (4) comparative evaluation of consequences.

The first step, analysis of the situation, involves consideration of the possible courses of action which could lead to the desired ends. As part of the analysis, factors such as available resources, obstacles to plans, and other situational factors must be taken into account. The second step, end reduction and elaboration, is the formulation or operationalization of the ends or objectives. Banfield distinguishes between "active" and "contextual" elements; the active elements being those ends actively sought by the planner, whereas the contextual elements exist but are only incidental to the plan. If during the elaboration of ends, there are conflicts between ends, then the planner must "discover the relative value to be attached to each (end) under the various concrete

circumstances envisaged in the courses of action" (p. 141). The third step, design of course of action, involves proceeding from the more general objectives to specific subobjectives which enable eventual attainment of aims. The fourth step, comparative evaluation, is essentially a cost-benefit approach to the consequences of alternative courses of action. Banfield stresses the importance of including both intended and unintended consequences in this evaluation.

Stoner (1978) takes much the same rational approach to planning, as a "more rational, fact-based procedure for making decisions...(which) allows managers and organizations to minimize risk and uncertainty" (p. 91). He also lists four basic steps to the planning process:

- (1) establish goals,
- (2) determine where you are (relative to your goals),
- (3) determine aids and obstacles to reaching your goals,
- (4) develop a plan,

The similarity to Banfield's list is fairly evident. However, Stoner does make a number of additional points. He notes that in practice, steps (1) and (2) are inseparable, i.e. goals can be formulated only in the context of the existing situation. The difficulty of establishing goals is also stressed; almost invariably there are conflicts and some choice or prioritizing is necessary. Stoner, in discussing step (4) (developing a plan), alludes to the tendency to "satisfice" rather than optimize when selecting among alternative courses of action; that is, instead of selecting the best alternative, the first acceptable alternative is used.

The systems analyst also takes a rational approach to planning. For example, Reisman (1979) lists seven steps to problem solving:

- (1) recognition of needs,
- (2) statement of problem,
- (3) formulation of the value model,
- (4) synthesis of alternatives,
- (5) analysis and testing,
- (6) evaluation,
- (7) decision-making,

Most of the steps are variations of those already listed above. It is worth noting that Reisman makes explicit the formulation of a value model, a step which is assumed by other rational planners, and thus often dealt with inadequately. He describes the value model as "a set of value relationships between the goals, objectives, constraints, and criteria which are pertinent to a given problem" (p. 239). As values are by their nature extra-rational, one can anticipate planning based on rationality will encounter significant problems at this step of the planning process.

Another systems analyst, Van Gigch (1974), presents a flow diagram outlining the organizational decision process (i.e. planning).

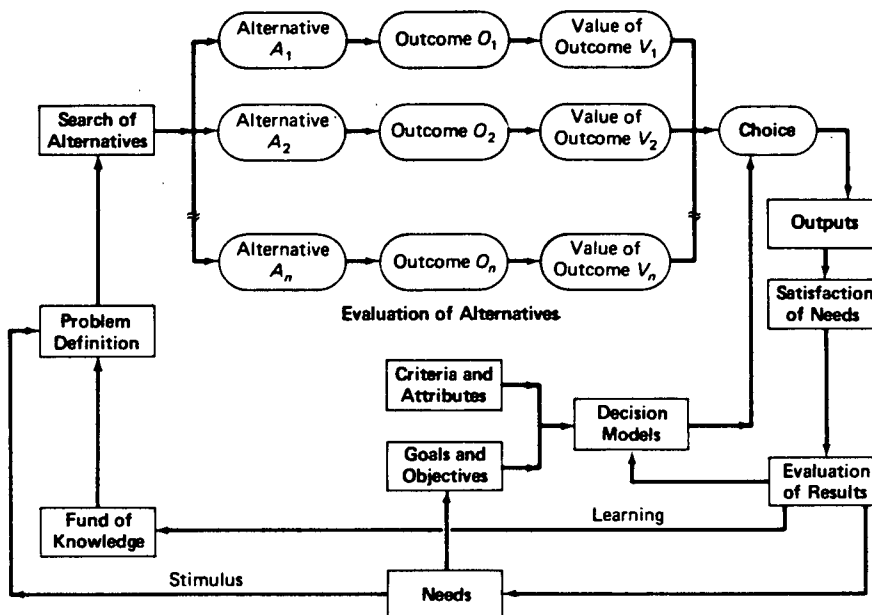


FIGURE 1: Organizational Decision Process

SOURCE: "Organizational Decision Process in Abstract Form" (After Cyert and March, *A Behavioural Theory of the Firm*, 1963, p.127, Prentice-Hall) from *Applied General Systems Theory* Second Edition by John P. van Gigch. Copyright 1978 by John P. van Gigch. By permission of Harper & Row, Pub. Inc.

The diagram repeats in a fairly compact way the process of problem definition (based on needs and available knowledge of the situation), development and selection of alternatives, and some evaluation of the selected course of action after implementation. It is useful to visualize the process as cyclical and ongoing, as implied by the closed loop nature of the diagram.

Taylor (1972) takes a more detailed view of planning, addressing himself specifically to health planning. He describes an eight stage sequence:

- (1) planning the planning and developing planning competence,

- (2) statement of policy and broad goals,
- (3) data gathering,
- (4) priority statement of health problems,
- (5) outline, with statement of major alternative proposals,
- (6) development of detailed plan with targets and standards,
- (7) implementation, as part of planning,
- (8) evaluation.

Taylor's approach overlaps a great deal the approaches already discussed. For example, the statement of goals and problems, followed by development of alternatives, etc. are indicated in the flow diagram shown in Figure 1. However, Taylor also attempts to take into account the importance of the political milieu, power groups, etc. Thus, he comments on the optimal position of the planning unit in the government hierarchy (i.e. closely associated with the administrative structure but not directly involved with administration), and states that "planning policies and goals must be politically determined". There is much greater orientation in Taylor's stages towards the implementation phase of the health plan. This is made explicit in the seventh stage, implementation as part of planning. He concludes that a balance must be struck between acceptance of innocuous plans confirming the status quo, and rejection of plans that are too innovative. A good plan should "contain the seeds of progressive change".

Taylor's concern with the usefulness of the planning process in the "real world" - the relevance of rational planning to decision makers in positions of authority - is more forcefully expressed in another school of thought, incrementalism.

II.B. Incrementalism

The incrementalist approach to planning argues that rational planning is hopelessly impractical. Donnison (1972, pp. 97 - 117) summarizes this position:

It is argued that long-range, synoptic or comprehensive analysis of problems as complex as those that confront the social policy-maker is usually impossible because of the dizzying variety of choices open to him, the profusion of their primary, secondary, and further repercussions, and the plethora of conflicting interests and pressures which must be accommodated before anything can be done. Put another way, the costs of gathering, analyzing, and interpreting all the information required to formulate and implement rational and comprehensive policies without intolerable delays are too high for anyone to attempt the task.

Lindblom (1973) is the best known advocate of incrementalism, and his model has six primary characteristics:

- (1) there is a focus only on those policies which differ incrementally from existing policies,
- (2) even within the scope of a limited number of policy areas, only a relatively small number of alternatives are considered,
- (3) for each alternative, only a limited number of consequences are evaluated,
- (4) since changes are incremental, there is constant adjustment and redefinition of the problem,
- (5) thus, no "right" decision is finally reached, only continuing analysis and evaluation,
- (6) the orientation is therefore remedial, and reactive rather than innovative and oriented towards future social goals.

Lindblom (1973) terms this process "successive approximation to some desired objectives in which what is desired itself continues to change under

reconsideration" (p. 163), or more simply, "muddling through". This series of incremental changes protects against being wildly off the mark, thus avoiding a full gain versus zero loss situation. By limiting analysis to incremental changes of policy, the process is much simplified. Thus, given the usual conditions of limited resources and limited human capabilities, the incrementalist approach is to be preferred. Lindblom makes the other major point that it is very difficult to clarify and prioritize values, and thus objectives. He states that this is the fatal weakness of rational comprehensive planning; planners or decision-makers seldom have a clear indication of public preference since in most issues there is little public discussion or indication of public preference. Moreover, the individual has difficulty ranking values at the abstract, philosophical level. Importance or relative weighting can be assessed only in context, and thus particular policies must be stated and choices made among alternative policies which offer different marginal combinations of values. Lindblom (1973) claims: "Somewhat paradoxically, the only practicable way to disclose one's relevant marginal values, even to oneself, is to describe the policy one chooses to achieve them" (p. 157). In a sense, one must simultaneously choose both a policy to attain certain objectives and the objectives themselves. Lindblom considers the means-end approach inappropriate since there is in practice no way to determine ends without at the same time considering the means. In situations where there is dispute over the "correctness" of a plan (based on conflicting values), the criterion to be employed in evaluation is whether there is agreement by the decision-makers.

Altshuler (1973) supports Lindblom's contention that the "public

interest" is not easily determined and that implicit in comprehensive planning is the assumption that a "community's various collective goals can somehow be measured at least roughly as to importance and welded into a single hierarchy of community objectives" (p. 194). The question looms whether this assumption is valid, given the difficulties in eliciting public discussion on major issues, the need for expertise and data to really understand the complexity of an issue, and the lack of organized groups or spokesmen to whom a planner can refer. Altshuler (1973) states: "In trying to persuade politicians to commit themselves to the policy visions of planners, defenders of comprehensive planning must contend that the politicians will benefit their constituents by doing so. To the extent that the planners themselves lack comprehensive perspectives, however, this contention becomes less and less plausible" (p.202). Etzioni (1973) similarly questions the assumptions implicit in the rational approach about the control exercised by the decision-maker. He points out that there is often no agreement upon a set of values that give criteria by which to evaluate alternatives, especially as values are both affected by, and affect the decisions made. In practice, questions of fact become confused with questions of value, and the means and the ends cannot always be separated.

Although at first glance it may appear that the incrementalist approach to planning is the preferable one, a number of authors provide cogent arguments as to the fallacies and weaknesses of Lindblom's model. Donnison (1972) points out that underlying any ostensibly incremental growth is an implicit master plan which determines the choice among incremental alternatives. There is almost always some overall plan which orients choice and decisions to an ordered pattern - if viewed from a sufficiently distant

timeframe. An example of this in the health care field is development of health care insurance in Canada. If any single event or decision is analyzed, it appears to be a result of a "plethora of conflicting interests and pressures". Yet a retrospective analysis indicates a definite pattern towards increasing government responsibility in assuring adequate insurance coverage of health care costs: National Health Grants (1948), Hospital and Diagnostic Services Act (1957), National Medical Care Insurance Act (1966). Within each of the provinces, extension of coverage continues, e.g. Pharmacare, Denticare. Donnison also warns against undue reliance on an incrementalist approach since a number of programs are inherently unsuitable for implementation by stages. Etzioni (1973) similarly argues that although the incrementalists concede the existence of fundamental decisions which occur outside their model, they underrate the importance of such fundamental decisions. Even if these decisions occur rather infrequently, they set the directions for incremental changes in the years following. He also points out that Lindblom's model assumes a pluralistic society, ignoring the problems of under-representation by the poor or other minority groups. Faludi (1973) disputes that incrementalism should serve as the normative model for planning: "The flaws in Lindblom's argument are that he completely replaces validity as a criterion for decisions with agreement, that he absurdly magnifies theory, and that he identifies rational-comprehensive with another form of planning which I shall call blue-print planning" (p. 117). Faludi further notes that incrementalists maintain that various groups are able to continuously adjust their interests (i.e. what Lindblom terms "partisan mutual adjustment") but do not specify how those groups themselves arrive at consensus as to what in fact are

their own interests.

Neither incrementalism nor rationalism can claim to be the "best" approach to planning in all instances. Conceptually these two modes of planning can be considered as lying at opposite poles of a continuous spectrum. This dichotomy of rational approach versus incrementalist approach is analagous to Friedmann's (1973) concept of developmental versus adaptive planning. Developmental planning involves a high degree of autonomy with respect to setting of ends and choice of means; adaptive planning accepts that most decisions are heavily contingent on the actions of others external to the planning system. Regardless of the labelling, the difference of these two approaches should be fairly clear. As with most instances of opposing approaches to any issue or problem, there are those who advocate a middle-range compromise.

II.C. Middle-Range Approach

Etzioni (1973) advocates an approach to planning which combines the advantages of both rational planning and incrementalism: "each of the two elements in mixed scanning helps to reduce the effects of the particular shortcomings of the other; incrementalism reduces the unrealistic aspects of rationalism by limiting the details required in fundamental decisions, and contextualizing rationalism helps to overcome the conservative slant of incrementalism by exploring longer-run alternatives" (p. 225). This "mixed-scanning" approach suggests a truncated analysis over a broad range of sectors, thus permitting an overview at reasonable cost. Coupled with this would be a full detailed review of a limited number of sectors. The relative amounts of truncated and detailed review would depend upon the

context in which the planning takes place, taking into account those in power, whether the planning environment is changing rapidly, and on the capability to implement any decisions that would result. Know (1979) describes four basic kinds of planning contexts: systems, partnerships, alliances, and individual actions. Systems involve close contact with policy makers who select goals and control implementation. Partnerships describe a situation where each participant submits plans to a bargaining process. Alliances depend upon an ability to mobilize public support needed, with long range planning compromised to incremental adjustments.

Although Myerson (1973) was writing in the context of community planning, it is worth noting the functions he suggests for middle-range planning:

- (1) central intelligence,
- (2) pulse taking,
- (3) policy clarification,
- (4) detailed development plan,
- (5) feed-back review.

The central intelligence function disseminates relevant information to providers and consumers. Pulse-taking refers to detection of trends and alertness to potential problem areas. This leads to policy clarification, ie. adjustments of policy through clarification of the implications of alternatives. The detailed development plan would have a five to ten year time horizon, and would serve as the linking mechanism between longer-range planning and incremental planning.

The middle-range approach to planning is similar to Coleman's (1975) concept of "policy research". He saw this as a guide to action and

decision-making, unlike "discipline research" which is more academically oriented. Thus in policy research, "partial information available at the time an action must be taken is better than complete information after that time" (p. 22) and the "value of research results lie in a high probability of giving approximately the right guides to action, rather than in their derivation from, or correspondence to, a good theory" (p. 23). Boudreau (1976), in discussing reasons why the social sciences do not appear to have influenced health policies, makes the same point that academic researchers may have to compromise scientific method in favour of relevance and timeliness.

Diagrammatically, the range of approaches to planning could be outlined as follows:

Rational ←———— Middle-range —————→ Incremental

Before making use of this typology, it is necessary to consider the different hierarchical levels at which planning takes place.

II.D. Planning Levels

Crichton (1981) suggests a paradigm showing stages in the process of translating social philosophies into social services. From a government perspective the hierarchy is as follows:

Philosophy

Ideologies

Government Policy Planning

Administrative Planning

Program Planning

Service Delivery

In order to simplify, numerous feedback loops and interactions between levels have not been diagrammed. Of particular interest to planners in government are the levels of government policy planning and administrative planning. Government policy planning involves "selection of broad ideological goals, determination of priorities on ideological grounds, consideration of the 'general will', development of definitions, categories and classes, development of legislation and regulations, and development of standing plans" (p. 279). The importance of linkages to ideologies and the political situation is stressed by Hall (1972): "The planner's desire to diassociate himself from the political process reflects a misunderstanding of his primary responsibilities, which have been succinctly defined as the 'illuminator of choices for the political decision-maker'" (p. 125). Administrative planning further specifies what has been generally outlined in policy planning, but with emphasis upon negotiations as to structures, processes, and resource allocation and management. Additionally, it is at this level that there is development of contracts of service. These functions and developments continue at the program planning level, and eventually result in service delivery. At this level, "planning" or "policy" takes the form of allocation and rationing of individual services.

A comparable hierarchical approach to planning levels is taken by Stoner (1978), although the terminology differs somewhat. His outline is shown in Figure 2.

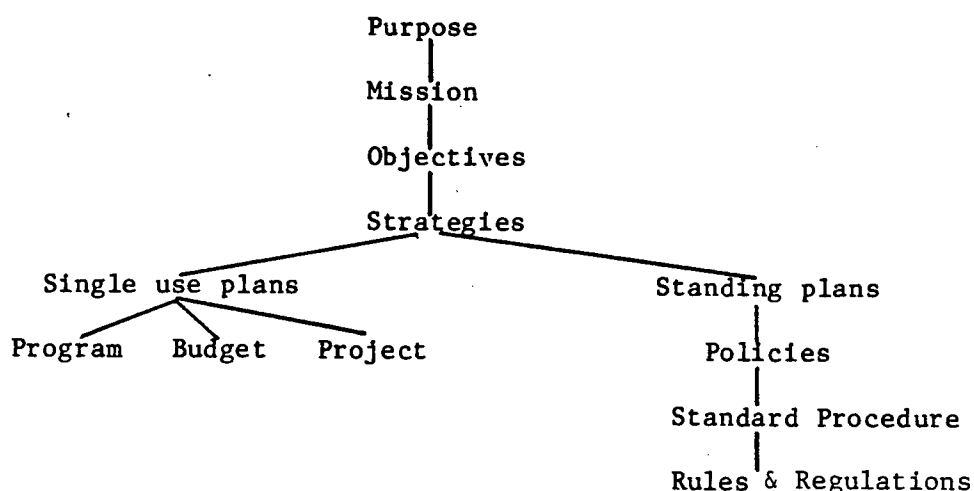


FIGURE 2: Hierarchy of Organizational Plans

SOURCE: James A.F. Stoner, Management, ©1976, p.99. Reprinted by permission of Prentice-Hall, Inc., Englewood Cliffs, N.J.

The purpose of an organization is its primary role as defined by society; the mission is more limited in scope, being what the organization sees as its broad aims. The objectives are those ends which enable the organization to carry out its mission. Strategies are the broad programs for achieving the objectives. Following from the strategies are tactics, the detailed allocation of resources to achieve strategic goals. These tactics can take the form of single use plans or standing plans. As a result of tactical plans, individuals will be engaged in certain types of activities and service.

Planning levels can be correlated with the organizational hierarchy; the higher planning levels correspond to higher levels of the organization chart. Thus, if a business organization is used as the reference point, an approximate mapping might be as shown in Figure 3. If another organization is used, different titles could be substituted but the basic pattern remains unchanged, e.g. within the B.C. Ministry of Health: Cabinet, Minister of Health, Deputy Minister, Assistant Deputy Ministers, Executive Directors.

Philosophy	Purpose	Board of Directors
Ideologies	Mission	Chief Executive Officer
Policy Planning	Objectives	Executive Vice-president
Administrative Planning	Strategies	Vice-president of Functional Area
Program Planning	Tactics	General Manager
Service Delivery		Supervisors

FIGURE 3. Planning Levels

However, it is only the general correspondence which should be stressed; personnel at one level of the organization structure will be involved in a number of different planning levels- the mapping above merely indicates the organizational level where a certain planning level is most often undertaken.

If the concept of planning levels is combined with the typology of planning approaches discussed earlier in this paper, a matrix results which can be used as a framework to classify the great range of planning activities which confront the policy analyst or planner. This matrix is shown below:

PLANNING LEVEL	PLANNING APPROACH		
	Rational	Middle-range	Incremental
	A	B	C
1) Philosophy			
2) Ideologies			
3) Policy Planning			
4) Administrative Planning			
5) Program Planning			
6) Service Delivery			

FIGURE 4. Planning Mode-Level Matrix

There has been a tendency to equate policy planning with rational planning, and service delivery or program planning with incremental planning. The matrix suggests that any planning level is subject to a range of planning approaches. Thus a rational scientific approach may be taken in planning services or programs, or policy planning may be done on an ad hoc incremental basis.

Using this matrix as a framework allows a synthesis of various other models of the planning process. It is worthwhile noting that Friedmann (1973) has formulated a conceptual model for the analysis of planning. His diagram is reproduced in the following figure.

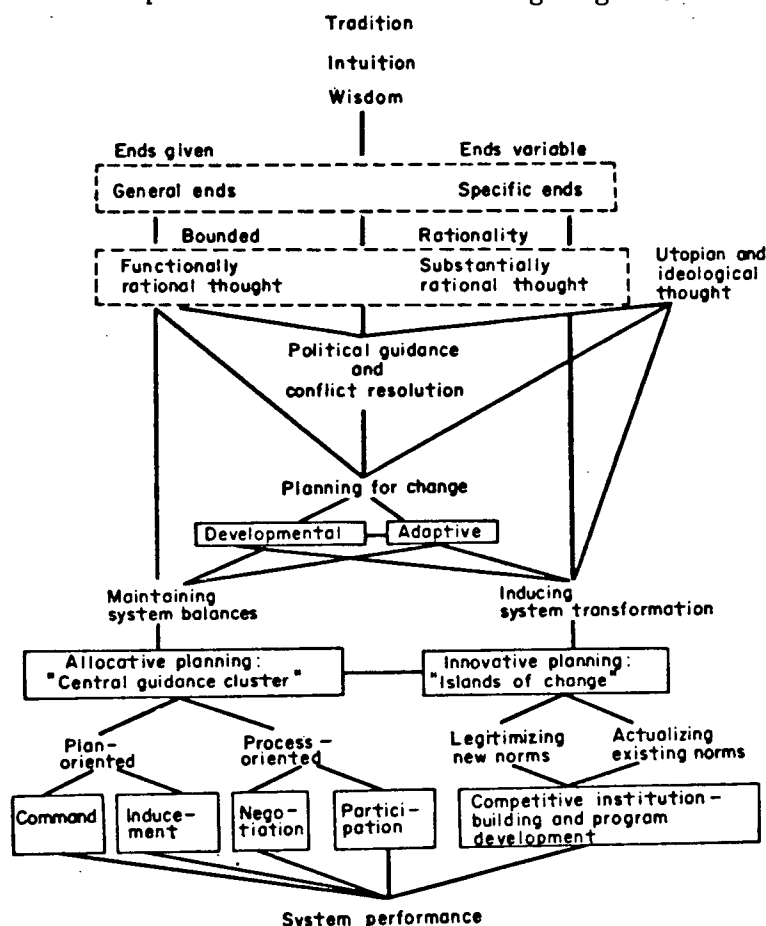


FIGURE 5. Conceptual Model of Planning

SOURCE: J. Friedmann, A Conceptual Model for the Analysis of Planning Behaviour. In A. Faludi (ed), A Reader in Planning Theory. Pergamon Press, 1973, p.349.

The components and relationships appear fairly involved, but placing his concepts in the matrix clarifies the system. Friedmann describes two forms of planning: developmental and adaptive. Developmental planning is equivalent to rational planning (and thus corresponds to the A cells in Figure 4.); adaptive planning to incremental planning (and thus the C cells). He does qualify developmental planning as "not only technical, but also, and to a large degree, a political function", and that planning must meet needs internal to the political process (e.g. symbolizing progress, or establishing a national consensus/unity). This qualification can be seen as a shift to a middle-range approach. The balance point, or the location on the planning approach spectrum depends on a number of factors: "Technical planning, therefore, moves temporarily into the foreground whenever goals are clear, widely held, and deemed to be important; whenever in such a situation system performance is believed to depart significantly from the norm and whenever, given all of these conditions, expert judgement coupled with a variety of control mechanisms is held to be more effective than political manipulation" (p. 353).

Friedmann (1973) discusses a number of other concepts related to planning theory. He notes that thinking can be "rational" or "extra-rational". He further states that rationality can be "bounded" or "nonbounded". Bounded rationality refers to rational decision-making within constraints of the situation, i.e. to be as rational as possible given the existence of interest groups, political opposition the economic system, existing information systems, the bureaucratic structure, etc. But this is essentially a description of a middle-range planning approach. Friedmann

makes a distinction between "functional rationality" and "substantial rationality". Functional rationality refers to a rational approach with respect to means only, whereas substantial rationality refers to a rational approach with respect to both means and ends. This idea is easily incorporated into the matrix by considering that for any particular "end", the "means" are operationalized at a lower planning level. Thus, functional rationality would describe a situation where an incremental approach is taken at a certain planning level, followed by a rational approach at the next lower planning level. For example, a "political" decision may be made to expand a medical school. Although this objective may not be rational (i.e. in cell 3A of the matrix in Figure 4.) the planning for such an expansion may be quite rational (e.g. calculation of additional lab space and teaching staff required) and result in the most cost-effective way of achieving the stated goal.

Jantsch (1972) discusses a planning approach which stresses some of the same points as the approach adopted in this thesis:

- (1) introduction of normative thinking and valuations into planning;
- (2) system design a central feature;
- (3) appropriate planning levels for a given structure: policy planning; strategic planning; and tactical or operational planning.

The first point is discussed at length in describing the development and applicability of Values in the Provincial Health Plan, (Section V.A.). The second point is reflected in development of a conceptual model of the health care system (Chapter III). The third point corresponds in many ways to the hierarchy of planning levels adopted in this thesis. Since

the planning matrix described has six levels, there is not an exact parallel with the policy, strategic, and operational levels; or the corresponding policy, systems, and project planning levels described by Reeves et al (1979). For example, according to Dever (1980), who adopts Jantsch's categorization, the policy planning level embodies "values, goals and objectives". The planning matrix, by comparison, distinguishes between values/goals at the ideologic planning level, and the objectives (long term) at the policy planning level. There is, in Dever's levels, little attention to the range of planning modes (i.e. from rational comprehensive planning to incremental planning.) Instead, he focuses on the results or outcomes of the differing planning levels. These are termed:

- (1) "creation of institutions";
- (2) "creation of instrumentalities";
- (3) "operations".

In other words, institutions are the conceptual basis of the planning (and in the context of planning for the Health Care System, this would take the form of concepts expressed in the Value Statements section of the Provincial Health Plan), and conceptual framework for the Health Care System. The instrumentalities are then the structures and mechanisms enabling service delivery or operations, e.g. legislation, programs, hospitals. The outcome at the lowest planning levels are then actual operations or service delivery. The combination of planning levels is expressed diagrammatically in Figure 6 with examples cited for Health Care (Dever 1980). Note that he considers the institution to be the Community Health Care System; the instrumentalities to be centres for high level wellness, etc.; and the operations to be putting high level wellness into daily living.

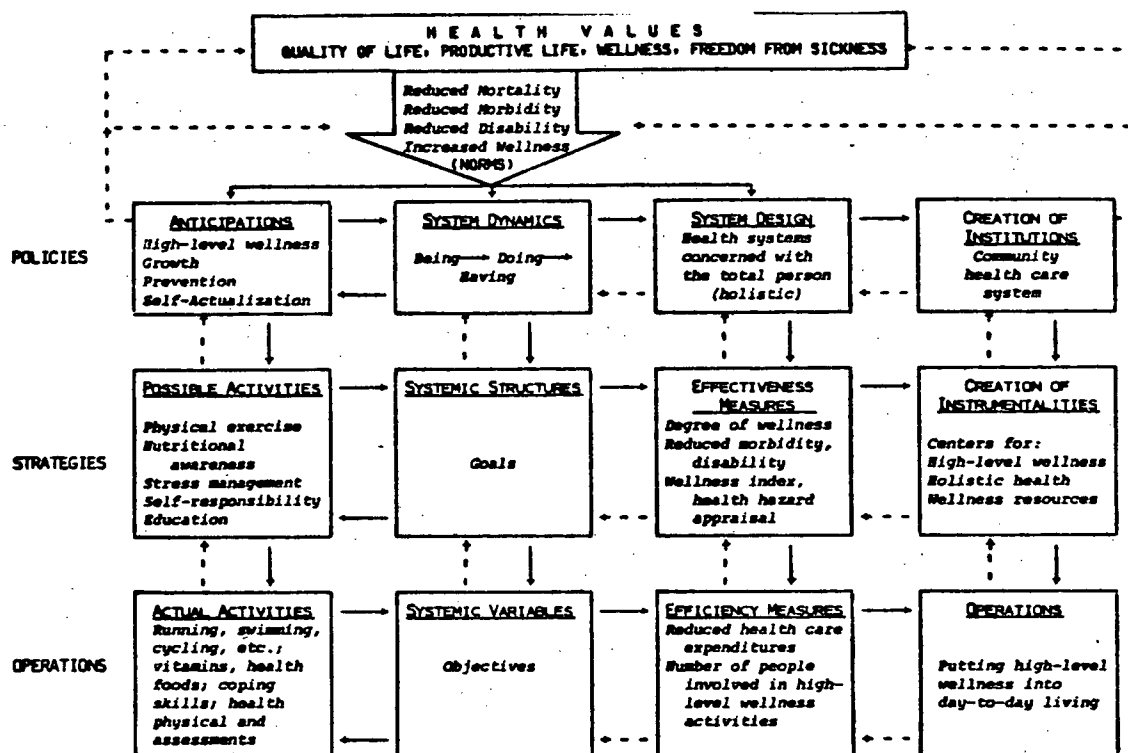


FIGURE 6. Planning Model for "Wellness and Holistic Health"

SOURCE: As adapted from Jantsch, Technological planning and social futures (London: Associated Business Programmes, 1972) p.16, in Dever, G.E.A., Community health analysis. Reprinted courtesy of Aspen Systems Corp. Copyright 1980.

This figure is reminiscent of the planning matrix shown earlier. There is a more or less common axis (planning levels), but the planning matrix shows planning modes at different planning levels, whereas Dever's diagram shows planning outcomes at different planning levels. Incorporating the latter into the planning matrix results in a three-dimensional planning matrix, as shown below:

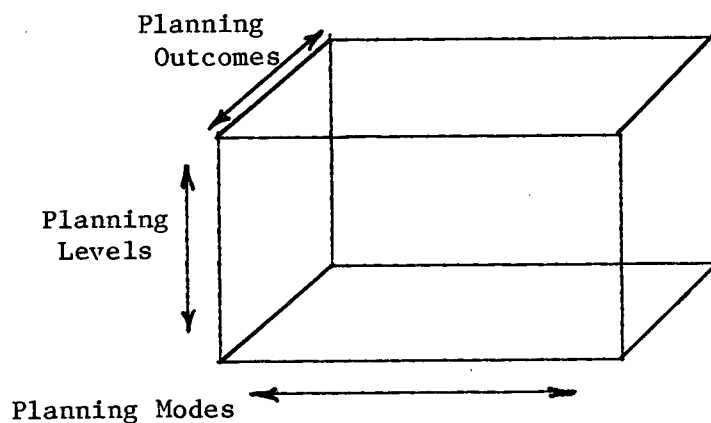


FIGURE 7. Planning Mode-Level-Outcome Matrix

II.E. Other Planning Models

Using the introduction of Medicare in the United States as a case study, Marmor (1973) illustrates how policy or planning can be seen as a result of actions of rational actors, as a result of organizational processes, or as outcomes of bargaining and negotiations. Using the rational actor perspective, "political occurrences may be properly characterized as the purposive acts of national governments, to summarize the varied activities of governmental representatives as the nation transforms 'unwieldy complexity into manageable packages'" (p. 97). Thus policy is seen as resulting from actions of rational decision-makers who seek

solutions to certain problems or attainment of certain goals. Central to such an analysis are explanations as to goals, alternative solutions, and consequences of the actions undertaken. The organizational process perspective sees actions as outputs of organizational functioning in a standard pattern. This analysis focuses upon "patterns of statements, directions, and actions of relevant agencies and departments" (p. 10) and assumes an incremental change process. The bureaucratic politics perspective sees policy as a result of "outcomes of a series of overlapping bargaining games...political bargaining among a number of independent players, of compromise, coalition, competition, and confusion among government officials" (pp. 103 - 104). In order to understand this process, the analyst must be aware of the power and position of the principal players. Although Marmor's intent is to provide an analytical framework, he chooses also to describe the introduction of Medicare as best explained initially by the rational actor perspective, then the organizational process perspective, and lastly by the bureaucratic politics perspective. This suggests strongly that over time an issue may in fact move from a rational planning approach (corresponding to a rational actor analysis), to a middle-range approach (corresponding to organizational process analysis) and finally reaching an incremental planning approach (corresponding to a bureaucratic politics analysis). The matrix in Figure 4. is constructed in such a way as to suggest that an issue will "descend" the various planning levels, resulting eventually in some sort of individual service or activity; Marmor's description implies that an issue may take a rather circuitous route, passing through various planning modes as well as through planning levels. If this pathway does exist, any attempts to move

from one planning level to another directly will encounter resistance.

The matrix does not indicate whether a particular planning approach is best for a particular planning level. Other factors must be taken into account. It would be an oversimplification to assume that the middle-range approach guarantees success. Using an organizational process perspective, Alford (1972) examined a major U.S. city and found that the "expansion of the health care industry and the apparent absence of change are due to a struggle between different major interest groups operating within the context of a market society - professional monopolists controlling the major health resources, corporate rationalizers challenging their power, and the community population seeking better health care" (p. 128). He describes the professional monopolist as researcher, physician, or other health professional, who shares an interest in professional autonomy and control of conditions of work. The corporate rationalizers include the medical schools, public health, hospital administrators, and government planners. They share an interest in maintaining and extending the control of organizations over conditions of work of professionals to ensure achievement of organizational goals. The community is described by Alford as being heterogeneous with respect to health need, ability to pay and organize, but sharing an interest in obtaining maximum health professional responsiveness, and also an interest in access to high quality health care. There is an inherent tension between the professional monopolists and corporate rationalizers, with the "equal-health" advocates of the community easily co-opted into one or other camp. Alford (1972) concludes: "The relationship between them (corporate rationalizers) and the professional

monopolists is symbiotic in that the ever increasing elaboration of the bureaucratic structure is justified by the need to coordinate the expansion of health care providing units at the bottom. No group involved has a stake in the coordination and integration of the entire system toward the major goal of easily accessible, inexpensive, and equal health care" (p. 145). The important aspect of Alford's analysis is that a middle-range planning approach (i.e. the rational approach of the corporate rationalizers as constrained by situational factors, power groups, etc.) was ineffectual.

Gilbert and Specht's (1974) classification of planner as technocrat, bureaucrat, or advocate, also provides clarification of the matrix, or at least for specific cells of the matrix. The technocrat is a specialist within the health care system having proper linkages. The types of experts would include epidemiologists, sociologists, etc. This type of planner and planning would be located under the rational approach column of the matrix, usually at the policy or administrative planning levels. Gilbert and Specht see bureaucratic planning as trying to introduce rationality, although not perfectionism into the health care system. Its activities would be regulative, allocative, and operational. The bureaucratic planner is constrained by a great number of pressures: logical difficulties, psychological stress, lack of data, etc. In response, there is a tendency to invoke defense mechanisms, such as stereotyping, adherence to rules rigidly, postponing action, and political decision-making. As envisaged by Gilbert and Specht, this type of planning (and presumably its associated pitfalls) is located under the middle-range planning approach, usually at the program or administrative or possibly

policy planning levels. Advocacy planning accepts the pluralistic model inherent in the incremental approach to planning. Thus, it is located under that column in the matrix. However, it is usually only at the ideologic or policy planning levels that advocacy planning is incremental. In the administrative and lower levels, advocacy planning could well take a rational or middle-range approach.

Other planning models or theories could be cited which focus on one or other of the cells within the matrix. For example, Yarmolinsky's (1971) classification of trend measurement, advising on policy choice, program development, trouble shooting, and evaluation could be fitted into the matrix. Stewart's (1963) list of managerial roles (emissaries, discussers, trouble shooters, backroom specialists), or Glennester's (1975) categorization (incrementalist, managerial, pluralist), or Blum's (1974) list of planning modes (problem control, allocative guidance, exploitive guidance, construction of a desired future) could also be analyzed in terms of the matrix. However, such discussion is beyond the scope of this thesis.

Chapter III. REVIEW OF HEALTH PLANNING

On analyzing health plans with a scope similar to that proposed for the Provincial Health Plan, it is evident that a common conceptual scheme serves as the basis. A number of models for the health care system are outlined below. Then their similarities and common elements are discussed.

III.A. Models

Before presenting the models themselves, it may be appropriate to touch upon the general concept of models. Reisman (1979) states: "A model is no more than an abstract representation of a part of reality" (p. 16). Deacon (1961) defines a model as "an artificial representation of a system, a process, organism, or environment designed to incorporate certain features of that system, process, organism, or environment according to the purposes which it is intended to serve".

A number of points should be kept in mind when considering models of the health care system. The model need not appear intuitively attractive; it may "feel" quite artificial, yet be extremely useful if validated. The model represents only a selected aspect of the real system; the "correctness" of selection depends very much on the purpose intended. For example, the purpose of MEDICS was "fundamentally that of a planning tool, to be used as a short-term predictive aid in testing various possible interventions and strategies..."(Quebec 1972, p. 2). The importance of practical application, rather than theoretical elegance is sometimes neglected. Bergwall (1975), on reviewing in detail some 37 models of the health care system , concluded that few of the models found real life

application because of a number of constraining factors: few models were developed by health planners; data requirements were generally onerous; models tended to be prescriptive and comprehensive, with assumptions and complex conceptual frameworks; models did not reflect reality; funding for the development of the models did not imply funding for their application; health planners lacked familiarity with systems and modelling. The spin-offs of modelling efforts are perhaps more useful than the efforts themselves. Belanger et al (1974) note: "The task of developing the model can focus human energies from diverse disciplines on a set of common objectives. Further, it leads to explicit definition of data needs, and thus to the design of health information systems" (p. 414). In the case of the Provincial Health Plan, the purpose of presenting a conceptual model of the health care system is to provide a context for explanation and development of a plan, which is not so much a descriptive or predictive tool as a management tool. Shigan (1979) notes that communication problems exist between the decision maker and model builder, rooted in differences in education, experience, and approach to real health care problems. Clarification of a simplistic model for the health care system may bridge this communication gap.

The development of health care system modelling is reviewed by Campbell (1980) . He traces introduction of systems analysis during and after World War II, and its spillover into the health area in the 1960's, using simulation, econometric, optimization (linear and non-linear) and Markovian flow models. In Canada, by the 1970's, a number of modelling projects were receiving government support in Quebec, Ontario, and British Columbia. This burst of activity soon faded, and by the mid 1970's,

development had essentially ceased.

