CHAPTER - II

REVIEW OF LITERATURE

2.1 INTRODUCTION

Health Economics is an intellectual middleman between nature and technology on the supply side and the preferences and choices of individual and society on the demand side. The economists have made significant contributions in enhancing the understanding of various issues relating to health and health care. A quantitative approach to the subject was initiated in 1967 by M. Feldstein with the publication of a seminal work on the functioning of National Health Services as the health provider in the U.K. The work was based on modern econometric methods. However not many studies were undertaken prior to 1965 as noted in the comprehensive Bibliography of health economics by Culyer et al., 1977.¹

According to Feldstein (1995)² studies prior to 1965 were concentrated on physician's services and on various health policy issues. In USA, the studies relied on mathematical and econometric tools for model buildings. The rapid growth of research has taken place only after 1965.

The initiative for much of the research work in the field of Health Economics has come from the fast growth in medical care and health expenditure especially in the developed countries and the rising cost of health


care. Economists have analysed hospital production and cost function, technology and quality of health care, financing of health care and the central role of health insurance in health financing.

Culyer\(^3\) identifies several issues which are of importance to Health Economics. The important among them are (1) need to integrate economics with medicine (2) biased allocation of scarce resources to high tech medicines in the less developed countries (3) the quality of health care received is not governed by the system of health care and no system is perfect. The task of health economist is to identify the most efficient and economical pattern of health care provision (4) The volume of health expenditure is ever increasing and is required to improve the effectiveness of health care.

Interestingly a direction in which significant research has been done in recent years in the developed countries especially in USA is on analysing the role played by health insurance as a funding source for meeting medical care costs.

2.2 THIS SECTION OF THE CHAPTER IS DEVOTED TO A REVIEW OF THE LITERATURE ON (1) THEORETICAL BASE AND (2) EMPIRICAL STUDIES AVAILABLE IN THE FIELD OF HEALTH INSURANCE

2.2.1 Theoretical base

Several writers through their valuable contributions have enriched the literature with reference to Health insurance. This literature available may be classified broadly into three categories namely:

A. Utility theories which are associated with Bernoulli, Neumann and Morgenstein, Friedman & Savage, & Markovitz.

B. Decision making theories - Arrow, Layard & Walters and MC Kenna have developed the decision making theories.

C. Market Insurance Theories which are associated with Mark Pauly, Anne Mills, Theodore C.Bergström, Isaac Ehrlich & Gary Becker.

A. Utility Theories

The modern developments in utility theory analyse the behaviour of an individual where he has to choose among risky and uncertain alternatives. This modern theory is also known as Bernoulli Utility theory after Daniel Bernoulli the 18th Century Mathematician who provided a hypothesis for resolving a problem known as 'St. Petersburg Paradox'. This Paradox refers to the problem "why people are unwilling to make bets at better than 50 - 50 odds when their mathematical expectations of winning money in a particular kind of gamble are greater the more money they bet."

In other words rational people try to avoid fair games or fair bets. Bernoulli provided a convincing explanation of the social behaviour of the rational individual in the following manner. A rational individual will take decisions under risky and uncertain situations on the basis of expected utility rather than money value. Further he contended that marginal utility of money

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declines, as the individual has more of it. When he knows that the marginal utility of money to him declines as he has extra money on hand, a rational individual will not play the game. Thus based on the expected utility hypothesis, Bernoulli resolved the St.Petersburg Paradox. Given the diminishing marginal utility of money, if the expected gain from the utility is less than the expected loss from the utility in a game or a bet, a rational individual will not make a bet even with 50-50 odds. Further he would even be unwilling to bet or gamble even at favourable odds if the marginal utility of money declines very fast.

Making use of Bernoulli’s idea, Neumann & Morgenstern gave the method of cardinally measuring expected utility from wins & prizes. They adopted an entirely new approach by assigning numerical values to the utilities obtained from extra money by the individuals behaving in risky and uncertain situations such as in the case of gambling and insurance. They constructed a cardinal utility index called the Neumann Morgenstern index of the marginal utility of money which a person gets from extra amount of money income. The choices by an individual under risky and uncertain situations depend on the expected numerical utilities.

Neumann Morgenstern model measures the utility of money with respect to predicting an individual’s choice under risky and uncertain situations. In this context, they have classified people into three groups based on their attitudes towards risk namely risk averters, risk neutral and risk

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lovers. A fair game or gamble is one in which the expected value of income from a gamble is equal to the same amount of income with certainty. The person who refuses a fair gamble is said to be risk averter. The person who prefers a gamble is a risk lover, and who is indifferent is a risk neutral person.

Risk aversion is the most common attitude towards risk. It is because of the attitude of risk aversion that many people insure against various kinds of risk such as burning down of a house, sudden illness of a severe nature, car accidents and also prefer jobs or occupations with stable income to jobs and occupations with uncertain income.

The attitude of risk aversion can be explained with Neumann Morgenstern method of measuring expected utility. Marginal utility of income of a risk averter diminishes as his income increases.

Fig.2.1 The Neumann Morgenstern utility curve of a Risk Averter

Source: AHUJA - Individual behaviour under uncertainty : choices involving risk, p.288
In fig (2.1) Neumann Morgenstern utility function curve \( U(I) \) has a positive slope throughout indicating that the individual prefers more income to less, and the curve is concave, which shows the marginal utility of income of a person diminishes as his income increases. Therefore the utility curve represents the case of a risk averter or the attitude of risk aversion. With \( M_1 \) income the person's utility is \( T_1 \) which rises to \( T_2 \) when the income increases to \( M_2 \). As his income further increases to \( M_3 \) his utility rises to \( T_3 \).

