CHAPTER 4

IDENTIFICATION AND ANALYSIS OF OBJECTIVES AND CONSTRAINTS

Possible elements in an insurance scheme have to be evaluated with respect to their effects. Effects can be measured in two dimensions. Firstly with respect to social and, by implication, economic objectives. Secondly, with respect to what may be termed constraints. The constraints, which, in some cases may be the opposite to an objective, are to be found in operational procedures and political and economic feasibility. Operational and feasibility constraints are not necessarily distinct categories but a broad spectrum.

Since the elements are to be evaluated with respect to objectives and constraints, ideally, the objectives and constraints should be expressed in a measurable form. Only then can judgements be made about effects and the judgements vindicated through subsequent experience. However, as is shown in Chapter 5, quantitation remains problematic even when more detailed criteria are defined.

4.1. Objectives

In determining social and economic objectives the broad function of any health insurance system has first to be defined. In some countries health insurance is a subset of a more comprehensive welfare or social insurance system. The latter may provide financial benefits to support the consumption of health care, financial benefits to offset loss of income and home nursing support due to accidents or ill health, special long term benefits for the disabled, allowances for the final months of pregnancy, unemployment benefit and a death benefit to cover the cost of burial or cremation.

For this study it is assumed that health insurance has only one function, to fund, in full or in part the consumption of health care when there is a need for health care.

It may be argued that the need for health care arises when the potential exists for avoiding a reduction in health status (preventive, promotive and some curative care) and/or when the potential exists for improvement in health status above what is or will be (curative care).

There are three important implications in this definition. Firstly, health care services exist to minimize need or bring about a maximum improvement in health status with the resources available. Secondly, no need exists if there is no currently available procedure which will produce an effective outcome. Thirdly, since there is no

need in the absence of an effective outcome, this suggests that love and concern, both important elements in health care, are not needs. This dilemma can be avoided by accepting that peace of mind is a 'health state" as reflected in the Alma Ata declaration on health.

If it is assumed that the function of health insurance is only to support consumption of health care then the literature suggest eight major objectives; improvements in health, equity, effectiveness, efficiency, risk sharing and quality of care.

Each of these general objectives has to be clearly defined and, ideally, expressed in , at least one objective indicator to help assessment of the nature and magnitude of any effect for each insurance element.

4.1.1 Improvement of Health

Health is an ill defined concept. As Doll (1974) observed, "Positive health seems to be as elusive to measure as love, beauty and happiness". Yet, in an effort to give some form to the concept the World Health Organization has defined health as, " a complete state of physical, mental and social well being, not merely the absence of illness or disease". This is a broad definition and the characteristics of health based upon this definition are not easy to pinpoint and measure.

If improvement in health is to have meaning comparisons have to be made over time (time series) or between groups (cross sectional analysis). But measurement is difficult for two reasons (1) health is value laden (2) health is multi dimensional,

As a result, measures of the health of a population are normally expressed in more objective indexes such as:

1. life expectancy at birth
2. mortality rates for specific diseases
3. infant mortality rate
4. perinatal mortality rate
5. incidence of a number of communicable diseases
6. prevalence of malnutrition and obesity
7. the burden of disease in terms of healthy days lost (QUALY's)
8. health status indexes

When trying to measure or assess the potential effects of a particular insurance element on health status it is clearly ideal to provide some measurable indicator(s) Ideally the indicator(s) selected should be sensitive, to quickly reflect effects, composite to encompass effects on other indicators and complementary to ensure that the specific effects of particular health care interventions, such as preventive and curative care, are not neglected. Such ideal indicators are not available and a compromise has to be accepted.

For this study, the indicator selected to allow direct analysis of the effects of insurance elements is: Infant Mortality Rate (IMR). This indicator is sensitive and readily measurable and reflects the

impact of curative and preventive care.