The MEDICS model, developed in Quebec, is shown in Figure 8., and in more detail in Figure 9. Using data on population, morbidity, and health resource trends, this model matches health care demands and resources under the assumption that scarcity of resources relative to demand exists and will continue to do so. The model also allows computer simulations of policy initiatives and the probable impact on this matching of health care demands and resources (Quebec 1972) .

The Human Resources Research Centre (HRRC) Prototype Micro-econometric Model of the U.S. health care system is shown in Figure 10. It draws upon supply/demand theory, relying on the "market" to accomplish matching and based on "price" and "quantities" of services (Yett et al 1979) .

Although activity in Canada diminished in health care system modelling, the International Institute for Applied Systems Analysis (IIASA) has been developing a set of submodels of national health care systems for health planning purposes (Shigan 1979) . This is shown in Figure 11.

A less technically oriented approach, where the model of the health care system serves more as a conceptual framework is seen in Figure 12. As might be deduced from the emphasis on hospitals, this is a model included in a consultant's report to the Ministry of Health in the area of hospital planning (Ernst and Whinney 1980) .

In Figure 13., Reinke's (1972) model of the health care system is outlined. It is included in a text devoted to "health planning", and thus serves as a conceptual framework that Reinke feels to be useful in the planning process. Another model, shown in Figure 14. takes a broader viewpoint in defining "health" (Shigan 1979) .

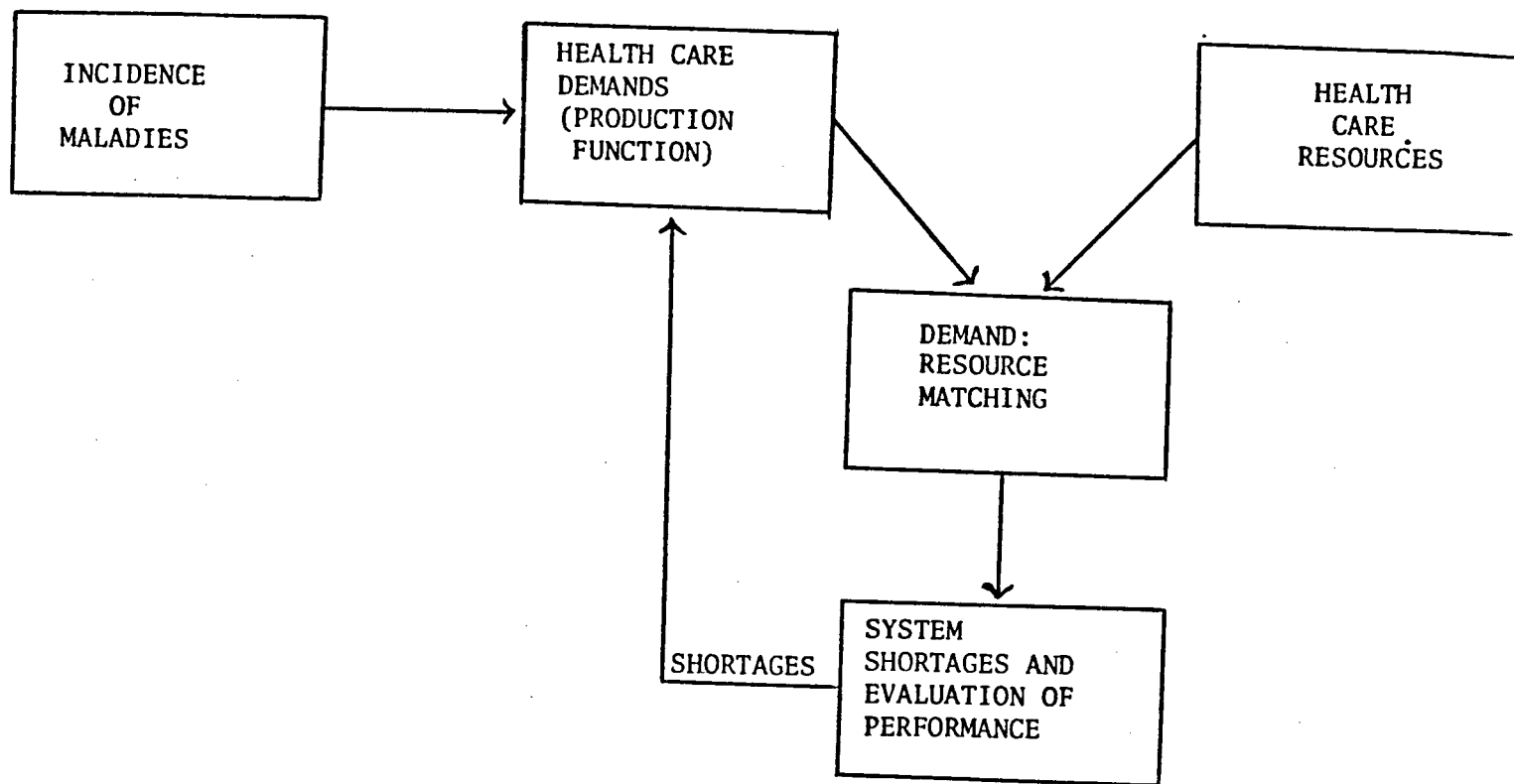


FIGURE 8: MEDICS Macro-model

SOURCE: Quebec, A Program to Model the Health Care Delivery System of Quebec.
Ministere des Affaires Sociales, 1972.

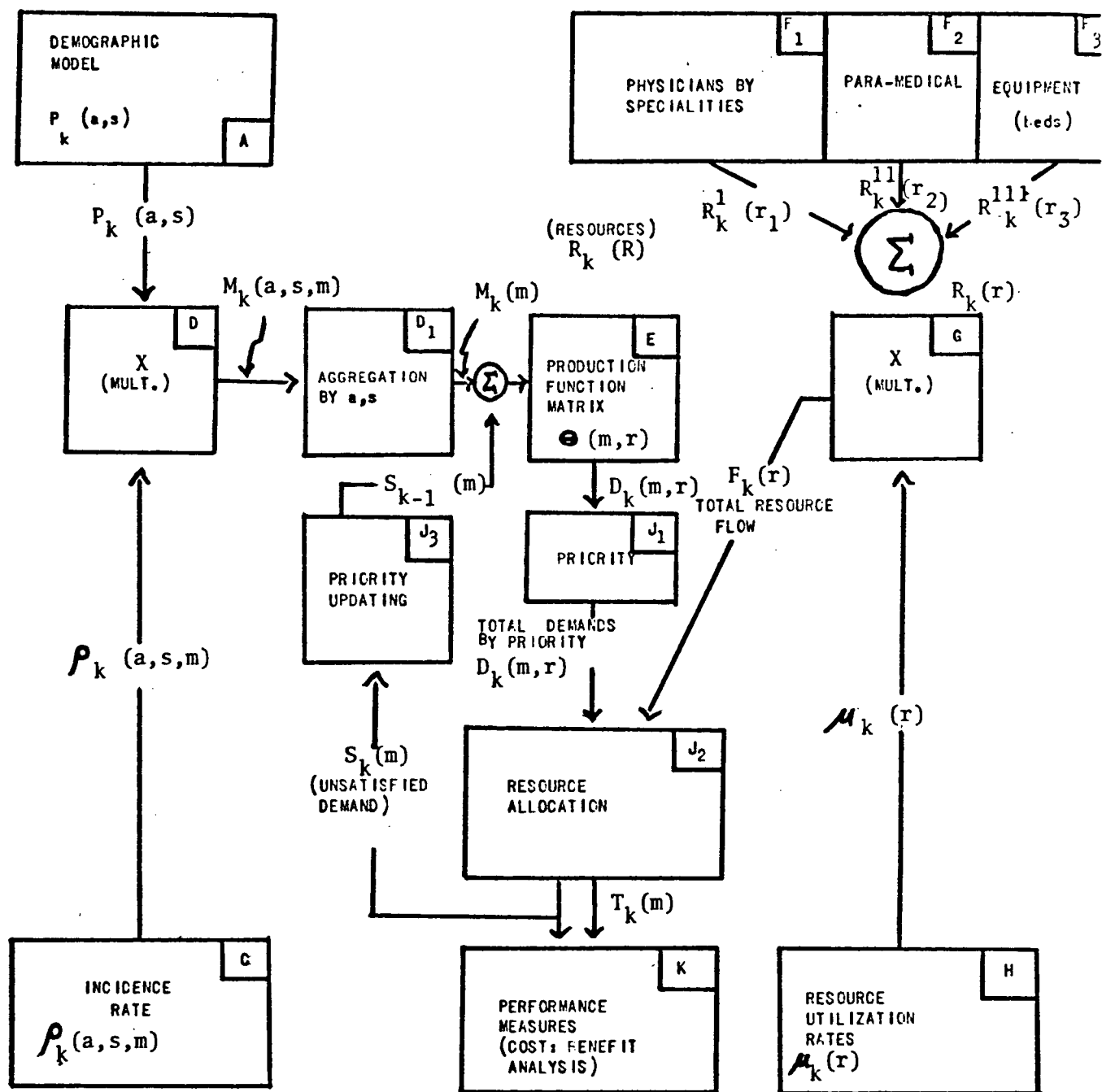


FIGURE 9. MEDICS Flow Model

SOURCE: Quebec, A Program to Model the Health Care Delivery System of Quebec. Ministere des Affaires Sociales, 1972.

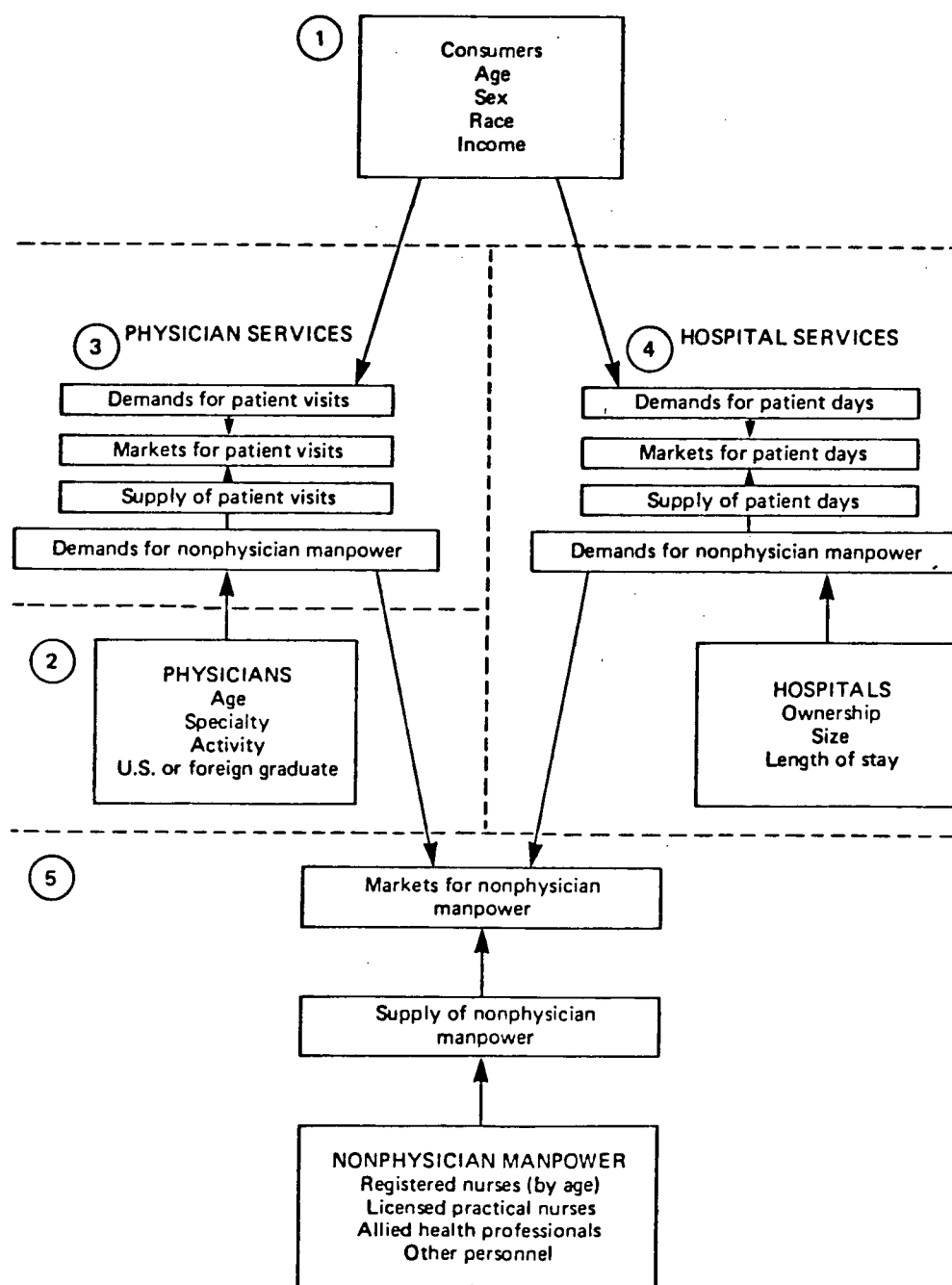


FIGURE 10. Micro-econometric Model of the Health Care System

SOURCE: D.E. Yett, L. Drabek, M.D. Intriligator, & L.J. Kimbell, A Forecasting and Policy Simulation Model of the Health Care Sector. Lexington Books, 1979, p.7.

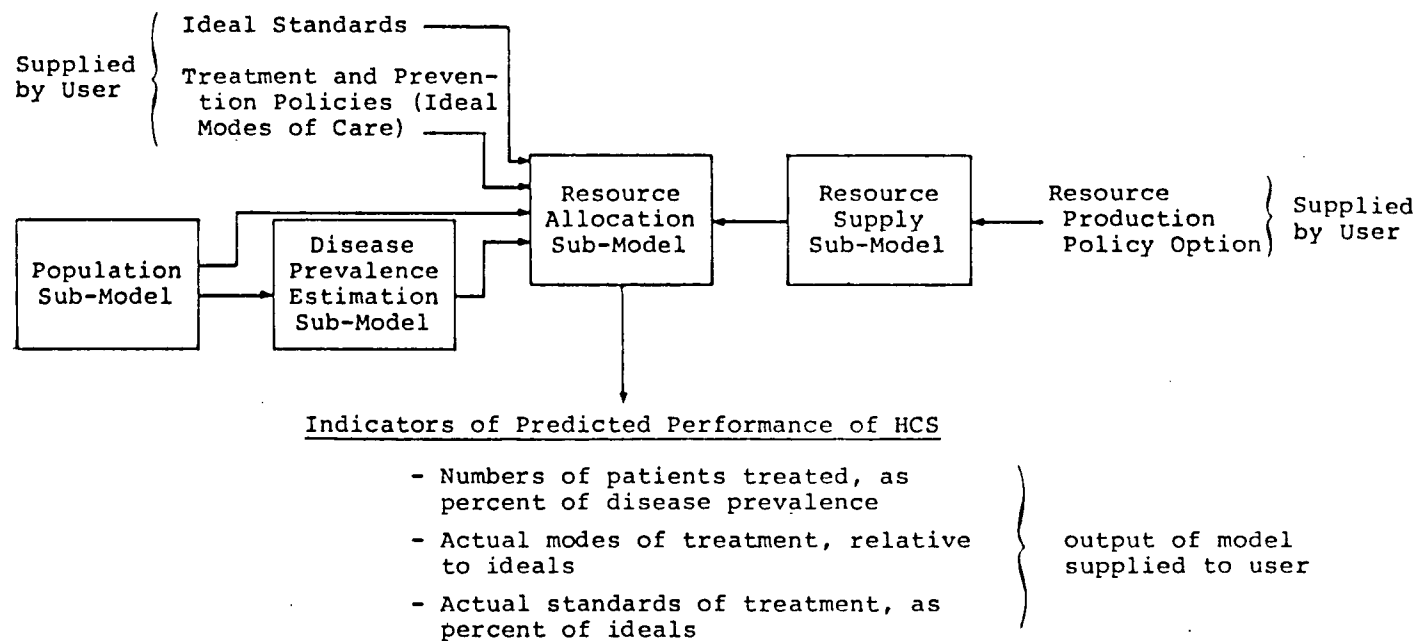


FIGURE 11. The IAASA Model of the Health Care System

SOURCE: R.J. Gibbs, The IIASA Health Care Resource Allocation Sub-model: Mark I.
International Institute for Applied Systems Analysis, 1978, p.2.

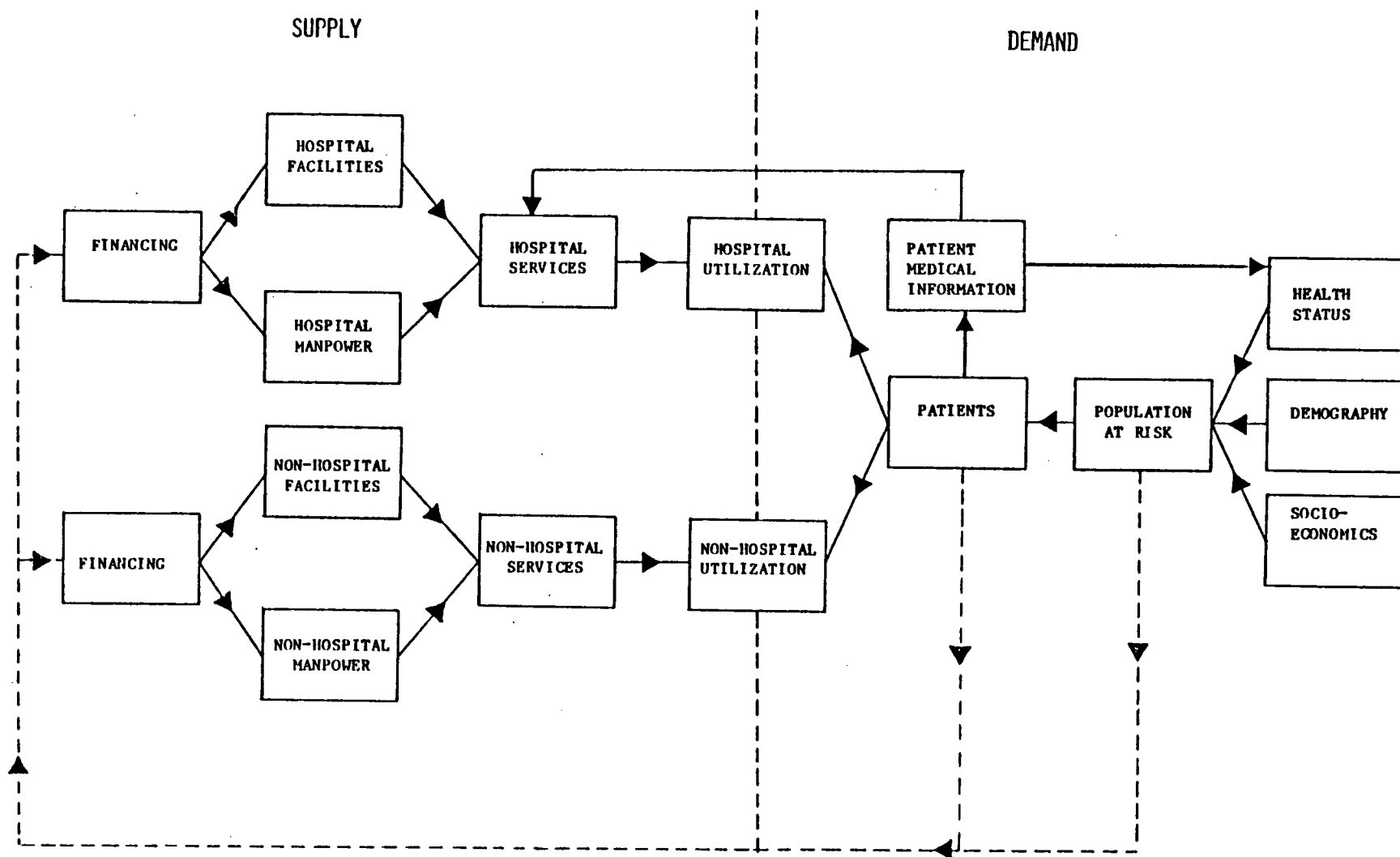


FIGURE 12. The Health Care Delivery System

SOURCE: Ernst & Whinney, Data Elements Manual/Joint Hospital Funding Project, 1980.

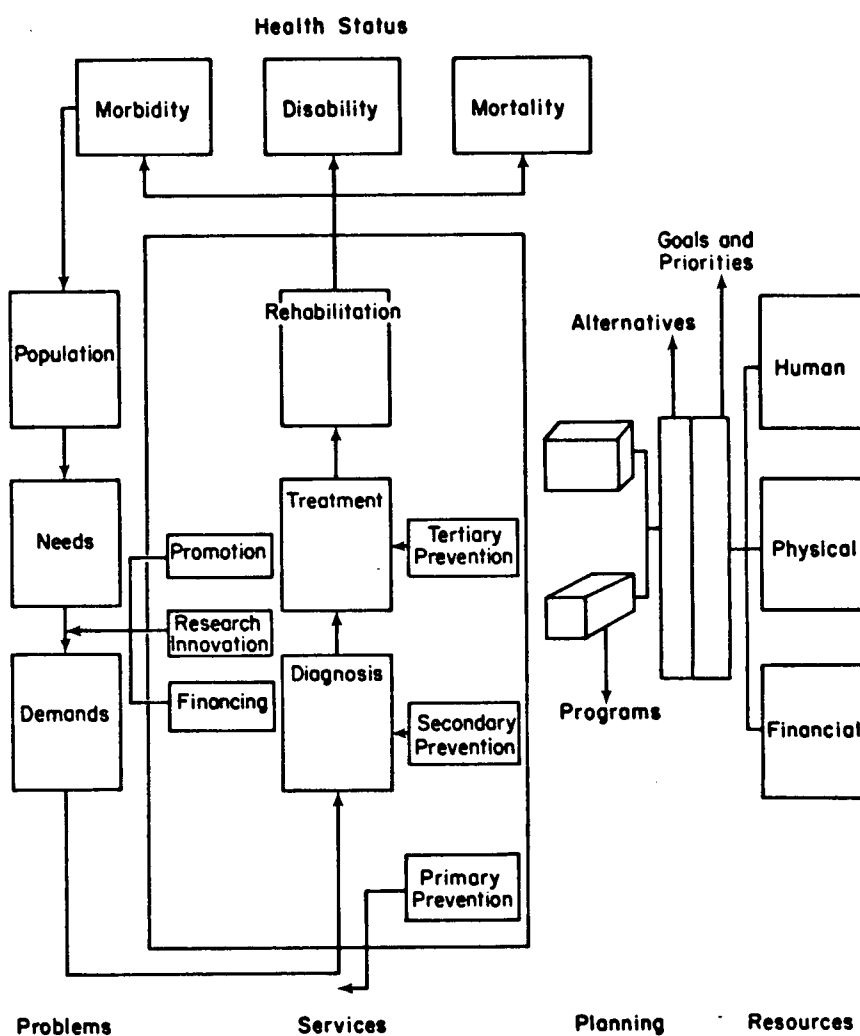


FIGURE 13. Health Planning Model of the Health Care System

SOURCE: W.A. Reinke (ed), Health Planning Qualitative Aspects and Quantitative Techniques. Waverly Press, 1972, p.64.

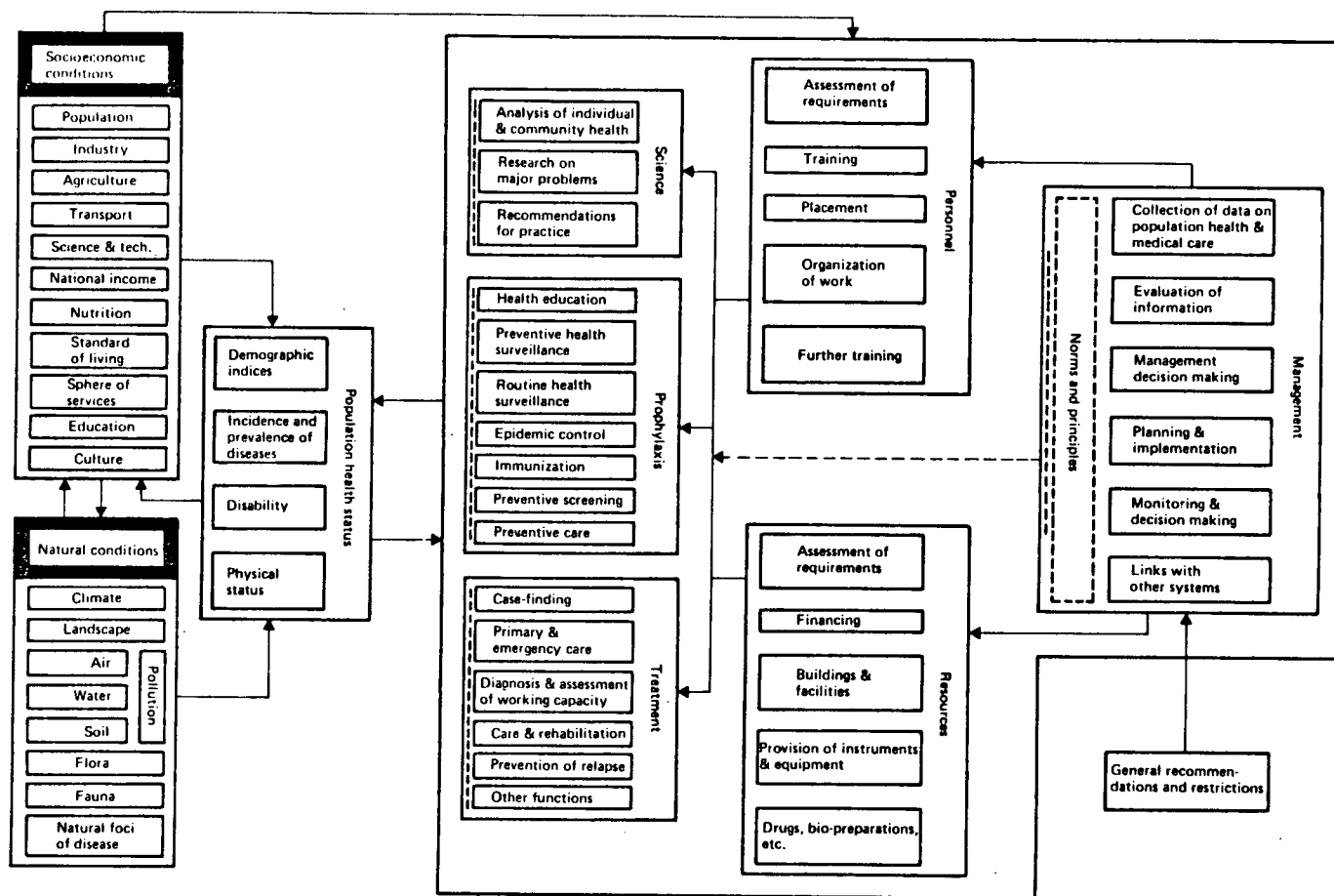


FIGURE 14. Functional Chart of a Public Health System

SOURCE: Venedictov in E.N. Shigan, D.J. Hughes, & P.I. Kitsul, Health Care Systems Modeling at IIASA: A Status Report. International Institute for Applied Systems Analysis, 1979, p.4.

All of the models diagrammed, and others too numerous to list, are composed of four (or fewer) major components: (1) Health Resources, (2) Health Status, (3) Requirements for Health Services, (4) Resource Allocation. The following table extracts the relevant components from each model under the appropriate heading:

MODEL	RESOURCES	RESOURCE	REQUIREMENTS	STATUS
	ALLOCATION			
MEDICS	Health Care Resources	Demand&Resource Matching	Health Care Demand	Incidence of Illness
IIASA	Resource Supply Submodel	Resource Allocation----- Submodel	-----	Population submodel Disease Prevalence Estimation submodel
E/W	Supply	-----	Demand	-----
	Utilization			
REINKE	Resources	Services	Problems	-----
HRRC	Physicians Physician services Hospital Services Non-physician manpower	Markets	-----	Consumers
VENEDICTOV	Personnel Resources	Science, Prophylaxis, Treatment	-----	Population Health Status

TABLE I:

The components tabulated demonstrate certain relationships in most or all of the models outlined. Thus, population health status is transformed

by some process to requirements for health services. The requirements in turn undergo interaction with certain health services provided through health resources (which in turn are determined by a resource allocation process). In real terms, this interaction can be thought of as the actual service provision to patients. The results of service provision (i.e. the quality and quantity of both services provided and the outcome in terms of population health status) become determinants of future resource allocation policies and decisions.

The relationship among these components of the health care system can be better understood by reference to a number of "systems" concepts. Every system has certain generic characteristics, which can be related to particular components for specific systems (Reeves et al 1979). Thus, the environment is society outside the defined health care system. There are boundary conditions as the health care system interfaces with its environment. Inputs to the system are people with a given health status, and also those resources which are injected into the system. Outputs are people with a hopefully, but not necessarily, improved health status. The system exhibits control mechanisms, including feedback and feedforward. Reeves et al (1979) explain the importance of the control function: "This is the element of the system that makes decisions which will affect the system's operations. These decisions typically affect the quantity and nature of the inputs used, the structure or functioning of the system's components (process) or both inputs and process. They are based on analysis of feedback and feedforward in relation to values expressed as criteria and standards or as goal levels" (p. 45). The basic systems model is shown

below:

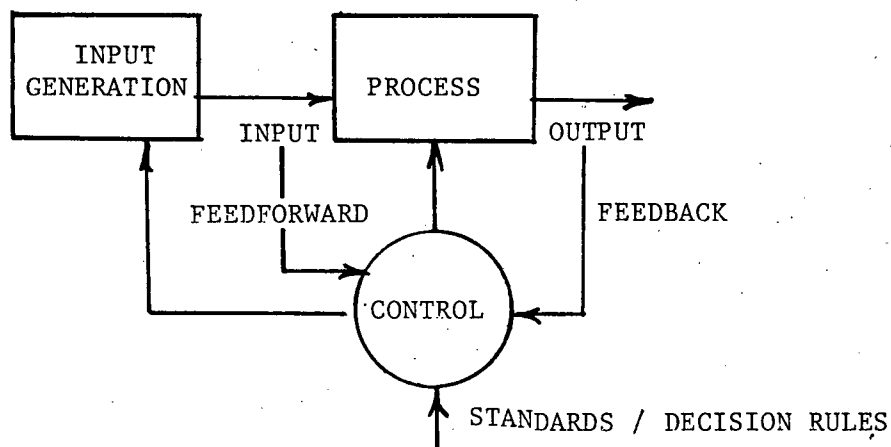


FIGURE 15.. The Basic Systems Model

Using the same pattern, and synthesizing concepts contained in the various models presented earlier in Figures 8. to 14., a simplified conceptual model of the health care system, for the purposes of developing the Provincial Health Plan, is shown below:

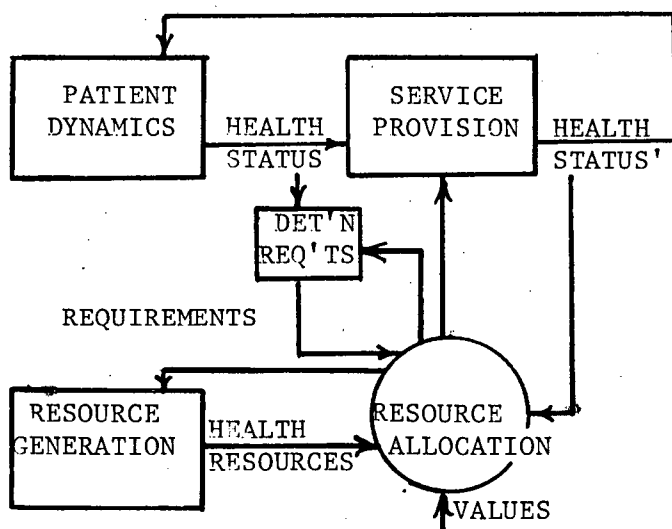


FIGURE 16. Conceptual Model of the Health Care System

This system, as with all systems, will have a number of functions

including: (1) system goal attainment, (2) system self-maintenance, (3) environmental adaptation, (4) integration of subsystem efforts. The focus of the Provincial Health Plan is to enhance function (4), and in doing so, to further attainment of the goals of the health care system. The key to a system's operations is the control mechanism. For the specific case of the health care system, that control mechanism can be considered as the allocation of health resources, where "allocation" is taken to mean not only distribution of quantity, but determination of quality and organization of the resources into services and programmes. Since, as diagrammed in Figure 16., the components of the health care system are functionally related, it is necessary to consider not only the process of resource allocation, but also health status, requirements for health services, and health resources. Of these, health resources is conceptually the most straightforward. Health status is less so, but there is still some consensus as to definition. In contrast, requirements and resource allocation are fairly complicated areas, with little consensus as to the preferred approach in either defining or applying the concepts.

III.B. Health Resources

There is perhaps less difficulty in defining health resources than in defining requirements because resources seem fairly tangible and thus quantifiable. Strictly speaking, only health manpower, facilities and equipment are "resources". However, financing is a prerequisite for both; and patterns of organization, i.e., combinations of health manpower and facilities, are expressed as health programmes or services.

For British Columbia, an inventory of the major health resources would

include the following (British Columbia, Ministry of Health 1982):

Hospitals

Acute Care Hospitals12,066 beds

51 hospitals of 1-50 beds

19 hospitals of 51-100 beds

23 hospitals of 101-400 beds

7 hospitals of 401-750 beds

1 hospital of 750+ beds

Rehabilitation Hospitals 486 beds

4 hospitals

Extended Care Hospitals 6,003 beds

36 hospitals of 1-50 beds

23 hospitals of 51-100 beds

10 hospitals of 101-200 beds

7 hospitals of 200+ beds

Long Term Care Facilities18,150 beds

TABLE II: B.C. Hospital Beds, 1981

Health Manpower (Division of Health Services Research and Development
1982):

	<u>Number of Practitioners</u>
Audiologists and Speech Pathologists.....	178
Biomedical Technologists and Engineers	119
Certified Dental Assistants	1,840
Chiropracters	292
Dental Hygienists	448

Dental Laboratory Technicians	325
Dental Mechanics	173
Dentists	1,670
Diagnostic Medical Sonographers	79
Dietitians and Nutritionists	444
Food Service Supervisors	134
Health Record Personnel	209
Licensed Practical Nurses	6,991
Medical Laboratory Technologists	1,953
Medical Office Assistants	569
Medical Radiation Technologists	925
Occupational Therapists	302
Optometrists	184
Osteopaths	6
Pharmacists	1,918
Physicians	5,690
Physiotherapists	1,274
Prosthetists and Orthotists	19
Psychologists	748
Public Health Inspectors	186
Registered Nurses	18,067
Registered Psychiatric Nurses	1,780
Respiratory Technologists	60

TABLE III: B.C. Health Manpower, 1981

SOURCE: Health Services Research and Development, ROLLCALL 81.
University of British Columbia, 1982.

An outline of the resource component of the health care system would thus include, in general terms:

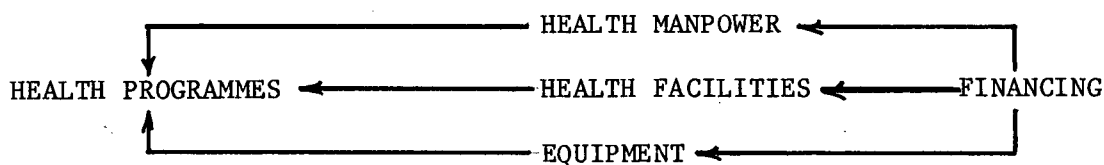


FIGURE 17. The Resource Component of the Health Care System

The derivation of these elements are not detailed, but many models exist which attempt to show the factors affecting health manpower, facilities, etc. For example, IIASA have Manpower Education and Retraining Models, and Manpower Migration Flow Simulation models (Shigan 1979). A simple inventory of resources is inadequate to describe the health resource component of the health care system. There are a number of problems in measurement of resources. For example, listing only the actual numbers of health manpower personnel does not account for specialties within a health manpower group, e.g. there is a significant difference between a dermatologist and a neurosurgeon. There are also differing work patterns or caseloads amongst health manpower and overlapping areas of practice. Listing actual numbers of manpower also does not address the issue of manpower distribution. There are similar problems in measurement of facilities by listing, for example, only hospital beds. Capacity, independent of distribution is not taken into account, e.g. economies of scale. Quality and intensity of service are not shown in a simple inventory.

Specialty specific facilities are not distinguished in counting total hospital beds, nor is the variation of throughput taken into account. Associated programs and services, e.g. outpatient services, may or may not

be reflected in the size of the facility when expressed in beds.

There are a number of advantages to describing resources not only by the physical number of manpower or facilities, but by services. Delivery of programs is often service based, and the manpower and facilities necessary for those services are thus linked. Discussion of services is often more meaningful to planners, providers, politicians, etc. Priorities, budgetting, organizational structures, often are established on the basis of services, for example, Emergency Health Services.

The U.S. Department of Health, Education and Welfare (1979a) suggests information that may be useful in describing a service:

- presence or absence (by area or facility)
- capacity (beds, caseload)
- activity (visits, procedures, days)
- availability (hours, seasons)
- resources levels (manpower, facilities, equipment)
- accreditation or licensure
- average costs or expenditures
- sources of funding.

The categorization of services can be based on different criteria: goals, location, clients, specialized resources, processing sequence (primary, secondary, tertiary), times, funding source. For example, the categorization used in the IIASA model is based on degeneration, infection, progress of civilization, or malnutrition (Shigan 1979). Reinke (1972) classifies health services as primary, secondary, and tertiary. The Vancouver Health Department provides programs as prevention, protection, promotion, and community treatment services

(Weinstein 1981). The Cleveland Health Goals Committee studied nine areas: reproduction, nutrition, dental and oral health, infectious and communicable disease, trauma and safety, chronic diseases, handicapping conditions, mobility problems and mental disorders (Reinke 1972).