Suppose the person's current income is \( M_2 \) and he is offered a fair gamble in which he has a 50 - 50 chance of winning or losing. Thus, the probability of his winning is \( \frac{1}{2} \) or 0.5. If he wins the game, his income will rise to \( M_3 \) and if he loses the gamble his income will fall to \( M_1 \). The expected money value of his income is

\[
E(U) = \frac{1}{2} x M_3 + \frac{1}{2} x M_1
\]

If he rejects the gamble he will have the present income \( M_2 \) with certainty. Though the expected value of his uncertain income prospect is equal to his income with certainty, a risk averter will not accept the gamble. This is because he acts on the basis of expected utility of his income in the uncertain situation (i.e. \( M_3 \) if he wins and \( M_1 \) if he loses).

\[
E(U) = \frac{1}{2} x T_3 + \frac{1}{2} x T_1
\]

In the fig (2.1) the expected utility can be found by joining point A (corresponding to \( M_1 \)) and point B (corresponding to \( M_3 \)) by a straight line segment AB and then corresponding to the expected value of the gamble \( M_2 \) and the expected value of the utility is \( M_2 D(T) \) which is less than \( M_2 C \) or \( T_2 \).
which is the utility of income $M_2$ with certainty. Therefore the person will refuse to accept the gamble, and such a person is called risk averter as he prefers an income with certainty (risk is zero).

Based on Neumann Morgenstern cardinal utility analysis Milton Friedman and Savage⁷ have put forward a hypothesis that a single person can be both a risk lover (gambling), as well as risk averter (insurance). According to Friedman - Savage hypothesis, "for most people, marginal utility of money income diminishes up to a certain level of money income, it increases from that middle level to a certain higher level of money income and thereafter at very high levels of income it again diminishes".⁸

Friedman - Savage consider that the Neumann Morgenstern utility curve of money indicates the behaviour or attitude of people towards risk in different socio economic groups; some have great preference for gambling and others are unwilling to take any risk at all. The middle income group with increasing marginal utility of money are eager to take risks to improve their economic conditions. The expectation of more money means much to this group of persons; if their efforts succeed, they will lift themselves up into the next upper socio economic class. These persons want not just more consumer goods; they have ambition to look up in the social scale. They want to rise, to


⁸ "The utility Analysis of choices Involving Risk" - Journal of Political Economy Vol. LV1 1948 reported in Stigler and Boulding (Ed.) Readings in Price Theory AEA, Ch.3.
change their life styles. No wonder that marginal utility of money increases for them.

According to Markowitz, marginal utility of money income relates only to the changes in the level of money income rather than to the absolute level of income. He has criticised Friedman - Savage hypothesis for its assertion that 'very poor' and 'very rich' will be unwilling to take risk. He takes the derivations from the present income of the individual as determining the attitude of the people towards risk.

Fig.2.2 The Markowitz Hypothesis

Source: AHUJA – Individual behaviour under uncertainty choices involving risk, p.295

According to Markovitz's hypothesis the marginal utility curve has three inflexion points. A, B & C and four segments BC, CH, BA & AC as

against two inflexion points and three segments in marginal utility curve $Y_o$ in fig 2.2 is the present level of income. As the person's income increases from $Y_o$ to $Y_2$ marginal utility of money increases along BC. However, increases in income beyond $Y_2$ yield diminishing marginal utility of money. On the other hand, small decreases in money income from $Y_o$ to $Y_1$ yield increasing marginal utility of money but large decreases in income i.e., to the left of $Y_1$, bring about diminishing marginal utility of money.

According to Markovitz hypothesis, small increases in money income yield rising marginal utility of money, but large increases in income bring about diminishing marginal utility of money. The individual will be willing to accept small fair bets but will be reluctant to take risks involving large amounts of money.

The following theories namely decision making theories and market insurance theories discuss the socio-economic factors that play a significant role in the system of health insurance.

B. Decision Making Theories

Arrow K.J.

Arrow\textsuperscript{10} points out that the special economic problem of medical care can be explained as adaptation to the existence of uncertainty in the incidence of disease and in the efficacy of treatment. The concept of marketability is somewhat broader than the traditional divergence between private and social

costs of benefits. The latter concept refers to cases in which the organization of the market does not require an individual to pay for costs that he imposes on others as the result of his actions or does not permit him to receive compensation for benefits he confers.

Non-marketability may be due to intrinsic technological characteristics of the product which prevent a suitable price from being enforced, as in the case of communicable diseases. The instance of non-marketability is that of risk bearing. The relevance of risk bearing to medical care seems obvious: illness is to a considerable extent an un-predictable phenomenon. The ability to shift the risks of illness to others is worth a price, which many are willing to pay. Because of pooling and of superior willingness and ability, others are willing to bear the risks.

There are two kinds of risks involved in medical care. The risk of becoming ill, and the risk of total or incomplete or delayed recovery. The loss due to illness is only partially the cost of medical care. It also consists of discomfort and loss of productive time during illness and in more serious cases, death or prolonged depreciation of normal function. From the point of view of the welfare economics of uncertainty, both losses are risks against which individuals would like to insure. The non-existence of suitable insurance policies for either risk implies a loss of welfare.