4.1.2 Equity

Whatever else is questioned about health care there is general agreement that 'fairness' should be part of health care. Judgements about the justification for and nature of equity derive from four theories of justice:

1. Entitlement theory (which is an amoral theory of justice)
   * each individual is only entitled to what he/she has as long as it is acquired fairly
2. Utilitarianism (greatest good for the greatest number)
   * not really about justice but rather efficiency
3. Maximum theory (maximizing benefit to the less well off)
4. Egalitarianism (equality of net welfare for individuals)
   * the goal is equal health

To this list may be added the socialist philosophy of 'rights' also expressed in the Alma Ata declaration which claims that individuals have a right to health and hence the consumption of health care.

Derived from these theories of justice are various definitions of equity subsumed under the general idea of "justice according to natural law or right" (Mooney 1986).

Inputs

* equal expenditure per capita
* equal inputs per capita

Response to normative needs

* consumption in proportion to need (maximizing aggregate utility from the consumption of care)
* equal access for equal need
* equal utilization for equal need

Outcome

* equal health

As with the measurement of 'health' the meaning of equity

selected and used a basis for evaluating the effect of insurance elements has as much to do with convenience of measurement as it has to do with social or ethical values.

Equal inputs per capita, though attractive in its simplicity will not maximize utility, health or efficiency. Equal health is impossible to measure and assumes a control over consumption of individual health care which can not be achieved.

One is left therefore with some response to needs (however those needs are defined). It may be argued that the equity goal of health insurance is consumption of health care services in proportion to need. This approach should maximize utility from the resources available. But one can not force consumption of health care and the scaling of need would presumably require some complex assessment of benefits.

The definitions of choice, in much of the literature, are often a mix of equal input for equal need and equal access for equal need, both of which are concerned with the supply and distribution of resources, with the mix determined empirically by examining the trade off between access and health. But what does equal need and equal access mean?

Need is not wants nor reasonable expectations. Culyer (1992) argues that a need exists if:

* the entity (health care RESOURCES) is necessary to attain the goal (improved health)

* if a (marginal) need for the entity is to be asserted then the expected (marginal) productivity in terms of health must be positive

* the goal is of such merit that the entity is a 'need' rather than a want or preference

This interpretation of need as 'capacity to benefit' leaves unanswered the question of who makes the assessment and how much care is required.

The concept of access is similarly problematic. Mooney (1983) suggest that access means opportunities to consume not receipt of treatment. Given this interpretation equality of access requires that individuals with the same need face the same money and time costs IF they are to consume care. But this ignores the effect of income.

Olsen and Rodgers (1991) and Culyer and Wagstaff (1992) resolve this problem by suggesting that equality of access to a good requires that the maximum attainable consumption of that good be the same for all. It is in this context that the potential value of health insurance is most clearly demonstrated.

Given this analysis equal access for equal need is the selected indicator for equity in this study.

4.1.3 Effectiveness in Health Care

Effectiveness is a measure of the extent to which an activity achieves a particular target or objective. In principle there can be three types of effectiveness targets for health care:

* output : changes in health status of patients as a result of health care interventions (This is a measure of change in health status)

* throughput: the number of patients receiving care in specified conditions (this could be a measure of equity)

* input : the health care services provided (This could also be a measure of equity)

Since the first effectiveness target will yield a measure of change in health status and two other measures are reflection of equity there seems to be little value in measuring effectiveness. however, it is judged to be a necessary objective then it should be based upon output targets from specific interventions and health care units.

Output targets

Traditionally, in clinical practice, 'effectiveness' is studied at two levels:

* in carefully controlled clinical settings the performance of a specific intervention in meeting a defined objective is expressed as efficacy

* in general health care delivery setting the performance of a specific intervention in meeting a defined objective is expressed as efficiency

In practice, even in a controlled clinical environment, it is difficult to conclude that a specific intervention was the cause of a measurable change in the health status of a sample of patients. The efficacy of any health care intervention is mediated by the natural responses of the body. The specific effects of the intervention can seldom be isolated.