MacStravic (1978) lists services for basic health maintenance, for acute problems, or for chronic conditions. He adds that the information required for planning each type of service is different, i.e. demographic data for maintenance, incidence data for acute problems, and prevalence data for chronic conditions. Hillboe et al (1972) define the major problems of personal health as acute medical and surgical illness, chronic adult illness; mental disorder; child and maternal health, family planning, nutrition; infections; accidents and occupational disease - environmental problems. Schwarz (1975) lists provision of medical care: promotive health, care of 'at risk' groups, care of presymptomatic disease, care of minor disorders, care of major disorders, management and rehabilitation, provision for health. Additionally he considered the components of a personal health care system to be: acute inpatient; ambulatory; patient's house or emergency sites; long term , chronic, or rehabilitation units.

Thus, he focuses both upon the setting of the service, and the service itself. Government Studies and Systems under contract to the then United States Department of HEW (1977b), has developed a taxonomy of the health system for use in health planning. It is a three dimensional matrix which specifies service type, setting, and six characteristics for each service/setting. The matrix is shown in Figure 18., for first-level services and settings. More detailed categorizations, i.e., second and third level services and settings, were also developed and can be found

in their full report.

SERVICES (x)	SETTINGS (y)						
	Community	Home	Mobile	Ambulatory	Short-Stay	Long-Stay	Free Standing Support
Community Health Promotion and Protection							
Prevention and Detection							
Diagnostic and Treatment							
Habilitation and Rehabilitation							
Maintenance							
Personal Health Care Support							

For "x" services in "y" settings, an analysis of:

1. Cost
2. Accessibility
3. Availability
4. Acceptability
5. Continuity
6. Quality

FIGURE 18. Taxonomy of the Health Care System

SOURCE: R. Casterline, Public Health Service Regional Office, Region VII Position Paper. Region VII Health Planning Branch, 1977, p.26.

The advantage of such a framework is to aid conceptualizing alternative possible organizations of the health system and arriving at alternative ways of intervening in the health system using innovative approaches (U.S. Department of Health, Education and Welfare 1977b). In other words, by focusing on services, settings, and the characteristics noted, it becomes

obvious that given structures and physical resources are not the only way, or even the best way, to provide specified services. Adopting such a framework gives a comprehensive, consistent way of looking at health resources. Moreover, it aids in defining boundaries of what should be reasonably considered as health resources.

The services x setting matrix complements, but does not replace, the more traditional listing by resource component in describing health resources. Resource planning is usually done in terms of physical resources, e.g. number of hospitals and numbers of health manpower, and thus the actual resource must be specified as well as the associated service. Similarly, requirements for resources are often expressed in physical terms, rather than as services. Although this may change over time, it is unrealistic to insist that all requirements be expressed in terms of services. Because of its familiarity, policies governing resources, rather than services, may be easier to understand and implement. In part, this results since one resource often provides a range of services. For example, an acute care hospital offers both inpatient and outpatient services. Budgeting, staff allocation, and hospital policies clearly must be coordinated for a particular hospital.

III.C. Health Status

Sullivan (1966) observed nearly twenty years ago that health, although spoken of as a single directly observable and measurable characteristic, in fact involves many potentially measurable characteristics of a person or a population. Traditionally, the characteristic used to measure community health has been mortality. In the late 1950's, a Study

Group of the W.H.O. recommended mortality based measures as indicators of health: age-adjusted life expectancy, crude death rate, and proportional mortality rate of those age 50 years and above. More recently, the EEC recommends use of three major indicators: life expectancy at birth, infant mortality, prime age mortality (Culyer 1978). The usefulness of these traditional measures should not be underestimated. Lalonde's (1974) New Perspectives on the Health of Canadians, which proposed significant policy changes and redirection of the Canadian health care system, based its arguments and conclusions on mortality data. Tonkin's (1981) Child Health Profile series similarly draws upon mortality and morbidity data to make some useful observations about problem areas in children's health. Data on births and deaths as discrete events are relatively easy to define, and although the recording and retrieving may not be straightforward, such data are still generally accepted for international comparisons. However, based on criteria for health and social indicators proposed by Chen, Bush, and Patrick (1975) it is evident that mortality data in itself are inadequate as indicators of health. Chen et al state that an indicator should have a direct normative interest with a value component such that if the indicator improves, society is "better" off. Additionally, the index should be applicable for priority setting, planning, and evaluative research. Finally, an indicator should be sufficiently sensitive to detect most of the important changes in health status. They state in particular that mortality rate and life expectancy in themselves are inadequate to serve as indicators of health. This is supported by Moriyama's (1968) analysis showing relative stabilization of mortality rates in the United States from the 1950's to the mid 1970's.

In order to provide a better picture of health status, morbidity based indicators have been used, either alone or in conjunction with mortality data. Traditionally, this has taken the form of type and incidence of disease and/or prevalence of disease. For example, the "endemic-oriented morbidity index" is a pathophysiological clinical assessment of the prevalence of disease. The usefulness of morbidity data is seen in the use of "tracers" to assess community health status. Kessmer (1973) suggests six tracers to evaluate health care provided in a community: middle-ear infection and associated hearing loss, vision disorders, iron-deficiency anemia, hypertension, urinary tract infections, cervical cancer.

Characteristics for selection of tracers are:

- (1) the tracer should have significant functional impact;
- (2) each should be well defined, easy to diagnose;
- (3) prevalency rate should be high enough for data from a limited population;
- (4) natural history varies with utilization and effectiveness of medical care;
- (5) techniques of medical management should be well-defined for at least one of the following- prevention, diagnosis, treatment, rehabilitation or adjustment;
- (6) effects of socioeconomic factors on each tracer should be understood.

However, assessments of morbidity, although subjective to the extent of disease symptoms, are not usually able to account for functional capability and sense of well-being of the individual. On reviewing the literature on social health indices, Elinson (1974) concluded that mortality data and

biomedical measures of morbidity are inadequate measures of the level of health in economically developed countries. He described current attempts to develop sociomedical health indicators: measures of social disability; typologies of presenting symptoms; measures which focus on behavioural expressions of sickness; research based on operational definitions of 'positive mental health', 'happiness', and perceived quality of life. In other words, in terms of the three types of evidence available for estimating health status (clinical, behavioural, subjective), there has been considerable work in behavioural measurement to supplement the more traditional clinical measures. And more recently, subjective measurement has progressed from disease symptomology to assessment of "wellness" in a social context. This progression parallels White's (1967) listing of health status: Death, Disease, Disability, Discomfort, and Dissatisfaction.

Social disability and behavioural expressions of sickness have relied on estimates of functional activity. Chen and Bush (1979) list a number of advantages in doing so. Assessment of functional states does not require extensive medical examination; it conforms to theoretical constructs of "health"; it is useful for evaluation, including assessing impact on family members; and it enables evaluation across disease groups and population groups. The United States Health Interview Survey separates symptoms of morbidity and disability, expressed in terms of activity limitation. Based in part on the U.S. survey, Mushkin (1979) suggests the following functional classification: cured or in remission; fully functioning despite disease; functioning with some limitation; capable of self-care but major and other activities limited; not capable of self-care. Sanders (1964) discussed the

"functional adequacy of an individual to fulfill the role which a healthy member of his age and sex is expected to fulfill" (p. 1067), and combined mortality with functional adequacy to calculate "effective life-years". Sullivan (1971) described disability as any temporary or long term reduction or restriction of a person's activity. Based on this, he classified persons as those with long-term noninstitutional disability, those with long-term institutional disability, and those with short-term disability. Katz (1963) developed the Index of Activities of Daily Living, based on ability to bathe, dress, feed, control bladder and bowels, go to the toilet, and transfer. Grogono and Woodgate (1971) suggested scoring patients according to ten items: work, recreation, physical suffering, mental suffering, communication, sleep, dependency on others, feeding, excretion, and sexual activity. The Duke UNC Profile and the Sickness Impact Profile are more recent attempts to develop a health status indicator/index based on functional level. The Duke UNC Profile is a 63 item instrument to measure health status in a primary care setting along four dimensions: symptom status, physical function, emotional function, social function (Parkerson et al 1981). The Sickness Impact Profile consists of 136 statements about health-related dysfunction or problems in twelve areas of activity. It can be administered in 20-30 minutes. This profile has been used as an outcome measure in trials of therapy for patients with chronic lung disease, emergency services for cardiac arrest victims, and home care for the chronically ill (Bergner et al 1981). Subjective assessment of health status with attachment of values to particular functional levels or types of morbidity, has been a recent innovation in estimating health status. The Alameda County Human Population

Laboratory used a mailed questionnaire listing items such as disability, symptoms, energy levels, as well as the more usual self-care items. Chen, Bush, & Patrick (1975) have done extensive work in developing an index of well-being. Functional classification is based on three scales (physical activity, mobility, social activity), which vary according to age group. A series of studies were done to assess the relative desirability of functional levels (i.e. various combinations of the three scales) and calculated on a value continuum from 1.0, for complete well-being, to 0.0 for death. Further refinement is also proposed where prognoses of various symptom complexes are taken into account in calculating "value adjusted life expectancy". Chen et al describe this as "the equivalent of the expected dysfunction free years of life". The Wellness Appraisal Index and Health Hazard Appraisal, are further examples. In general, four methods of weighting are used: an arbitrary scale; probability of death; a psychosomatic scaling; von Neuman-Morgenstern utility measures; or economic valuations (Mushkin 1979). Examples of national efforts to obtain some assessment of the health status of its citizens are the U.S. National Health Survey, Britain's Social Survey, and the recent Canada Health Survey. This last survey, with data collected 1978-79 was a once-only project, rather than an annual survey as in the United States or Great Britain (Canada, Department of National Health and Welfare 1981). Through a combination of survey questionnaire, interview, physical examination and laboratory tests, useful data were gathered and disaggregated by demographic and socioeconomic groupings. The following information was obtained:

Risk Factors:

Lifestyle- alcohol use, tobacco use, physical activities, seatbelt

use, female preventive behaviour (Pap smear, breast exam);

Biomedical- immune status, blood cholesterol, glucose, uric acid, family history of disease;

Environment- lead, cadmium, copper and zinc blood levels.

Health Status:

Reported health- activity, short-term conditions, accidents and injuries, chronic conditions, impairments, hearing/vision/dental status;

Physical health- blood pressure, cardiorespiratory fitness, per cent body fat, anemia, blood tests for liver and kidney function;

Emotional health- psychological well-being, alcohol related problems.

"Consequences":

Utilization- professional providing care, location of care, reasons care not sought, drug use, medical devices used.

Condition impact- disability days.

III.D. Requirements for Health Services

Once the health resources have been classified, the determination of health services requirements specifies the levels of services. For example, in the areas of hospital services, Butts and Ashford (1977) note: "First the planner is required to define the terms of reference of the planning exercise by specifying the population secured, the per capita need, and the efficiency of the services provided. Secondly, a procedure is established whereby these key measures may be translated into a requirement for hospital beds and other in-patient and out-patient resources" (p. 3). However, the definition of "requirements" is problematic.

In theory at least, meeting health needs is the *raison d'être* for health planning. As MacStravic (1978) states: "It is clear that the general purpose of health planning is to identify needs and to use them as goals in developing health action strategies" (p. 2).

Unfortunately, the term "needs" is used for different concepts. For example, the Canadian Mental Health Association lists the basic needs for middle-aged Canadians as: friends, hobbies, social service, religion, economic activity, security, relaxation, etc. Another usage of "need", mentioned only to dispense with it, is to consider need as the discrepancy between the actual and the ideal. This is semantic confusion, not widely accepted, but occasionally encountered.

Oritz and Parker (1971) suggest that a health need exists either when someone is healthy, but preventive services can reduce the transitional probability of becoming unhealthy; or when someone is unhealthy, and the transitional probability of becoming more healthy can be increased through diagnosis and therapy. In essence, this suggests that a health need is a lack of "health" -- a circular argument at best.

Boulding (1966) sees two approaches expressed in the distinction between need and demand: "One's demand for medical care is what he wants; his need for medical care is what the doctor thinks he ought to have" (p. 202). Boulding's preference seems fairly clear, as evidenced by his observation that "only the slave has needs, the free man has demands" (p. 208).

Jeffers et al (1971) make a further distinction between need, wants, and demand (pp. 46 - 63):

Need -- "that quantity of medical services which expert medical opinion

believes ought to be consumed over a relevant time period in order for its members to remain or become 'healthy' as is permitted by existing medical knowledge"

Wants - "that quantity of medical services which its members feel they ought to consume (at zero price, zero lost wages, zero waiting time, zero access constraints, etc.) over a relevant time period based on their own psychic perceptions of their health needs"

Demand - "multivariate functional relationship between the quantities of medical services that its members desire to consume over a relevant time period at given levels of prices of goods and services, financial resources, size and psychological wants of the population as reflected by consumer tastes and preferences for (all) goods and services".

Chambers et al (1980) make roughly the same distinction, but do not limit need to medical services, and correspondingly, do not limit determination on the basis of "medical opinion" but rely on the broader designation of "expert". The same comments apply to wants and demand. A further concept is added to the listing of need, wants, demand, by Chambers et al: use or utilization, referring to the health services actually provided. Butts and Ashford (1977) note that utilization, unlike need or demand, is conditional on access and availability of services. If one accepts the concepts expressed, then relationships between need, wants, demand, and utilization can be examined. For example, if health professionals recommend fluoridation, but the "public" rejects this measure in a referendum, then one might suggest that the need is greater than the demand for this service. Or, patients may request medications, such as minor tranquillizers, in situations where health professionals feel there is not

sufficient justification given the side-effects and habituating properties of these drugs. One might then suggest that demand is greater than need in such instances. These concepts of need, demand, wants and utilization are extremely important in the development of the Provincial Health Plan. Each is therefore discussed in greater detail below.

Shonick (1976) looks to the health professional to define health need. For example, in estimating need for hospitals, he assumes that for a given population with certain health (or ill-health), there is a prescribed number of patient days that would be used if health care was provided according to "standards of good health care as presently established by a consensus of the professional leaders in the various health specialty fields...and being taught in the health professional training schools" (p. 19).

Implicit in this approach is an assumption that health needs are an objective phenomenon, and that a consensus amongst "experts" as to what those needs are, can be obtained. A classic study using this approach was done by Lee and Jones (1933). They determined frequency of occurrence of illness in the population, and then polled experts to determine the amount of service required to diagnose and treat each type of illness. Additionally, the average number of services/hour by the provider and professional opinion as to the number of hours/year for each provider were determined. These estimates permitted calculation of the resources and services required overall, e.g. they expressed a need for 135 physicians/100,000 population and 4.62 general beds/1000 population. The conversion by MEDICS of illness episodes to resources is a similar approach using health insurance data, e.g. average number of visits to physician

specialist/time unit (Quebec 1972). This type of study was repeated in 1972 by Schonfeld (1972) for primary care physicians.

An early example, notable because it was done in B.C., was the study by Hamilton and Associates (1949). This study estimated needs for general acute hospital beds based on a formula devised by the U.S. Commission on Hospital Care, adjusted for local conditions (social, economic, geographic factors and referral patterns). The report estimated 8069 beds needed in 1951 (6.71 beds/1000 population), and 11,886 beds needed by 1971 (7.09 beds/1000 population).

A similar "expert" approach to determination of health needs is being developed by the IIASA HCS Modelling Group (Shigan 1979). Information is obtained about population, health status, present levels of care, and the translation of health conditions into needs for health resources. Indices are calculated, expressing the need for specific services per capita. These indices are derived from the opinions of experts, standards from official routine statistics, e.g. hospitalization rate or average length of stay, or comprehensive studies.

Implicit in the above determinations of health need is the expectation that those levels of services should in fact be provided. Unlike demand, wants, or utilization, need evokes a prescriptive connotation: a need should be met or fulfilled. It is conceptually useful to have a term for professional and expert opinion as to the level of services, given existing knowledge and technology, required to maintain a healthy population. Unfortunately the same term, health need, is used to describe the level of services which society ought to provide. This semantic confusion has permeated the health planning literature and philosophy. It is not uncommon

in the health planning literature for health need to be used synonymously with the goals or objectives of the health care system. For example, MacStravic (1978) states: "Ultimately health needs are determined by an intellectual and political process which sets and modifies the goals and standards for health services; these goals and standards are then used to guide the development of the health system" (p. 8). He goes on to define health needs as the "manpower, equipment, and facilities determined by organizations and communities to be requirements for maintaining and improving health" (p. 11). Unlike Know (1979) who links need to the possibility of effective remedial action, MacStravic is less concerned with whether in fact a service makes a positive contribution to health; the perception of the service as being required is the determining factor. In fact, the concept of health service requirements as determined by political means, or on the basis of community perception is much closer to the concept of demand. This thesis supports reserving the usage of health need for the levels of health services deemed necessary by "experts" (or at least the majority of experts) on a technical basis. However, it is important to recognize that "experts" have their own values and biases. As Wagner (1977) states, it is worthwhile taking a "closer look at the sources of criteria and standards to separate the technical judgements based upon formal or informal observation from value judgements based upon the self-interest of a professional or group of professionals" (p. 15).

Health demands have been defined earlier in economic terms. However this notion of demand requires informed consumers, able to understand the "costs and prices" involved. In reality, this is seldom the case, and one is left in the position of health planners or health economists substituting

what they estimate other people or the public would want if fully informed. Another fallacy is to equate demand with utilization. Schwarz (1975) defines demand in the following manner: "Demand comes in two forms: i) the vocal demands from the community for medical care to deal with their ailments; ii) the demand, in a less articulate form, that arises from the necessity to care for patients such as those in coma or those involved in accidents" (p. 149). However, he then goes on to calculate demand using utilization data.

Wants suffer the same conceptual difficulties as demand. It assumes an artificial situation of zero price, zero loss of wages, etc. Again, this is seldom realized. To further confuse the issue, wants sometimes refers to the actual community perception of the need for health services, without regard to assumptions such as 0 price and fully informed consumer. It is not need, yet because of the values attached to community participation, it may have significant impact.

Utilization is a much more easily understood concept. It is measurable, and in a jurisdiction such as B.C., fairly easily measurable. It would be a mistake however to assume utilization can always serve as a proxy for need. If this were done - and it often is - a number of obvious contradictions might occur. For example, greater utilization would necessarily imply greater need, whereas this often means that a particular health problem is already receiving considerable attention. Also, if utilization were to decrease, need could be said to decrease, but in fact this may reflect poor access to health services. Utilization data are useful, given its ready availability, but should only be used as a substitute measure if assumptions are well understood. For example,

accuracy of utilization data depends on physicians or health professionals reporting accurately. MEDICS calculates demands by applying utilization rates from health insurance data to a given population to arrive at a morbidity figure which is transformed to resources required, based on production function describing resources per illness episode. However, the developers of MEDICS note in Quebec, "there are conceptually trivial but practically important difficulties; for example, physicians may accept the medicare card of a relative if the patient's is not available" (Quebec 1972, p. 11).

The various definitions of need, demand, want, and utilization, are in a sense alternative translations of health status requirements for health services:

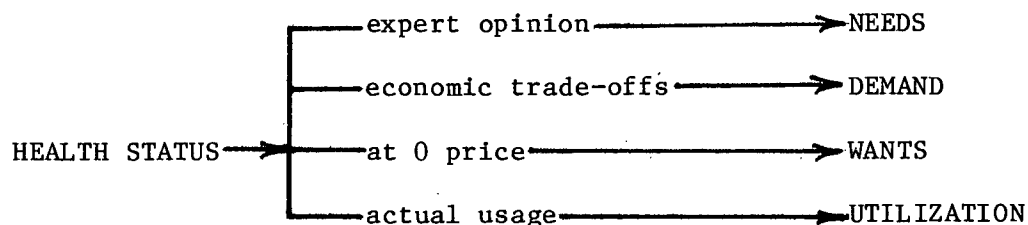


FIGURE 19. Requirements for Health Services

The risks of using one or the other in planning should be recognized. Feldstein and German (1965) point out that the planning of hospital facilities on the basis of recommended rather than anticipated usage may result in too few, or too many beds being provided. Shonick (1976) similarly observes that curtailment of medical services is not necessarily associated with an increase in resources allocated for other services which might efficiently substitute or mitigate the need for the curtailed medical services.

As explained above, the various approaches to defining or

conceptualizing requirements for health services are often confused and used interchangeably. This thesis proposes to use both the concepts of health needs and demand in the determination of Objectives. In other words, determination of requirements for health services is not so much a matter of selecting whether health needs or demand is the "correct" definition, as it is a matter of drawing upon both expert opinion and consumer/community/societal preferences. For example, the Alamo Area Council of Governments (1976) uses epidemiological data, expert Task Forces, resource inventory, and a community perception of need (using Nominal Group process) to do a "health needs" assessment and goals determination.

It is timely at this point to analyze how health needs and demand are determined. There are different planning modes available, depending on the data and resources available: rational planning, middle-range planning, and incremental planning modes. The most marked differences in determination of health needs and demand occur when the rational planning mode is used. As approximations are necessitated by data, resource, and time constraints, the methodologies used for determining health needs and demand begin to merge. In the rational planning mode, health needs are determined generally as: (1) determination of the health status of a given population; (2) expert determination of health services (type and amounts) to address (prevent, treat, rehabilitate, etc.) the existing health status; (3) translation of health services needed into health resource requirements, expressed in terms of health manpower, facilities, equipment, and programs.

In contrast to such an approach, the determination of demand in the rational planning mode follows these general steps: (1) determination of consumer preference for health status or services offered by the health care

system; (2) expert determination of health services (types and amounts) to address the preferred health status levels, and consolidated with the preferences expressed for health services; (3) translation of health services required into health resource requirements.

Because of numerous constraints on adopting the rational planning mode approach, less exacting and comprehensive planning must be used. For example, a "service-targets" methodology may be relied upon, eliminating a detailed determination of health status and its translation to health services. The resulting expert determination of health services "needed", based on whatever data is available, is then translated into health resource requirements. The translation of health services to resources may be omitted, proceeding directly to a "resource:population ratio" (e.g. physician:population ratio) estimate of requirements. Utilization may also be used as an approximation of health services required, again avoiding the detailed determination of health status and its translation to health services.

The adjustments to the rational planning mode determination of demand centre about approximations to consumer preference. Whereas a detailed survey or sample may be used in the rational planning mode, a much smaller sample would be used in the middle-range planning mode or perhaps even reliance on the stated preferences of "representatives" such as political leaders. Another approximation, in the incremental mode is to assume that preference is expressed in the existing utilization patterns.

In summary, the following table displays the planning approaches corresponding to the planning modes as applied to determination of health needs and demand.

PLANNING MODE

	<u>Rational Planning</u>	<u>Middle-range</u>	<u>Incremental</u>
NEEDS	Health Status - Service Resources	Service Targets	Resource: Population
			or
DEMAND	Consumer Preference	Representative Preference	Utilization

TABLE IV: Determination of Health Needs and Demand

III.E. Resource Allocation

Resource allocation is a difficult conceptual challenge, and lies at the heart of any effective planning. What are the criteria for deciding that a particular health problem receives certain resources, while another health problem receives fewer, or more? Many health plans neglect to prioritize their requirements for health services or do so in such a way as to be unrealistic for purposes of resource allocation. There is of course always then an "unmet need" and request for more funds and services, without useful guidelines as to which areas or programs should receive available funds. For example, the Los Angeles County Study of Health Care Needs uses utilization (and projections) to approximate need and an inventory of physicians and facilities to estimate available health resources, but throughout the report, there is no explicit recognition of the importance of prioritization (Los Angeles County Hospital Commission 1973).

Some planning models do not provide guidelines for resource allocation, but do allow analysis of alternative scenarios, given certain policy

decisions with regards to resource allocation. For example, Povey's (1973) modelling retains a separation of resource category in the matching process. A subroutine of the model generates episodes of morbidity requiring health services, and these episodes are then associated with the resources required in order to determine if there will be a "shortage".

MEDICS uses a linear programming method to determine priorities in its modelling of the health care system (Quebec 1972). Different objective functions can be chosen, and an optimal solution calculated. To permit this approach, the various resources (manpower, facilities, equipment) are translated into dollar equivalents. Mathematical formulations are used to represent resource allocation criteria.

Although the methodologies above do not directly provide guidelines for resource allocation and setting priorities, they can clearly facilitate the process. There does seem general acceptance of the importance of setting priorities, recognizing that requirements for health services will likely always exceed available resources. Thus, for example, the United States Department of Health, Education and Welfare (1979a) lists some of the advantages in setting priorities:

- (1) indicates which problems or projects are to be dealt with first,
- (2) eliminates unimportant or infeasible projects,
- (3) suggests which of competing alternatives should be chosen,
- (4) guides resource allocation.

The primary criteria for determination of priorities vary according to which approach is adopted or preferred in determination of requirements for health services. If reliance is placed on a "needs" approach, attempts will

be made to quantify or prioritize according to needs criteria, with assumptions or estimations as to the relative importance or weighting of the various health status conditions (or more practically, health status indicators). If, on the other hand, reliance is placed on a "demands" approach in determining requirements, attempts will be made to prioritize on the basis of expressions of community preference. The needs criteria will rely on expert opinion; the demand criteria will rely on lay opinion. Section III.E.1. discusses prioritization on the basis of needs. Section III.E.2. discusses prioritization on the basis of demand. Section III.E.3. attempts a synthesis and suggests an approach to be used in the development of objectives for the Provincial Health Plan.

III.E.1. Resource Allocation based on need

Belanger et al (1974) described an approach to resource allocation in their modelling for a Vancouver regional health care system: "In the real system the actual priority with which a particular person's demands are met is presumably determined either as an interpersonal transaction, given the constraints of resources in the local region, or by a more impersonal process in a large hospital. Consequently, the model introduces a major conceptual simplification in that all resources and demands are separately determined in total, before the resource-demand matching procedure is tackled at all" (p. 411). Priorities were estimated for each illness, and the simulation model then matched the top priorities until resources were exhausted. The unmet needs/demands were then given an upgraded priority for the next time period under consideration. The criteria in this instance for each illness were the rankings of disease items (from dandruff to leukemia),

on the "seriousness of illness scale". This scale was an effort to give weightings and therefore allow calculation of priorities by geometric averaging of individual scorings, where a normative value of 500 was given for peptic ulcers. The range of the scale is illustrated below:

	RANK	SCORE
1	Dandruff	21
25	Tonsillitis	117
50	Mononucleosis	216
75	Kidney Infection	374
100	Blood Clot in Vessels	631
125	Cancer	1020

Another example of efforts to quantify, and thus prioritize, health problems is the Health Problem Index or "Q" index developed by the U.S. Division of Indian Health: $Q = MDP + (274A/N) + (91.3B/N)$.

The variables in this equation are explained below:

M= age/sex adjusted mortality rates for the target population as a proportion of age/sex adjusted mortality rates for the reference population.

D= crude mortality rate for the target population

P= years of life lost using life expectancy to age 65 for the target population

A= hospital days for the target population

B= outpatient visits for the target population

N= number of individuals in the target population

274 and 91.3 are constants to convert A and B to years per 100,000 population.

The dominant variable is mortality, with lesser contribution from in-patient days (which are weighted three times as heavily as outpatient visits). Dever (1980) explains this index and numerous others in greater detail, including: Wellness Appraisal Index, Health Hazard Appraisal, Z-score Additive Model, Life Expectancy and Weighted Life Expectancy, and Mortality Index.

Casterline (1977) similarly attempts to quantify on the basis of need. She uses measures of "magnitude, emotional, social and monetary costs of the problem to the community" (p. 42), and proposes cost-benefit and cost-effectiveness calculations based on such measures.

New Zealand (1981) has recently indicated that they are taking a population based approach to allocate available funds to hospitals, with adjustments for age/sex, expected bed days based on Standard Mortality Ratios and patient in and outflows by region.

One of the most sophisticated approaches to resource allocation, taking a needs approach is found in Great Britain's Resource Allocation Working Party (RAWP) report (Great Britain, Department of Health and Social Services 1976). The RAWP was mandated to "review the arrangements for distributing NHS capital and revenue to RHA's, AHA's, and districts respectively with a view to establishing a method of securing, as soon as practicable a pattern of distribution responsive objectively, equitably and efficiently to relative need and to make recommendations" (p. 5). In brief, RAWP's approach involved three steps:

- (1) measures of relative need to establish share of available revenue to each RHA (i.e. a revenue "target"),
- (2) determination where each Authority was presently, relative to the

target,

(3) phased change towards the target.

Relative need is based on numerous criteria: size of population, age/sex mix, morbidity, costs (which would vary across regions, inflow and outflow of patients to the region, medical education factors, and capital investment. Figure 20 shows seven service populations and the weighting factors used.

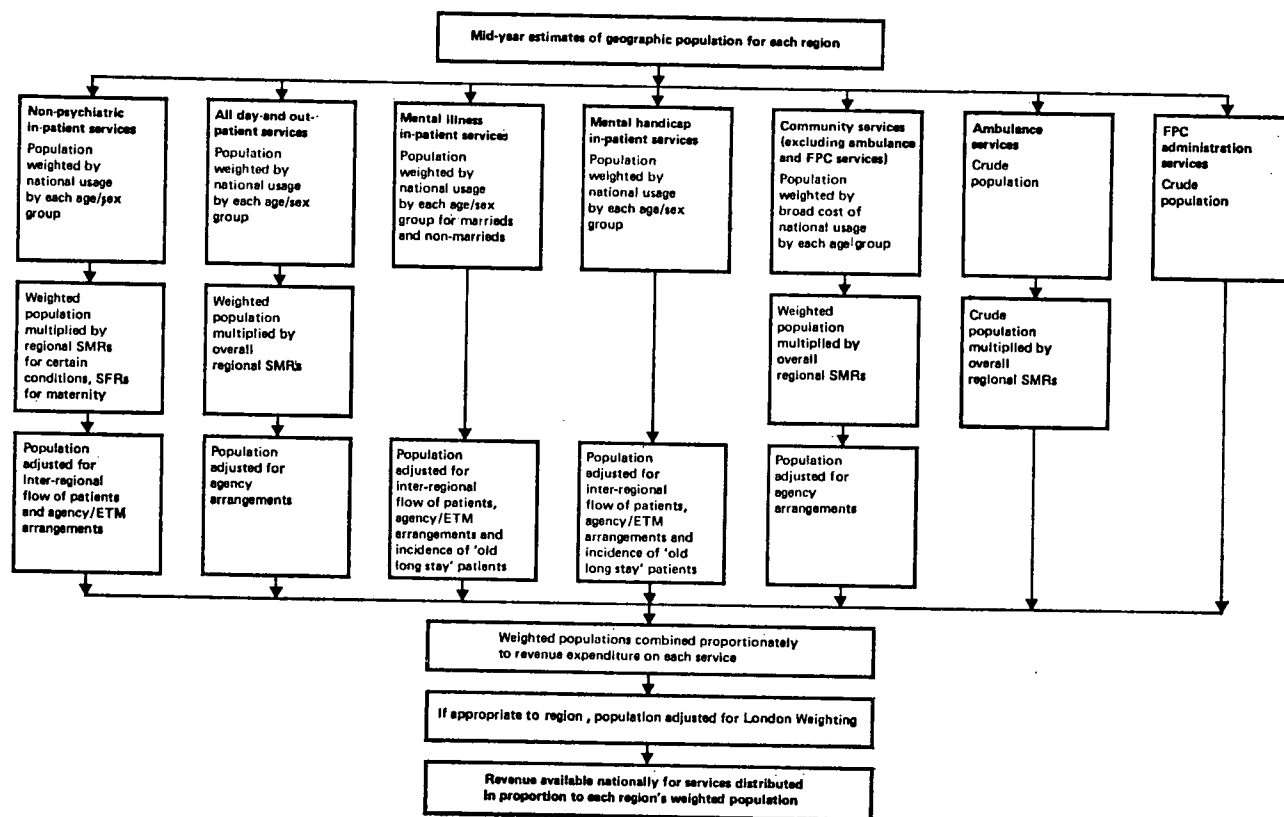


FIGURE 20. RAWP Determination of Relative "Need"

SOURCE: Great Britain, Sharing Resources for Health In England. Report of the Resource Allocation Working Party, 1976, p.26.

Theoretically then, according to RAWP, "the revenue available for services nationally should be notionally distributed in proportion to each Region's weighted population to arrive at the revenue target allocation for each RHA" (p. 27). In other words, artificial service populations are generated by the calculations, which may, and probably do not coincide with actual patients seen. The RAWP proposed a phased change towards the calculated revenue targets, with the rate of change dependent on the growth of NHS resources. Floors and ceilings on changes (either decreases or increases) were proposed. For example, it is suggested that a maximum five per cent increase for regions be allowed from the previous year's allocations. Differential rate of change are indicated depending on whether a region is above or below its revenue target.

The RAWP approach to allocation of capital funds differs somewhat from their treatment of operating or revenue funds. In summary, the suggested procedure is to value the existing stock in a region and to total the available NHS capital (existing stock + new capital funding). The total NHS capital is then allocated to regions using weighted populations (similar criteria to that for revenue funding), and phased change towards these capital targets is then undertaken.

The RAWP allocates its resources to RHA's, which in size are comparable to the entire province of British Columbia. Thus, of more significance to the development of the Provincial Health Plan are RAWP's proposals for allocating from RHA to Area Health Authorities. However, allocation to these smaller regions is described with many more constraints by the RAWP. Additional problems include: questions of regional self-sufficiency and inflows and outflows; seasonal changes; apportioning "central"

administrative costs; more difficulties in phasing changes; need for more detailed information (although fewer age/sex groupings may be required); particular local characteristics (e.g. centres of excellence for teaching or research); and disproportionate impact of capital projects. Butts and Ashford (1977) raise concerns about the RAWP methodology, questioning the implicit assumptions that costs across specialties and age/sex groupings remain constant, and that Standardized Mortality Ratios accurately reflect morbidity. They note in particular the difficulty in estimating inflows and outflows for smaller areas.

III.E.2. Resource Allocation based on demand

The approaches to resource allocation presented up to this point of the discussion are very much associated with a determination of health services requirements based upon need. There is reliance on experts to prioritize health problems, and thus derive criteria or guidelines for resource allocation. Relying on such approaches entirely is unlikely to be acceptable for a number of reasons. In western society, the allocation of resources is done through a political process - not an expert determination. The general principles and values in support of such a mechanism are deeply ingrained in society. There are no generally accepted objective criteria by which to rank or prioritize health issues and problems; there is always an element of judgement and choice. The difficulty is demonstrated in obtaining consensus amongst experts as to the relative ranking of various health issues and problems. Within a limited field, ranking may be possible; for example, experts may agree that immunization for measles, mumps, rubella is more important than immunization for influenza. However, it is much more

difficult to assess whether immunization for measles, mumps, and rubella is more, or less, important than fluoridation of the water supply. IIASA has developed a model of resource allocation called DRAM (Disaggregated Resource Allocation Module). Gibb's (1978) version states that the main assumption of the model is that in allocating its resources the Health Care System (HCS) attempts to "maximize a utility function whose parameters can be inferred from observations on past allocations" (p. 4). The demand inputs are:

(1) total number of individuals who could be offered treatment, by category (from morbidity and population submodels).

(2) the policies for treatment (i.e. the feasible modes of treatment for each patient category - inpatient, outpatient, domiciliary, etc.)

(3) ideal standards of treatment for each patient category and mode of treatment (e.g. the length of stay in hospital for a given episode of illness).

The supply inputs are "amounts of resources available for use in the HCS." The model assumes distribution of limited resources in three dimensions:

(1) number of patients of different types who are offered treatment

(2) the modes of treatment offered, and

(3) the standards at which treatment is offered.

The model's outputs indicate numbers of patients who receive treatment according to (1) to (3).

An assumption is made about behaviour based on priorities which can be derived from past HCS performance. The concept modelled is that the "HCS achieves an equilibrium by balancing the desirability of treating more

patients of one type against treating more of other types and against the desirability of treating each type of patient at a higher average standard" (Shigan 1979, p. 37). This model addresses directly the issue of prioritizing needs, but tends to accept historical and existing allocations of resources as reflecting certain priorities, and would allocate future resources on that basis.

Other approaches are used to obtain an expression of current community preference, whether directly from community members, through their elected representatives, or some other mechanism of community input. An approach, which has found wide usage in pluralistic United States, is to survey the community and/or professional groups/agencies, and prioritize by consensus or majority decision. Reinke (1972) anticipates this process in his reference to broad goals and choice of "alternative problem priorities and alternative programs or techniques for coping with the problems, with due consideration for the many physical, environmental, technological, social, cultural, and political constraints" (pp. 66 - 67). Similarly Know (1979) described social choice as "inherently a political process, and social planning requires mechanisms and structures through which information, authority, and preferences may be aggregated, and through which agreed strategies may subsequently be disaggregated to create plans of implementation" (p. 9), and priorities are based on a "blend of factual evidence about the past and present, upon tradition and law, upon changing value systems and expectations, and upon the degree to which resources are thought to be transferable from one use to another" (p. 15). Thus, according to Know, the determination of priorities for resource allocation is basically extralogical. There is rarely a Pareto-optimal solution, and

when cost/benefits fall unevenly, additional ethical principles are needed. For example, Rawls (1973) argues that collective decisions are fair only if the least disadvantaged are made no worse, and Nozick (1974) argues that individuals should be free from collective decision to effect transfers coercively.

An example of the community survey approach is the Comprehensive Health Planning Agency of S.E. Wisconsin's "Health Areas Priority of Concerns Questionnaire", mailed to all of its members (480 in 1973). The results were very useful to the Program Development Committee, with the top five concerns becoming five major areas in the Agency Work Program, over and above functions mandated by Federal guidelines. It is of interest methodologically that 18 potential health planning areas were listed and the respondent was asked to list his impression of the ten most important, with additional space for comments. The top five concerns were expressed in terms of either services or facilities, not in terms of health status problems.

Another example of the community survey approach is a 1978 study of health planning in the Philadelphia area (Philadelphia Health Management Corporation 1978). A consumer health needs survey was done as part of the study to determine health related behaviour patterns and community perception of health care needs, problems, and potential solutions. Of 953 questionnaires, only 181 (19%) responded despite intensive follow-up. The five most important services according to the survey were paediatric care, preventive care, home visits by physicians, services for the elderly, and dental services. The high cost of health care was cited as the most significant barrier to access to services.