As a basis for the analysis, it is assumed that each individual acts so as to maximize, the expected value of a utility function. If utility is attached to income, then the costs of medical care act as a random deduction from this income, and it is the expected value of the utility of income after medical
costs that is relevant. (Income after medical costs is the ability to spend money on other objects which give satisfaction. Illness is not a source of satisfaction in itself: to the extent that it is a source of dissatisfaction, the illness should enter into the utility function as a separate variable). The expected utility hypothesis due originally to Daniel Bernoulli is plausible and is the most analytically manageable of all hypotheses, that have been proposed to explain behaviour under uncertainty.

Individuals are normally risk averters. In utility terms, they have a diminishing marginal utility of income. It follows from the assumption of risk aversion that if an individual is given a choice between a probability distribution of income with a given mean 'M', and the certainty of the income 'M_1' he would prefer the latter.

A large insurance company stands ready to offer insurance against medical costs on an actuarially fair basis as if the costs of medical care are a random variable with mean 'M', the company will charge a premium "M" and agree to indemnify the individual for all medical costs. The individual will certainly prefer to take out a policy and will have a welfare gain thereby. In the absence of insurance, a risk averter may well prefer not to take a chance on further impoverishment by buying medical care. A suitable insurance policy would, however, mean that he pays nothing, if he does not benefit, since the expected value is greater than the cost, there would be a net social gain.

In medical policies, the cost of medical care is not completely determined by the illness suffered by the individual but depends on the choice
of a doctor and his willingness to use medical services. It is frequently observed that widespread medical insurance increases the demand for medical care. Co-insurance provision have been introduced into many major medical polices to meet the contingencies as well as the risk aversion of the insurance companies.

LAYARD & WALTERS 11

Layard and Walters concentrate on two insurance problems (1)moral hazard and (2)adverse selection. The problem of moral hazard arises whenever the liability of the insurance company is affected by actions of the insured party about which the insurance company has incomplete information. To overcome moral hazard, insurance companies often practice co-insurance.

The adverse selection arises if individuals know their own risk, but insurance companies do not. To explain the adverse selection they identify two types of risk groups (1) high risk groups (H) (2) Low risk groups (L). In an adverse situation, both groups risk a disaster costing 'd' but the probabilities are \( \Pi_h \& \Pi_l \) where \( \Pi_h > \Pi_l \).

The model established by Layers and Walters is that the premium for a full coverage insurance is

\[
P = d(\Pi_h (H/H+L) + \Pi_l (L/H+L))
\]

But the expected loss of the low risks is

\[
d \Pi_l < d(\Pi_h (H/H+L) + \Pi_l (L/H+L))
\]

Which means that the low risk people will not be covered as they will not be willing to take the insurance policy. The high-risk people will prevail and the premium will rise.

Insurance is a business where the pooling of risks takes place, and only if both the groups participate, the insurance company can profit. The whole frame work of the insurance companies survive because of uncertainty and unpredictability.

C.J.Mc Kenna

C. J. Mc. KENNA\(^{12}\) looks at insurance as a response by individuals to uncertainty or to risky situations. He develops two models to elaborate his ideas (i) The first model refers to the demand for full cover where the premium would be sufficient to induce persons to take the insurance policy. (ii) The second model refers to insurance deductible where the individuals determine not the price at which insurance contracts are bought, but the extent of the cover to be taken.

The demand for full cover: This refers to a situation where an individual with an initial wealth of ‘W’ facing the risk of a financial loss ‘x’ (\(<W\)) with probability ‘p’. If no insurance is taken, the individual’s expected utility is.

\[
U_o = pu (W-x) + (1-p) u (W)
\]

--- (1)

Suppose, he pays a premium 'h' the individual may insure fully against the loss, rather than suffer a loss 'x' with probability 'P' and the immediate receipt of 'x' from the insurance policy expected utility with all cover policy is

\[ U_1 = pu(W-h) + (1-p)u(W-h) = u(W-h) \]  \hspace{1cm} (2)

For an expected utility maximiser choosing to take insurance the expected utility \( U_1 \) should be certainly no less than \( U_0 \). When the premium rises the utility for taking insurance falls.

\[
\frac{dU_1}{dh} = -u'(W-h) < 0 \]  \hspace{1cm} (3)

where \( u'(\cdot) \) the marginal utility of wealth is positive \( h^* \) is the maximum premium

\[ u(W-h^*) = pu(W-x) + (1-p)u(W) \]  \hspace{1cm} (4)

Eq.(4) explains that the utility from full insurance or alternatively the utility from removing income uncertainty is a weighted average of the utility from full wealth and the utility from the net wealth after a financial loss.

\[ u(W-x)< u(W-h^*) <u(W) \]  \hspace{1cm} (5)

\[ h^* < x \]

In the case of the policy holder being risk averter \( u''(\cdot) < 0 \)

\[
\frac{dh^*}{dp} = \frac{u(W-x) - u(W)}{-u'(W-h^*)} \rightarrow 0 \]  \hspace{1cm} (6)
The denominator in eq. (6) is negative by eq.(3) and the numerator is negative by eq.(5).

\[
\frac{dh^*}{dx} = \frac{pu'(W - x)}{u'(W-h^*)} \rightarrow 0
\]

--- (7)

The maximum premium that an expected utility maximiser would pay for full insurance cover increases with the probability of loss and with the size of the loss.