Carefully controlled clinical environments are unusual in the real world. Even where efficacy is known with some confidence the performance of a given intervention in the real world will be affected by variations in:

* clinical diagnosis

* health states among patients

* clinical decisions on the most appropriate intervention

* the quality of health care

* the behavior of patients when consuming health care

In addition to variability in inputs there is one further practical constraints to measuring (output) effectiveness of health care interventions.

Obviously, there must be many limitations and difficulties to use some exact indicators to measure effectiveness in the field of health care based upon its definition i.e. outcome / target. However since it is used very often as an objective, some measurements in this particular case may be found out. For example, those ratios can be used:

* health improvement (e.g. reduction of IMR, increase of life expectancy) to input (resources used).

* number of patients receiving health care services to input.

* health service delivery to input.

4.1.4 Efficiency of Resource Utilization

Efficiency expresses the relationship between inputs made to health care services (financial, manpower, facilities and/or materials) and the outputs expressed as final outputs (changes in health status) or throughput (e.g. number of patients treated in a facility). Efficiency is tied to the definition of equity and hence the ethical judgements or principles of justice which underpin a health care service.

Given that the resources available to health are always restricted (less than that required to meet normative and/or expressed need) the efficient utilization of resources to maximize the outcomes from the resources available is essential.

However, if the definition of equity adopted is equal access for equal need then these goals may be achieved at the expense of efficiency. For example equal access might require the maximum distance to a given type of health service point for each member of the population should be 30 km. But efficiency in operation of the service points will be affected by the population density in the catchment area. Similarly it may be argued that a life threatening condition for a 70 year old man and a 10 year old boy demand the same input of care. But when the resources available are limited it will be more efficient to treat the child since the return on the input expressed as Days of Healthy Life saved will be much greater.

Efficiencies measured may be of specific interventions (preventive and/or curative), the operation of service points and/or of specific services. However it must be recognized that efficiency is not simply a result of planning physical location of service points and inputs to those points. Efficiency in operation will also depend upon consumer behavior (demand), supplier behavior, and management. These three factors can be significantly affected by how health care is financed both with respect to how payments are made by the consumer and how payments are made to the supplier.

Since there are so many levels at which efficiency could be measured, for the sake of this study, preventive and curative care through health centers, will be considered as an indicator.

4.1.5 Risk-sharing or Solidarity

In principle health insurance provides the means by which the costs incurred by an insured person, in the consumption of health care due to uncertain events, are shared among many persons. In practice constraints may be imposed on the number of people who benefit from insurance (who may subscribe, who is covered in terms of family) and the nature and extent of consumption. These constraints may be imposed by the insurer, the consumer and/or the supplier can affect the financial viability of the scheme, that is income > expenditure on health care consumption, administration and management.

1. Insurer

The insurer (government, private non profit or private for profit) may be obliged to:

* Limit the persons eligible to subscribe
* Limit the persons 'covered' by a premium payment
* Limit the range of services covered by the scheme
* Limit the number of treatment incidence
* Limit the total cost incurred in a particular period
* Impose part payment on each consumption episode
* Impose a basic charge for each consumption episode
* Increase the premium

2. Consumer

Actions by the consumer which affect risk sharing and the viability of the scheme are:

* The proportion of the eligible population who exercise any right to join or 'opt out' of health insurance (there may be one or more insurers depending upon government policy). Individuals will weigh the risks and costs of alternative actions; costs of regular payment of premiums vs cost of potential health care consumption.

* The life style and exposure behaviors of consumers which will affect their health status and therefore demands on health care. Mongolia has stated that health care costs will not be met where the controllable behavior of individuals leads to ill health.

* The behavior of individuals in the consumption of health care. If preventive care is not consumed the costs of subsequent curative care will be higher and others may be affected.

3. Supplier

The behavior of the supplier (health service unit or health care professional) depend in large measure on the type of market in which the insurance system and the suppliers operate.