The S.E. Alabama Health Systems Agency (1976) asked its council

members to rate (on a 1-5 scale) 16 health service areas using factors of number of people affected, seriousness of need, urgency of need, and quality of life.

Another example of prioritizing is found in a Consumer Health Needs Survey in S.W. Louisiana (Arcadiana Health Planning Council 1974). Participants were asked to select from a list of health services in response to a question: "What kind of health care (services) would be most important for you and your household?" The study emphasized the extent of consumer health education, availability and access to health facilities, knowledge of existing institutions and maternal and infant care. The Consumer Health Needs Survey sampled 250 families divided into three levels of income, rural vs. urban, and white vs. non-white categories. A personal interview was used to gather information. Various organizations, including hospitals were also given a shorter version of the questionnaire. The results of the survey suggested a particular need for non-emergency medical transportation. Also identified were needs for consumer health education, maternal and infant care, and services for a number of specific health conditions.

More complicated and structured approaches have also been used in attempts to obtain community preferences. The revision and update of the South Carolina Comprehensive Health Plan attempts to establish priorities and recommendations based on a collaboration of governmental and non-governmental health organizations within the state (South Carolina 1975). A listing of health needs of state-wide significance is compiled (based upon state planning agencies, consumers, other health organizations), following which a forum would rate each need (with accompanying recommendations to improve the health of residents) on a scale of 10 to 1,

with 10 representing the highest or most important value. The points for each item are summed to derive a prioritized listing according to total score.

Despite the many efforts using community surveys, which attempt to determine and prioritize requirements for health services, health planning and resource allocation continues to be relatively ineffectual. The surveys, including the ones cited above, do not consider the entire range of health services in the region or area under consideration. Reasons for this should be obvious; the response rates cited above would be even lower if a complicated and lengthy listing of health problems were presented to the respondents. These surveys also confused the concept of health needs and demand. Participants were not informed as to the health needs of their community and asked to select or prioritize from these needs. Instead, the format suggested that the participants were themselves defining health needs.

III.E.3. Resource Allocation, a Suggested Approach

An important question, in efforts to determine priority for allocation of health resources, is whose priorities are to be considered? Schwarz (1975) suggests calculation of priorities based on loss and gain from each of five perspectives (patient, family, community, health services, humanitarian). Know (1979) observes that the criteria for policy-making and resource allocation depend upon the perspective used. Political accountability will rely upon criteria of accessibility, equity, and individual protection; while professional accountability looks to

effectiveness, efficiency, standards, and meeting "needs". Also, it has been suggested that "central" concerns are expressed in terms of "public accountability" (e.g. geographical equity) whereas "peripheral" concerns are expressed in terms of individual needs and services.

Blum (1974) discusses in considerable detail the criteria to be used in setting priorities for health problems, taking a community perspective. He suggests that both the criteria to be used, and the relative weightings attributed to each criteria are "restatements of the general goals and of the health aims which the community (at whatever level) has already selected as the ends toward which the normative aspects of its developmental planning will be working" (p. 229). Blum concedes that there may be little rational basis for these criteria except as "pure value judgements."

Four batteries of criteria are proposed:

- (1) technologic concerns
- (2) health status goals
- (3) overall social goals or concerns
- (4) health planning concerns

These are reproduced in Table V below:

CLASSES OF CRITERIA, THEIR WEIGHTS,
AND RATING SCALE

<i>Criteria</i>	<i>Weighting</i>	<i>Rating Scale</i>
Technological Aspects*		
Technology Possible	Absolute	Pass or Fail
Technological Feasibility	5	-10 to +10
Manpower Requirements	3	-10 to +10
Balanced Attack on All Phases of a Situation	3	-10 to +10
Balanced Attack on All Phases of the Environment	3	-10 to +10

Health Aspects			96
Problem Likely to Go Away by Itself	5	-10 to +10	
Probable Duration of Problem if Undisturbed	4	-10 to +10	
Deaths	3	-10 to +10	
Disability	3	-10 to +10	
Disease	3	-10 to +10	
Discomfort and Pain	3	-10 to +10	
Condition Size or Numbers	3	-10 to +10	
Condition Severity	3	-10 to +10	
Condition Duration	3	-10 to +10	
Distress or Danger to Others	2	-10 to +10	
General Social Concerns			
Legal Conformance	Absolute	Pass or Fail	
Ecology	5	-10 to +10	
Environment	5	-10 to +10	
Equity	5	-10 to +10	
Resource Consumption	5	-10 to +10	
Time to Consummation**	5	-10 to +10	
Goal Conformance	5	-10 to +10	
Public Concern	4	-10 to +10	
Public Dissatisfaction	4	-10 to +10	
Political Feasibility	4	-10 to +10	
Flexibility**	4	-10 to +10	
Speed of Change**	4	-10 to +10	
Effectivity	4	-10 to +10	
Productivity	3	-10 to +10	
Overall Costs	3	-10 to +10	
Net Benefits Level	3	-10 to +10	
Community Involvement	3	-10 to +10	
Avoidance of Other Significant Predicted Problems	3	-10 to +10	
Protection of Next Generation	3	-10 to +10	
Balance of Quality & Quantity	2	-10 to +10	
Efficiency	2	-10 to +10	
Cost-Benefit Ratio**	2	-10 to +10	
Employment	2	-10 to +10	
Esthetics	2	-10 to +10	
Segregation	2	-10 to +10	
Coordination between Levels of Government			
Coordination between Public & Private Interests	2	-10 to +10	
Science Merit	1	-10 to +10	
Can Others do the Necessary Planning?	1	-10 to +10	
What Would People be Willing to Pay?	1	-10 to +10	
No Other Way to Go	1	-10 to +10	
Consideration to Special At-Risk Groups	?	-10 to +10	
Planning Concerns			
Plan Conformance	5	-10 to +10	
Leverage	4	-10 to +10	
Public Education Re Planning	2	-10 to +10	
Balanced Planning Body	2	-10 to +10	
Long-Term Planning Body Involvement	2	-10 to +10	
Planning Body Image	2	-10 to +10	
Planning Process Image	3	-10 to +10	

TABLE V. Criteria for Resource Allocation

SOURCE: H. Blum, Planning for Health. Human Sciences Press, 1974, pp. 238-9.

The concept of "weighting" health problems has been discussed earlier (e.g. the Seriousness of Illness Scale). Blum calculates for each criterion a "significance" level by multiplying the rating and weighting. An overall "averaged significance" level for each health problem is then obtained by combining the scores for each criterion, and a prioritized listing of health problems results. These calculations are rather arbitrary, as are the weightings Blum suggests. However, the criteria are worthy of note, and Blum in discussing this ranking process makes a number of valid points. He notes that values, and therefore goals may be in conflict or competition with each other. Preparation of criteria lists should be done by a widely representative group, sensitive to community concerns. Highest and lowest priority rankings are generally easily decided; middle priority items require more study. Blum also gives examples of how a prioritized ranking of health problems might be used: to indicate which items in each category are to be implemented first; to indicate which items in each category are to receive no further consideration; to indicate which items in each category are to receive the major share of resources; to indicate whether the activities called for by the high priority items in each category are to be firmly established before others are to be embarked upon; to indicate, which among the high ranking items in all the categories, are to get the go ahead, on what timetable, and with what proportion of the resources.

Blum discusses the difficulties in designating minimal, intermediate, and optimal levels for various activities. Intuitively, the underlying guidelines should be to fund to all minimal levels before any intermediate, and similarly to all intermediate levels before optimal. But the argument is advanced by Blum that this ranking system gives no indication whether

minimal levels should be satisfied completely before resources can be allocated to the next higher level. In particular, the situation of threshold levels of financing is cited, where the total amount of funding is required on an all-or-none basis, e.g. capital construction. The conceptual difficulty Blum encounters hinges on an inadequate definition of minimal level. If "minimal" is taken to mean a basic level, which it is generally agreed should be maintained, then indeed logically, all activities should be funded to minimal levels. That decision as to minimum must already have taken into account factors such as marginal gains relative to other sectors, feasibility, and threshold levels.

A different perspective on Blum's listing is possible through consideration of Hall, Land, Parker, and Webb's (1975) three major criteria for determining whether an issue assumes priority status: legitimacy, feasibility, support. The authors takes a government perspective, but this is consistent with the perspective of this thesis.

Legitimacy , as Hall et al discuss the concept, relates to the proper role and sphere of government action. There are various levels of legitimacy, ranging from issues almost universally recognized as government responsibility (e.g. wars), to issues in which government normally has little involvement. The question of legitimacy becomes especially important at times of policy (or program) initiation and termination.

Feasibility depends upon theoretical and technical developments, i.e. the "state-of-the-art". Equally important, but often overlooked, are factors relating to resource availability (financial, manpower, etc.); likelihood of collaboration or cooperation with key groups or individuals; and administrative feasibility. As with legitimacy, issues will be

considered at various levels of feasibility. Usually plans are theoretically feasible, but the costs of achieving the desired results have to be estimated.

Support, which Hall et al interpret in political terms of public opinion, can be considered "diffuse" or "specific". The general public mood towards government is reflected in diffuse support. Special interest groups, and groups with special resources provide specific support. The degree and type of support are important to government depending on the type of issue under consideration.

Most of the lengthy listing of criteria by Blum corresponds to one of the three major criteria defined by Hall et al. For example, the criteria "technology feasible" and "technological feasibility" are factors of feasibility. Similarly, "public concern" and "public dissatisfaction" are factors of support. The major conceptual modifications to the major criteria as proposed by Hall et al relate to legitimacy factors. Blum's listing implies that principles, apart from the question of the proper role of government vis-a-vis other sectors of society (e.g. the individual or family) determine the rightness or appropriateness of an issue in estimating that issue's overall priority. For example, Blum lists "equity" as an important criterion. In other words, when determining the relative importance of a health problem, reference will be made to certain general principles which in some way "legitimize" the problem (or proposed solution), and this extends beyond simply legislative or legal sanction.

The criteria of legitimacy, feasibility, and support can also be viewed in the context of the planning matrix discussed earlier in this thesis (see Figure 4.) Legitimacy criteria reflect whether a health problem or issue at

one planning level can draw upon principles or guidelines at a higher planning level as justification. Feasibility and support criteria reflect the ease of movement of an issue at any given planning level, from a rational planning mode to an incremental planning mode. Support criteria are particularly important at the ideological and policy planning levels. Conceptually, the higher the priority of a health problem or issue according to the criteria of legitimacy, feasibility, and support, the easier (and faster) the movement of the issue to lower levels in the planning matrix and eventual implementation/service delivery.

The provincial government has recognized, perhaps more on the basis of practical experience than conceptual foresight, the usefulness of examining issues in a systematic fashion, to include certain key criteria. The standard format for a Cabinet Submission includes specific sections on financial implications, legislative implications, municipal and regional implications, political implications, and federal-provincial implications. The similarity of these criteria to the legitimacy, feasibility, and support criteria is worth noting.

It is also of interest that the efforts of the United States to establish national guidelines for their health care system, pursuant to Public Law 93-641 (National Health Planning and Resources Development Act, 1974) use a number of criteria for "goal" selection that correspond to legitimacy, feasibility, and support criteria. Legitimacy criteria include relevance to statutory mission, whether the goal addresses an important health issue, consistency with other policy statements in law or regulation. Feasibility criteria include susceptibility to achievement through program action and potential usefulness to Health System Agencies. Support criteria

include whether the goal is ready to be adopted as a national statement (United States, Department of Health, Education and Welfare 1977a).

III.F. Previous B.C. Health Plans

Before concluding this chapter on health planning, it is useful to briefly review previous B.C. health plans of a scope similar to the proposed Provincial Health Plan. British Columbia attempted a comprehensive plan for its health care system in the Elliot and Hamilton Reports of the early 1950's. The Elliot Report (1952), "Survey of Health Services and Facilities in B.C.", was initiated originally to meet conditions for obtaining federal National Health Grants. But the mandate was soon broadened to include consideration of major policy. The report described federal government health services in the province, provincial and local public health and mental services, hospital facilities, and other health services (WCB, VON, Red Cross, medical insurance plans, etc.) and made 41 major recommendations to improve B.C.'s health care system. The Hamilton Report ("A Hospital Plan and Professional Educational Programme for the Province of British Columbia") was also carried out to meet conditions of federal funding (Hamilton and Associates 1950). Its focus was on estimating hospital bed requirements for the province, and how to best meet these requirements; but it also attempted to estimate health manpower requirements (including physicians, professional nurses, hospital administrators, technicians, and social workers) and the educational programs necessary to supply the needed health manpower. It is interesting to note that this report some thirty years ago stressed the same approach taken by the Hospital Role Study undertaken more recently by the

B.C. Ministry of Health (1981). The Hamilton Report suggested four levels of hospital: community clinic and health centre; community hospital; regional hospital; and teaching or base hospital; and stated that the functions performed by each acute general hospital are determined by factors such as location, size of community to be served, relative distance between hospitals, and availability of doctors. The Elliot and Hamilton Reports were essentially a rational comprehensive planning mode approach. An inventory of health resources was prepared; a list of health needs was established by "experts" and reliance on accepted standards; and recommendations were made to bridge the gap between existing resources and perceived needs. However, there was little mention of health status outcomes expected from increasing services, nor was there attention to problems of resource allocation except in the hospital sector. This was to be expected given the context of these reports, i.e. proposed federal cost-sharing for hospital construction. No explanation is given in the reports for the ranking of hospital projects, and there was little explicit discussion in the report of the guidelines used to arrive at the recommendations.

The next comprehensive study of B.C.'s health care system was Health Security for British Columbians, completed in late 1973, and known commonly as the Foulkes Report after its author. This report began by stating the basis of its approach to improving the health care system:

- (1) a W.H.O. definition of health,
- (2) consumerism,
- (3) systems approach to health care,
- (4) equal access based on needs,

(5) regionalization of services for public participation and rationalization of services,

(6) a government role in health planning, financing, monitoring, research, and education,

(7) increased public regulation of professions,

(8) modern management theory and techniques.

The Foulkes Report then described the existing health care system of the province, and proposed a number of changes: reorganization of the Ministry of Health; decentralized funding; Community Human Resource and Health Centres; Councils to interface with other government ministries, the public, and health professionals/workers; establishment of 7-9 regions for health planning, adoption of PPBS and personnel department expansion. More specific concerns were also addressed by the report, and the scope of its recommendations is impressive. The report addressed health manpower issues, teaching hospitals, emergency services, rehabilitation, occupational health, environmental health, preventive medicine, mental health, alcohol, native peoples, the aged, children's dental needs, housing and health, etc. Many of the points or issues raised in the report are still applicable in B.C. and in this sense the Report serves as a useful reference for health planners. However, in the context of development of the Provincial Health Plan, it is useful to focus not so much on the content as the planning approach adopted in the Foulkes Report, and an analysis of possible reasons it was never officially adopted as government policy.

As described above, the Foulkes Report laid the basis of its report and recommendations on a "New Philosophy of Health Security for British Columbians". The use of the term "philosophy" is overstatement; the

concepts are more at the level of values and general principles rather than philosophy. There is explicit recognition that such general principles precede, and serve to guide, health planning. However, insufficient attention was given to these general principles in the Foulkes Report in two important respects: the general principles stated were not sufficiently comprehensive and the process to derive or develop such general principles was neglected. The gaps in the general principles, as stated in the Foulkes Report can be seen on comparing them with the general principles used as illustrative examples in this thesis (see Section V.A.) The lack of attention to the process of developing such principles is the more serious shortfall. The general principles proposed in the Foulkes Report are justified by the author as a reflection of the stated philosophy of the New Democratic Party, who had just been elected to provincial government. There is no indication that other groups, i.e. professional associations, other levels of government, unions, etc. had been consulted in either establishing or ratifying these general principles. Clearly, any appeal to legitimize proposed changes on the basis of these principles would carry less weight.

A noticeable feature of the Foulkes Report is the amount of detail provided. There are for many areas detailed "blueprints" of what is to be done or changed, eg. new uniforms for ambulance crews. In effect, the Foulkes Report attempted to plan for the entire health care system from the policy planning level to the program delivery level. In doing so, it took a rational planning mode approach, ignoring the importance of feasibility and support criteria. The Foulkes Report deliberately set out to create a new system, and in planning such a system proposed significant changes which would adversely affect influential and important groups in the

existing health care system. For example, the report recommended putting physicians on salary rather than fee-for-service, in the face of a long history of medical association opposition in this province for any such move. The report recommended wholesale changes in senior management of the then four departments dealing with health, thereby antagonizing the existing civil service. The report took an oblique swipe at voluntary associations, strongly implying that they would be integrated into the public system. The report detailed a regional structure for the province, which necessarily would affect the autonomy of hospitals and other institutions. Many other examples could be cited, but the pattern should be evident. In attempting to prove its case, the Foulkes Report often had to concede that its data base was inadequate. This may have been acceptable in a less antagonistic climate, but was unacceptable given the scope of the changes proposed in the report. Operationalizing the recommendations of the Foulkes Report required extraordinary cooperation from all the components of the health care system, given that a large segment was not (and still is not) in the direct control of the government. Such cooperation and support was very unlikely given the planning approach adopted. The outcome of the Foulkes Report (i.e. basically "shelved") supports the more limited scope of the Provincial Health Plan, and suggests that greater attention must be given to building consensus as to the general principles which are to guide the Provincial Health Plan. As well, there must be incorporation of widely representative viewpoints and expertise in the development phase of such a plan. Lastly, a data base in support of planning must be developed as an integral part of the development of the Provincial Health Plan.

Chapter IV. PROPOSED SCOPE OF A PROVINCIAL HEALTH PLAN: B.C.

The review of general planning in Chapter II is applicable to the planning for the Provincial Health Plan in both the selection of the type of items to be included in the plan, and the approach suggested to develop the content itself. Therefore, the following chapters will draw heavily upon the theoretical framework established, especially the concept of a matrix of planning modes and levels.

Although the rationale for a Provincial Health Plan was discussed in general terms in Chapter I, the specific nature and scope of the Provincial Health Plan and how in fact it would improve the functioning of the health care system has not been detailed. This chapter addresses the scope, form and applicability of the Provincial Health Plan. Rightly or wrongly, "plans" are often considered inherently desirable. The connotations of comprehensiveness, rationality, coordination, integration, effectiveness, and efficiency may obscure the fact that planning must be directed to specific outcomes, and that there are both good plans and bad plans. A frequent major failing of plans is that important assumptions, limitations, and intended scope of the plan are left unstated. This chapter details the implications of the planning level selected; the rationale for adopting a government (and within government, a Ministry of Health) planning perspective; and the boundaries and limitations of the Provincial Health Plan proposed in this thesis.

IV.A. Planning Levels

It should be emphasized that planning takes place at different levels

(see Figure 4.), and it is not a question of determining the "best" level to plan, but rather clarifying the most appropriate level for the specific outcome intended.

The wide range and type of issues discussed in Chapter I, Rationale for a Provincial Health Plan, point towards the "policy planning" level as the primary focus of the Provincial Health Plan. Recall that this was discussed earlier as "selection of broad ideological goals, determination of priorities on ideological grounds, consideration of the 'general will', development of definitions, categories and classes, development of legislation and regulations, and development of standing plans" (Crichton 1981, p. 279). It is interesting to compare this approach to Dror's (1971) three levels of policy: metapolicy, megapolicy, and specific policy. Metapolicy is concerned with policy about policymaking. Megapolicies are a set of master guidelines to more specific policies. The Provincial Health Plan can therefore be considered as megapolicy, while the development of the framework for the plan can be considered metapolicy.

This thesis suggests that development of legislation and regulations, although definitely influenced by policy planning, in fact is more appropriately considered at the level of administrative planning. In other words, legislation is but one of many mechanisms by which policy is operationalized. The other characteristic activities of the policy planning level are applicable as guidelines to what must be considered by the Provincial Health Plan. Thus, there must be a selection of ideological goals and consideration of the 'general will'. In other words, the Provincial Health Plan must incorporate statements of values and general principles of a fairly high order of abstraction, although not at the level

of philosophy, applicable to the health care system. Moreover, the process of development of such statements must include inputs by individuals and groups in a manner acceptable to western liberal democratic principles.

Following from the selection of the policy planning level, there comes the need for definitions and categorizations. This depends in part on the general principles selected. For example, concerns or principles relating to regional equity of health services will result in different categorizations than concerns or principles relating to socioeconomic equity of health services. The definitions and categorizations depend in part also on the nature of the health care system itself: the existing organization of services, the patterns and causes of ill-health, etc. The Provincial Health Plan must therefore have a framework which categorizes components of the health care system in a way which is consistent with general principles, and yet which recognizes the categorizations inherent in the health care system.

Perhaps of greatest importance at the policy planning level, and certainly the characteristic which appeals most strongly to senior managers and decision-makers, is the focus on determination of priorities. This is intrinsic to planning; whatever level of planning is selected, priorities will have to be determined. The policy planning level is unique in that it must serve as the interface between the philosophical level, where priorities are relatively unimportant; and the administrative level, where priorities are essential. At administrative and lower levels of planning, determination of priorities is amenable to traditional "rational" approaches to evaluation (cost-benefit, cost-effectiveness, etc.) At the policy planning level, determination of priorities is much more subject to

political (i.e. ideological) considerations, and there is a tremendous difficulty in operationalizing general principles into "objectives" which are understandable and useful to managers at the administrative level.

Crichton's final characteristic of policy planning, development of standing plans, provides an explicit indication that the Provincial Health Plan is appropriately considered at the policy planning level, and also sheds some insight into how the Provincial Health Plan is likely to be of usefulness. Standing plans , whether by design or default, are relatively comprehensive and a ready reference when time or circumstances preclude developing a new plan to meet a particular situation. The timeframe is generally longer since the standing plan, even if regularly updated, is meant to be applicable over a period of time.

Selection of the policy planning level implicitly delimits the scope of the Provincial Health Plan by stating in effect it does not deal primarily with other planning levels. Thus, it does not deal with "blueprint planning" as envisioned by MacStravic (1978): "The outcome of the needs-determination process should be a blueprint of the health system and its performance. This blueprint describes the number, type, organization, and location of health resources required to respond to the population's expected behaviour" (p. 26). Such a plan is applicable at a lower planning level. The Provincial Health Plan will not address planning at the level of abstraction and scope of, for example, Gil's (1970) formulation of societal functions as resource development, allocation of status, allocation of rights/prerogatives, and linkages of the latter two activities. This is not to suggest that analyses, such as Gil's, are not a useful and necessary part of the understanding of the overall planning

process. The importance of allocation of status and rights to the definitions and categorizations determining priorities is obvious. However, the planning level selected (in this case, policy planning) precludes this level of analysis.

Adherence to a particular planning level for the Provincial Health Plan may appear artificial and unnecessary. Why do we not take a broader view of planning and consider simultaneously different planning levels? As this thesis illustrates, a large task remains even when we primarily discuss one planning level. More importantly, different levels of planning are undertaken and understood by different levels of management. Mixing levels may result in an irrelevant plan from the viewpoint of the groups/level of people that the Provincial Health Plan is intended to serve.

Recognition of the planning level should prevent, or at least mitigate, jumping inappropriately from one planning level to another. For circumscribed problems or issues, it may be necessary and desirable to plan how an issue can be developed from the philosophic level to the actual service provision. However, the breadth of the Provincial Health Plan makes such an approach unfeasible.

A distinction should be made between flipping back and forth inappropriately between planning levels, and an appreciation that other planning levels, notably the two adjacent (higher and lower levels), exist and must be considered.

IV.B. Government (Ministry of Health) Perspective

Culyer (1978) discusses the public interest (= government) involvement in health care, in terms of four factors: (1) communicable disease, (2) financial burden, (3) geographical distribution, (4) health status. Communicable disease is the classic example where the social benefit is greater than individual benefit because of spill over effects. The latter three factors are "public interest" because the public or community at large is presumed to adhere to values about equity, (extending to income distribution and in-kind distribution), geographic distribution, and priorities of health "needs" based on status. This is an expression of a government role that extends beyond what Lowi (1964) has termed "distributional" activities, into areas of "regulative" and "redistributive" activities, partly because market forces are seen as inoperative or at least ineffective in coordinating and integrating the health care system. Evans and Williamson (1978) provide, from an economist's perspective, criteria for government intervention: (1) reduction of financial risk, (2) transfer of wealth, (3) impact on level or patterns of utilization, (4) improved relative economic efficiency of health services to meet needs.

In Canada, one of the major factors in government involvement in health care has been the division of responsibilities between federal and provincial governments. Constitutionally, provinces have jurisdiction over "health". Historically however, that provincial responsibility was not related to revenue generating authority to fund health care costs. Beginning in 1948, the federal government entered into a series of cost-sharing agreements with the provinces, which had the federal government funding approximately 50% of medical and hospital costs. Since the

provincial government was in effect spending "50 cent" dollars for health care, there was perhaps initially less incentive to concern itself with details of how effectively the health care system was operating. The continuing rise in health care costs did cause concern and led to various efforts to contain costs (e.g. Canada 1970). From the federal perspective, cost-sharing was too open-ended and a formula of bloc grants to the provinces was negotiated instead. As these monies were transferred to the provinces' general revenue, there was increased incentive for each province to contain its health care costs. Provincial governments initially content to control costs by attempting to control overall health care expenditures, found that despite projected budgets and ceilings on expenditures, health care costs continued to rise. Faced with decisions whether to cover budget deficits and over-runs, or to curtail high profile health services and programs, provincial governments have tended to avoid the politically unpopular step of curtailing programs. However, given the current economic recession and drop in government revenues in British Columbia, containment of health care costs becomes increasingly a major issue. The provincial government continues to take steps to ensure the most effective use of the resources it does allocate for health care; in other words, rather than delegating the allocation of health services entirely to providers (e.g. hospitals), the provincial government tends to a greater role in determining priorities and setting guidelines.

A quick overview of the health insurance system operating in B.C. illustrates the degree of provincial government involvement in health care funding. All residents of the province (after 3 months) who are landed immigrants or citizens have their hospital expenses covered by taxation

revenue, except for a nominal daily charge to the patient. After approximately a three month waiting period, all landed immigrants and citizens can subscribe to the Medical Services Plan. Rates are, as of January 1982, \$138/year for a single person and \$345/year for a family of three or more. This insurance covers physician services (including lab work) and a limited number of services for other groups (chiropractors, physiotherapists, osteopaths, etc.).

Pharmacare covers drug costs for senior citizens (over age 65) and also, in instances where an individual (or family) registered with the Medical Service Plan spends over \$100/year on prescription drugs, 80% of any additional costs. The Long Term Care Program provides personal care, intermediate care, and extended care beds at a nominal daily charge for eligible patients. Home support and Home Care (i.e. home nursing services) are also covered. Even the health care costs which are borne privately are eligible for an income tax deduction, further reducing the net out-of-pocket private expenditure.

The existence of such a comprehensive health insurance system, government funded, means that almost all of the health care costs of operating the health care system are channelled through government, notably the Ministry of Health and to a much lesser extent the Ministry of Human Resources. An often overlooked aspect of this system however is that the Ministry is usually a third party payer. Although the Medical Services Commission pays physicians directly, it does this for physician-patient transactions. The relationship is even more indirect with hospitals, where the Ministry funds hospitals, who in turn negotiate with and pay their staff. There is every indication that the government is attempting to

change the style of professional control from what Johnson (1972) terms "collegiate" to "mediation", i.e. towards greater government regulation and standards. The rationale for this is in many ways similar to points raised by the Castonguay Commission, i.e. "to reconcile the public interest with the incontestable advantage of a certain autonomy of the professions with regard to public authority" (Quebec 1970, p. 9).

Additionally, capital and equipment costs are funded primarily through government, although unlike operating costs, in a shared fashion amongst different levels of government. Ordinarily, capital costs are divided 50% to the regional hospital district and 50% to the Ministry of Health. For facilities or equipment that can be considered as referral centres, the Ministry of Health pays a higher proportion, up to 100% for capital that constitutes a provincial resource.

Because of the comprehensive health insurance system, the government has access to a wealth of information relating to provision of health services, e.g. Medical Services Plan billing data provides information on number and types of services provided by physicians to patients, grouped according to age/sex. Further information is available from the Vital Statistics branch of the Ministry, which by statute must gather and publish certain health status information. Information not found within the Ministry of Health (and the data sources are numerous) can often be relatively easily accessed from other government departments. For example, population projections by age/sex breakdown are prepared by the Central Statistics Bureau, a branch of the Ministry of Industry and Small Business Development.

The level of planning expertise and experience in the Ministry of

Health should permit consideration of a wide range of health issues. Planning resources available within the Ministry of Health include a division devoted to policy and planning. Other divisions within the Ministry also have planning and research staff, although generally with a more narrow perspective. The increases in Ministry of Health budget were noted earlier, as were the factors leading to continued expansion. These translate into increased pressure on the Ministry to contain costs, and develop more effective planning.

The selection of a government perspective, and in particular a Ministry of Health perspective, is seen as a reasonable choice, given the public interest aspects, degree of government funding involvement, information and data availability, and willingness (under some pressure) to devote resources to undertake the planning. Indeed, the types of problems which Shigan (1979) lists for the health care system are very much just those problems which the Ministry of Health is expected to address and in fact, is best prepared (relative to any other organization or institution) to address:

-Long-term forecasting of health, environmental and resource demand indices

- Reorganization of the health care system
- Selection of new directions for research
- Estimation of health status indices, environmental parameters, and resource demands and utilization
- Control of costs of medical services
- Efficient satisfaction of emergency and non-emergency demands
- Short-term forecasting of health, environmental, and resource demand

indices.

Having stated a governmental, and specifically a Ministry of Health, planning perspective for the Provincial Health Plan gives some guidelines as to the scope of such a plan. Adopting a Ministry of Health perspective is not synonymous with formulation of a Ministry of Health plan. Certain functions within the health care system are direct government responsibilities; other functions are funded by government, but operationally controlled by non-governmental bodies. There are still other elements of the health care system affected by the Ministry of Health only indirectly in the broad sense that the Ministry influences all major components of the system. The Provincial Health Plan, and the objectives contained therein, will thus be most directly applicable to those health services provided by the Ministry of Health and other provincial agencies or ministries. To the extent that other providers of health services, and consumers of health services, accept the Provincial Health Plan, it is applicable as a planning document for the health care system. Of course, the government through its fiscal and legislative authority can strongly influence the adoption and application of the Provincial Health Plan, even in areas not directly under a Ministry line responsibility. Since, as will be elaborated in later sections of this thesis, there will be explicit opportunity for various interested groups to provide input to the development of the Provincial Health Plan, and since there is recognition and extensive reliance on both "expert" opinion and community input, the Provincial Health Plan will hopefully be broadly accepted as the general direction and policies for the entire B.C. health care system. Implementation of the plan may require separate plans by

various actors within the health care system. There may well be a Ministry of Health plan, which given its resources and responsibilities, details specific Ministry goals and objectives within the context of the Provincial Health Plan. Similarly professional groups or associations and individual facilities may develop their own plans and objectives within the environment of the Provincial Health Plan.

To better understand the implications of a Ministry of Health perspective requires some assumptions as to the role of the Ministry, and in particular, its role vis a vis other levels of government, e.g. municipal or other regional structures.

IV.C. Regionalization and the Provincial Health Plan

Regionalization is not a new concept. A U.S. Public Health Service report some four decades ago, proposed a blueprint of an integrated national hospital system (Shonick 1976). This was subdivided into hospital service areas composed of base hospitals, district hospitals, small rural hospitals, and health centres for isolated areas. The base hospitals are what we might term today tertiary referral centres. In England, the 1974 reorganization created 15 regional health authorities, with smaller subdivisions of "area health authorities". The Castonguay Report recommended CLSC's for delivery of local services, supported by a hierarchical structure of regional, specialist and university centres/hospitals. District Health Councils have been in existence now in Ontario for many years. Foulkes recommended a regional structure for B.C. in 1973, with community human resource and health centres and a regional health district board.

Despite the familiarity of the regionalization concept, B.C. has only a rudimentary regional system for health planning purposes (eg. Regional Hospital Districts), and it is worthwhile starting from basic explanations of regionalization. There are many definitions in the literature for regionalization. For example, it has been described as a "scheme for the national/ geographic development of health care resources in an organized and hierarchical arrangement, so that the maximum amount possible is done at the lowest service level and services of progressively greater levels of intensity are provided according to the needs of the individual patients" (Rhode Island, Department of Health 1977). Despite the wide variety of definitions, generally two basic concepts (over and above generally applicable health planning principles) are stressed:

(1) resource allocation or service delivery based on geographical areas

(2) hierarchical arrangement of service delivery, ranging from primary to secondary, to tertiary levels of care, functionally linked in a coordinated manner.

These two concepts imply a prescriptive distribution of health manpower and facilities and also consumer usage patterns. This latter aspect is often overlooked, i.e. it does little good to locate manpower or facilities at the geographically optimal locations if patients refuse to make use of them.

A long list of advantages is cited in support of regionalization, but analysis indicates that these can be subsumed under three major headings:

(1) increased effectiveness/efficiency, and therefore cost containment

(2) improved access to health services, including a more personal nature of service

(3) increased community participation

There are differing approaches in defining a region. An Australian report states: "A region is a geographical area that is economically and socially defined. A region should show a considerable level of independence such that within region ties are stronger than between region ties."

(Australia, Hospitals and Health Services Commission 1974). It classified three different approaches to determination of regions: (1) ecological - based on usage patterns of services within an area; (2) optimization - areas determined on a theoretical basis and prescribed; (3) administrative - adoption of arbitrary boundaries of already existing (or proposed) administrative regions.

There is some overlap in these definitions and an eclectic approach would seem more reasonable than rigid adherence to any single method. On this basis, a number of factors are commonly used in determination of regions:

(1) geography - e.g. natural geographic barriers,

(2) transportation and communication lines - existing and future roads, rail, air, etc. The actual travel time involved is crucial. One criteria that has been proposed is that there be a maximum of 2-3 hours from centre to periphery of the region,

(3) population - present and projected total, and the distribution among urban and rural areas. For example, it is suggested that there be a minimum of 100,000 population to constitute a region, and that 850,000 to 1 million population is needed to justify a full range of health services with

several major centres.

(4) social and economic patterns,

(5) existing facilities, services, and utilization patterns. The inter-regional flow can be used to quantify the self-sufficiency of a region.

(6) existing government and administrative structures, boundaries, etc.

(7) financial systems and mechanisms of funding.

These factors are not independent of each other. Geography will affect transportation, which in turn affects social and economic patterns, and so on. It has been suggested, from consideration of such factors, each region should have a "critical mass" allowing appropriate community involvement, a sophisticated level of integrated health care services logically tied into central services, and an effective management and administrative organizational group for the region.

Regionalization allows for varying degrees of autonomy for the region relative to central authority. For analytic purposes, three degrees of autonomy are described (Martins 1975):

(1) complete autonomy

(2) relative autonomy

(3) close supervision

Complete autonomy describes a "state within a state" situation. The region would have a high degree of self-sufficiency and legal authority. The relative autonomy model tends to leave areas of discretion in application of basic principles decided at the central level. Close supervision implies branch offices of central authority rather than regional

administrations. The pure forms are seldom seen in practice; usually a mixture of each type for various attributes are found in any particular region, especially as related to executive power, financing sources, regulation of services and overall standards.

The current situation in B.C. regarding regionalization has been the subject of much study. Existing jurisdictional boundaries for health services are not coterminous. Thus, the regional hospital districts (corresponding to the regional districts) are not exactly the same as the public health unit districts. Mental health services rely on still another set of boundaries. The districts contribute to capital financing for hospital buildings and equipment, but operating expenses are negotiated directly between the Ministry of Health and individual institutions. Presently, in the health care system in B.C., there is not a delegation of authority or responsibility to regional authorities. Indeed, most regional authorities presently lack the staff and technical resources to undertake such responsibilities.

For discussion purposes, boundaries for regionalization of health services in B.C. have been proposed, resulting in seven regions with populations ranging from 200,000 to 800,000:

- (1) The North
- (2) Central Interior
- (3) Okanagan/Kootenays
- (4) Lower Mainland
- (5) Vancouver
- (6) Vancouver Island and Coast
- (7) Capital Regional District

This thesis suggests the most effective approach to regionalization is a "relative autonomy" model. Reference can be made to Ontario's (1974) efforts in regionalization, which appears to follow this model. A number of complementary functions were proposed for the provincial, ie. central, and regional levels. Thus, at the provincial level:

- (1) Delineation of boundaries and updating
- (2) Overall planning and guidance for the provision of health services - setting policies , standards.
- (3) Provision of specialized consulting services.
- (4) Collection and analysis of data for evaluation.
- (5) Maintenance of financial control.
- (6) Necessary central reorganization to accommodate a regional system.

And at the regional level, these functions were proposed:

- (1) Develop goals, recognizing the health needs and concerns of the citizens within the region.
- (2) Develop plans for the provision of resources, programs, and facilities.
- (3) Coordinate health services programs and the resources of manpower, facilities, and finances for the region.
- (4) In collaboration with the Province, evaluate the effect of region programs.
- (5) Exercise financial authority commensurate with assigned responsibilities.

The Provincial Health Plan should therefore accommodate the sharing of planning responsibilities between central and regional planning authorities.

In particular, overall policies and standards would be centrally determined, but the regional or community-specific application of such standards would be regionally determined.

IV.D. Boundaries of Health

The scope of the Provincial Health Plan must also address the question of boundaries of "health". What is the subject matter of the plan? There are certain areas generally agreed to be part of the health care system (e.g. hospitals). However, other marginal areas are often considered part of the economic, welfare, and education systems rather than part of the health care system. Especially difficult is the distinction between health care and social welfare policy. Crichton (1982) has observed that health policy in Canada has been used as an instrument of key social policy, not just directed to health care.