**The insurance deductible:** It refers to a situation where the individual is presented with a choice between no insurance & full insurance against a financial loss and chooses the maximum price of the insurance contract. The premium 'h' is determined by the insuring firm and the individual's choice is to determine the extent of the insurance cover. The individual determines the loss 'x' which may be reclaimed from the insurer, an amount 'y'. The difference between the loss 'x' and the claim 'y' is known as the deductible 'D'.

\[D = x - y\]

--- (1)

The risk averse individual chooses D>0 & therefore does not opt for full cover.

To demonstrate this interesting result the first model (the demand for full cover) is extended to include the premium 'h' to be determined by the insurer. The insurer makes a policy available at its expected cost, and in addition to the expected payout of a policy with cover y, py, there is an
administrative cost of \( k \) per payout. The total expected cost to the insurer of providing a cover \( y \) is

\[
e = py + pky
\]  
--- (2)

Assuming \( h = e \) and making use of eq. (1)

\[
h = p(1+k)(x-D)
\]  
--- (3)

Expected utility is

\[
U_D = pu(W-x+y-h) + (1-p)u(W-h)
\]  
--- (4)

or using eq.(1)

\[
U_D = pu(W-D-h) + (1-p)u(W-h)
\]  
--- (5)

Choosing \( D \) in eq.(5) bearing in mind the dependence of \( h \) on \( D \) in eq.(3), 1st order condition

\[
\frac{u'(W-D^* - h)}{u'(W-h)} = \frac{(1-p)(1+k)}{1-p(1+k)}
\]  
--- (6)

right hand side of eq.(6) is greater than unity and hence

\[
u'(W-D^* - h) > u'(W-h)
\]  
--- (7)

by concavity of \( u(.) \) for the risk averter implies

\[
W-D^* - h < W-h
\]

\( D^* > 0 \)

It is optimal for the risk averter to choose a positive deductible and so the individual does not fully insure, but insures fully above a deductible. Thus the individual pays the premium \( h = p(1+k)(x-D^*) \) and the deductible written
into the insurance contract. The insured person only makes a claim on the policy if the loss exceeds $D^*$ and then the claim is only the difference between the loss and the deductible. This result depends on the relationship between the price of insurance (the premium) and the coverage given by equation (3) \[ h = p(1 + k) (x - D) \].

C. Market Insurance Theories

Mark V. Pauly

Mark V. Pauly\textsuperscript{13} has presented a simple model of market insurance where there are two possible states of the world $S_1$ and $S_2$. The individual consumer does not suffer any loss in $S_1$, whereas in $S_2$, he suffers a loss equal to $L_t$ dollars. The probability of loss and no loss can be studied by the level of activity of the individual. The activities are represented by $Z_t$. In this model, it has been assumed that all individuals have identical endowments and utility functions. Given the level of $Z_t$, the individuals are subject to identically independent distributed risks.

It is assumed that insurance depends on a preventive function and is related to the level of activity. Thus, if individual $i$ buys $X_t$ dollars worth of insurance and if $P_t$ is the total premium for that insurance and $S_{0i}$ is his initial wealth, his final wealth will be

(i). \[ W^1_t = S^o_t - Z_t - P_t \text{ if } S_t \text{ occurs} \]

and

(ii). \[ W^2_t = S^o_t - Z_t - P_t \text{ } L_t + X_t \text{ if } S_2 \text{ occurs} \]

By introducing utility maximising behaviour of a representative individual under conditions of uncertainty, the problem of how much insurance is to be bought is solved in two stages in this model.

First, the consumer determines the utility maximising level of \( Z_t \) for every value \( X_t \). He chooses the utility maximising value of \( X_t \) given its associated value of \( P \) and of utility maximizing \( Z_t \). The expected utility function is represented as

\[
\text{Eu} = (1 - \Pi_t (Z_t)) u(S^o_t - Z_t - P_t) + \Pi_t (Z_t) \mu(S^o_t - Z_t - P_t + X_t - L)
\]

In general, as the level of preventive activity gets reduced as more insurance is bought, it also reduces the individual wealth as more premium is paid.

The amount of insurance the individual will buy, depends on \( \partial P/\partial X_t \). Under conditions of observable \( Z_t \), the premium would tend to vary with \( Z_t \) and hence with \( \Pi_t \). But since \( Z_t \) is not observable, an optimal can only be second best optimum. This would involve a trade off between risks and incentives.

The above optimality cannot prevail when competition between insurance firms exists and when free entry and exist of insurance firms exist.
Each unit \( X \), of insurance is sold at a price \( P \), which is, as far as the purchaser is concerned is unaffected by the amount of insurance he buys.

In a model, where the insurer knows how much insurance he has sold to individual but does not know how much the individuals has bought from the other sources. A seller always tries to adjust by increasing the price by the quantity purchased.

In the optimal case, the actual curve of supply prices per unit of insurance is an upward sloping curve and the individual adjusts to a curve marginal to it. But in the competitive case, each individual believes to be faced with a horizontal curve at \( P \), while the aggregate SS curve is upwards sloping, reflecting the increase of \( \Pi \) and \( P \) with increased insurance.

For rational decisions Pauly shows that the individuals premium should vary as much as possible with his expected loss. But in competitive equilibrium, as the price is uniform for all quantities of insurance bought does not vary at all, with individuals expected loss. The price is invariant to the quantity insured.