Actions by the health care professional which can constrain risk sharing (by raising costs) are:

* focus on treatment without concern for efficiency

* over treatment (possible due to asymmetry of information)

* fee inflation (influence by demand supply relationship, the high utility of health when one is not well, and the system for reimbursement from insurance)

Assuming that staff in a health service unit receive no direct or indirect financial benefit from the operations of the unit (ie they are salaried employees) the concerns of the units will be providing the services required with the funds available. If the management has freedom of action then the range and quality of care provided may be improved by reinvestment of any profits derived from the sale of services.

4.1.6 Quality of health care

Quality of health care is both an attractive and necessary objective for the consumer and insurer but extremely difficult to define and measure. In principle it would seem that quality could be simply defined as health care which produces the necessary improvement in health status. However 'necessary improvement' in health status is mediated by many factors such as the patients condition and behavior, the health professional's competence, the facilities and the funds available for treatment. It may be more appropriate to use the quality of process, the intention to produce a necessary output as the basis

for assessing quality of health care.

Within the constraints of the patients condition and behavior, the health professional's competence and the facilities and funds available for treatment the components of any health care process are;

* Diagnosis of need
  - best diagnosis of condition
  - best diagnosis of cause(s)
  - best assessment of the most suitable treatment
* Ensuring access to care
* Best service in providing care

Since output is not necessarily a measure of the quality of the care process and the fact that many processes contribute to quality of care it is very difficult to select one indicator.
From the supply side it would need a group of professionals to assess whether a particular group of patients were receiving quality care. From the consumer side it may be argued that analysis is some what simpler. If patients believe they are receiving quality care then they try to consume services from the same service point and person. Patient response might therefore be an indicator of quality of care even though information asymmetry and the patients dependence on the supplier make this a very questionable criteria from the professional point of view.

4.2 Constraints

A health insurance scheme may encounter constraints in many areas. The nature and magnitude of those constraints depends, on the market which exists with respect to health care which is itself determined in large part by the political system and values of the society.

4.2.1 The Health Care Services Market in Guangxi

Every market has a supply-side and a demand-side. As a specific good, the health market has distinct features in addition to those which occur with consumer goods. A brief analysis of health market of rural Guangxi is as follow.

* Supply-side.

As the major (almost only) provider of health care services, the State owns and runs all health care institutes (including hospitals, health centers, anti-epidemic institutions, and some

specific institutions) and employs the staff. Funds for the health care units are almost all from governments but generally speaking, insufficient for some units to maintain health service delivery.

The costs of operating health services in rural areas are basically covered by governmental fiscal budget. Pricing of health services is set at a nearly uniform standard.

In effect the state has a monopoly in the provision of health care but its objectives have nothing to do with profit. It might be assumed that the objectives are the efficient provision of health care to meet normative needs of the population. But given the charges imposed for consuming services and the absence of any supporting mechanism to improve efficiency and meet the costs on consumption of care a very different picture emerges.

In this case, the state economic and political systems and health policies, play the dominant role in deciding what will be produced (nature, quality and quantity), at what price and to whom it is distributed.

* Demand-side.

Given the supply conditions outlined above, the consumers decides on grounds of needs, cost, access and utility what can be consumed subject to available information and the agency relationship with the health care professionals.

The population in Guangxi has a high normative need for health care because of poor health status and/or poor health facilities. On the other hand, because the province is under developed, the population has a relatively low ability to pay and therefore consume health care services. Despite these conditions, about 90 % of rural residents in Guangxi must pay directly for the medical care consumed. That is to say there is a significant need for health care but demand is constrained by the willingness and ability to consume.

In addition, because of social and cultural backgrounds, people's awareness about health and health care has become a factor affecting health service consumption.

Else, geographical profiles in Guangxi are another a factor affecting health care consumption.