The distinction between health planning and health care planning attempts to resolve semantically the question of boundaries (Know 1979). Health planning is described as operating "through modifying any or all of the determinants of health, including the physical and social environments and patterns of individual and group behaviour, as well as through the personal health services" (p. 30). Health care planning, on the other hand, "focuses on the latter (personal health services), attempting to select volumes and configurations of facilities, personnel, technologies, equipment, and services which will best meet the needs of defined populations within the limits imposed by resources and acceptability" (p. 30).

Blum (1974) argues that social and environmental factors are the

largest determinants of health and therefore should be considered in any study of the health care system: "As multifaceted as our definition of health has become, indicators directed only to health (our system of concern) are not enough and must be matched by batteries of indicators useful in the nonhealth sectors of our society (the environment around our health system)" (p. 166).

Ideally, the Provincial Health Plan would concern itself with health planning, and it is not difficult to find support for this approach. The International Institute for Applied Systems Analysis (IIASA) states (Shigan 1979):

"To answer questions of medical resource demand and allocation, it is necessary not only to estimate population change but also to forecast the dynamics of the health of the population. This problem is also complicated by the strong dependence of the health care system on socio-economic, environmental, and other external systems... We see that both the HCS and external systems may be divided into subsystems and that the connections between subsystems and their parameters may be direct or indirect, continuous or discrete, strong or weak, changeable over time or constant" (p. 3).

It is worth mentioning an effort to model a system incorporating various sectors, the Vancouver Regional Simulation Model, which included aspects such as population, transportation, land use, pollution, ecology, etc. (Quebec 1972). MEDICS also outlined a broad picture of health care within a wider government system, including education and public works (Quebec 1972).

McKeown (1975) concluded that since the 18th Century, "influences responsible for the modern improvement in health were mainly behavioural (the change in reproductive practice which led to the decline of infanticide and restricted the growth of population) and environmental (comprising two changes, an improvement in food supplies and removal of hazards from the

physical environment.)" (p. 71). This conclusion is still valid, and modern man's health is largely dependent on behavioural and environmental factors - not the medical care system. Thus health planning should encompass more than the traditional health care system with its medical orientation.

One of the best known statements/reports advocating a health planning rather than a health care planning approach is Lalonde's (1974) New Perspectives on the Health of Canadians, a report which has perhaps generated more attention outside Canada than at home. There is a clear demonstration that if potential years of life lost is used as a criterion, the major health problems in Canada are related to lifestyle and environmental factors.

The arguments presented for taking a health planning perspective are very forceful. There is a rational, logical basis for taking such a comprehensive approach. Unfortunately, the disadvantages inherent in such a planning mode are applicable also in taking a health planning approach. Belanger et al (1974) state: "our current social organization packages our concerns into discrete bureaucratic departments. It seems unlikely that this can change significantly within the near future. Consequently, models of health care systems must necessarily mimic their parent systems in being delimited, if rather arbitrarily so" (p. 407). Close relationships across sectors cannot be assumed. Shonick (1976) cautions that reductions of expenditures in the health care system will not necessarily lead to increased resources being set aside to improve non-health care system determinants of health status. Similarly, the Resource Allocation Working Party (RAWP) made a conscious decision to take a restrictive definition of

health: "We recognize the important influences of other factors, e.g. housing, environmental health facilities, working conditions, etc. Except in the sense that they all have an impact on the morbidity of populations, we cannot take them into account. They are the province of other social programmes and the extent to which they react with the health care programme is not an issue with which we are equipped to deal" (Great Britain, Department of Health and Social Services 1976, p. 11).

Because the health care system is exceedingly complex and rooted in the medical model, efforts to institute radical change will encounter stiff resistance. For example, the "Black Report" in Great Britain reviewed the persistent socioeconomic class inequalities in health status and use of health services, and recommended a wider strategy encompassing more progressive taxation measures (e.g. increase of child tax allowance and increased housing benefits) and more educational opportunities. However, the government has given the report a "frosty reception", and in fact made only a limited number of copies of the report available (Gray 1982). The inertia of existing institutions and organizations precludes taking a strict health planning approach as the basis for the Provincial Health Plan. However, if it were simply a question of maintaining the status quo, with only marginal changes, there would be little purpose in developing the Provincial Health Plan. What is required is a recognition and incorporation of existing organizational patterns and health care resources into a planning framework which still permits the injection of "expertise" and rational planning.

This suggests that neither a health planning nor a health care planning approach is adequate in defining the boundaries of "health" for the purposes

of the Provincial Health Plan. Instead, this thesis adopts what might be termed a modified health care planning approach. This approach includes, but is not limited to, areas traditionally considered in health care planning, including areas clearly under the jurisdiction of the Ministry of Health. It encompasses therefore areas of responsibility mandated by specific legislation falling under the Ministry of Health. There are currently about 40 specific Acts administered by the Ministry of Health. A dozen of these relate to health professional groups, defining self-regulatory rights and responsibilities, notably preventing non-qualified practitioners from the specific professions: Chiropractors Act, Dental Technicians Act, Dentists Act, Medical Practitioners Act, Nurses(Practical) Act, Nurses (Psychiatric) Act, Nurses (Registered) Act, Optometrists Act, Pharmacists Act, Physiotherapists Act, Podiatrists Act, and Psychologists Act.

A number of the acts under the Ministry of Health are very specific in scope, and therefore of less interest in discussion of boundaries for the Provincial Health Plan, e.g. Hairdresser's Act. A further group of acts relate to "vital" events, but again is of less interest from the perspective of boundaries since the functions are of an administrative and record-keeping nature: Marriage Act, Name Act, Vital Statistics Act, Wills Act.

There are a number of major acts under the Ministry of Health's administration which do define the scope, and thus in a sense the boundaries from a legislative standpoint, of the Ministry. The Ministry of Health Act states that "the Ministry, under the minister's direction, shall have charge of all matters relating to public health and government health insurance programs." The government's traditional public health protection role is

found more specifically in the Public Toilet Act, Tuberculosis Institution Act, Venereal Disease Act, and the Health Act. The emphasis, reflecting historical development, is on measures to prevent and contain communicable diseases. The Mental Health Act authorizes the restraint and custody of persons suffering from mental illness; this again has overtones of public protection. The government's involvement with hospital and medical insurance is detailed in the Hospital Insurance Act, the Medical Service Act, and the Medical Service Plan Act. The extent of health insurance and implications arising from this have been discussed in Section IV.B. Government involvement in hospital construction is detailed in the Hospital District Act.

Within this legislative framework, the Ministry of Health's responsibilities are reflected in its organizational structure. Reporting to the Deputy Minister are four major areas, three of which are "program" areas, with the fourth encompassing support functions applicable Ministry-wide. These four areas, and the corresponding functional activities, as noted in the 1981 Annual Report, are shown below (British Columbia, Ministry of Health 1981):

Management Operations: Legislation, Planning, Policy Formulation, Research and Evaluation, Financing and Budgets.

Institutional Services: Emergency Health Services (primarily the ambulance service), Hospital Programs (funding of operational budgets, capital construction, purchase of equipment), Home Care and Long Term Care (including home support services and residential care).

Community Care Services: Mental Health Services, Forensic Psychiatric Services, Alcohol and Drug Services, Medical Services Plan (the medical

insurance system).

Preventive Services: Public Health Inspection, Public Health Nursing, Speech and Hearing Services, Dental Health Services, Health Promotion and Nutrition, Occupational Health, Venereal Disease Control, Tuberculosis control, Provincial Laboratory.

Areas which interface with other sectors of society, corresponding to so-called "interface" issues with other government ministries can be categorized according to the Ministry in question. Major areas of interface are with the Ministry of Human Resources, Attorney General, the Ministry of Education (and because B.C. has a separate Ministry for Universities), the Ministry of Universities, Science, and Communications, and the Ministry of the Environment. Examples of interface issues, where the boundaries of the Provincial Health Plan may be "fuzzy" are shown below.

Ministry of Human Resources: Children Services, including Child Abuse; Long Term Care; Pharmacare; "Social" problems ; Handicapped and Rehabilitation Services.

Attorney General: Seatbelt usage; Alcohol Abuse, including while driving a car; Forensic psychiatric problems; Behaviour disorders; Drug Abuse, including heroin.

Ministry of Education: Health manpower education; Clinical placements of interns.

Ministry of the Environment: Pesticides; Pollution.

There is no question that these issues and factors impact on "health", and therefore must be considered in a modified health care planning approach. For the purposes of the Provincial Health Plan, these areas require special attention. Only those aspects of the interface issues which

are considered within the traditional health care system (and the boundaries for such consideration are renegotiated constantly) will be formally included in the process of objective setting, policy, standards, priority determination etc. of the Provincial Health Plan.

The boundaries on "health" suggested by this paper for the purposes of the Provincial Health Plan can be usefully compared to the framework developed by de Miguel (1975) for the study of national health systems. He proposes four sub-systems, with "factors" or components in each subsystem:

(1) Individual - Health status, Bio-medical factors, Psychological factors;

(2) Institutions - Health Services, Health Organizations, Health Planning;

(3) Society - Sociocultural patterns, Political Structure, Economic Development, Demographic Structure;

(4) Larger Systems - Environment.

The sub-systems range from the micro to the macro, and together provide a comprehensive picture of the health system. The Provincial Health Plan focuses on the "Individual" subsystem, and the "Institutional" subsystem, with lesser attention to the Society sub-system.

Chapter V. PROPOSED FRAMEWORK FOR A PROVINCIAL HEALTH PLAN: B.C.

Chapters I to IV have provided the background for an approach or framework for development a Provincial Health Plan. The outline of the proposed framework is diagrammed below:

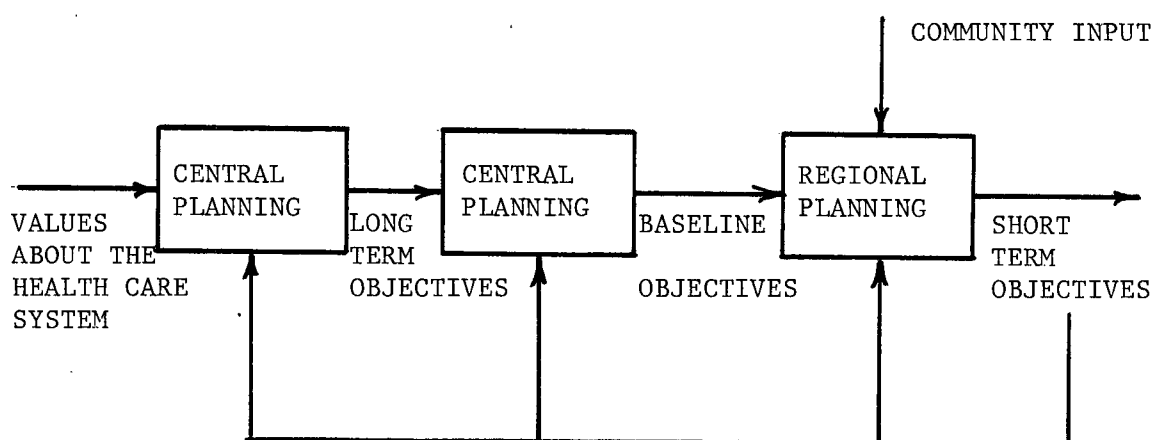


Figure 21. Outline of the Proposed Framework for a Provincial Health Plan

The Provincial Health Plan focuses on the policy planning level, which corresponds to objective setting. Hence the endpoint, or outcome, of the development process consists of Short Term Objectives (STO's). Because the Provincial Health Plan is a "standing plan", Long Term Objectives (LTO's) are also included. Indeed, as suggested by the sequential nature of the development, establishing LTO's facilitates development of STO's. This concept is common to most planning approaches. The translation of LTO's to STO's - those operational objectives which are to receive current funding - requires a resource allocation process. This thesis proposes using the concept of Baseline Objectives to make this a more manageable undertaking.

Because the policy planning level takes its reference from the ideology planning level, Values or general principles concerning the health

care system and society in general, are a major determinant of the objectives for the Provincial Health Plan. Thus, Values are shown as an initial input to the development process. The basic skeleton of this process also assumes that a regional health care planning system has evolved in British Columbia. The division of planning responsibility between central and regional planning authority is an integral part of the developmental outline. Community input is considered by regional planners as part of the process of determining ST0's.

The Provincial Health Plan will therefore contain statements of Values, Long Term Objectives, Baseline Objectives, Short Term Objectives, and also a consistent methodology for ensuring community input is taken into account. Following sections of this chapter discuss in greater detail the development and application of each of these components necessary to the Provincial Health Plan.

It is of interest to compare the framework for development of the Provincial Health Plan with the many-stage developmental process described for Health Systems Plans in the United States, shown in the following figure 22.

PLAN DEVELOPMENT PROCESS

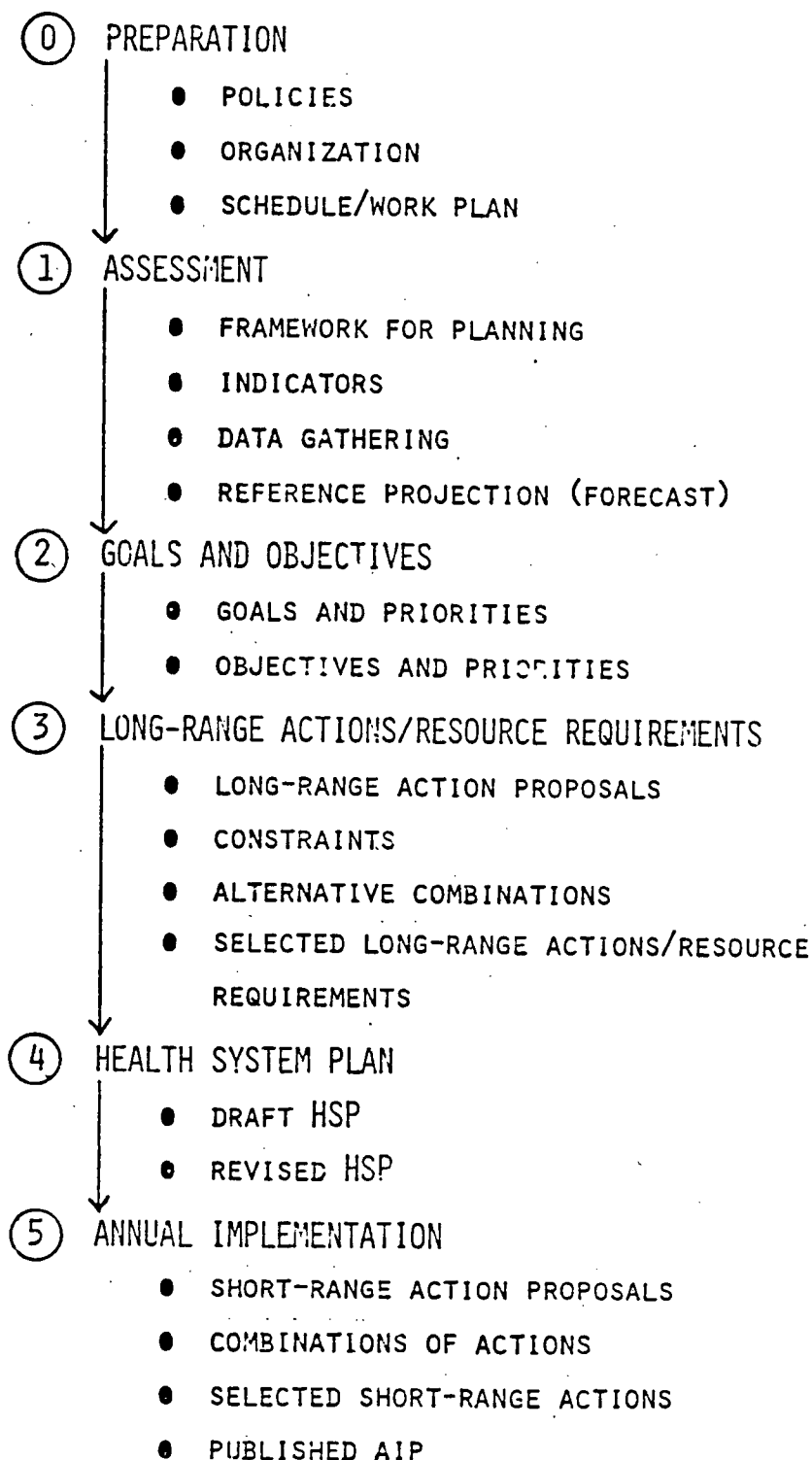


FIGURE 22. Development Process for Health Systems Plans

SOURCE: United States, Department of Health, Education and Welfare.
A Course on a Systems Approach to Health Plan Development
Leader's Guide. 1979, p. I-13

The stages are "a cyclical process of expressing community values and long-range applications for health status and health system performances; projecting and evaluating the capabilities of current health services to address them; and designing and choosing among actions that will close the gap between projected and desired levels of community health and health system performance" (United States, Department of Health, Education and Welfare 1979a, p. I - 13). The Provincial Health Plan is of more modest scope, focusing primarily upon the expression of community values in terms of health status and health system objectives.

V.A. Values, as applied to the Health Care System

The planning matrix, Figure 4., summarizes the concept that planning objectives stem from higher order general principles or values. Most planning approaches incorporate this concept implicitly or (less often) explicitly. For example, Cantley (1981) refers to "general ideals about quality of life and society, and the role of health" as an input to strategy formulation in health care, (see Figure 23.) As Abel-Smith (1976) observed: "Value premises must underlie any choice of priorities whether or not these premises are formalized in a health status index...Such choices should reflect the values of a particular society. Ideally each community should be enabled to participate in the choice of its own priorities" (Chapter 8).

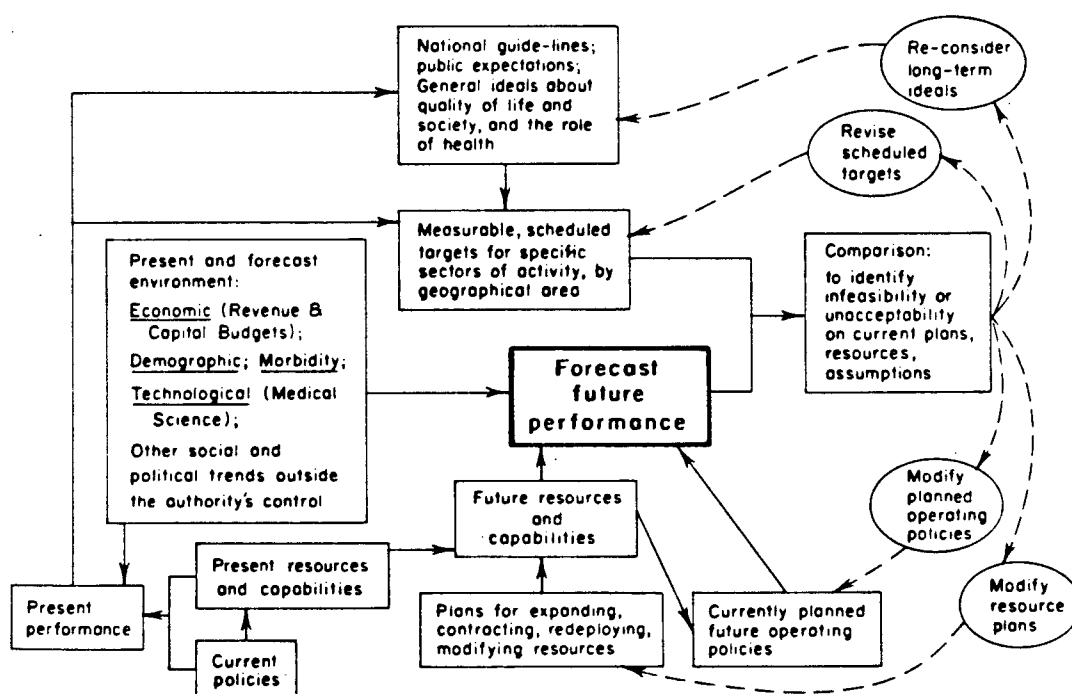


FIGURE 23. Gap Analysis Applied to Strategy Formulation in Health Care

SOURCE: M.F. Cantley, Strategic Control for a United Kingdom Regional Health Authority: A Conceptual Framework. Behavioural Science, 1981, Vol. 26, p. 7.

The first step in development of objectives for the Provincial Health Plan is consideration of the values which are to serve as the basis for the health care system in British Columbia. Major inputs for the establishment of values are shown below:

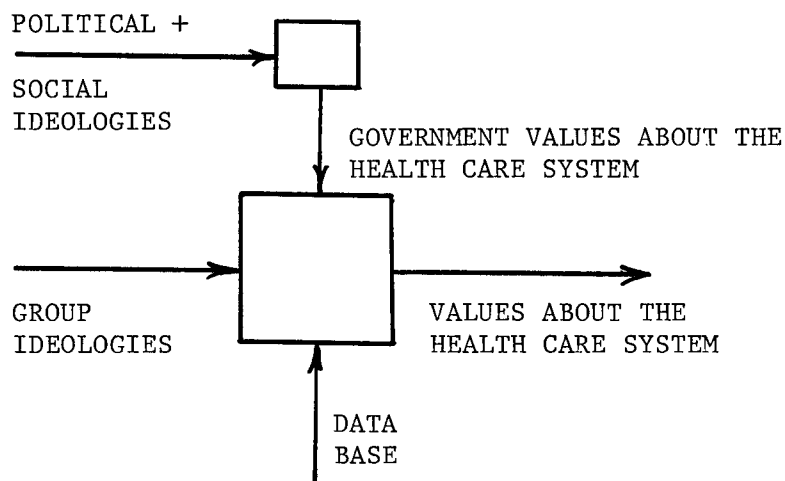


FIGURE 24. Determination of Values

Political and social ideologies, and their translation into value statements applicable to the health care system and consistent with current government and Ministry of Health values, are discussed in Section V.A.1. Group ideologies, and a proposed mechanism to formalize such input for the purposes of the development of the Provincial Health Plan, are discussed in Section V.A.2. The Data Base is discussed in Section V.B.1., in the context of development of Long Term Objectives.

V.A.1. Political and Social Ideologies

V.A.1.1. An Overview

Roemer (1977) has discussed, in his review of international health care systems, the determinants of a health care system as being historical events, economic levels, and cultural influences as well as political policies. However, since the factors amenable to planning are within the political (and social) sphere, it is useful to first present a brief overview of political and social ideologies.

Marchak (1975) defines ideologies as "screens through which one perceives the social world. Their elements are assumptions, beliefs, explanations, values, and orientations" (p. 1). Geertz (1964) adds: "Whatever else ideologies may be...they are most distinctively maps of problematic social reality and matrixes for the creation of collective conscience" (p. 64). He further suggests that ideologies are a result of societal strain, permitting mechanisms for relief of that strain through catharcism, morale sustainment, group solidarity, and advocacy. Christian and Campbell (1974) discuss two expressions of ideology. The first is found in an abstract principle or set of principles; the second is found in the actual operations of institutions. These two expressions may not coincide. For example, statements of Canadian ideology have stressed equality of condition since World War II. Yet, Badgley and Charles (1978) present epidemiologic evidence that this is not in fact the case in Canadian society.

The major political ideologies in Canada are (democratic) socialism, conservatism, and liberalism. Warham (1974) notes that socialism, in

whatever form implies a commitment to "equality". Moreover, on reviewing the various forms of socialism, she concludes that in democratic socialism, equality of condition is considered the "end", and equality of opportunity is seen only as one of several means to that end. The aims of democratic socialism will therefore be more equitable distribution of political and economic power (e.g. national income) using taxation, extension of the government sector through social services, and other forms of redistribution.

Conservatism has elements of socialism and liberalism. Horowitz (1970) describes it as stressing "prescription, authority, order and hierarchy in an organic society". Thus, there is simultaneously an implication of collectivist orientation (as in socialism), and also a minimal role for government (as in liberalism). The conservative will downplay innovation, seeking instead to accept only those changes that are unavoidable in a changing society. In a conservatively ordered society, the rules and laws will tend to maintain the existing status.

Given the dominant nature of the liberal ideology in Canada, it is discussed here in greater detail. It is important not to equate political party labels with ideology. Marchak (1975) cautions that the Liberal Party in Canada is not synonymous with the liberal ideology, which has its roots elsewhere, and its strongest expression in other countries, notably the United States. The liberal ideology rests on the philosophic position that the individual is more important than society. Weber traces this back to Protestantism, which emphasized individual responsibility for sin and redemption. Liberalism focuses not on equality of condition, but rather claims the right of individuals to seek their own happiness, i.e. equality

of opportunity. Warham (1974) states: "Whereas the egalitarianism of socialism is based on the notions of collectivity, and of equalities of condition as conducive to the freedom of individuals to participate more fully as equally valued members of the collectivity, liberalism sees societies as composed essentially of individuals in competition with each other" (pp. 36 - 37). Government intervention is justified only to promote the capacity of individuals to work towards their aims - not to supply or provide the aims themselves. The U.S. Economic Opportunities Act clearly demonstrated this attitude: "to integrate the poor into the opportunity structure of American Life." In Canada, Pearson explained liberalism: "(the problem) is posed in the necessity of preserving the independence and self-reliance of the individual, driving home the realization that he stands above the state, which is the essence of liberalism, with the obligation, in the complicated organization of society which we have today, of the state to protect the individual when protection is required." (Marchak 1975, p. 35). The role of government is thus very differently viewed in democratic socialism and liberalism. In the latter, social services, rather than being government instruments of first resort, are instruments of last resort, to be discarded as soon as possible.

Horowitz (1970), on analyzing liberalism in Canada, concludes that in English Canada, liberalism, although dominant, has had and continues to have legitimate streams of toryism and socialism. Historical factors help to explain Lipset's (1963) findings that Canada has much greater tendency to ascription and elitism than the United States, accepting hierarchy and social stratification as well as the power of the state to develop and

control the economy to a much greater degree. Marchak (1975) also notes that liberalism in Canada, although dominant, is not the only ideologic stream: "the dominant ideology of the country is liberal in the utilitarian tradition. Its humanitarian conscience is expressed in the challenging welfare state ideologies of the NDP and the philanthropic endeavour supported by Liberals and Conservatives" (p. 12).

Crichton (1980), in comparing a number of western nations (including Canada), observes that social ideologies have stemmed from political ideologies. This close relationship is seen in the three models of social ideology within western democracies, described by Titmuss (1974):

- (1) residual welfare,
- (2) industrial achievement,
- (3) institutional redistribution.

The residual welfare model can be traced to England's poorhouse. An individual's needs should be met by himself (or family) and the market, according to this model. Only if these fail should social welfare institutions intervene. Titmuss explained: "It is the case for minimum government, central and local, maximum liberation from state intervention, a residual role for (preferably) a voluntary social policy, and maximum permission (or freedom) for the individual to act according to his own conscience and to spend his own money as he wishes in the private market without let or interference from officials or bureaucrats (who cannot know best)" (p. 33).

The industrial achievement model views social welfare institutions as significant adjuncts to the economy. The determination of needed services

is very much influenced by the effect on productivity and work performance.

The institutional redistribution model places social welfare integrally within society. Services are distributed on the basis of "need", and based on a principle of social equality. Titmuss cited the United States as an example of a residual welfare model, West Germany as an example of an industrial achievement model, and Great Britain as an example of an institutional redistribution model.

A more recent analysis of the values of health policy "elites" in the United States, the United Kingdom, and West Germany suggests that these models of social ideology are still applicable, and lead to distinct health care ideologies in each country. For example, health insurance is viewed as a right of citizenship in Great Britain, whereas in West Germany, it is linked to employment and productivity, (e.g. through employment-related contributions (Lockhart 1981)).

Crichton (1980), in the context of rehabilitation services, has analyzed the progress from residual welfare, to industrial achievement, to institutional redistribution models, moving most recently to the "human rights" model. The last model goes beyond distribution of services on the basis of need, and advocates reverse discrimination in some instances.

A historical perspective is useful in understanding the changes of political and social ideologies in Canada. The Beveridge Report in Great Britain, and the Burns Report in the United States, reflected a preoccupation in the western world with equality of condition. This also found expression in Canada, e.g. the Marsh-Heagarty report. The emphasis on equality of condition held sway through the 1960's as values were translated into structures and processes. Since the 1970's, the Canadian

ideology in the area of social services appears to have cycled away from an emphasis on equality of condition. Crichton (1982) notes that Canada, having developed national health insurance and a social security scheme, seems to have returned to the idea of equality of opportunity. However, this cycling has not seen a complete reversal. Rather, a basic floor or minimum level of social security, used in a broad sense, is incorporated into this ideology of equality of opportunity.

Political and social ideologies provide the broad guidelines for the value statements of the Provincial Health Plan. Within our democratic system of government, political and social directions are decided at the ballot box. In British Columbia, the Social Credit government presents itself as free-enterprise, and therefore tends to liberalism. The opposition party, the New Democratic Party (NDP) presents itself as democratic socialist. It is worth noting the level of NDP support. In government only once (1972-75), the NDP won 39% of the popular vote in 1975, and 46% of the vote in 1979.

Although the political and social ideologies are defined in general terms by the choice of political party, there has not been, up to this point, explicit consideration of how political and social ideologies ought to be applied to the health care system. A description of the existing health care system does not adequately reflect the application of political and social ideologies, since group pressures, budgetary constraints, political considerations, etc., all play roles in determining the health care system's current structures and processes. It is useful for government to have a clear statement of its values, as applied to the health care system, so that whatever compromises and accommodations are made, policies

consistent (or at least not entirely inconsistent) with its stated values can eventually result.

On reviewing a number of provincial, national, and international statements of principles, implicitly or explicitly stated, which should guide the health care system, it is apparent that the statements show some variation (as might be expected from the range of political, social and other ideologies which exist) but fall within four distinguishable areas (Beveridge 1942; Canada 1964, 1969; Foulkes 1973; Lalonde 1974; World Health Organization 1977, 1978, 1979):

- (1) Definition of health, and related to this, responsibility of the health care system
- (2) Social Justice
- (3) Role of Government, Individuals, and Professions
- (4) Effectiveness and efficiency.

For example, according to United States legislation, Health Systems Plans are to improve the health of residents; to increase the accessibility, acceptability, continuity and quality of the health services provided; and to contain health care costs, in part by preventing unnecessary services (United States, Department of Health, Education and Welfare 1979a). The "health" of residents falls under Definition of health. Accessibility and acceptability fall under Social Justice. Continuity and quality reflect Effectiveness and efficiency, as do restraining costs and prevention of duplication of services.

For each of the four areas, a range of value statements is possible, associated with the range of political and social ideologies that are likely to exist in a particular jurisdiction. For the purposes of the Provincial

Health Plan in B.C., the relevant range of political and social ideologies has been outlined. It remains therefore to apply these ideologies in a health care system context.

V.A.1.2. Political and social ideologies applied to the HCS

The following matrix provides a convenient format for discussion:

Area of Concern	Ideology		
	Liberalism	Socialism	Conservatism
Definition of Health			
Social Justice			
Role of Government,			
Individuals, Professions			
Effectiveness/Efficiency			

FIGURE 25. Application of Political/Social Ideologies

The issues or questions addressed by the above matrix should encompass what Fuchs (1974) has listed as the "choices we must make" in health-care policy. He includes in his listing as the most "basic" level of choice "health or other goals". However, as discussed in Section V.D.2., this choice is more appropriately considered at another planning level. The policy planning level, and the Provincial Health Plan do not consider the relative worth of "health", "justice", "beauty", "knowledge", etc. The other choices in Fuch's listing are relevant and summarized below:

- (1) medical care or other health programs?
- (2) physicians or other medical care providers?
- (3) how much equality, and how to achieve it?

(4) today or tomorrow?

(5) your life or mine?

(6) the jungle or the zoo?

A choice must be made between medical care or other health programs, where medical care refers to the traditional health care system with a medical model (physicians, hospitals, etc.) as compared to other health programs such as pollution control and accident prevention. Within a medical model, there may be alternative methods of providing services, e.g. substituting nurse practitioners for physicians, so that choices must be made whether physicians or other medical care providers or other methods of service delivery are to be used. How much equality, and how to achieve it, constitute major choices for any society. The distribution of goods and services to individual members of society, and whether health care services are to be treated in the same way as other goods and services, is a matter of social choice. Today or tomorrow refers to a choice between what economists term "consumption" and "investment", and raises the question of how much should be spent in providing for future problems, at the expense of care for present problems. Your life or mine refers to a central issue in making choices -- who decides what choices are to be made? Different groups have different interests and priorities; how are these to be reconciled? Finally, the jungle or the zoo is a vivid metaphor describing the balance between individual and societal responsibility for health, and to what extent society can impose restraints on individual actions to improve either that individual's health or the health of others.

These difficult choices recall what Crichton (1981) has termed the

fundamental issues of health policy. She reviews the importance of defining "health", and whether health policy is to be considered synonymous with policies about medical care and services; or whether a broader definition, including social and economic issues, is to be adopted. The basic issue then arises whether health, however defined, is regarded as a "means" (e.g. to national solidarity or economic development), or as an "end" in itself. If health is considered the latter, issues of health promotion versus life preservation require policy decisions. In other words, should the quality of life take priority over the prolongation of life? Should acute life-saving medically oriented services take precedence over prevention and promotion? In order to address these questions, one must face issues of social reciprocities in modern, relatively affluent societies and consider the rights and privileges of individuals and health care providers in the face of the allocation of scarce health care resources.

Political and social ideologies, as applied to the health care system, should also address those characteristics which define and differentiate types of health care systems: economic support, manpower, facilities, delivery patterns, preventive services, regulation, and administration and planning (Roemer 1977).

The following discussion systematically considers each of the four areas of concern shown in the matrix (Figure 25.), and the application of different political and social ideologies. Illustrative value statements are included to suggest some sense of the form such statements could take in the Provincial Health Plan, and also to allow demonstration of the application of value statements in later stages of development towards Short Term Objectives for the Provincial Health Plan.

Definition of Health and Responsibility of the Health Care System

The choice of a broad or narrow definition of "health" for planning purposes, and specific inclusions or exclusions, is very much a value-laden decision. Boundaries of "health" for the Provincial Health Plan are proposed in Section IV.D. of this thesis. It should be evident that the author's personal value system predisposes towards that particular definition. There cannot be value-free planning, and the planning for the Provincial Health Plan is no exception. However, by consciously addressing the issue of Definition of Health, and examining alternative definitions, this thesis invites differing approaches (which variation may in turn lead to modifications in the form and developmental outline for the Provincial Health Plan).

Liberalism tends to a fairly restrictive definition of "health" for planning purposes. This stems not from a particular value about "health" inherent in the liberal ideology, but rather from its emphasis upon the individual and the competitive market to deal with social and economic problems. There is no need to define health in a broad manner if in practice, only a narrow set of "health" problems are deemed to require formal planning and evaluation. For example, whether lifestyle problems constitute "health" problems ceases to be a major issue for planning purposes if one's values stress individual responsibility for personal actions (or inactions). A liberal definition of health would therefore encompass only those areas traditionally considered "public health", accepting (perhaps reluctantly for planning purposes) also those areas which traditionally have been considered as falling within the health care system, e.g. physicians, hospitals, and emergency services. Without necessarily

implying government provision, the emphasis is on personal care and the medical model providing such care. There is little attention to the concept of "community health".

Conservatism takes a similarly restrictive definition of health, although for different reasons. The existing social order of the health care system still reflects to a large degree the medical model of "health". To the extent that the conservative ideology attempts to preserve the existing order, the more restrictive definition is favoured. There is a greater attention to the collectivity and the "social good" which would be reflected in more emphasis on occupational health, the workers in society being viewed as an important component of the social fabric. Also, disruptions to the social order seen in family breakups or disintegration of social networks may be viewed more seriously in conservatism. In other words, "social health" may be a more legitimate concept in a conservative, rather than a liberal, society.

Socialism tends to a fairly broad definition of "health". As in conservatism, there is greater attention to the collective good and community or social health. Thus, for example, environmental health may be given greater emphasis. As well, social problems, such as deviant behaviour, have tended to be categorized as "health" problems. In the dominant liberal society, being sick seems to be more acceptable than being bad. It is unclear whether the same definitions would be made in a dominant socialist society. The broader definition of "health" also stems from socialist values supporting centralized "rational" planning and government intervention. The definition of "health" for planning purposes would, in socialism, therefore include preventive health services and lifestyle

problems,(and possibly also housing, income, and education to the extent they affect health status); family counselling, social and psychological problems; services to the handicapped and rehabilitation; long term care patients; and so on. Illustrative value statements which would be considered under Definition of Health are listed:

- 1) Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Following from this W.H.O. definition, responsibility for health rests not only with the health care system, but also other sectors of society such as social services, the educational system, and the economic system.
- 2) The Health Care System has major responsibilities in areas of public health and primary and specialized care for diagnosis, treatment, and rehabilitation from disease, including the following areas: medicine, surgery, obstetrics, gynaecology, paediatrics, psychiatry, dentistry, etc. Primary care should include at least: education concerning prevailing health problems and the methods of identifying, preventing and controlling them, promotion of food supply and proper nutrition and adequate supply of safe water and basic sanitation, maternal and child health care including family planning, immunization against the major infectious disease, prevention and control of locally endemic disease, appropriate treatment to common disease and injuries, promotion of mental health and provision of essential drugs.
- 3) The Health Care System also has major responsibility in the areas of health care research.
- 4) The Health Care System shares responsibility with other sectors in areas such as environmental protection, preventive health measures, health

promotion/education and lifestyle changes, housing and income maintenance.

5) The B.C. Health Care system is dedicated to maintaining and improving the health of B.C. residents; firstly through maintaining and improving services in its major areas of responsibility, and secondly by working with other sectors in areas of shared responsibilities. In order to accomplish these purposes, the B.C. Health Care System should be responsive to demographic, social, economic, and technological changes.

Social Justice

Fletcher (1976) notes that justice has traditionally been considered as commutative, legal, and distributive. Commutative justice refers to one-to-one or one-to-group relationships. Legal justice refers to the obligations of the individual to the state. Distributive justice concerns what society or the state owes to the individual. This discussion uses social justice primarily in the last sense.