**Moral Hazard and Public Provision:** According to Pauly the case of public provisions of medical insurance arises because of the contribution that even if people differed in potential loss or risk aversion, uniform provision by an authority still makes the insurance purchasers better off with information on the magnitude of \( X_i \) firms would calculate the premium for incremental coverage that reflect the probability of \( \Pi(X_i) \) associated with that level of \( X_i \). But the problem is that the firms do not have sufficient information on the total amount of insurance bought by the progressive insurer.
Adverse Selection: While moral hazard arises from asymmetry of information, adverse selection occurs when the insured has no control over the probability of future states. There are some aspects of insured conditions which cannot be proved by the objective evidence that the insurer will accept. So long as some people lie, the insurer will have to assume that any insured person will lie.

Anne Mills

Anne Mills discusses the economic implications of health insurance (either in private or public form) in developing countries. Health insurance carries with it certain implications for the efficiency and equity of the health care system. An analysis of the implications helps to throw light on the likely behaviour of different institutional forms of health insurance.

This analysis is based on the premise that health care possesses certain characteristics that distinguish it from (1) the goods and services normally produced and purchased in private markets and (2) the other forms of insurance. It is a foregone conclusion that in the case of health, the individual is essentially uncertain about the type and quality of health care that he needs. Secondly, he, as a consumer has no role to play, unlike the provider (medical doctor) in determining the access to and consumption of health care that he needs. Thirdly, the principle of equity does not operate effectively with reference to who should receive care and who should pay for it.

Anne Mills and Lee L. - "Economic aspects of Health Insurance" - The Economics of Health in Developing Countries, Oxford University Press 1983.
Uncertainty: In the event of illness an individual obviously feels the need for health care services. In this context it must be mentioned that economists prefer to refer to demand which is defined as the quantity of a commodity consumers wish and are able to buy at a given price. Need (or desire) gets equated to demand only if it is backed by ability and willingness to pay.

The economic theory of demand mentions that under ceterus paribus conditions, demand is inversely related to price. Given financial resources at his command, a rational consumer will expand his consumption to the point where marginal value of the product equals its marginal cost, where the total benefit will be the maximum. Thus, price is a major rationing mechanism upon demand. The above simplified exposition of demand theory can be built to explore the likely behaviour of private markets for health care and to explore the impact of insurance on demand.

Fig. 2.3 Presents Anne Mills – An individual’s demand for health

In the figure No.2.3 the individuals demand for health care at different prices is shown by the curve DD' and the supply of health care by SS'.

If the consumer faces a price for health care of P, and this is the only cost involved in obtaining care, he would consume upto the point where his marginal value equals the price, that is Q units. If however he faces no price, for instance because he is insured, he will increase consumption to point D'. Yet, at this point, his valuation of the extra unit of health care is less than the cost of producing them. In other words, his consumption is inefficiently high in his own value terms (though others may still pays a higher value of his consumption).

The likelihood of over consumption (when the consumer pays no direct price) depends upon the elasticity of demand. If the demand is perfectly inelastic, the lowering of the price will have no impact on demand. If the demand curve slopes downwards i.e., elastic it will increase the quantities demanded. It is clear that price elasticity of demand will vary between outpatient and inpatient services and will be affected by the severity of the patients condition.

The issue of over consumption of health care by an insured person is referred to as moral hazard i.e., the tendency of the insured individuals to increase likelihood or size of the risk against which they have insured. From an individual’s point of view such a behaviour may be highly rational. He may value insurance precisely because he does not want the excess money burden during illness. However, from the insurer’s point of view, such behaviour may
lead to a large quantity of care being consumed, and thus to higher costs which require higher premiums.

**Provider Influence**: In the health sector, doctors as suppliers of medical care, do have considerable direct influence on consumption (demand). Besides, the consumer (patient) with their insufficient knowledge cannot decide upon the type and quantity of health care they require. The doctor's decision reflect not only his patient's preferences but also his own and particularly his preference for a reasonable income. In other words, his income forms an important variable in what is termed as "Doctors utility function" in a fee-for-service system. In a private market countervailing power by consumer permits overcharging and high cost services and / or the supply of an inefficiently large quantity of health care (i.e., over consumption). The introduction of insurance coverage will aggravate the situation. This is all the more so if the insurer belongs to the third party. That is, where the provider is separate from the insurer, insurance cover liberates the provider from having to tailor his treatment to the resources of the patient. The most realistic model of demand would be where the consumer decides whether or not to enter the health system, and the doctor determines the treatment.

**Equity considerations**: In many societies consumers make choices about goods and services they consume on the basis of a given distribution of income and wealth. However, this rule cannot be allowed to be followed in the case of health care when ill. The state has to decide whether the health care provided is adequate. If the individuals are left to purchase health care with the income available with them, then some would be unable to afford an
appropriate amount. Moreover, the purchasing power of the poor communities may be inadequate to attract health practitioner and facilities. The problem comes in determining how to move towards a different distribution of health care consumption (public sector) than that which results from free market forces. Further, once income transfers are made to subsidize consumption, attention has to be given not only to who is consuming health care but also to who is paying.

In the circumstances described above, private insurance cannot be a solution, because the premiums are made to relate to the actuarial risk of the individual. If it is not related then, the private insurance agencies would be subsidizing high risk individuals by "over charging" low risks. In such cases, the low risk people will move away to other agencies offering lower premiums. Thus, private insurance does not cover bad risks such as those with chronic disease, the elderly and the low income groups who usually have worse health than the better off. In most developed countries social insurance (not private) is provided to such groups to help them out. It can be inferred that private insurance system does not bring in equity principle.