Within this market the following major constraints, affecting the implementation of a health insurance scheme and achievement of the objectives, emerge:

* Demand - side context

1. ability to pay
2. peoples' commitment to health and health insurance

* Supply - side context

3. resources available
4. price of health services
5. accessibility and availability of health services

* Managerial contexts

6. operational efficiency
7. management capacity

* Political contexts

8. government's attitude to health insurance
9. political and economic system of the state
10. health system and policy of the state
11. state legislation

4.2.2 Demand-side Context

Constraints on the demand - side are economic paying ability, awareness about health and willingness to join insurance.

1. Ability to pay

Demand for health care (willingness and ability to consume) is a function of need, cost (including price of care), and income level. Health care consumption is relatively inelastic, at a given income level, compared to many other goods. However at very low income levels, where expenditure on health care may prevent consumption of other essential commodities, such as food, health care consumption ceases to be inelastic.

The demand for health care insurance will also be a function of a set of significant variables; costs of health care, current state of health, ability to pay (premium and health care), expected utility on future consumption of health care, opportunity cost of premium and the benefits provided through the scheme.

Indicators of ' ability to pay' a health insurance premium could be

- income per capita

- individual expenditure on healthy care

However such indicators take no account of income distribution or the relation of premium to income. More appropriate indicator might be the ratio of premium to minimum wage rate, or the ratio of premium to average family income in each district.

2. Peoples' commitment to health and health insurance

Many of the variables in the demand function for health care insurance are strongly influenced by social, cultural and educational factors. As a constraint the criteria are a low level of education in a population, high illiteracy rate, some bad health habits such as alcohol and cigarette smoking and a general disregard for health.

4.2.3 Supply-side Context

The major constraints on the supply - side, outside those imposed by the political context, are the resources available, the price charged for services and access to and availability of services.

3. Resource available

Resources available within the health care sector (manpower, materials, equipment and fixed assets) are a potential constraint to the supply and therefore consumption of health care, assuming there is a large demand. In consequence, where there is freedom of choice, to the 'take up' of health care insurance consumers may be disinclined to consume health care insurance. A spiral of decreasing confidence can result with a necessary reduction in cover provided, or increase in premium, as the administration consumes a larger proportion of the gross premiums. Further withdrawals from the scheme may result in financial failure. As a result the planned objectives will not be achieved.

Where income from the supply of services exceeds cost, and profits can be retained and reinvested at the point of service, then an insurance scheme could contribute directly to improvement in resources beyond that provided through the government.

4. Price of health services

The price charged for health care affects the quantity of health care consumed and the economic viability of the production unit. Given that two of the objectives of introducing health insurance are to improve health, through the consumption of more health care services and to improve the quality of care, then the price of health care can have a significant effect on the achievement of these objectives.

According to the law of demand, the amount of a good that consumers are willing and able to purchase during some period of time varies inversely with the price of that good.
However the demand for health care, funded through insurance, can deviate from this principle in two important respects. Firstly, the consumer does not pay directly for the services consumed. Secondly the consumer will seek to maximize the return on his insurance premium by consuming more services than he/she would do if paying at the point of consumption. Thirdly, due to information asymmetry, the agency relationship and limited concern for costs on the part of many suppliers, over consumption of care may be stimulated. In effect an insurance scheme will make health care consumption more inelastic to price.

However, if the price is set at a level which will provide normal profit for the supplier then the profit can be reinvested to improve and expand the service to the benefit of the consumer.

5. Accessibility and availability of health services

Access to care, may be expressed as the money and time costs incurred if health services are used (Mooney 1983). These factors are part of the analysis made by the consumer before deciding whether to seek and consume care. Availability of care is a more problematic concept which can not be readily assessed before health care is sought since the consumer may not be in a position, due to information asymmetry, to know what care is required.

Access and availability are determinants of health care consumption with or without health care insurance and, as such, may be viewed as constraints to the achievement of health improvement and equity. The specific effect of access on the uptake of health insurance and the consumption of health care under insurance cover has not been studied. Two arguments could be advanced.