The standard conceptions of social justice, which find expression in political and social ideologies, are: to each according to his merit (effort or achievement); to each according to his societal contribution; to each according to his contribution in satisfying whatever is freely desired by others in the open market; to each according to his needs; and similar treatment for similar cases (Veatch 1976).

Expressed in a political context, liberalism stresses equality of opportunity, and in the health care system, access to health care services. Whether these health care services in fact lead to better "health" is perhaps of lesser importance than the access to those in services. A

further displacement occurs where equitable access is proposed to substitute for equal access. Differences in access are accepted under certain conditions, often couched in terms of Effectiveness/efficiency arguments. For example, access to Emergency Services in rural areas may be less than Vancouver and Victoria, but this is justified on the basis that urban areas have sufficient volume of calls to provide 24 hour service. Liberalism, without necessarily conceding that the government need be directly responsible for an equitable distribution of health care resources, does nonetheless tend to emphasize the availability and access to resources such as hospitals and physicians. This can be measured either in geographic distance or travelling time. Whether the resources are utilized is a further indicator of access, but the important feature from a liberal perspective is that patients shall have the choice to obtain services. Cultural or economic disincentives to obtain services are not of major concern. Conditional differences in access are more widespread and acceptable in liberalism. For example, those who can afford better health care services (or faster services) should be able to obtain those services. User charges, extra billing, and individual responsibility for medical and hospital insurance premiums are all consistent with liberalism. The development of sophisticated high technology medical services follows also from the free-market entrepreneurial attitudes of the liberal ideology.

Socialism stresses equality of condition, and in a health context, equality of health status, (usually displaced to equitable health status, recognizing that no two people will ever have the same genetic endowments). Socialism thus places greater emphasis on indicators of health status and

the effectiveness/utilization of health care resources in improving health status. Demonstration of availability of services will be insufficient assurance of equitable resource distribution. Instead, those areas of greatest "need", according to health status, would receive more resources. Insofar as non-medical services can improve or affect health status, they too will be considered important. For example, aids to daily living, long term care/home care services, vocational rehabilitation would be considered a "health" responsibility. With its emphasis on equality, socialism tends to accept fewer qualifications to equal access. Health care becomes a "right"; extra-billing, user charges, individual insurance premiums, would be opposed as discriminatory. Because of the "greatest good for the greatest number" approach inherent in an egalitarian view of society, socialism would favour general improvement of basic health services over more expensive high technology services. The egalitarian viewpoint would lead also to greater emphasis on the health of workers. Health services planning would revolve around economic aspects of access to medical care, and secondarily, the planning for the required manpower and facilities in the face of economic constraints (Roemer 1977).

Equality (or equity) of either access or health status implies comparisons and therefore categorizations. The number and type of categories reflect value systems and ideology. Specifying categories such as children's health, native health, geriatric health, and rural health, stem from values about these groups. (Indeed, not only political and social, but also cultural values may play an important role, although this is beyond the scope of this discussion). Illustrative value statements within the area of Social Justice are as follows:

- 1) B.C. residents should have equitable access to health service, regardless of age, sex, ethnic background, political beliefs, economic or social conditions.
- 2) Because of the unique geographic characteristics of B.C., special efforts should be made to ensure equitable access to health services in remote areas, particularly emergency health care and primary health care. Because of the diversity of cultural backgrounds in the province, special efforts should be made to ensure equitable access to health services by minority groups.
- 3) Because there remain income disparities which may prevent equitable access to health services, health insurance that is comprehensive and universal should be an integral component of the Health Care System.
- 4) Priority should be given in provision of health services to those who are in greatest need, in particular: indigenous peoples, the handicapped, low income groups, refugee/immigrant groups, and the elderly.
- 5) The optimal health of the members of society is desirable not only because this enables more productive lives, but also because of humanitarian concern.

Role of Government, Individuals, Professions

The values with respect to role of government, individuals, and professions are best understood if they are thought of as the roles of government relative to individuals, roles of government relative to professions, and the roles of professions relative to the individual patient/clients.

Liberalism stresses individual responsibility for health and health

services, with minimal government planning, regulations, standards, or direct provision of services. Government intervention, such as it is, involves educating people so that they are better able to make informed decisions. Areas considered to be of "public interest" and thus which justify government intervention include: public health measures (water, sewage, communicable diseases, etc.), and because it has been a government responsibility in B.C. for many years, basic medical and hospital insurance. Additional services, such as drug costs, are the responsibility of individuals or their private insurance plan. Family and community support (as in voluntary associations or philanthropic groups) are expected to provide necessary assistance for health services. Local community, and regional, direction and participation are important parts of the health care system in liberalism. This results often in a multiplicity of groups and a pluralistic approach to coordinating services. The practical application of the liberal approach to the health care sytem may be more difficult than proponents care to admit. As Roemer (1977) notes, "there hardly remains a country with a health care sytem in which free enterprise, once common, is the predominant mode of operation" (p. 14). According to Roemer, the nearest example is the United States ca. 1940.

Conservatism supports the individual within society. There may well be fairly extensive government involvement in the health care system, but only where existing support networks (such as family) are not operating.

Socialism opts for a wider role for government, as compared to liberalism. Government would be evaluating, monitoring, and setting standards and regulations for the health care system. A wider range of services would be included under the government medical and hospital

insurance schemes, and these would be funded in total from general taxation revenue. More government intervention in individual behaviour would be consistent with socialism, e.g. increased taxes on alcohol or cigarettes, mandatory use of seat belts.

Value statements concerning governmental-professional roles also flow from ideologies. Liberalism assumes that health occupational groups, to the extent that the public requires protection, should be granted self-regulation, which generally involves licensure. This includes aspects of qualifications and approval of educational programs, fees, self-discipline by a peer group, number and distribution of practitioners, etc. Physicians in a liberal system would be paid on a fee-for-service basis. However, where possible, health occupational groups should not have a monopoly on provision of services so that a competitive market system can function. Enthoven's (1980) proposed "Consumer Choice Health Plan" is an often cited example of a liberal approach. He advocates a system of fair economic competition among alternative financing and delivery systems, rewarding providers for better care at lower costs. Fixed dollar subsidies would be provided to individuals (or families) who could then choose amongst competing plans.

Conservatism would tend to preserve the existing system, where professional groups (within the medical model) have well-defined hierarchical roles in the health care system. Attempts by occupational groups to use government to shift these roles would be resisted.

Socialism extends government intervention to the health occupations. Areas of professional self-regulation under liberalism become areas of government regulation and standards under socialism. Salaried, rather than

fee-for-service practitioners would be the general rule. Fewer specialists would be utilized, with desired distributions of manpower achieved by more coercive means than in liberalism. Discipline by the peer group is less important since the administrative structure has built in controls.

The government's role relative to organizations and institutions can be considered a subset of the government-profession relationship, except that instead of individual practitioners, a collective "professional" (e.g. a hospital) is involved. Liberalism tends to a minimal role for government, limiting involvement to setting basic regulations or criteria. Socialism would look to direct government control of institutions and agencies receiving funds from government. The notable exception in practice seems the manufacture and distribution of drugs which even in democratic socialist countries remains in the private sector.

The relationship between professionals and the individual are also of importance to the Provincial Health Plan, and this is discussed in Section V.A.2.

Although it has been noted under each ideology, it is worth repeating that one of the fundamental differences between health care systems is the method of financing. This ranges from personal payment, charity, payment by industry, voluntary insurance, social insurance, to general taxation revenue funding.

It is of interest to note that in Canada, and most other countries, the trend has been towards increasing regulation by government, either through regulation of "purchases" (i.e. requiring prior approval for government funded services, scrutinizing services provided, and negotiating fees to be paid) or regulation of "supply", i.e. limiting the number of facilities,

equipment or manpower, (Roemer 1977).

Illustrative value statements concerning the Role of Government, Individuals, Professions are as follows:

- 1) The provincial government and therefore the Ministry of Health has the overall responsibility for B.C.'s Health Care System, except for specified areas of federal responsibility, such as native health, immigration, and international health commitments.
- 2) The government has a responsibility to deal with health problems that individuals are incapable of handling themselves. This includes areas of what has been traditionally termed public health, i.e. sewage, infectious diseases, water supply, food inspection, inspection of public eating establishments, maternal and child health, vital statistics, and mental health. Because research for the most part benefits the general community, government should provide funding for health care research.
- 3) The government should take a leadership role in the overall planning and coordination of the Health Care System in the province. This entails clear statements of goals and priorities, and following from this, standards and guidelines. Government must monitor health needs and health resources in the province to ensure provision of health services that meet provincial standards and also adhere to the general principles listed under Social Justice and Effective/Efficient Management.
- 4) Although not necessarily involved with the actual provision of health services, government should ensure a well-trained administrative infrastructure in support of the Health Care System in the province.
- 5) Government should be responsive to community and individual concerns; individuals and communities have a responsibility to be well-informed and

provide input to government planning.

- 6) The government should take a leadership role in encouraging inter-sectoral cooperation in areas of shared responsibility for health issues.
- 7) Communities have a responsibility to encourage the health of individuals. Regionalization is one mechanism for encouraging and strengthening such community responsibility. There is a continuing role for voluntary activities and all things being equal, individual and voluntary actions are preferable to government interventions.
- 8) Individuals should have freedom of choice in determining health service providers. Government should provide funding for adequate provision of basic health services, but individuals should have the opportunity to seek additional or alternative services at their own costs, so as not to stifle incentive, opportunity, and individual responsibility.
- 9) The individual has the responsibility to make use of available services, follow prescribed treatment and rehabilitation plans, and adopt healthy lifestyle habits and preventive measures which depend on individual initiatives. The individual must ensure adequate insurance coverage for out-of-province services. Overall, individuals are primarily responsible for their own health.
- 10) Professions must maintain adequate standards of care and ethical practice. There must be accountability to the public and the individual patients they service.
- 11) The profession has the responsibility to provide the public with sufficient information so that the public can make a reasoned decision as to alternative forms of health services.

Effectiveness/Efficiency

In one sense, values in support of effective and efficient operation of the health care system are not dependent on political and social ideologies. It would be difficult to argue in support of ineffective or inefficient operations. However, it is worth noting that value systems and ideologies determine the criteria for "effectiveness" (e.g. short term cost containment vs. longer term savings). Illustrative value statements are shown below:

- 1) Containment of health care costs is a high priority and steps should be taken towards this end without compromise of provision of health services. For example, regionalization can lead to coordination and integration of services and greater efficiencies. Appropriate use of health manpower and technology in a tiered referral system makes most efficient use of our health care resources. Emphasis on preventive and environmental measures, such as screening programmes, can often result in cost savings.
- 2) Efficient operation of the Health Care System requires clear, measurable objectives and ongoing evaluation including maintenance of accurate records and accountability for funding (especially by government and government-funded agencies and organizations).
- 3) Health care research is necessary for the most efficient operation of the Health Care System when viewed in the longer term. Such research would include basic research, problem-oriented research, and health care management research.

Value statements in the areas of Definition of Health; Social Justice; Role of Government, Individuals, Professions; and Effectiveness/efficiency are a necessary, but often neglected step in the determination of objectives

for the health care system. It is useful also to have some general sense of the relative importance of these areas (and even of the value statements within each area) since the practical application of value statements may show some inherent conflicts. For example, values in support of equal or equitable access to health services may run counter to values in support of efficient delivery of those services. Placement and size of hospitals is one commonly cited example. Similarly, values in support of individual and community participation in health planning may result in delays and administrative costs. It seems unlikely that precise weightings of the relative importance of value statements can be made until specific situations and objectives are examined. However, it would be possible and desirable to review the entire set of value statements, once formulated, in a ranking (e.g. paired comparison) exercise. Viewing the set of values in this way may also assist in the preparation of a summary statement of values - a "goal statement" - which reflects the government's political and social ideologies as applicable to the health care system. For example, the Report of the Ontario Health Planning Task Force summarized its goal: "The basic objective of Ontario's health services plan is to provide and maintain for residents of the province a state of physical, mental, and social well-being, including the prevention or treatment of disease or infirmity, to the extent possible given the resources that are available" (Ontario 1974, p. 6). Another example is found in the stated goal of the Health System Plan as "the Health Systems Agency's statement of desired achievements for improvement in the health status of area residents and in the health systems serving that population. The purpose of the HSP is to promote at the local level comprehensive health systems which will improve

levels of health status, assure a healthful environment, and provide for the availability and accessibility of high quality health services in a manner which fosters continuity of care at a reasonable costs for all residents of the area." (United States, Department of Health, Education and Welfare 1979a).

V.A.2. Group Ideologies

The political and social ideologies of the government, as applied to the health care system, are the major determinants of the value statements for the Provincial Health Plan. There are other inputs to the determination of value statements, including group values. Some plans ignore or downplay the importance of such inputs. However, it would seem more realistic, and ultimately more effective, to anticipate that certain groups are important to the implementation of health policies and therefore, group values or ideologies should be considered at an early stage in the development of objectives for the Provincial Health Plan. There are many mechanism whereby groups make their viewpoints and interests known to the B.C. government. For example, voluntary and professional associations send briefs or reports to the Ministry of Health. Their executive meet with Ministry staff and the Minister to express concerns and request funding support. Groups use the media to make public various health problems in hopes of generating wider support and pressures on government. More formalized mechanisms are possible. For example, Health Systems Agencies in the United States have employed problem or need surveys sent to consumer and provider groups, community meetings, and meetings with local health agencies and officials to gain some sense of community and group values (Casterline 1977). Murphy

(1975) has developed and used a community health orientation scale to assess attitudes towards primary prevention, continuity of care, epidemiologic approaches to health care, consumer involvement, etc. After a large study involving over 600 health professionals and administrators, Murphy concluded that the scale seems "reasonably valid and reliable for assessing orientation to community health on a group basis" (p. 1295). Other possible mechanisms that have been used or proposed include Royal Commissions, advisory councils, conferences, polls, surveys, Delphi or other group techniques, briefs or written submissions and reports. In order to build some measure of consensus amongst a broad range of groups, over the spectrum of health policy issues, one of the more formal mechanisms is indicated. This thesis proposes a conference format to provide a forum for discussion of values and definition of group ideologies. Numerous advantages accrue from using a conference. The associated publicity and participation of a cross-section of groups would lend importance and a sense for both participants and the community at large that basic guidelines for the health care system were being seriously and comprehensively addressed. Groups would therefore be more willing to commit the time and resources in preparation for the conference, and government would be more inclined to heed the outcomes. By having various groups participating, each group's interests will be represented. Thus, it is more difficult for any one group to advance its own interests at the expense of other groups. Government is spared the role of arbitrating between competing or conflicting interests, The conference, separate from the usual ongoing mechanisms of group pressures, can more easily adopt the perspective of values and general principles, rather than dealing with specific administrative and program

issues. The personal contacts and networks resulting from the conference would help ensure the commitment of important sectors of the health care system.

The key questions are then firstly, which groups are to be considered and what weighting should be attached to their value positions in formulating value statements for the Provincial Health Plan; and secondly, what work must be done in preparation for the conference. These questions are discussed in Sections V.A.2.1. and V.A.2.2. respectively.

V.A.2.1 Selection of Groups, their relative influence

For health planning purposes, Blum (1974) lists thirteen interest group categories: political interest, technical interest, government agencies in the subject area, voluntary agencies, other government and voluntary agencies in the same geopolitical area, planners, special interest groups (e.g. labour), consumers, special needs groups, specifically vested groups, experts, operative and policy-making persons. Other categorizations have also been used in describing relevant interest groups within the health care system. Alford (1972) classifies interests according to pluralist (market), bureaucratic (planning) and institutional (class) and Schmitter (1977) uses categories of pluralist, corporatist, syndicalist. Perhaps the simplest typology is that of providers (health occupational groups and institutions); consumers and their advocacy groups; planners and bureaucrats (government, university, independent); and political officials, at various levels of government. Within each of these broad categories, individual groups will have interests and values specific to their group. However, there are some common characteristics of the broader

group. For example, the health care provider ideology for the most part consists of "arguments about the right to claim the professional prerogative of having freedom to control one's own work in return for giving services to the community" (Crichton 1982, p. 219). And health service consumers, at least middle-class consumers, have been "anxious to retain and develop their privileges in getting access when they want it and to the professional providers of their choice" (Crichton 1982, p. 223).

Examples of groups and organizations in B.C. are listed below:

Provider Groups

1. Professional associations (and their licensing bodies), e.g.
B.C. Medical Association (College of Physicians and Surgeons), B.C. Nurses Union (Registered Nurses Association of B.C.).
2. Non-licensed health occupational associations, e.g.
B.C. Government Employees Union, Hospital Employees Union, Dispensing Opticians Association of B.C.
3. Hospitals, individually and collectively through B.C. Health Association, Health Labour Relations Association.
4. Long Term Care Facilities Association

Consumer Groups

1. Disease groups, direct service and advocacy/funding associations;
e.g. C.N.I.B., B.C. Heart Foundation, B.C. Lung Association.
2. General health and social service associations, e.g. United Way
3. Private groups paying providers on behalf of consumers, e.g.
C.U.&C. , M.S.A.

Planners and Bureaucrats

1. Government, e.g. Ministry of Health staff, Greater Vancouver Regional Hospital District Staff
2. Universities, e.g. U.B.C. Health Services Planning Faculty
3. Independent, e.g. various private consulting firms

Political officials

1. Federal
2. Provincial
3. Regional and Municipal

A comprehensive listing of groups with some interest in the health care system would be quite lengthy. What then are the characteristics of such groups which provide some guidance as to their relative influence? Blum (1974) suggests a number of areas for consideration: evidence of interest in health issues, positions generally taken on such issues, access to resources, level and extent of citizen participation, ability to get voter turnout, integrity, alignments and obligations, organizational capacity, identified leaders, general gatekeepers, health issue gatekeepers. Eckstein (1960) also notes that a group's effectiveness in pressuring government depends upon group characteristics, such as physical resources, size, organizational cohesiveness, political skills, and nature of the group objectives (i.e. self-interest versus social "good"). However, he makes the additional point that a group's effectiveness is dependent on factors external to the group, including activities of government and the governmental decision-making structure. For example, governmental activities and policies may require the technical skills, support, and cooperation of certain groups.

The following listing of relevant characteristics of groups incorporates the characteristics discussed, using as an example, physicians in B.C.

<u>Characteristic</u>	<u>Physicians</u>
1) Numbers and direct costs to the health care system.	6000 physicians in B.C., earning about \$600 million (1982)
2) Resources available	B.C.M.A. staff (Executive Director, computer programmer, economist, public relations officer, etc.); B.C. Medical Journal + staff; College of Physicians and Surgeons staff (Registrar, Deputy Registrar etc.); access to other medical associations (e.g. C.M.A.); voluntary services of members; some \$2 million in annual dues.
3) Professional Image and role in the health care system	Physicians are the "model" for the health care professional. Years of training, skills and techniques, the life/death aspect of the work, media portrayals, etc. lead to a very high status image of the physician. Control of much of the diagnostic and therapeutic resources of the health care system is vested in the physician.

CharacteristicPhysicians in B.C.

4) Primary contact versus referral.

General Practitioners are the entry point into the health care system for the majority of people. Specialists usually require referral from a General Practitioner.

5) Legislative authority

Physicians operate under the Medical Practitioners Act, which allows them almost unlimited scope in diagnosing and treating patients. Moreover, it gives legislative sanction to prevent other groups from undertaking the "practice of medicine".

6) Solidarity and cohesiveness of the group

Despite publicity recently of different factions in the profession, it remains well organized (e.g. there are regional structures, numerous committees). The common educational, income, and social levels of physicians are major factors.

7) Linkages to the "power" structure and decision-makers.

Physicians have traditionally been influential within the health care system. Additionally, their social contacts give them access to the "elites" and decision-makers.

8) Government organization Since physicians receive payments from the Medical Services Plan, there is frequent government-physician contact at this level. Various other Ministry of Health structures, e.g. the Professional Advisory Committee, are set up to facilitate physician input to the Ministry.

V.A.2.2. Conference preparation

This thesis proposes that provider, consumer, planning and political groups and organizations are to be included in a conference on health policies for B.C. What preparation is required? Davidoff and Reiner (1973) suggest assigning exchange prices to several goals, posing alternatives, analyzing ramifications, and disseminating information to assist effective bargaining between proponents of opposing values, and rendering value meanings explicit to provide common grounds for appraisal. Such a process would be undertaken at the conference. This is not to suggest that the values and general principles that are to guide the Provincial Health Plan can be simply a compilation of value statements from various groups at such a conference. There may be unrealistic, inconsistent, and even incorrect statements. The Ministry of Health must be sensitive to the expression of values reflecting group ideologies, without losing sight of its responsibility to coordinate and plan for the entire health care system. Depending on the consensus developed amongst participants at such a conference, edited drafts can again be distributed, perhaps to a still wider

circle, for comments and ratification. In a democratic society, it is unlikely that total consensus can ever be achieved. This thesis suggests, however, that British Columbia is sufficiently within the mainstream of western liberal democracy that there will be a high degree of agreement as to values and general principles, if not in their application.

The conference requires a considerable amount of background preparation. Under the assumption that it is easier for participants to choose among general principles than it is to generate such principles de novo, it would be desirable to have a number of models or sets of general principles to initiate discussion. The government values, reflecting its political and social ideologies applied to health, could be one such set of value statements stimulating responses from the participant groups. The administrative difficulty of coordinating a large number of health related groups for a two to three day conference is itself formidable. Sufficient lead time would be required to permit the various groups to prepare their positions and background material. This thesis cannot discuss the detailed planning and coordination of such a conference. The task merits a task group dedicated to this project, with a target date at least one year from initiation. A number of general guidelines should be kept in mind. The framework for the conference must be made clear beforehand to all participants. It should be seen as an opportunity for various groups and associations to provide input to the government (and specifically the Ministry of Health) in determination of the value statements which will guide the health care system of this province for the foreseeable future. However, specific problems or strategies cannot be resolved or debated in

such a forum, since this would involve participants being overwhelmed with detail (although practical examples will, no doubt, be cited in discussing values and general principles). Further, stating the limitations of the conference will prevent unrealistic expectations. For example, the relative importance of "health" to other sectors of society cannot be usefully debated as those other sectors will not be represented at the conference. Accordingly, the question of the overall funding for "health care" versus other sectors cannot be answered by the Conference.

V.A.3. Application of Value statements

Caution must be observed in attempting to apply value statements directly to program administration or delivery of services. The planning approaches outlined in Chapter II of this thesis have stressed that the overall purpose and directions of the planning must be clearly defined (which is tantamount to defining value statements). However, the planning matrix suggests that considerable attention must be given to consistency in descending from one planning level to the next, through various planning modes. Skipping levels and modes invites resistance to implementation of policies and objectives. Thus, the primary application of value statements, from the viewpoint of developing the Provincial Health Plan, is in providing a clear reference for the policy planning level, and specifically the development of objectives for the health care system. The value statements will be a major input to the determination of the legitimacy of a particular health problem or issue. The degree of consensus as to value statements will be a reflection of the level of support.

Additionally, a clear statement of values will facilitate and improve

communication among those in the health care system, the "public", the media, etc. These will be a measure of consistency of the value statements, but also a focus and increased awareness of the importance of ongoing review of some very basic facets of our society.

V.B. Long Term Objectives

Value statements about the health care system are one of the inputs to the development of Long Term Objectives (LTO's) for the Provincial Health Plan.:

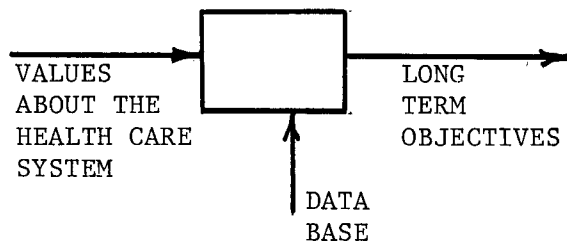


FIGURE 26. Determination of Long Term Objectives

The other major input is a data base describing the present health care system, and projections of what the health care system may be like in the future. The form and content of the data base are discussed in V.B.1. The process of developing LTO's from value statements and the data base is then presented in Section V.B.2. The form and application of LTO's resulting from the developmental process are discussed in Section V.B.3.

V.B.1. Data Base

The data base for the Provincial Health Plan cannot satisfactorily be set up by the accumulation of whatever data is (or can be) collected about the health care system. Few would even suggest this approach, and most planners in this field are content with a more limited listing. For

example, Reinke (1972) sees a need for the following data: demographic information, epidemiological data on the frequency and distribution of major health problems, economic data, utilization of facilities and functional patterns of work of personnel, administrative data on manpower and facilities, demand for service. Know (1979) suggests similar data requirements: population distribution by age/sex, social characteristics, social geography, morbidity (including regional distribution), resources, and volumes of services. There is no clear cut demarcation between obtaining social characteristics to assist in planning and embarking on a socioeconomic portrait of an area. For example, the Arcadiana Health Planning Council (1974) notes the following number of regional characteristics: historical development of the area, description of land area, population density, major transport arteries, temperature, population (by age and ethnic background), unemployment, income levels, education, etc. These factors could all be linked to the health care system in some way, but should this be part of the data base for the Provincial Health Plan? What data should be included?

The data base for the provincial plan is shaped by its intended applications. Thus, its description of the health care system should be readily applicable to policy planning and objective setting. In particular, data on specific aspects of the health care system, deemed important because of values related to that system, would be included. The data base should allow monitoring and evaluation of whether the goals and objectives of the health care system are being achieved. And finally, the data base must be such that projections of the state of the health care system can be made,

given certain assumptions. Note in particular that the degree of detail required for administrative or program planning is not necessary for the Provincial Health Plan.

The description of the health care system follows from the conceptualization of the system into its components: health status, resources, requirements for health services, and the process of resource allocation. These components have been discussed at length in Chapter III, which pointed out some of the methodological problems in measuring or representing certain aspects of the "real" world through using various indicators. The information to be conveyed about the health care system components will remain fairly constant. However, the actual data elements used to measure or describe the components will change as better instruments, techniques, and understanding of the system are developed. Indeed, this updating and improvement should be an integral part of the development of the data base for the Provincial Health Plan. The degree of detail required about the components will vary according to the perceived importance of areas of concern within the health care system. For example in B.C., there will be a relatively large amount of data concerning physicians as compared to say, osteopaths. The information of use for policy planning and objective setting is listed below, under the relevant health care system component:

Health Status

- population, by age/sex/ethnic/socioeconomic background
- mortality, morbidity, disability/dysfunction
- "well-being", both individual and community

Health Resources

- actual physical resources: manpower, facilities, equipment serving specified populations
- health services x setting x characteristics (see Section III.B.) serving specified populations

Requirements for Health Services

- "need" and "demand" expressed either as resources or services

Resource Allocation

- the effectiveness of meeting the requirements with available resources.

The above listed information flows from characteristics intrinsic to the health care system, and is relatively independent of values about the system. The opinions and judgements of "experts" are necessary in a number of these areas, especially in assessing "need". Additional information, in the form of particular categorizations and presentation of health care system component information arises from values and general principles about the health care system. Thus, it is important to understand that the two major inputs to development of LTO's -- value statements and data base -- are not independent factors; the data base is shaped to a large degree by the expression of values. This relationship is not an obvious one. Culyer (1978) draws attention to the values and assumptions which are needed to operationalize the concept of health status indicators, noting that often these assumptions are not clearly stated. Another example is found in the

biases of determining "efficient" programs. Blum (1974) notes that available data often tends to be in areas where goal achievements can be quantified, and that "other outputs which are difficult to measure may either look poorly justified or go unmeasured and remain less known and be seen as less deserving of further allocations" (p. 209). In other words, values about "efficiency" determine the type of data deemed acceptable for planning and resource allocation decisions.

Data elements under each of the health care system components is found in Section V.B.2., which explains the process of determining LTO's. The data base describes the present health care system by indicating levels of certain data elements, e.g. infant mortality. Long Term Objectives describe a desired state of the health care system by specifying levels (usually different than present levels) of these same data elements for some future point.

It is useful at this point to refer briefly to the relative importance and usefulness of health status (or "outcome") data, as compared to health resources and resource allocation (or "input" and "process") data. One viewpoint is that "if the ultimate concern of the population based planner is improved health status, then he should be able to measure that improvement with system-wide, general health status indicators at some point in time" (Casterline 1977, p. 33). In counterpoint, those supporting reliance on input and process indicators maintain that planning within the health care system, dictated by existing administrative structures and institutions, cannot rely on outcomes which may be, to a large extent, determined by factors outside the health care system. It is argued that the more immediate indicators needed to allow policy intervention cannot wait

for outcomes. There are often conceptual problems in relating data gathered and the "outcome" which was really to be measured. Moreover, certain "process" characteristics may be important because of general principles or values which dictate that "how" a result is achieved is in itself of some importance. Himatsingani (1973), while recognizing the need for research into outcome-based measures and functional relationships between changes in effectiveness and the provision of services, states: "It will be worthwhile developing a planning framework based on input rather than outputs and this framework should be improved and refined as and when more information is acquired." Although writing in the context of evaluating the quality of medical care, Donabedian (1972) came to similar conclusions. Thus, while he accepts outcomes as the ultimate validators of medical care, he points out numerous limitations (essentially similar to the points noted already and concludes, "another approach is to examine the process of care itself" (p. 169). Dever (1980) notes that process evaluation allows continuous monitoring (and thus program operation and control), serving as early indicators of outcome.

It would seem therefore, that although health status data should logically be the major determinant of health planning, because of constraints on data availability and timeframe required for the planning, health resource and resource allocation data may in fact be used more often, especially when health status data is inadequate or the relationship between health status and health resources or resource allocation is poorly understood. Such a compromise should not be viewed as justification for excessive reliance on input and process indicators. Continuing efforts to clarify relationships of inputs/processes to outputs and outcomes are needed

to counteract the tendency to substitute health care for "health" as the overall goal of planning.

As this thesis does not set out to establish values, the definitive statement as to information requirements cannot yet be given. However, using the value statements cited earlier as illustrative examples, the approach to setting information requirements can be demonstrated. Recall that the illustrative value statements related to four areas: (1) Definition of health; (2) Social justice; (3) Role of governments, professions and individuals; (4) Efficient management.

The values as to what constitutes "health" are discussed in Section IV.D. which delimited boundaries for the Provincial Health Plan, and it was suggested that a modified health care planning approach be taken. Based on this, information from non-health sectors will be sought only to the extent there are quantifiable impacts on the health care system. For example, cutbacks to education budgets will affect production of health manpower and thus such information is required. Poor economic conditions may also cause increased unemployment, which as a stressor may be related to various health problems. However, at this point in time, given limited planning resources and capabilities, it is inappropriate to attempt an overly comprehensive data base that would necessarily include items, such as levels of employment, which have not traditionally been included within the health care system, nor which have been shown to directly causally impact on health status or services. With greater sophistication in planning, which hopefully will result from steps such as developing a Provincial Health Plan, non health care system factors can be added to the data base.

Values as to social justice are a major factor in the determination of

information to be included in the Data Base. Resource allocation, to the extent that principles of social justice are to be considered, requires information by various categorizations: geographic region, age/sex/ethnic groupings, socioeconomic levels, etc. Comparisons across such groupings allow policy statements and hence LTO's in support of principles such as equal or equitable access to health services. There should probably be sufficient information to provide an awareness of the relative contribution of resources to "health" by the health care system, as compared with other sectors. Culyer (1978) expresses this concept within an economists framework: "a socially relevant notion of need must therefore at once be both relative and marginal - relative to the other good things which must be sacrificed and marginal in that the more we succeed in meeting need in one field, the less urgent (again relative to other needs or demands) further degrees of success become" (p. 49).

Values as to the roles of government, professions, and individuals imply information on community viewpoints and priorities. Sultz (1973), in discussing community health information profiles stated: "the profiling process begins with consultations with representatives of community groups who are committed to the necessity of having information on which to base planning decisions...This initial involvement of those who are involved in subsequent decisions creates an atmosphere conducive to the acceptance of the end product and contributes a great deal to its potential for effecting change" (p. 7). He went on to review community health profiles (which are analagous to the proposed Data Base for the Provincial Health Plan) for four planning projects and concluded that nothing constructive happened unless the community power structure was also involved in the planning process.

Values as to the role of government, and in particular the Ministry of Health, demand information which allows both a central planning capability, and an ongoing capability to set standards, monitor adherence to these standards, and generate constructive policies to maintain and improve levels of service in accordance with these standards. The role of government would be similar to "allocative guidance" and "problem control" planning modes, as described by Blum (1974). Problem control is the identification of "significant departures from current health and health care goals"(p. 161), whereas allocative guidance maintains a "continuous overview of the health of the community under study so that its current status can be compared with those of other places and with that of its own past" (p. 163).

Values regarding efficient management require certain information and also impose constraints on the data and information system. Povey (1973) states: "To arrive at rational evaluation criteria of health care activities one must define and measure their contribution to health status" (p. 104). But clearly the costs associated with data collection, processing and analysis may not be justified by the usefulness of a "rational" evaluation.

Data, especially health status information, useful for the determination of objectives, consistent with the conceptualization of the health care system and with whatever value statements are adopted, may be insufficient for monitoring and evaluating whether objectives are being adequately addressed. Although strictly speaking, the intermediate steps (sub-objectives) are primarily considered at the next lower planning level, it may be necessary to use these sub-objective categorizations (most

probably data on resources or services) to provide an ongoing monitoring of the success in moving towards the objectives of the Provincial Health Plan. This additional information is then included in the data base. For example, monitoring progress towards a reduction in infant mortality may require data on number of home visits and the proportion of mothers who attend antenatal clinics.

This linkage between various planning levels is a recurring theme demonstrated well in the discussion on data base. Although applicable to the policy planning level primarily, the data base is very much influenced by values (ideology planning level) and may draw upon intermediate strategies and sub-objectives towards stated objectives (administrative and program planning levels).

To be useful for objective setting (which necessarily involves a future state of the health care system), the data base should enable projections of what the health care system may be like, given certain assumptions such as technological trends and population growth. The determination of Long Term Objectives may be significantly affected by such projections. For example, projections about new medical technology may change the prognosis of certain health problems, and the Long Term Objectives must incorporate assumptions as to availability of such technology and corresponding effect on morbidity. The methodology for future projections are not included within the framework of the Provincial Health Plan, but it is of interest to touch briefly on the approaches available. Ackoff (1970) discussed using four projections for planning: reference projection, modified reference projection, wishful projection, and planning projection. The reference projection refers to continuation of the

existing situation. The modified reference projection postulates changes in existing trends. The normative or wishful projection expresses the preferred outcomes.

The planning projection estimates how far towards the goals a plan could actually be effected. MacStravic (1978) reviews various methodologies: status quo forecast, trend extrapolation, trend correlation, multivariate analysis, group process. Other authors have different labelling for similar techniques. Blum (1974) classified projective methods as: persistence, trajectory, cycle, association, analysis, correlation, simulation, best guess. Abt (1970) described extrapolative, speculative, analytic, and judgemental techniques. Of the various possible projections that can be used, one in particular is fairly basic to the determination of objectives: the future, given continuation of the current conditions. Such a status quo or reference projection should be included as part of the data base. Additional projections can be used depending on the importance of an issue and available forecasting resources (staff, computer time, data, etc.).

Deficiencies in obtaining the desired information for the data base should be expected, given that most of the available data is not collected for planning purposes. Sultz (1973) considers the usefulness of data according to the usefulness of the information over time, whether it is valid and comparable to other data, and whether the format is easily understandable. King and Ross (1981) stress the availability of data, level of analysis for which the data is required, and the desirability of straightforward calculations and manipulations of data to produce indicators. Dever (1980) provides criteria in assessing data: importance

of program to be measured, validity, uniqueness, accuracy, timeliness, confidentiality, costs, completeness. Chambers et al (1980) describe health data according to four subject areas: mortality/morbidity data, social indicators, manpower and health facilities, utilization rates under treatment. Very broadly speaking, the first two subject areas correspond to output indicators; the latter two are input and process indicators. The advantages and disadvantages of each type of data are tabulated by Chambers et al. For example, mortality data is usually readily available, fairly well-defined and understood by health professionals, and can be mathematically manipulated. On the other hand, mortality data depends on accuracy of reporting with the usual difficulties in establishing correct cause of death, etc. On reviewing their tabulation, there are trade-offs for every data type in each subject area. Usually the availability of data is inversely related to the usefulness of the data as a valid indicator.

Bearing in mind these caveats, currently available data sources for British Columbia are listed below, according to data element. The required data may or may not be published as part of a regular report. If data is unavailable, estimates of the B.C. experience can be made from national or international rates and ratios.

<u>Data Element</u>	<u>Source</u>
Population	Statistics Canada
Mortality	Central Statistics Bureau Vital Statistics
Morbidity	Hospital Utilization (Hospital Programs + individual hospitals); special reports;

<u>Data Element</u>	<u>Source</u>
	Medical Services Plan
	Health Surveillance Registry
	Records of Reportable Diseases
Dysfunction	Canada Health Survey
	Worker's Compensation Board
	Schools
Manpower	Health Manpower Research Unit
	Professional associations or licensing body; MSP, CU&C, MSA.
Health facilities	Hospital Programs
	B.C. Health Association
	Community Care Facilities Association
Equipment	Hospital Programs
	Individual hospitals
Services and programmes	-----
Measures of resource allocation and system effectiveness	Ministry of Health Newspapers and other media Specific reviews or studies

V.B.2. Process of Determining Long Term Objectives

Although the key inputs to determination of LTO's have been presented, it is rather unsatisfying to suggest simply that the Ministry of Health study the Data Base and Value statements and somehow arrive at Long Term Objectives. Some guideline or a framework is essential. With unlimited resources, health needs could be considered synonymous with the objectives

of the health care system. However, because the resources stipulated to match health needs would exceed the available resources society has (or is willing) to set aside for the health care system, some form of resource allocation must take place. LTO's are thus a first approximation in that the sum of resources required to meet all LTO's is less than required to meet all health needs, but still in excess of currently available resources. Since the determination of LTO's is a form of resource allocation, a process similar to that described in Section III.E.3. can be used as a framework. Thus determination of these Long Term Objectives will be based on factors of legitimacy, feasibility, and support. As noted in Section III.E.3., the weighting and rating scale proposed by Blum (1974) is somewhat arbitrary, and thus quantitative analysis and prioritizing based on such a scale are necessarily suspect. Indeed, Blum states: "It remains to be stressed that use of criteria, weights and ratings cannot substitute for judgement, even though their use helps inform those who do the judging. Rather than providing a simplistic guide to setting priorities, the main utility of creating and using a rating scheme is to guide planning body members to consideration of what may be, for them, novel value systems; such considerations would then lead to a full view of the complexities involved." (p. 246). In this vein, a checklist of factors (non-weighted) adapted from Blum's listing, but within the general paradigm of legitimacy, feasibility, and support criteria as outlined by Hall et al (1975), is suggested below:

Legitimacy

(1) Legislation

(2) Existing policy, procedures, rules, goals, plans, etc.