Even the social insurance cannot bring in equity principle, because even if it covers both high and low wage earners, utilization patterns will not necessarily be proportional to health need. Paying a price for health care can be viewed as a rationing device. When care is free at the point of consumption, rationing by waiting and by providers of care will replace rationing by price. The equity of the system will depend firstly on how
different income groups value the cost of waiting & secondly it depends on whom the providers select or attract for treatment.

**T.C. Bergstrom**

Theodore C Bergstrom constructs a simplified model of private and public social decision making related to health care and health insurance. This model is designed to bring out the logical relationships among health insurance plans, life insurance and annuities, consumption, medical and nursing care. The model is analogous to models of Arrow (1976), Nordquist and Wu (1976).

**Model**: It assumes a large number of consumers, with identical tastes. There are two commodities, bread and medical care. In a situation of free medical check up and a given probability distribution of 'n' possible diagnoses d₁, d₂, ..., dₙ, only two outcomes are perceived, either the patient can be restored to perfect normal health or can die.

The consumption strategy available for an individual is given by a vector (M.B), where M (M₁, M₂, ..., Mₙ) specifies the amount Mᵢ of medical care that the consumer will receive if his diagnosis is 'i' and B = (b₁₀, ..., bₙ₀, b₁¹, ..., bₙ¹) is the amount of bread that an individual will receive under different diagnosis and also under conditions of life and death.

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The Von Newmann-Morgenstern expected utility function, with the medical strategy M and consumption strategy B, will take the form

\[ V(M, B) = \sum_{x=0,1} \sum_{i=1}^{n} (d_i^x : M_i) \]

\[ U(d_i^x, M_i, b_i^x) \]

If it is assumed that medical care does not affect utility and after medical treatment, one is restored to perfect health or dies, utility function takes the special form

\[ u(d_i, m, b_i^x) = u_i(b_i^x) \]

Where \( U_i(b) \) can be viewed as the utility of the prospect of surviving and consuming 'b' units of bread and \( u_0(b) \) is the utility of the prospect of dying and leaving 'b' units to be consumed by the heirs.

The availability of health care for an individual is determined by a centrally imposed health plan. Let \( (M, B) \) be a uniform national plan that offers each consumer the consumption plan. If the number of consumers is \( K \), then the total number of persons with diagnosis 'i' will be \( K_i \). The average per capita consumption of medical care in the economy and can be decided as

\[ \bar{M}(m) = \sum_{i=1}^{n} \Pi_i m_i \]
Since consumers are assumed to have identical preferences a national plan that maximises the utility of a representative consumer can be formulated on the set of feasible national plan.

The same model can be extended to a competitive, decentralized economy, with appropriate insurance market. A health insurance plan consists of a payment between the insurance company and the consumer, the size of which depends only on the consumer's diagnosed condition. If \( M^* = (m_1^*, \ldots, m_n^*) \) is an optimal medical care plan, then \( M^* \) is sustained by an insurance plan in which the net payment between the insurance company and the consumer in the event of diagnosis \( 'i' \) is \( m_i^* - \bar{m}^* \) where \( \bar{m}^* = \sum_{i=1}^{n} \Pi_i \) \( m_i^* \) is the expected cost of medical care in an optimal medical strategy.

The model takes into account only a single time period. If we provide for a passage of time the list of possible diagnosis becomes extremely long and complicated since each time path of medical and diagnostic history would have to be treated distinctly. An insurance plan that determines what happens in each case would have to be extremely elaborate coinsurance then presents an easy proposition. In a world where there is moral hazard and adverse selection, the issue deserves much more careful attention.

**Isaac Ehrlich and Gary S Becker**

Isaac Ehrlich and Gary S. Becker\(^{16} \) of Chicago University developed a theory of demand for insurance that studies the interaction of market insurance, "Self-insurance" and with "Self-protection. In this context,

insurance is analysed by combining expected utility and an indifference curve analysis within the framework of the "State Preference" approach to a behaviour under uncertainty.

With the existence of alternative forms of self-insurance and self-protection, through incentives, how much insurance is purchased under varying opportunities is analysed.

In a simple market insurance mode, it is assumed that an individual is faced with two states of the world \((0, 1)\) with probabilities \(p\) and \(1-p\) and the real income endowment in each is given by \(I_0\) and \(I_1\).

The maximizing expected utility of the income is Max:

\[
U^* \propto (1-p) u(I_1) + pu(I_0)
\]

Subject to the constraint

\[
I_1^c - I_1 = \Pi (I_0 - I_0^c)
\]

Where,

\(I_1^c\) and \(I_0^c\) are endowed incomes in real terms in each state.

The first order optimality condition is

\[
\Pi = \frac{pU_0'}{(1-p)U_1'}
\]

Where \(U_0'\) is \(M_0\) in state 0 and

\(U_1'\) is \(M_0\) in state 1
The first order optimality condition gives the slope of the indifference curve and \( \Pi \) gives the slope of the budget line. In equilibrium, both are same.

The second order condition is

\[-PU''_0 - \Pi^2 (1-p) U''_1 > 0\]

Which implies that marginal utility of income is strictly declining.

An important inference from the above model is that insurance would be demanded if the slope of the indifference curve exceeds the price of insurance at the endowment point E. This is given as

\[\Pi < \frac{U'(I_0)}{U'(I_1)}\]

If the price of insurance were fair, then

\[\Pi = \frac{1-p}{p} = \frac{U'_0}{U'_1}\]

implying incomes would be equalized in both the states.