Where the consumer incurs a high cost due to restricted access, the cost of the health care consumed may only be a fraction of total cost. As a result consumers may be less inclined to invest in health insurance since they still incur a considerable financial burden. Conversely, people with health care insurance may be more willing and determined to consume what they have paid for with less regard to travel and time costs.

4.2.4 Managerial context

As mentioned in Chapter 1, a variety of causes lead to disintegration of the Rural Cooperative Health System. One of the major causes was managerial weaknesses in operation. Two of the major constraints to implementing a health insurance scheme and achieving any of the stated objectives must therefore be operational efficiency and management capacity.

6. Operational efficiency

Aviva (1987) noted that one feasibility criteria to be considered when introducing a health insurance scheme is the administrative capacity of the organization to implement and operate the scheme with increasing efficiency. Since efficiency is the ratio of outcomes to inputs this means two things; firstly that an increasing proportion of contributions is channelled to paying for health care, secondly that there should be an increased benefit from each unit of expenditure.

The former requires efficiency in administration of premium collection and paying for services consumed. The latter requires strong negotiation over the price of care and monitoring of the services provided.

7. Management capacity

Important issues under the control of management in the operation of insurance schemes are organizational structure, coordination between insurer and providers of health services, management of insurance funds, scheme planning and the information system.

While operational efficiency describes the outcomes required, the means to that achievement are dependent upon management capacity and capabilities. This is a likely constraint in two respects. Firstly lack of experience in the operation of insurance organizations. Secondly the probable absence, subject to government decisions, of the incentives which would stimulate good management to improve efficiency.

4.2.5 Political context

As outlined in section 4.2.1, the market in health care and the potential system of health insurance is determined by the political context. The three major constraints to the efficient implementation of an insurance scheme and achievement of the stated objectives are the government's attitude to health insurance, the general political and economic system of the state, and specific health policies.

8. Government's attitude to health insurance

Prior to recent liberalization it was absolutely essential that governments approved, initiated and remained a dominant force in managing new activities. Subject to clear directives to the contrary, it seems likely that health insurance can not be carried out without political support and financial supports from local governments as well as central governments. As a socialist country, in China government's attitude is a factor which can not be ignored in planning any insurance scheme.

9. Political and economic system of the State

The nature and implementation of any health insurance scheme can not be isolated from the political and economic values and environment of the state. This is particularly important in the highly centralized political and planned economy in P.R. China. The influences which result, taxation system, fiscal policies, political commitments to people's health may have a regressive or promotive effect on the viability of health insurance and the outcomes from such schemes.

10. Health policies

The political and economic system of the state may determine what, if any type of health insurance may be implemented. At the same time, the state health policies determine what health care will be produced (nature, quality and quantity), at what price and to whom it is distributed. As such, health policies can have a supportive or constraining effect on the outcomes from health insurance depending

upon the nature of the benefits to be provided by any scheme.

11. State legislation

Legislation is the laws and regulations by which the values and policies of the state are implemented and enforced. In the absence of a specific insurance scheme and a thorough examination of relevant legislation, it is not clear to what extent, if any, current laws and regulations will be a constraint to implementing an insurance scheme.

4.2.6 Selected Set of Objectives and Constraints

The five objectives and eight constraints to be considered in the study are presented in Table 4.1

Table 4.1 Selected Objectives and Constraints

Objectives
Improvements in
1. Health
2. Equity
3. Efficiency
4. Effectiveness
5. Risk-sharing or solidarity
6. Health service quality
Constraints
1. Ability to pay
2. People's commitment to health and health insurance
3 Resources available
4. Price of health services
5. Accessibility and availability of health services
6. Operational efficiency
7. Managerial capacity
8. Government/authorities attitude to health insurance
9. Political and economic system of the State
10. Health system and health policies of the State
11. State health legislation