(3) Values:

1) Definition of Health and Responsibility of the Health Care System

- severity of condition: symptoms, dysfunction/disability, prognosis

(self-limited to life-threatening)

- urgency of condition; reversibility

- prevalence; incidence

- life-years lost

- environmental concerns; risk factors.

2) Social Justice

- equity, fair shares, etc.

- special groups; at-risk groups

3) Role of Government, Individuals, Professions

- threat to Society; impact on other people

- environmental impact

- productivity loss; employment

- downstream costs

- community involvement: participation, control/responsibility,

education

- coordination of government sectors, and with non-government

- new scientific knowledge

4) Effective/efficient Management

- secondary, side-effects

- outcome effectiveness (critical path analysis)

- cost-benefit; efficiency

- resource consumption

- flexibility option (vs. future committed)

Feasibility

- (1) Theoretically technically feasible.(Or research with a high probability of success).
- (2) Practicable application of technology: skilled manpower, administrative infrastructure, support facilities, etc.
- (3) Manpower availability.

Support

- (1) The number of problems/issue addressed by a "solution" (also termed leverage; association).
- (2) Time frame, with longer solutions having less priority.
- (3) Public concern, dissatisfaction: numbers, intensity, likelihood of change.
- (4) Political support; impact on government image.
- (5) Bureaucratic support.
- (6) Support of special interest groups.

Each of these listed factors is discussed in more detail below, indicating the direction of impact on the priority rating of an issue. Legislation is not immutable, but existing legislation has great force in consideration of an issue's priority. Health services that are to be provided by statute almost invariably are funded without much scrutiny, e.g. maintenance of vital statistics and public health inspection. Conversely, services or responsibilities that require new legislation or revisions to existing legislation are more difficult to introduce.

To the extent that a health issue is consistent with existing policy, procedures, plans and priorities, it will be given higher priority. The length of time an existing policy has been in place, and whether or not the current administration was involved in setting up that policy, will affect the degree to which consistency is required. Also, if existing policy has been challenged by the courts or the Ombudsman or government itself, then it may play a relatively minor role in determining whether a particular issue is given a higher priority.

Values concerning "health" will determine an issue's priority. In the areas of health status, those conditions that are life-threatening or urgent are likely to be given higher priority, e.g. open-heart surgery. The greater the prevalence or incidence of a condition, the greater the priority. For example, cardiovascular disease and cancer are major causes of mortality; arthritis is a major cause of disability. Life-years lost will be important if younger lives are considered more valuable than older lives.

The greater the environmental risk, clearly the higher the priority to address a particular health problem, although the degree of urgency will vary as to values about government intervention and regulation. The clearer and more direct the connection between a risk factor, either behavioural or environmental, the higher the priority given to that risk factor. For example, cigarette smoking has been shown to be a major factor in many health problems, notably lung cancer.

Depending on values in the area of social justice, issues that involve equitable access, treatment, or conditions will be of higher priority. For example, the disparity between Native Indian infant mortality and that of the general population may be given more attention. Related to social

justice, issues or problems that affect specific groups may be given priority because of certain values that hold these groups as more important, e.g. children, workers, the elderly.

Issues involving public protection or a threat to the public welfare are given high priority, e.g. epidemics. Similarly, issues that may affect people other than the patient/client in question will be given priority. For example, mentally ill patients, especially those that have or may engage in violent behaviour are given priority attention. The factor of environmental impact on health is noted earlier; however, the more general ecological concerns of preserving the natural environment may also be invoked in assessing an issue's priority.

Issues that affect productivity and employment (which may or may not be related to health status) may be given priority, e.g. alcoholism affecting worker productivity through absenteeism or job-related accidents may be given priority.

The downstream costs of an issue, either the costs of a service (e.g. operating costs of capital construction) or the costs from neglecting health problems, also is a factor to be considered. Clearly, the higher the costs, the higher the priority.

If community participation is considered important, the degree of community concern and opportunity for the community to become involved with an issue may enhance its importance.

It may be important from a political viewpoint, to be seen as cooperating with other groups or governments. Issues that allow this mutual assistance may be considered higher priority.

Issues that generate new scientific knowledge may be given higher

priority, e.g. introduction of digital imaging to B.C.

The total resource consumption or costs of an issue is a major determinant of priority. In general, the higher the costs, regardless of cost-effectiveness over the longer term, the lower the priority. This is not to say that the cost-effectiveness and the cost-benefit ratio of services are not also determining factors in an issue's priority.

The degree to which an issue forces commitments and reduces options and flexibility will also determine its priority.

Feasibility factors are fairly straightforward in assessing an issue's priority. If a service or programme has been previously shown to work successfully, the priority will be higher. If it can be done within current resources, then so much the better. As health services are labour intensive, availability of manpower (both the actual numbers and the specific skills) is of particular importance. Levels of services or health status achieved in other jurisdictions can be considered also as a demonstration of the technical feasibility of achieving those levels. For example, international comparisons of infant mortality, as shown below for 1972, may influence determination of LTO's in this area (Maxwell 1975):

<u>Country</u>	<u>Infant Mortality per 1000 live births</u>
Australia	16.7
Canada	17.1
United States	18.5
England/Wales	17.3
Sweden	10.8
Norway	11.8
Netherlands	11.7

France	16.0
USSR	24.7
Japan	11.7

TABLE VI International Comparison of Infant Mortality, 1972

SOURCE: R. Maxwell, Health Care The Growing Dilemma, McKinsey & Co., 1975.

Support in the most general sense is the public concern for an issue, measured by the number of people and intensity of feeling.

Issues with a longer time frame will generally have less impact, and thus less priority. Solutions that address simultaneously a variety of different issues tend to be viewed as higher priority. For example, building a long term care facility in a community will be seen not only as helping the elderly, but also as freeing acute care beds for the general population, providing employment during the construction and operation of the facility, and encouraging community participation through the voluntary board of the facility. Specific support is also a factor in assessing priority. The impact on the political image of the government, or whether an issue has the support of the bureaucracy or certain special interest groups, may determine its priority.

The impact of some of the factors listed above has been couched in tentative terms simply because they rest in large part on a clear statement of values. Although these factors (and others which may be added) are qualitative, it would be useful to have a sense of relative weighting. Formal techniques could be used (ranking, paired comparisons, ratings) or it may be just a matter of dealing with sufficient specific issues to generate some patterns of relative importance.

V.B.3. Form and Application of Long Term Objectives

The inputs to determination of LTO's have been presented; the process of selecting certain levels for these LTO's, and a qualitative ordering of the LTO's has been discussed. The general concept of objectives for the Provincial Health Plan is really an expression of a desired state of the health care system at a certain point in time. Some health plans state LTO's with ten or twenty year time frames. For purposes of the Provincial Health Plan, this time period is too lengthy. Since the operational outcome of the Provincial Health Plan are Short Term Objectives, with a one year time horizon, it is more appropriate to consider LTO's to have a three to five year time horizon. This coincides with the political time horizon, allows a reasonable but not excessive lead time for capital planning purposes, and most importantly, is within the limits of present forecasting capability. There has been a tendency to equate LTO's with policy planning and STO's with administrative planning. More accurately, "objectives" are considered at the policy planning level; "strategies" at the administrative level. There can be both short term and long term objectives. In other words, STO's do not specify "how" LTO's are to be achieved. Long Term Objectives describe a desired state of the health care system in three to five years time; short term objectives describe a desired state of the health care system in one year's time. LTO's and STO's are expressed in the same dimensions. For example, a LTO may be an infant mortality of 9.0/1000. The corresponding STO may be 10.0/1000; it would not be expressed in terms of some intermediate objective such as increasing the proportion of women attending antenatal classes. As the data base, and its categorization of elements, is descriptive of the health care system, both LTO's and STO's

will, for the most part adhere to a similar framework.

V.B.3.1. Form of Long Term Objectives

In addition to following the general framework outlined for the data base, LTO's should also adhere to characteristics suggested for "objectives". The United States Department of Health, Education and Welfare (1976b) lists a number of these: goals and objectives should be visible and measurable ; an objective should specify the dimension in which changes are to occur, its measure or indicator, the time period in which the change is to occur, and its direction or magnitude. The Ministry of Health in B.C. also stresses the importance of measurable objectives in its definition of a long term objective: "an explicit statement of intent that describes a desired result. In the Health context such an objective should address a health problem to be solved and/or an improvement to be made in the well-being of the population. While complete measurement of the long term objective is not always feasible it should be stated in terms that provide some means for assessing achievement" (British Columbia, Ministry of Health 1981a, p. 3). Weiss et al (1975) provide some additional guidelines for ensuring that goals can be evaluated, noting in particular the importance of considering unanticipated outcomes, specific program goals and evaluation criteria or indicators, the inclusion of dollar costs in all assessments, and the usefulness of multiple indicators for expressing objectives. Thus, objectives, in addition to meeting the criteria of legitimacy, feasibility, and support, should display the characteristics of good "indicators": measurable (either quantitative, or a qualitative yes/no), accurate reflection of the underlying concept (singly or in combination),

etc. The time horizon is determined by the specification of Long Term Objective or Short Term Objective, although it may be useful also to estimate when certain prescribed levels or objectives can be reached. These characteristics of objectives do not seem complicated but the practical adherence is more difficult. One of the major problems is the different usages of the term "Long Term Objectives" by planners. For example, the Ministry of Health (B.C.) Long Term Objectives for 1979 were:

- (1) To promote programs of a preventive nature as well as other alternatives in order to contain rising costs of health care and provide an optimum state of health.
- (2) To foster a responsive organization of the Ministry of Health which facilitates effective communication, cooperation, and coordination and achieves a planning and evaluation capability supported by an integrated health information system.
- (3) To provide an effective delivery system throughout the province which provides equitable access to preventive and treatment programs.
- (4) To implement a province-wide Public Education program directed at the Public dealing with their: a) financial responsibility and utilization of services, b) lifestyle and attitudes, c) personal, family, and community involvement.
- (5) To identify and reduce environmental hazards to health in cooperation with other ministries and agencies.

It is clear that these "objectives" do not correspond to the definition of objectives used by this thesis, and proposed for the Provincial Health Plan. In fact, the above statements seem closer to value statements than objectives. Although the framework and form of the LTO's have already been discussed in the context of the data base for the Provincial Health Plan, it is useful to demonstrate now in greater detail what the LTO's of the Provincial Health Plan might look like. The categorization of LTO's according to health care system component is listed below. It is of interest to note the general similarity to the "goal" areas for which the United States is establishing national guidelines: health status, health promotion/prevention, health care services, health data systems, health

innovation, and health financing (United States, Department of Health, Education and Welfare 1977).

Health Status Long Term Objectives

I. Mortality

- 1) Overall mortality and life expectancy
- 2) Mortality, by International Classification of Disease (ICD) grouping
- 3) Mortality, by age/sex grouping
- 4) Mortality and life expectancy, by special groupings (Natives, socio-economic , geographic regions, etc.)
- 5) Potential Years of Life Lost by ICD grouping.

II. Morbidity

- 1) Incidence and Prevalence of Risk Factors (and risk protection factors, such as immunization), including those in the environmental and public health areas
- 2) Incidence and Prevalence by ICD grouping
- 3) Incidence and Prevalence by ICD grouping, by age/sex grouping
- 4) Incidence and Prevalence by ICD grouping, by special groupings (Natives, socio-economic, geographic regions, etc.)

III. Dysfunction/disability

- 1) Dysfunction by severity
- 2) Dysfunction by ICD grouping
- 3) Dysfunction by age/sex grouping
- 4) Dysfunction by special groupings (Natives, socioeconomic, geographic regions, etc.)

IV. Health Status Index

- 1) Infant mortality
- 2) Other indices that may be adopted

Health Resource Long Term Objectives

I. Health Manpower Groupings. For each group, there is specification of actual numbers, full-time equivalent numbers, practitioners per population ratios, services per population ratios, health care expenditures for the group, and some measure of accessibility.

- 1) Physicians;
- 2) Nurses;
- 3) Other manpower groups as listed in Section III.B., Table III.

II. Health Facilities. For each group, there is specification of number of beds, bed per population ratios, bed-days per population ratios, age and condition of facility, accreditation of facility, occupancy and length of stay (by diagnosis), and health care expenditures.

- 1) Acute Care
- 2) Long Term Care (Personal, Intermediate, Extended Care)
- 3) Others (Rehabilitation, etc.)

III. Equipment. For each category, there is specification of numbers, number per population ratios, capacity utilized, annual services or procedures, and health care expenditures.

- 1) Imaging: CT scanners, Nuclear Med, Ultra Sound, PET;
- 2) Specialized Lab Services;
- 3) Specialized diagnostic or therapeutic equipment, e.g. cardiac

catheterization and dialysis.

IV. Health Services. For each service, and setting in which the service is performed, there is specification of characteristics of availability, accessibility, acceptability, quality, continuity, and cost. (See Section III.B. and Figure 18.)

V. Finances

- 1) Total health care costs
- 2) Health care costs by major service or program area
- 3) Per capita health care costs, overall and by major service or program area.

Resource Allocation Long Term Objectives

- 1) Assessment of coordination and integration of the health care system
- 2) Information system operation
- 3) Congruence LTO's and values
- 4) Discrepancy health needs and resources
- 5) Discrepancy between LTO's and health needs
- 6) Public satisfaction
- 7) Health care provider satisfaction
- 8) Crises and formal complaints

In order to convey some sense of the quantitative nature of the LTO's, the Canadian averages for mortality by age/sex grouping (a health status LTO), for physicians per population (a health resource LTO), and total

health care costs (another health resource LTO) are presented. Comparable British Columbia figures are also given. Of course, determination of actual LTO's, although relying on the Canadian averages will take into account many other factors and also would be considerably more detailed.

<u>Age-specific mortality</u>		<u>Canada</u>	<u>B.C.</u>
(deaths/1000 population, 1976)			
age 1-14	Male	0.54	0.53
	Female	0.36	0.38
age 15-24	Male	1.6	1.9
	Female	0.5	0.7
age 25-44	Male	1.9	1.9
	Female	0.9	0.9
age 45-64	Male	11.8	10.7
	Female	5.8	5.7
age 65 +	Male	65.5	61.8
	Female	44.6	42.6

(Canada, Department of National Health and Welfare 1979b).

<u>Population per physician</u>	<u>Canada</u>	<u>B.C.</u>
(excluding interns and residents, 1981)		
General Practitioners	636	553
Specialists	1276	1188

(Canada, Department of National Health and Welfare 1982).

<u>Health Expenditures per capita</u>	<u>Canada</u>	<u>B.C.</u>
(public and private, 1975)		
	\$517	\$547

(Canada, Department of National Health and Welfare 1979a).

The general nature of some of the categorizations listed for LTO's suggest that more effort is needed to operationalize concepts into measures which can serve as objectives for the health care system. A major effort in this direction is contained in the report Operational Measures for Health Systems Characteristics (United States, Department of Health, Education and Welfare 1979b). The six characteristics of availability, accessibility, acceptability, quality, continuity, and cost are analyzed to develop mutually exclusive operational measures. For example, measures for accessibility include: per cent of the population with health insurance, per cent of population within a specified travel time to selected services (e.g. 30 minutes to general medical services), waiting time to obtain an appointment, facilities with access for the handicapped, service units available outside normal working hours, etc.

Most of the LTO's listed are stated in per capita measurement terms as

well as actual numbers. Shaughnessy (1982) discusses two approaches to per capita measurement in health care: community-based and provider-based. The more traditional community-based approach starts with a target population (usually geographically defined) and determines the utilization of that target population across all providers, whether or not in the specified region. The community-based utilization measure is then the total utilization divided by the community population. The LTO's proposed are primarily of this type. The provider-based approach specifies a group of health service providers, and the size of their service population is determined by allocating (to the provider group) portions of the population from each community served. The calculated service population is then used as a basis for cost or utilization per capita measures for that particular provider group. The community-based and provider-based measures are complementary, and consideration should be given to adding provider-based measures if data availability and planning capability allows. The community-based measures indicate whether a given community is over or under-served compared to average rates; while the provider-based measures indicate provider efficiency relative to other groups, the degree of "market penetration" of a particular group, and also provides information on an important factor affecting cross-regional community-based measures.

V.B.3.2. Application of Long Term Objectives

The primary application of LTO's is to assist in determination of STO's by providing a longer time horizon. The three to five year rolling projection enables adjustment for demographic, social, economic, and technological changes, and also statements of final outcome for objectives requiring that

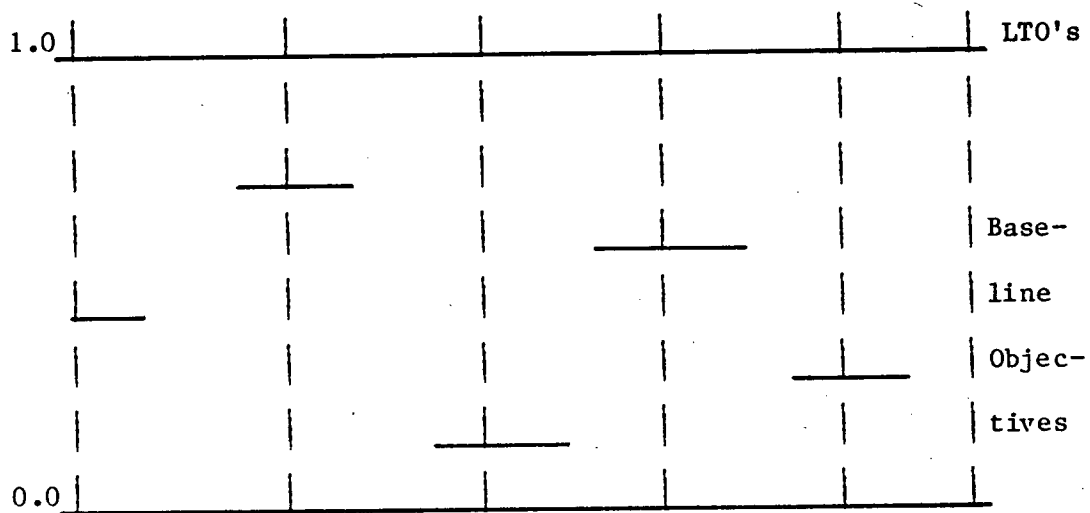
length of time, e.g. capital construction projects. In certain instances, an even longer time horizon, e.g. up to ten years, may be necessary to enable the three to five year objective to be meaningfully established. For example, demographic changes over a ten year period (or longer) will influence decisions regarding construction of long term care facilities. There are also a number of secondary applications of LTO's. Since they are in a sense the operationalization of values, the LTO's serve as a feedback and linkage to statements of values. The LTO's test the relative importance of values, and encourage review and reassessment. Discussion and dialogue among government, interested groups, and the "public" are facilitated. The LTO's also allow inter-sectoral comparisons for purposes of resource allocation, e.g. comparison of LTO's in health with LTO's in education or social services.

Although most LTO's require some translation into service or program delivery, and thus downward movement (and feedback) through other planning levels, in some instances, LTO's lead fairly directly to policies or changes of the health care system. For example, changes to the organizational structure of the Ministry of Health may be a direct result of LTO's concerning regionalization. Legislative changes may be made on the basis of LTO's. Granted, these, or other changes, then generate various administrative or programatic planning activities. Nonetheless, it is conceptually important to recognize that implementation of LTO's is not limited to their translation into strategies and eventual service delivery.

V.C. Baseline Objectives

Although fairly involved, the determination of LTO's described in the

previous section is still relatively easier than determination of ST0's. Despite some limitations on expectations, LTO's still, in general, allow for some degree of non-committed wishfulness. They are not placed in direct competition for current resources, the allocation of which will impact on day-to-day operations of the health care system. Moreover, LTO's, although quantitative, allow some measure of flexibility, given the longer time frame, in approaches or strategies that might be adopted. However, moving from LTO's to ST0's requires more selective resource allocation and prioritization decisions. To facilitate the task, this thesis proposes using the concept of Baseline Objectives. The (minimally acceptable) level for any particular LTO considered for British Columbia is defined as the Baseline Objective. Implicit in this designation is the policy that any area or group of people for whom the measure falls "below" this baseline must be considered highest priority in the planning and resource allocation process. "Below" is meant to imply that increase of the measure is desirable, e.g. life expectancy or amount of health resources or services. Clearly, certain measures are scaled in the opposite direction, e.g. mortality. Also, there may well be some measures which initially improve on increase of the measure, but reach a point where further increase is undesirable, e.g. number of physicians per population. For LTO's related to one area of concern, or possibly even for a range of different areas, a profile can be used to graphically display the relation of Baseline Objectives to LTO's. Because LTO's would have different indicators, and thus different measures, some method of scaling would have to be used, e.g. defining the LTO=1, and the Baseline Objectives as some fraction between 0 and 1. A graph similar to the following would result:



For the most part, STO's would be determined to fall between the Baseline Objectives and the LTO's, and such profiles allow planners to better visualize the process of determining the appropriate level for the STO. The inputs to determining Baseline Objectives are shown below:

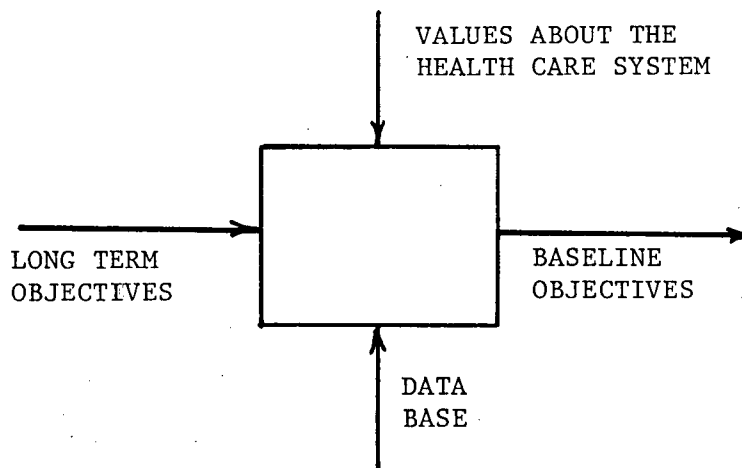


FIGURE 27. Determination of Baseline Objectives

The process itself is essentially similar to the process used to determine LTO's, i.e. consideration of the factors making up the legitimacy, feasibility, and support criteria. Every LTO thus has a baseline level. However, one cannot equate the existing level with the baseline level; otherwise simple incrementalism results. Nor can one assume that the baseline need always be a certain proportion of the LTO, or the status quo. Such an assumption would be valid only if all LTO's were considered equally important, and if the priority for all LTO's varied in a linear fashion. In practice, it would seem that the priority for a LTO need not follow a linear pattern, e.g. it may be considered crucial to have a certain level of a service, after which additional services provide far less "return" or value for the resources provided.

Since Baseline Objectives should, by definition, all be reached, they must be feasible and internally consistent. For example, should the Baseline Objective for infant mortality require a certain number of neonatologists in the province, and a certain number of Intensive Care Nursery nurses, then it follows that the Baseline Objectives for these categories of health manpower resources must be at least those specified numbers. The Baseline Objectives should allow some flexibility for local conditions, and thus may require some qualification. For example, whereas a LTO for physician manpower may be the same for urban and rural areas, Baseline Objectives for physician manpower may specify different levels.

The applications of Baseline Objectives are, firstly, to facilitate development of STO's (which is discussed at length in Section V.D.2., explaining the process of developing STO's); and secondly, as an aid to the budgeting process. Since all Baseline Objectives, by definition, are

funded, the greater part of the resource allocation will be accomplished once Baseline Objectives are designated. It is useful to consider the application of Baseline Objectives in the context of the budgeting system of the Ministry of Health. In a modified zero-base approach, each responsibility or cost centre is required to outline "packages", beginning with core items as package #1, and progressively more discretionary items in packages #2, #3, etc. As well, issue papers are prepared and ranked for program areas exceeding a designated dollar amount, or for expansion of any major program area. Baseline Objectives within this system can be considered as the base "packages": those items which do not require further justification in the form of issue papers. Note that useful application of Baseline Objectives is not limited to the Ministry of Health. Other levels of government, health institutions and organizations can also use them in planning, management, and budgeting.

V.D. Short Term Objectives

The desired "end-product" of the development of the Provincial Health Plan are Short Term Objectives (STO's) for the health care system. The inputs to the process of developing these objectives are shown below:

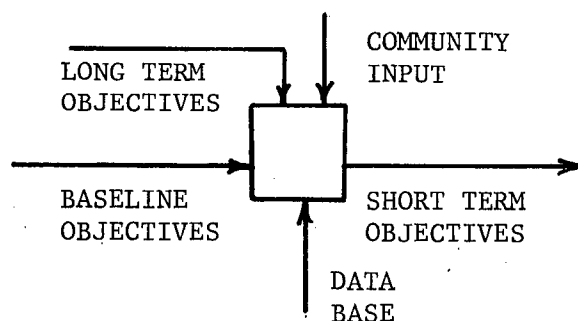


FIGURE 28. Determination of Short Term Objectives

The Data Base, LTO's, and Baseline Objectives have been discussed in Sections V.B.1., V.B.3., and V.C., respectively. Community input is an important input to the determination of STO's. The emphasis placed upon this input will depend upon the value statements regarding the role of the government and the individual, and the importance of community participation. There are a number of advantages to emphasizing community input. The alienation of consumers to the institutions and services in the community is reduced. Consumers are able to influence decisions which directly affect them. Communication is improved and minority groups have a greater opportunity to make their concerns known. Community participation also reinforces the underlying principles of a democratic system. There are also pitfalls to formalizing community input. Decision-making may become short-sighted and vulnerable to local pressuring and lobbying. Questions of representativeness of individuals or groups claiming to speak on behalf of the community may arise. The planning and implementation process may be significantly lengthened by inviting community participation.

Community input is obtained through a variety of mechanisms. One mechanism offering particular advantages is the Delphi method. To illustrate its application, a small scale Delphi study was carried out in the Queen Charlotte Islands. This is presented in Section V.D.1. The more general methodology and details of the Delphi method are provided in the Appendix. The synthesis of the inputs, including community input, to develop STO's is presented in Section V.D.2; and the application of the STO's so derived is discussed in Section V.D.3.

V.D.1. Obtaining Community Input: the Delphi method applied

The Queen Charlotte Islands in northern B.C. offer a number of

advantages as the site for a Delphi study to determine relative importance of health problems as perceived by the community. Although diverse, the Queen Charlotte Islands are sufficiently geographically isolated and have sufficient common concerns to be considered a discrete "region".

One of the major concerns of the Provincial Health Plan is that of access to health services. The Charlottes have particular characteristics, such as geographical isolation and sparse population base, which may affect access and thus a study in the area is of interest from this perspective.

A detailed account of the study is found in a separate report, Application of the Delphi Method to Determine a Priority Ranking of Health Problems in the Queen Charlotte Islands (Hsu 1982). The following discussion presents aspects of the study of relevance to the development of STO's for the Provincial Health Plan.

The application of the Delphi in the Queen Charlotte Islands follows the general format described by Dalkey (1969), except that being a policy Delphi, a representative rather than solely an expert panel is used. This panel is asked to indicate their opinion of relative importance of health problems for the Queen Charlotte Islands and to provide comments in support of their rankings. A coordinator collected and edited the responses and prepared a controlled feedback to the panel, who were asked again to rank health problems, taking account of the feedback provided. This generated another round of responses which the coordinator again edited and provided to the panel as feedback. In total, three rounds were used in the study. From a methodological viewpoint, there are a number of features of the study

which may be used in the application of the Delphi in other communities to generate community input for determination of ST0's.

The major task requested of the panel was to rank health problems, according to their perception of each problem's importance in the Queen Charlotte Islands. The definition of "importance" was purposely left vague. Questions of prevalence, incidence, urgency, severity, emotional overtones, amenability to treatment, population subgroups affected, etc. were not specifically addressed. It was felt that the relative weightings of these factors may well differ from one individual to another. Blum (1974) has attempted a comprehensive listing, with suggested "scores" for such factors. This approach seemed impractical in a community setting. As Fischer (1979) states, "people often behave inconsistently when confronted with health or safety-related willingness-to-pay decisions; people do so because the issues involved are so complex that they cannot respond to them in an informed systematic fashion" (p. 194). Instead, an assumption was made that an individual takes these factors into account, perhaps implicitly, when asked to consider the importance of a health problem. A ranking, rather than a rating on an "importance" scale was used, since for resource allocation purposes, the relative ordering is of greater usefulness. Of course, ratings could be analyzed and scored to rank health problems, but likely this would have resulted in less discrimination amongst health problems. There seems to be a tendency to consider most health problems fairly "important". Of the various approaches to ranking, a card sort was felt most useful. There was a fairly lengthy listing of health problems, which would have been very difficult for a participant to rank by placing a rank

order number by each health problem. The card sort allows easy modification of the ordering during the ranking process. Health problems are placed side by side for comparison (in essence using successive paired comparisons), and the physical positioning of the cards may reinforce the sense of ordering according to importance. Each health problem appeared on a 4 x 6 inch white card. This gave sufficient space to place typed comments (from the Panel) on each health problem/card. Thus, this feedback was directly in front of participants as they ranked the health problem. A simple analysis was done to average the rankings of health problems:

(1) cards were numbered sequentially by the participants according to the relative ranking, #1 being most important; (2) for each health problem, an average score was calculated using the mean of the numbers accorded to the health problem by the participants; (3) the health problems were ranked according to average score, the lowest score being most important.

Previous Delphi studies have suggested the use of a prepared list, or structured first round, rather than asking the panel to generate the initial policy choices or problems de novo. The study in the Queen Charlotte Islands drew up an initial list of 17 health problems. This was based on a number of sources: general familiarity with B.C.'s health care system and problems of northern B.C., previous studies of the Queen Charlotte Islands, and annual reports of the Health and Human Resources Centre in the Queen Charlotte Islands. An effort was made to include a cross-section of health problems, i.e. related to health status, health resources, and the administrative/planning of health services (= process of resource allocation). Thus, although "health problem" was not explicitly defined,

the participant had in the initial list a very broad range of health problems. Since that initial list was expanded through panel suggestions, this placed few restrictions on what a participant might offer as additional "health problems". Previous Delphi studies, especially policy Delphis have indicated that it is useful to track panel subgroups. The Queen Charlottes study requested participants to indicate whether or not they were: Haida; associated (or not) with the DND base at Masset (one of the two main population centres in the Queen Charlotte Islands); and whether or not they were health professionals.

Although the Delphi study was aimed primarily at ranking health problems by "importance", it was felt useful to obtain at least a general assessment of the panel's perception of the feasibility of improving a particular health problem. The rating scale used for feasibility was essentially the same as the one proposed by Turoff (1975), and reproduced in the Appendix.

The results, after the final round of the Delphi, showed the following "top ten" health problems according to importance:

- | | |
|----------------------------|-----------------------------------|
| 1. Alcohol Abuse | 7. Inadequate Long Term Care |
| 2. Motor Vehicle Accidents | Facilities/Programs |
| 3. Drug Abuse | 8. Inadequate Dental Services |
| 4. Industrial Accidents | 9. Inadequate Emergency Care |
| 5. Mental Disorders | 10. Lack of Programs on Lifestyle |
| 6. Poor Nutrition | and Preventive Medicine |

Additional information about these health problems, and indeed all the health problems included in the study, was obtained in using the Delphi.

For example, there are clearly two viewpoints on whether teenage pregnancy amongst the Haida population constitutes a "problem". On the one hand, there is a higher rate amongst the Haida when compared to the non-Haida population; on the other hand, the extended family of the Haida community supports the children of teenage mothers.

The advantages cited in the review of Delphi methodology are confirmed by the experience of this small scale study. A major consideration for an area such as the Queen Charlottes is the expense and uncertainty of travel. Since the Delphi used mailed responses, it was possible to effectively gather responses from a group of people geographically dispersed, while still allowing an exchange of information and ideas. The educational aspect of the Delphi was not stressed in this study, but clearly it would be feasible to have larger panels and dissemination of information about health to the participants.

The limitations of the Delphi should also be noted. Its implementation does require planning and administrative resources. The method does not necessarily "force" consensus amongst respondents; indeed, it is not really meant to be a forum for negotiation and lobbying by competing groups. Hence, other mechanisms may have to be used to resolve conflicts. The production of a ranked list of health problems does not translate immediately to solutions of resource allocation. The community input is just one input, albeit an important one, to the determination of STO's. The length of time required for the three rounds of the Delphi study may pose problems. Some panel members moved out of the area during the course of the study. While it is true mailed questionnaires and responses can continue to be used, participant interest is likely to drop once out of the study area. During

the course of a lengthy study, changes in the health care system may occur which impact the ranking of health problems. For example, over the duration of the study in the Queen Charlottes, additional resources in the form of a replacement mental health worker and an alcohol counsellor were being actively sought.

It is inappropriate to extrapolate the usefulness of the Delphi study solely on the basis of the small scale study in the Queen Charlottes. The small population base is of some concern since a provincial "region" will likely be much larger than the 5-6,000 population of the Queen Charlottes. A methodology that works well with a small community may be inappropriate for a larger region. The same reasoning cautions against extrapolating from a primarily rural-resource based community to areas with major urban centres. However, the experience of the Delphi method in other applications (including urban areas, although not in the health care field), and the relatively simple procedures of the methodology strongly suggest that it can be used in different regions of the province. Moreover, other mechanisms of community input can be used to complement the Delphi method. For example, informal sources include local press and media reporting of health related concerns, public expressions of interest, statements by local governments or organizations and volunteer activity in the health care system. More formalized mechanisms include survey, community meetings and the Knowledge Network.

V.D.2. Process of Determining Short Term Objectives

The inputs for developing ST0's have been discussed, and examples of each provided. The process of determining ST0's uses these inputs in a way

essentially similar to the processes described earlier for determining LTO's and Baseline Objectives. The paradigm for determining LTO's, Baseline Objectives, and STO's is consideration of criteria of legitimacy, feasibility, and support. Once the LTO's are developed, determination of Baseline Objectives is facilitated because the comparison of the existing state of the health care system to LTO's provides guidelines. Similarly, once Baseline Objectives are developed, determination of STO's is facilitated because comparison of the existing health care system to Baseline Objectives provides additional guidelines. For example, one might suggest that those issues or health problems which are presently well above the Baseline Objective can be given less preference, and thus in the context of resource allocation, fewer resources.

The detailed development of STO's would follow a listing similar to the one in Section V.B.2. Because of the shorter time frame, more emphasis will be placed on factors under the feasibility and support criteria. Accordingly, more detail may be needed from the data base for these areas when considering STO's, as compared to LTO's. For example, budgetary constraints and difficulties in transferring resources from existing institutions and programs play a dominant role in the development of STO's.

The total resources or dollars immediately available for the health care system is another factor of considerably more importance in development of STO's than in development of LTO's. Determination of an appropriate total amount of resources for the health care system is not addressed by the Provincial Health Plan. The planning and decision-making which determines the total amount for the health care system does not occur at the policy

planning level, but at a higher planning level. Such resource allocation between sectors of society may use LTO's developed by the Provincial Health Plan in a broader prioritization and policy setting process.

Determination of the resources available to a regional planning authority could in itself provide the subject of a major report or thesis. It is not dealt with at length in this thesis because of time constraints. Various approaches to determining resource allocation on a regional, instead of a service or program basis, are possible. For example, the status quo for each region could be assessed, and present and future allocations of the total resource pool made on the same proportionate basis. Thus, each region would receive roughly the same percentage increase, depending on the growth of the total health care system resource pool. Alternatively, criteria for allocation of a proportion of the total resource pool can be stated. For example, the RAWP uses size of population adjusted for a variety of factors, as their criteria. Somewhere between the incremental change to the status quo approach, and the resource allocation on the basis of "need" approach is a phased change towards some target and/or including demand factors in the criteria for resource allocation.

A conceptually different approach to dividing the total resource pie is to have each region put in requests for resources, and approve or adjust their request by considering the relative merits of their packages. Presumably, criteria for making such comparisons would have to be devised, and would likely be similar to those used for determining LTO's.

The use of the concept of Baseline Objectives allows still another variation to resource allocation on a regional basis. The level of resources needed in a region to achieve Baseline Objectives should, by

definition, be provided. It remains therefore to allocate resources remaining from the total resource pool to the regions. At least in this manner, the large part of the resource allocation process is accomplished in a relatively straightforward manner. The criteria for allocation of remaining resources could then be based on one of the other approaches outlined above.

Regardless of the approach taken to allocating resources to regions, account must be taken of catchment areas and levels of service provided in regions. For example, a tertiary referral hospital in Vancouver will be serving a much larger population than just the people in the Greater Vancouver area. It may be reasonable to designate certain provincial resources, which would be funded or provided at certain levels determined by central (rather than regional) planning. These referral services, along with central administrative resources, would be considered separately and deducted from the total resource pool prior to regional allocations. Further adjustment of central of central administrative costs to reflect differing "service" to various regions may also have to be done.

It is unlikely that a system of resource allocation to regions, simultaneously satisfactory to everyone, could ever be devised. For example, one could conceive of certain wealthier regions which could by voluntary donation or municipal contribution obtain health services. Should these regions then have the same drawing power on Ministry of Health funding?

In British Columbia, the organizational structure and responsibility of regional planning authorities have yet to be decided or detailed. The

degree of responsibility accorded to the region will be reflected in the amount of discretionary dollars allocated to the region.