Given the above model, price, income and substitution effects can be traced and conclusions can be drawn in terms of behaviour under risk aversion and risk preference.

This model also helps to analyse the alternate conditions of insurance in form of self-insurance and self-protection. Self-insurance reduces the size of loss; while self-protection brings down the probability of loss.
By making an assumption that market insurance is not available, then the loss to a person is $L=L(L^c, c)$ where $L^c$ is the endowed loss.

$C$ is the expenditure on self-insurance then, the expected utility takes the form of

$$U^* = (1-p)U(L_{1} - c) + pU(L_{0} - L(L^c, c) - C)$$

In this rigorous model, by incorporating self-insurance, it drives to the conclusion that market insurance and self-insurance are substitutes, if the price of market insurance is fair.

Under self-protection, the model is depicted in terms of appropriate expenditure that needs to be incurred by an individual to reduce the probability of a hazardous state.

If no market or self-insurance are available, given `r' the expenditure on self-protection, $p^c$ is the endowed probability of hazard, then the optimal expenditure on self-protection would maximize utility function which may be projected as follows

$$U^* = [1-p(p^c, r)]U(L_{1} - c) + p(p^c, r)U(L_{0} - r)$$

The maximum amount of expenditure on self-protection can be assessed from the first order condition.

The effect of market insurance on the demand for self-protection is generally called as "moral hazard". In particular, moral hazard refers to an alleged deterrent effect of market insurance on self-protection.
Market insurance has two opposite effects on self-protection. On the one hand, self protection is discouraged because of reduction in marginal gain through reduction in the difference between the incomes and thus the utilities in different states. On the other, it is encouraged if the price of market insurance is negatively related to the amount spent on protection through the effect of these expenditures on the probabilities.

The analysis of moral hazard applies not only to the relation between self protection and insurance but also to the relation between protection and insurance in all uncertain events.

2.2.2 Empirical studies

A. Developed Countries

Cost escalation in health care is a serious problem faced by almost all the countries in the light of limited resources. The developed countries have witnessed tremendous increase in the cost of health care in the last two and a half decades. There has been a growing concern on the increasing burden of treatment on the households. In this context, several studies have been attempted to understand the role played by health insurance system as an alternative source of funding the escalating costs.

Fuchs (1972)\textsuperscript{17} study identified the new sophisticated and high cost medical technology like renal dialysis and open heart surgery etc., to be important factors responsible for increased expenditure for medical care. As for market imperfections, he says, physicians exercise considerable control. They play a key role in the supply of medical care thanks to greater

specialization, restriction of entry, narrow range of options available for people seeking personal care. Hence, people seek insurance facilities to meet the high cost of medical care.

Alan Sorkin (1975)\(^{18}\) anyalsing the phenomenon of increasing health care expenditures both in absolute levels and as fraction of Gross National Product in the context of the trends in expenditures on health and medical care in U.S.A, identified a continuous increase in the demand for health services, augmented by a sharp advance in government financing, new methods of paying for health care including steady growth of health insurance and extraordinarily large and sustained increases in health care prices. He also added rising level of malpractice claims made by insurance policyholders to be the cause of high medical costs.

According to his another study (1986)\(^{19}\) 
"(1) The income elasticity with respect to medical care expenditures is less than one but the income elasticity with respect to dental care expenditures is greater than one (2) The demand for health services is quite inelastic with respect to price (3) Persons with health insurance have higher out of pocket expenditure on health care than persons without insurance and (4) The demand for health insurance is more elastic with respect to price than the demand for medical care services."

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According to Lalonde (1975)\(^{20}\) the Canadians' experience with National Health Insurance has shown that no health care system, whatever its financing mechanism, can by itself achieve health. The essential problems of health today stem from social, biological, environmental and lifestyle factors much more than they reflect inadequate facilities or curative services. Hence, he points out that the health insurance does not improve the lifestyles of the people for the better in general and health in particular. It would only increase the health care cost. The same ideas have also been expressed by Davis (1975)\(^{21}\).

L.K.V. Ng, D.L. Davis and R.W. Mandersheid (1978)\(^{22}\) state that health care insurance system provides economic incentives for sickness rather than health. They refer to health insurance as disease insurance. In other words, it refers directly to the payment of claims only for treatment of illness and to the exclusion of coverage for regular medical screening, check-ups and health education (i.e., preventive measures). They believe that if health insurance covers these preventive measures, the overall health of the population would be improved.

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George E Brown Jr (1981) addresses himself to the growing debate over National Health Insurance and health care in general in the United States. He felt that the debate neglected several major issues that were integrally related in determining the success of any health insurance programme. On account of this neglect the Americans do not have a rational framework which could explain why health costs were increasing faster than any other major component in the cost of living index, with no commensurate increase in health or "wellness" as measured by lifespan, infant mortality, incidence of illness or any other conventional measure of health. He identified two major interrelated reasons for this. (1) the American health care system emphasised third party payment for medical treatment of disease and ill health, rather than individual and community responsibility for the prevention of ill health or positive promotion of good health (2) The system emphasised the expensive form of care namely hospital care, expensive technology etc, rather than simple home and community care, less expensive technologies and paraprofessionals.

To reduce the dependence on health insurance and costs of health care, and to improve the health of the American people, he suggested five measures to be implemented (a) to establish a system of paying for health care that emphasises health promotion and disease prevention (b) utilisation of the full range of health care personnel and facilities more effectively (c) focus on the improvement of environmental factors (d) focus on simple lifestyles (e) focus

on biological research that would, reveal the answers to questions such as causes of heart disease, genetic disorders etc.