Although an equitable system for resource allocation to regions has yet to be formulated, such a system is not in itself crucial to the implementation of the Provincial Health Plan. The fact remains that whether or not there are systems and criteria, resources are each year allocated to regions. Given this additional information about resources available to a given region, the regional planning authority then goes through a process of determining STO's in a fashion paralleling the process of determining LTO's at the central planning authority. Additional factors available to the regional planning authority are the LTO's and Baseline Objectives previously developed, and the community input specific to the region under consideration. These factors fit into the schema outlined for the legitimacy, feasibility and support criteria for resource allocation. Specific guidelines may assist in this judgemental process. One such guideline is suggested already, i.e. the discrepancy of existing status from Baseline Objectives. Another useful guideline, recognizing that STO's face real world constraint, is to limit STO's to a set percentage change (e.g. 10%) as compared to the status quo. Health status STO's can be achieved with perhaps less certainty than health resource objectives, which generally tend to be under some sort of management control. Hence, it may be useful to specify a range for health status STO's, rather than a single value. Although STO's could span the calendar year, it would be convenient and useful to have the one year span coincident with the government's fiscal year, i.e. the beginning of April. There will be certain groups of STO's that are functionally related, and this characteristic can be used to

simplify the derivation of STO's, as well as the monitoring and implementation. Supplementary and more detailed information for each region is generally available to the regional planning authority, even if not included as part of the data base for the Provincial Health Plan. Advantage should be taken of such information in developing STO's. Inter-regional coordination and cooperation is essential in developing STO's since few regions are self-sufficient in terms of health services, or self-contained in terms of patient in and outflows.

V.D.3. Application of Short Term Objectives

The form of STO's will be essentially similar to that described for LTO's and Baseline Objectives. Thus, objectives will be stated for the various components of the health care system, with the additional condition that they are to be achieved within a one-year time frame.

The application and usefulness of STO's stem from the advantages of having clearly stated goals and objectives to guide day to day operations. The Management-by-Objectives method stresses defining and quantifying objectives, but every planning and management approach emphasizes similar principles. For example, one health planning report states that setting Objectives lessens uncertainty, and allows changes to funding as required. Reallocating existing resources or substantiating the case for additional resources are facilitated by clear objectives. Moreover, objective setting assists in building understanding and a shared commitment to the organizational goals (United States Department of Health, Education and Welfare 1979a). In other words, objectives let people know in clear terms what is expected of them, and in doing so motivate the attainment of the

objectives. The statement of objectives can become an effective form of advocacy.

Another, not inconsistent but slightly different perspective is to consider STO's as "standards". The determination of objectives described in this thesis has many similarities to MacStravic's (1978) listing of different approaches that can be taken to establish standards in a health care setting: population ratio, ideal resource unit, productivity standard, occupancy standard, statistical variation, multiple performance standards, simulation, group process, etc. However, the concept of "standards" or "norms" is not straightforward. Know (1979) points out that one must distinguish between normal as "average" and normal as "free from deficit". He classifies standards as minimum, ideal, or reference. Blackman (1969) describes standards as uniform measuring unit, prevailing practice or average level of attainment, and goals and statements about what ought to be. The STO's as proposed for the Provincial Health Plan are clearly "standards" in the last sense, i.e. goals about what "ought" to be, without suggesting they are necessarily ideal or prevailing practice.

Dever (1980) supports the use of generally promulgated standards as goals and objectives because: "(1) such standards serve as quick reference to what is regarded as adequate, (2) by matching standards to local conditions, local areas that fall significantly short of devised levels can demonstrate health gaps, (3) by comparing multiple health gaps (revealed by standards), a community can see gaps that are proportionately worse and that may deserve higher priority, (4) though local standards are not well accepted, national standards are capable of demonstrating meaningful comparisons of what "is" versus what "could be" or "should be",

(5) community comparisons of rational standards can provide impetus to the measurement of health status" (p. 173).

Blackman (1969) reviews the advantages and disadvantages of standards. The advantages he cites are essentially the same as those listed by Dever. However, he cautions that standards may come to substitute for the goals they were originally set to represent. Local conditions may be ignored, and flexibility and innovation discouraged through rigid adherence to standards. Blackman concluded: "Despite any virtues, we do not think standards serve well the purposes of a technologically complex, pluralistic society" (Chapter 2). He suggests instead that community goals should be used as the basic criteria for evaluation and planning of programs.

If established in isolation, STO's could easily become entrenched as the goals of the health care system. However, linkages to values and general principles on an ongoing basis would ensure that community goals are being taken into account. Flexibility for local conditions is an integral part of STO's since they are determined at the regional level. The importance of such flexibility is recognized in the National Guidelines for health planning established in the United States. Currently, there are guidelines with respect to nine areas: general hospital beds, obstetrical inpatient services, neonatal special care units, pediatric inpatient services, open heart surgery, cardiac catheterization, radiation therapy, computerized tomographic scanners, and end-stage renal disease (United States, Federal Register 1978). However, provision is made for adjustment of the guidelines because of local conditions. For example, for general hospitals, the standard is less than 4 beds per 1000 persons in a health service area. But there is allowance for a more elderly population,

seasonal population fluctuations, rural travel time, presence of referral hospitals, etc.

Another application of STO's stems from the comprehensive framework used in their establishment. Because STO's are specified for all components of the health care system, clear statement of STO's facilitates analysis for duplication and inconsistencies. Although it is recognized that cause-effect relationships between health resources or services and health status are often not clearly established, cross component analysis will still allow for more effective planning and greater acceptance of alternative methods for achieving desired outcomes. The process of determining STO's will demonstrate the need for trade-offs, and expose gaps and deficiencies (United States, Department of Health, Education and Welfare 1977a).

The STO's are also useful for program evaluation. The Working Group on Program Evaluation (1977) noted that evaluation is not widespread because of a number of disincentives: a larger-is-better philosophy, personal investment in programs by managers, and general resistance to change. Weiss et al (1975) write of an "immunity to evaluation". The Working Group suggested criteria for effective evaluation: a clearly articulated program, clearly specified goals and/or effect, and a rationale linking the goals and/or effects to the program. Development of STO's provides the clear specification of goals.

Chapter VI. CONCLUSIONS AND FUTURE DIRECTIONS

Conclusions

The purpose of this thesis has been to outline a framework for the development of a Provincial Health Plan. The framework proper is detailed in Chapter V. Background material important to understanding and applying this framework are found in the preceding four chapters. While this background material has been presented with the primary intent of setting the stage for outlining the Provincial Health Plan framework, many of the concepts developed have wider application.

The planning mode-level matrix (Figure 4. and also reproduced below), either in its two dimensional or three dimensional form, provides a powerful tool for analyzing and understanding not only health planning, but planning in general.

PLANNING LEVEL	PLANNING APPROACH		
	Rational	Middle-range	Incremental
	A	B	C
1) Philosophy			
2) Ideologies			
3) Policy Planning			
4) Administrative Planning			
5) Program Planning			
6) Service Delivery			

Different planning approaches can be categorized into one or other of the cells of the matrix. Characteristics of each cell, and the relationships

between cells at the same or different planning levels can be established theoretically and tested by empirical observations. The success or failure of planning efforts can be understood as resulting from either specific events occurring in certain cells, or in the movement of issues from one cell to another. In other words, the planning matrix is useful not only in the study or science of "planning", but in analysis of specific plans. The matrix also offers guidelines to more effective planning. For example, the matrix suggests that "rational" plans at any level are but the first step towards plan development. A choice has to be made, given constraints on planning resources and capabilities, to focus on either achieving breadth of topic or achieving depth of topic. One cannot simultaneously study all planning levels for all issues. Although the primary purpose of a plan at a certain planning level is to serve as the basis for planning at the next lower planning level, certain "outcomes" result at each level, i.e. actions or policies are undertaken directly by actors at the initial planning level rather than simply delegating tasks to subordinates. The planning mode-level matrix also suggests that planning approaches and criteria for evaluation cannot be arrived at objectively, but require reference to higher planning levels.

Detailed discussion of components of the health care system is presented in the context of applying general planning principles to the health care system. A number of concepts, although certainly relevant to the development of a Provincial Health Plan, have more general application in health planning. The need for a systems approach to planning for the health care system has been emphasized, with particular attention given to control mechanisms and feedback or feedforward. Measurements of health

status requires a variety of indicators, some biomedical, others more rooted in social contexts. Measurement of health resources requires both an inventory of physical resources (manpower, facilities, equipment, financing) and a listing of services by setting and characteristics. Requirements for health services is an area of some confusion in health planning. The term "needs" should be reserved for the determination by experts of the health services needed, given current knowledge and technology. The determination of requirements should take into account the "needs", but also demand, wants, and utilization of health services. Resource allocation can be considered synonymous with objective setting in many ways. Factors of legitimacy, feasibility, and support can be combined to assist in a judgemental process of priority setting and allocation of health resources.

The major outcome of this thesis is a proposed framework for development of a Provincial Health Plan in British Columbia. The major elements of such a framework are: Values, Long Term Objectives, Baseline Objectives, and Short Term Objectives. Supporting development of these major elements are a data base and a mechanism to obtain community input on health problems and priorities. The following diagram shows the relationships among these elements.

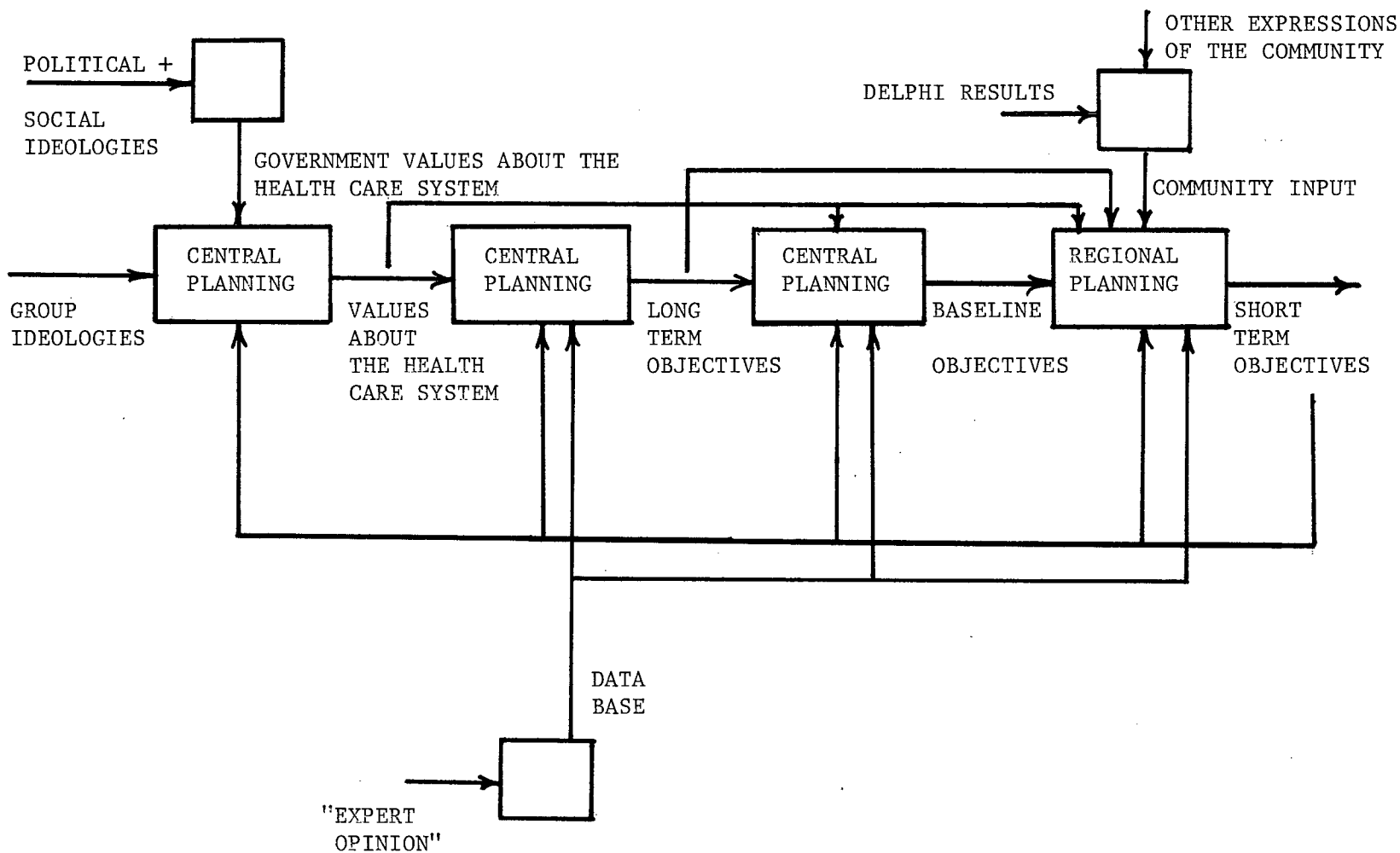


FIGURE 29. Framework for a Provincial Health Plan

Discussion of each of the elements in Figure 29. is presented in Chapter V. of this thesis. In summary, the endproduct of the development is a set of Short Term Objectives (STO's) covering all major components of the health care system. These STO's are used to guide planning and implementation of programs and services within the health care system. To arrive at STO's, a series of steps (with numerous feedback and iterations) is proposed. Firstly, values about the health care system are determined, taking into account the views of various groups within the health care system ("Group Ideologies") and also taking into account the political and social ideologies of the elected government. A major consideration is the political priority of the health care system (and indeed all social services) in British Columbia relative to other sectors, notably the industrial and business. In times of economic recession, government preference may be given to supporting and encouraging economic growth and production, rather than provision of services. Secondly, Long Term Objectives (LTO's) for the health care system are determined, taking into account values and also information about the current and projected state of the health care system in the province ("Data Base"). At present, most planning approaches proceed directly from LTO's to STO's, but to facilitate this transition, the concept of Baseline Objectives is now introduced. Finally, all these elements -- Values, LTO's, Baseline Objectives, Data Base, and Community Input -- are combined in determining STO's at the regional planning level.

Since the framework for the Provincial Health Plan is presented from the perspective of the Ministry of Health, it is worthwhile highlighting the points in the diagrammed framework which actively seek "community input",

where community is taken to mean both the professional community and the lay "public". The initial determination of values would have formal input from various interested groups by means of a conference, and less formally through the many contacts such groups have with the Ministry of Health. Similarly, the public, through the electoral process and numerous lobbying strategies provide continuing input to their elected representatives on health issues. Throughout the development of LTO's, Baseline Objectives, and STO's, "expert" consultation and opinion is obtained. "Expert" here is meant to imply not only expertise through formal training, but also the expertise derived from practical experience. Such input tends to be fairly issue-specific. The STO's, determined at the regional level within certain general guidelines and constraints set by the central planning level, are shaped to a large extent by community input. In this instance, community refers to the service catchment areas on a geographic basis. One formal method of obtaining this community input, the Delphi, is proposed.

Future Directions

Throughout this thesis, reference has been made to real world constraints on "rational" planning. The limitations imposed by time, resource, and data availability have left a number of areas of the proposed framework for a Provincial Health Plan which require further consideration and elaboration. Such work can be done during the actual development of the Provincial Health Plan. However, it may be useful to point out specific areas that could receive further study, even before formally initiating development of the Provincial Health Plan, thus saving time and effort at some later stage.

This thesis has provided a brief overview of the "problems" confronting the health care system. A more comprehensive listing, with specific B.C. examples, would contribute to the development of the Provincial Health Plan.

Specific data elements to be collected and used in describing health status and health resources may need to be reviewed in light of values about the health care system established during the course of the plan development. A more comprehensive tabulation of available data for B.C. (special reports as well as routinely collected data) would be a necessary part of establishing a data base for the Provincial Health Plan. The reliability and validity of the indicators proposed for health status and health resources should be checked with those individuals, groups, and organizations which collect and use the data on a regular basis.

Factors of legitimacy, feasibility, and support, which assist in determining priorities for resource allocation, will depend upon the values about the health care system. An analysis of existing policies, explicit or implicit, operating within the health care system may facilitate the listing of these legitimacy, feasibility, and support factors. A review of previous issue-specific or area-specific plans would contribute towards such an analysis, as much by noting which plans were not adopted.

The framework for development of the Provincial Health Plan assumes a regional structure for delivery of health care services, and also some method of determining total resources allocated to each region. At this point in time, further work is required before these assumptions are realized.

Recognizing that the development of the Provincial Health Plan is in

itself a major project, the proposed framework focuses upon the health care system, and less on its interface with other systems. However, these "interface" issues often are the most problematic, and further work on mechanisms to increase inter-sectoral cooperation and liaison would be essential.

The outline for LTO's, Baseline Objectives, and STO's includes a fairly lengthy listing of items. It may be possible to reduce this number by consolidating objectives which are functionally related. The application of the Provincial Health Plan has been discussed primarily from a Ministry of Health perspective. Further study of the more general application of the Provincial Health Plan by other actors in the health care system would be necessary at some stage of the plan development.

Implementation of the framework for a Provincial Health Plan entails task assignments, timeframes, and commitment of planning resources. Tasks and timeframes are suggested in the following table. Costs have not yet been estimated, but clearly this would be required well in advance of development of the plan. It should be noted, however, that once the Provincial Health Plan has been developed, subsequent updating and revision will require only a small fraction of the initial cost. For example, the proposed conference on values need not be repeated on an annual basis. Although values do change over time, it seems unlikely that major changes would develop except over multi-year intervals.

<u>Task</u>	<u>Timeframe</u>
Determination of:	
-Government values about the health care system.....	4 months
-Group ideologies.....	12 months
-Values about the health care system for plan development.....	2 months
-Data base.....	12 months
-Long Term Objectives.....	4 months
-Baseline Objectives.....	3 months
-Community input.....	3 months
-Short Term Objectives.....	3 months
-Feedback.....	2 months

Some of the tasks for development of the Provincial Health Plan need to be done sequentially; others can be carried out concurrently. Determination of values about the health care system requires completion of the two preceding tasks. The determination of LTO's requires completion of all the preceding tasks, as does determination of STO's. However, establishing a data base can begin well before the completion of the preceding task of determining values; similarly, community input does not require that all preceding tasks be completed, and Baseline Objectives can be determined more or less concurrently with determination of LTO's. Throughout the development towards STO's, there will be numerous occasions for feedback. For example, determination of Baseline Objectives may initiate further work on the data base to specify areas of the province where the Baseline

Objectives have not yet been attained. The last task listed, "Feedback", refers to a more formalized analysis of STO's to ensure consistency with the LTO's and values. The suggested scheduling of the tasks is outlined in Figure 30., and is seen to require approximately two years from initiation.

<u>Task</u>	<u>Time (in months, XX= one month)</u>												
	0...	2...	4...	6...	8...	10...	12...	14...	16...	18...	20...	22	
Gov't values about HCS	XXXXXXXX												
Group Ideologies	XXXXXXXXXXXXXXXXXXXXXXXXXXXX												
Values about HCS									XXXX				
Data Base	XXXXXXXXXXXXXXXXXXXXXXXXXXXX												
LTO's										XXXXXXXX			
Baseline Objectives										XXXXXX			
Community Input										XXXXXX			
STO's											XXXXXX		
Feedback												XXXX	

FIGURE 30. Timeframe for Development of a Provincial Health Plan

Although completion of the tasks outlined should result in the development of a Provincial Health Plan, the planning process does not stop at that point. Further steps to develop strategies and programs to implement and achieve STO's should follow. These further steps may in turn lead to reconsideration and revision of the STO's. Service delivery will result from the strategies and programs that are implemented. Monitoring and evaluation of services and outcomes then provide data which are used to update the data base of the Provincial Health Plan. In this manner, regular revision and improvement of the Provincial Health Plan becomes an integral part of the health care system, as shown in Figure 31.

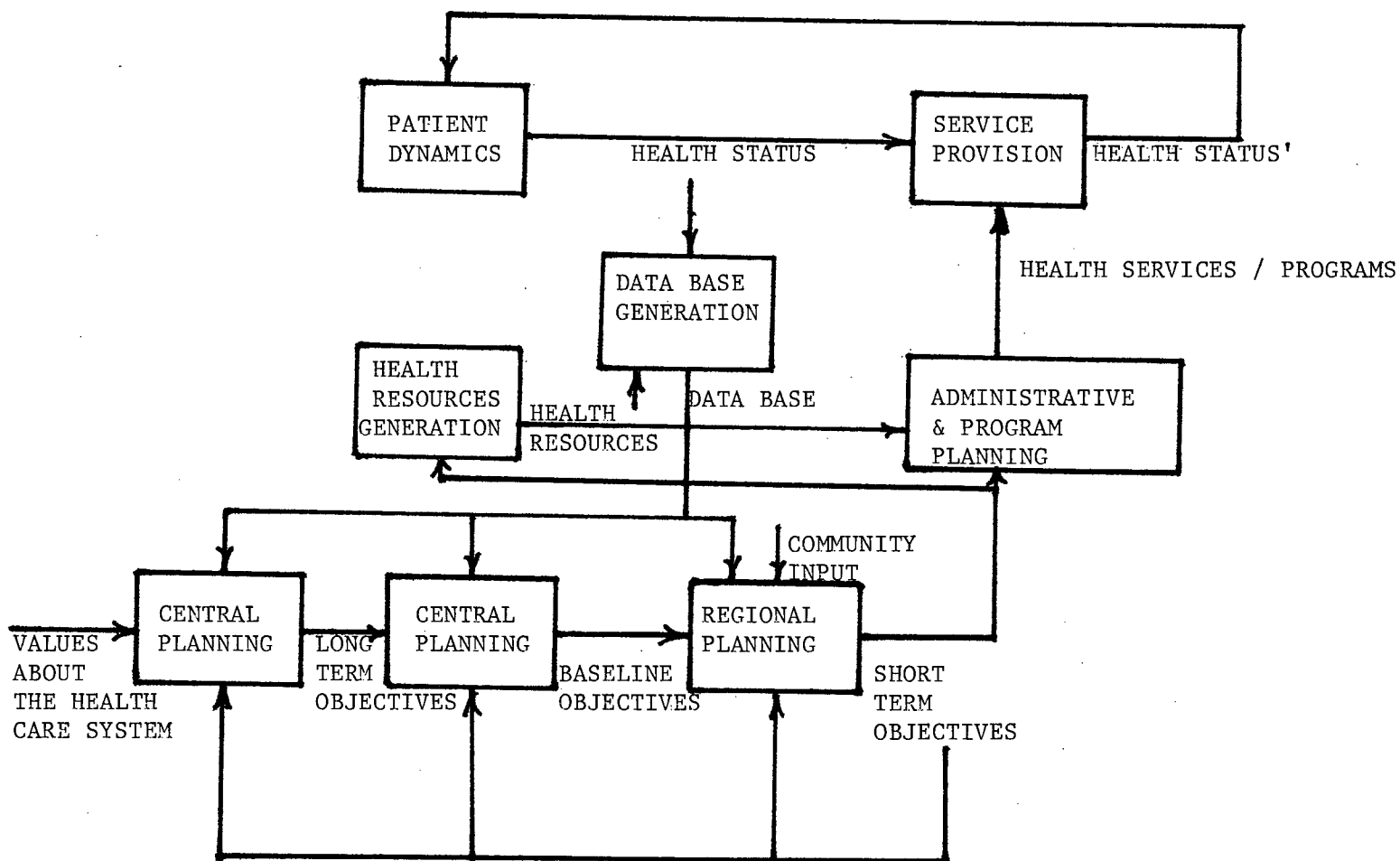


FIGURE 31. The Provincial Health Plan in the Context of the Health Care System

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APPENDIX

REVIEW OF THE DELPHI METHOD

This methodology was first used in 1953 by Dalkey and Helmer. Under the auspices of RAND corporation, forecasts were solicited from seven experts on the subject of atomic warfare. Given the classified nature of this work, reports of the project were not released until 1962. The following year, Gordon and Helmer did a study using the Delphi method to forecast events in growth, automation, space progress, probability and prevention of war, future weapons systems. This ambitious study popularized the Delphi method and led to its use in areas of education, industry, social planning, evaluation of research projects, etc. (Pill 1971). What then is the Delphi method? Dalkey (1969) explains: "The Delphi technique is a method of eliciting and refining group judgements. The rationale for the procedure is primarily the age-old adage 'Two heads are better than one' when the issue is one where exact knowledge is not available" (p. 408). The basic outline of the Delphi is straightforward:

(1) A panel of experts are asked to consider and give opinions in certain topic areas.

(2) A coordinator collects the answers, edits them and prepares a controlled feedback.

(3) This feedback is returned to the panel (usually a summary of the group response), and the experts are again asked to consider certain topic areas, taking account of the feedback.

(4) This generates another round of responses (including usually

comments justifying positions in light of the group response) which the coordinator again collects, edits, and gives as feedback.

(5) The process continues until consensus is reached, or until it is felt that further rounds are not justified by the costs.

In a committee, more knowledge and a wider range of experience are brought to bear on particular issues by drawing upon a number of experts. Dalkey observes that the mean accuracy and reliability of response increases with group size. Pill (1971) comments also on the advantage of a group rather than a single person: there is often a conservative tendency of experts when dealing with issues outside the traditional boundaries of their own discipline. Albertson and Cutler (1976) make the same point that experts in particular fields tend to have similar narrow outlooks, and that a cross-disciplinary group will be more innovative. The Delphi method has three main features which can be viewed as efforts to mitigate the disadvantages associated with committees, while retaining the advantages. Dalkey (1969) lists these features as:

- (1) anonymous response
- (2) iteration and controlled feedback
- (3) statistical group response.

The anonymity of response reduces the "halo effect" and dominant bias which occur in face-to-face encounters and committee meetings. Arguments will be weighed on their merits, not on the personality or forcefulness of the speaker. Moreover, without the worries of repercussions or threat to reputation, panel members may be more candid and innovative. The iteration and controlled feedback eliminates much of the "noise" that occurs in group meetings, i.e. the discussion unrelated to the issue at hand. The

statistical group response ensures that minority opinions will be heard. Since the panel recognizes that a range of opinions is allowed for, and in fact encouraged by the Delphi, there will be less susceptibility to group pressure towards conformity. As well, participants find that the effort required is less than at committee meetings; the exercise is motivating and stimulating, with increased sense of participation and responsibility. In short, the Delphi method is a "rapid and relatively efficient way to cream the tops of the heads of a group of knowledgeable people" (Dalkey 1969, p. 415).

Juri Pill (1971) has classified the Delphi method as a type of subjective scaling technique. He notes that such techniques range from the "revealed preferences" approach of econometrics to the sociopsychological techniques, e.g. paired comparisons, equal appearing or successive intervals, summated ratings, scalogram analysis. Pill distinguishes between whether a method relies primarily on what respondents do, or what they say they would do. On this basis, the Delphi method would lay more towards the sociopsychological scaling pole. On reviewing the literature concerned with the Delphi method, Pill offers a number of conclusions:

(1) "The Delphi techniques should be used at high levels of uncertainty and one must accept the difficulty of gauging its usefulness.

(2) It should be possible to apply Delphi in conjunction with a more concrete procedure which works backward from the real world.

(3) Its eventual usefulness will be judged by its performance rather than by any abstract analysis of its worth.

(4) Research in Delphi should stress its psychological aspects in terms of communication rather than in mathematical terms" (pp. 63-64).

A number of specific aspects of the Delphi method are worth noting. Panel selection is a major issue. Teeling-Smith (1971) reports on a modified Delphi used in the "Medicines in the 1990's" study. An initial small nucleus of experts (known to the coordinator) were asked to suggest additional experts to serve on the panel; new panel members in turn were asked to suggest other members, and so on. Most Delphi studies tend to gloss over the criteria for panel selection, except as a result of the considered judgement of the coordinator(s) of the study. Clearly, personal bias can distort the panel composition. Reliance on "experts" does not necessarily resolve this difficulty. Szabo (1980) has reviewed definitions of "expert" used by various authors (e.g. "an expert is someone who commands a specialized body of knowledge"), but concludes that they all leave considerable freedom to the coordinator in the assembly of the panel. It appears useful, however the method of selection, to ask panel members to rate themselves as to expertise. The size of the panel selected is also a factor to consider. Huckfeldt and Judd (1974) have found disadvantages to large scale Delphi studies, e.g. panel "fatigue" in later rounds as seen in drop-out from the study. One method to avoid this sort of problem is not to require participation of the entire panel in all phases of the Delphi. Sulc (1969) describes a study which attempted to relate interactions of technological and organizational change to the impact of technological innovations. Different panels were used in successive rounds of the Delphi, i.e. initially eight computer scientists were asked about technical developments; then, a second group of management personnel were asked to comment on the effectiveness of organizational measures to adapt to these technical developments.

The amount of structure provided to the panel in a Delphi study is another factor which can be varied. In some instances, the panel is requested to generate the initial list of issues, in other instances, the coordinators of the study provide a suggested list and invite revisions, additions, etc. Pyke (1970) found that pasive generation of lists by a Delphi panel of experts resulted in gaps and areas omitted from consideration. Greater attention to study design and structure was found necessary. By starting with an initial suggested list time is saved, since it is possible to write, test, and revise the goal statements. Experts can be included and overall, the participants' tasks are simplified.

Kendall (1978) has commented on aspects of the questionnaire used in the Delphi method. Parallel questionnaires are useful to cover similar topic areas in different ways. Respondents are split into sections and randomly assigned to one or other of the parallel questionnaires. It was felt that any attempt to combine alternative approaches in one questionnaire would have made it overly lengthy.

The Delphi method is not without criticism. Overbury (1969), referring to the 1964 Helmer and Gordon study, said: "The general immaturity (frankly it is the only word) of the results follows from the kind of questions asked, but it is also inherent in the method, the shortcoming of which suggest other weaknesses of approach in much that has been written about long-range forecasting and planning" (p. 76). He noted in particular that the problem becomes prediction not of what can be done, but what will be selected to be done, i.e. predictions cannot be separated from the participation of the predictors. Sulc (1969) similarly cautions against the tendency of Delphi to focus on technically feasible predictions:

"The more technically capable we become of achieving our desired ends, the more important it becomes to admit the normative element of technological forecasting. Consequently, definitions of values and their change over time should influence those responsible for such forecasting" (p. 402). Others also cast doubts on the reliability and validity of Delphi. Sackman (1975) sees the anonymity of this method resulting in personal unaccountability and "elitism and deliberate manipulation of the results to satisfy vested interest." He further questions the Delphi method's validity, using criteria similar to those used for the evaluation of psychometric tests. Responding to Sackman, Linstone (1975) suggests that procedures designed to evaluate the testing of individuals should not necessarily be applied to evaluation of opinion questionnaires. He notes that Coates states: "If one believes that the Delphi technique is of value not in the search for public knowledge but in the search for public wisdom, not in the search for individual data but in the search for alternative judgements, one can only conclude that Sackman missed the point" (Linstone 1975). Hill and Fowles (1975) criticize the Delphi method in areas of panel selection and attrition. Although advocating the usefulness of the Delphi method, Linstone (1975) does point out "eight basic pitfalls" encountered in its use:

- (1) Discounting the future - the tendency for people to be present-oriented rather than future-oriented. How heavily a person discounts the future will depend on his socio-cultural-economic background.
- (2) Prediction urge - the preference for definite predictions, and the assumption that convergence of opinion is necessarily more accurate.
- (3) Simplification urge - the use of a reductionist approach to

social/behavioural systems, not recognizing that complex systems often show counter-intuitive behaviour. Linstone also includes under this category the tendency to assume that scaling is uniform from one individual to the next.

(4) Illusory expertise - the undue reliance on the technical "expert" or the exclusion of certain groups when cross-representativeness is being claimed.

(5) Sloppy execution - for example, poor selection of panel or superficial analysis of responses.

(6) Optimism/pessimism bias - the tendency to be overly pessimistic in the longer range, overly optimistic in the short range.

(7) Overselling - the misuse of Delphi, in situations where other methods are more appropriate, e.g. if a committee structure exists already and is functioning effectively.

(8) Deception - the use of the Delphi method for manipulation of participants, or to justify preconceived positions.

The discussion of Delphi method so far has been limited to forecasting, but Turoff (1975) proposes the use of Delphi in a different way, for the analysis of policy issues. Turoff reiterates the drawbacks of the committee structure: presence of domineering or outspoken individual, unwillingness of individuals to take a position until majority views are known, difficulty of publicly contradicting a more senior person, unwillingness to abandon a position once stated publically, and the fear of suggesting innovations which may lead to embarrassment. He suggests that with up to ten people, these problems are not usually of major significance. Greater than this number of people, consideration should be given to use of a policy Delphi, when policy issues are to be examined. There are six phases:

- (1) formulation of issues,
- (2) exposition of options,
- (3) determination of initial positions,
- (4) exploration of reasons for disagreement,
- (5) evaluation of underlying reasons for disagreement,
- (6) re-evaluation of options.

In principle, there should be five rounds, but in practice three or four rounds are generally sufficient. The monitor team does the preformation of obvious issues and provides a general range of options. The format is not markedly different from the traditional Delphi method, but there is much greater importance attached to selection of an informed representative panel.

There are four major factors to consider in the selection of the panel for a policy Delphi:

- (1) representativeness,
- (2) expertise,
- (3) size,
- (4) motivation.

In discussing, representation, Marmor and Morone (1980) point out that direct community participation, as envisaged by Plato, Aristotle, Rousseau, etc. has been replaced by representation as the "institutionalization of the idea that every man has the right to have a say in what happens to him" (p. 135). There are three types of representation: formal, descriptive, and substantive. Formal representation is said to result if an acceptable, prescribed process for selection of the representative has been

followed. Thus, in a democratic society, an elected official is representative by virtue of his obtaining more votes than his opponent. Descriptive representation attempts to mirror the constituency in important characteristics: "The similarity of composition is expected to result in similarity of outcomes; the assembly (of representatives) will think, feel, reason (and therefore) act as the public would have" (p. 137). The popular modern variation of this is termed "socially descriptive representation": social and demographic characteristics of the constituent community are to be reflected in their representatives. For example, if a community has a large ethnic minority, then its council (or board, legislature, etc.) should have a correspondingly proportionate number. There is an intuitive appeal in this approach to representation. However, the potential exists for tokenism to substitute for representation of a group's interests. The thrust of Marmor and Morone's argument is that representation should be substantive. i.e. "the effective pursuit of the interests of the constituency" (p. 143). The focus has shifted from what representatives are, to what representatives do. The authors propose, in the context of Health Systems Agency Boards in the United States, guidelines for selection of a representative Board. The government is to select groups or organizations within the community, and these in turn would nominate a representative who is accountable to that particular group - and who may not necessarily "mirror" that group in social or demographic attributes. The issue of explicit criteria for inclusions of groups is skirted: "The answer is clear when there is a macrotheory of objective interests spanning the entire citizenry, such as class analyses include. However, liberal theory

offers no comparable vision of fixed systematic interests" (p. 150). Instead, there is an appeal to "reason", "prudence", etc. Despite this reliance on "reasonable" judgement, or even a consensus among "reasonable" men, there will inevitably be a degree of arbitrariness in selection of representation.

Marmor and Morone also stress that representation must involve the "effective" pursuit of constituency interests. It is axiomatic that some level of information and expertise is essential to enable this. Especially in a field as complex as health, reliance on intuition may lead a representative group to pursue policies that are in fact detrimental to constituency interests. Note that this is not a requirement that each representative be knowledgeable about all aspects of health care. Rather, it implies that relevant information and expertise must be readily available and considered. In the context of HSA's, Marmor and Morone suggest this function be performed by an expert support staff to the Board. Not encumbered by legislation or administrative regulation, the policy Delphi is able to simply include experts on its representative panel. Thus, much as in a forecasting Delphi, experts are required; but unlike a forecasting Delphi, representativeness is essential.

Panel sizes range from less than ten to hundreds, depending on the purpose of the Delphi study. As a rule of thumb, in a typical forecasting Delphi a panel of 30 is comfortable, with larger panels providing little new information. A policy Delphi, operating under the additional constraint of representativeness, may have to be larger to accommodate relevant interest groups. If there are reasons such as group education or motivation of the panel, again there may be valid excuse to extend the panel size. The

trade-off in increased panel size relates mainly to cost: more time is necessary to analyze, edit, collate responses; more supplies, postage, etc. are consumed; and more "expert" time is taken up. There is additionally the danger of decreased motivation if a respondent perceives his response as being only marginally influential.

Motivation is an important factor in the Delphi since this methodology relies on the individual to complete and return the questionnaire. According to Delbecq and Van de Ven (1975), the respondent "must be convinced of the importance of the Delphi's objectives and the importance of their participation" (p. 88).

As compared to the forecasting Delphi, the policy Delphi devotes more attention to the establishment of rating scales for policy issues. Turoff (1975) suggests ratings based on "desirability", "feasibility", "importance", and "confidence". As the feasibility rating scale is utilized in the application of the Delphi method in the Queen Charlotte Islands (discussed in Section V.B.2.), it is reproduced below for reference:

Definitely Feasible- no hindrance to implementation; no research and development required; no political roadblocks; acceptable to the public.

Possibly Feasible - some indication this is implementable; some research and development still required; further consideration or preparation to be given to political or public reaction.

Possibly Unfeasible - some indication this is unworkable, significant unanswered questions.

Definitely Unfeasible - all indications are negative; unworkable; cannot be implemented.

One of the major problems in using a policy Delphi is the amount of material generated by the respondents, especially if they feel strongly about an issue. It is estimated that on average, the written material for the second round may be five to ten times that of the first round. Turoff (1975-) suggests a number of guidelines when using a policy Delphi:

- (1) Keep track of subgroups within the panel, enabling analysis of response differences.
- (2) Have at least two people on the monitor team, reducing bias.
- (3) Pretest the questionnaire and format, avoiding compound statements and giving examples of the type of responses expected.
- (4) Allow respondents to suggest wording changes or new items.
- (5) Show the individual his original when asking him to "revote".
- (6) Convince members of the panel that they are in a peer group.