M.Greenwald (1981)\(^\text{24}\) study points out that lifestyle and environment factors greatly influence morbidity and mortality patterns. Hence the challenge before a society in a developed country like America is to determine what the various institutions with an involvement in health can do to foster healthier lifestyles. In this context, he emphasizes that in general (1) No institution can or should deal with the entire problem of lifestyle change. It should only co-ordinate with the other related institutions (2) Institutions must confine themselves to roles which the population believes to be appropriate. The health insurance business, he mentions, in this context, should reformulate its basic design of its policies to encourage health promoting behaviours of the people, instead of just being a third party funding agency. It should also use the risk classification system to encourage healthful activities and to provide incentives for health. For this it should charge lower premium rates, (discounts) to those who have positive health habits, and also to those who, improve their standing on certain indices of health.

Paul Menzel (1983)\(^\text{25}\) mentions that the new technologies are only a symptom and not the main cause for growth in medical costs in U.S.A. The real reason, according to him, is the growth of health insurance private and public. "Hospital insurance for example has grown especially rapidly, and in one sense, has become surprisingly comprehensive. In 1950 the annual

\(^{24}\) M.Greenwald "Health promotion and Health insurance in LKY Ng and D.L. Davis (Ed) strategies for public health 1981 p.259 to 265.

hospital costs were 24 $ per U.S resident, and out of that 49% was reimbursed by insurance, in 1977 annual hospital costs were $ 297 per person, 94% of which were reimbursed by insurance".26

John Akin (1987)27 has extensively reviewed the economic rationale for risk sharing and discusses the role of the government in providing insurance services to the people. According to him, when services are available free of charge, the need for insurance is not felt by the people. Moreover, when incomes are very low, often health care does not receive priority. Overtime, as incomes rise, the quality of free services declines and the cost of health care increases. Then the demand for insurance coverage goes up.

B. Developing Countries

As a result of economic realities and the limitations of Government financing many developing countries have recognised the need to find alternatives to public general revenues for financing health services. User fees and health insurance are the most common options mentioned for hospital services 28.

Barnum and Kutzin (1992) present a wealth of information on various insurance programmes in developing countries, the population covered, financing mechanisms and means of re-imbursing hospital, but they found

26 Ibid p.5


little evidence on the extent to which insurance contributes to hospital revenues. The study reveals that private and public insurance schemes, including social security, exist in a number of developing countries, and that private health insurance is becoming more prevalent but covers only a small segment of the population. Kutzin's study of Jamaican health insurance found less than three percent of insurance payments going to public hospitals. The public hospitals were heavily subsidised and thus the financial burdens for the patients were minimal. Eleven percent of the insurance claim amounts was for private hospitals. He thus concluded that motivation for health insurance is to provide access to private physicians and pharmacies.

In Papua New Guinea (Barnum 1992) the insurance schemes often were framed to allow a certain group (organised sector) to utilise private hospital facilities. The private health services were viewed as preferable to public services because of high quality of care, better accessibility, shorter waiting times, and more convenient hours of operation.

At the Asian Development Bank Seminar (ADB 1987) health insurance schemes vogue in the Asian countries - Bangladesh, China, Indonesia, Malaysia, Pakistan, Philippines and Thailand were presented.

As per the country papers presented, in Bangladesh there are no state run insurance companies. The Government has been reviewing the proposals from a number of private sector companies and also considering government


sponsored scheme of risk sharing. For employees of many corporations and private companies medical costs are fully reimbursed. For government employees, a lumpsum amount is paid along with the salary which is however inadequate to cover the medical costs.

In China there are three kinds of schemes: free medical services, labour insurance and co-operative medical insurance. The free scheme covers government workers and college students. The labour insurance scheme covers industrial workers. Upto 50% of the medical expenses of family members are also covered. The cooperative scheme was initiated by the Chinese villagers. In China approximately 50% of the total population is covered by various medical insurance schemes, as against 6% in India.

In Indonesia, there are two government schemes. The first one covers all civil servants and their dependents. The second is a social insurance for employed workers. There are other private health insurance schemes by commercial insurers, providers of health services and NGO's. In the private sector, modifications in tax laws have influenced the growth of insurance.

In Malaysia, the government schemes are under the Social Security Organization, a compulsory social insurance scheme providing employee compensation in the case of injuries. This is a contributory scheme amounting to 2.25% of the monthly salary, of which over 3/4 comes from the employers and the rest from the employee. This scheme is mainly for lower and middle income groups in the private sector. There is a need to extend this scheme to the public sector and other individuals as well.
The Employment Social Security Institution (ESSI) in Pakistan provides medical care facilities, cash benefits during sickness, maternity and injury. It covers industrial workers earning Rs.1,500/- or less a month, with the employer contributing 7% of the salary.

In the Philippines, there are five types of medical insurance schemes: compulsory social insurance covering the employed; medical insurance as a part of personal accident benefits; separate medical insurance; health maintenance organizations; and voluntary medical insurance for the self employed and unemployed in selected pilot areas. Approximately 42% of the population is covered by insurance, with only 5% under voluntary schemes.

In Thailand, the Workmen's Compensation Fund of the Department of Labour must be subscribed to by every employer with more than 20 employees. The workers do not have to contribute, since the government shares the expenditure. The fund covers only work related sickness. The Health Card Fund is a voluntary health insurance scheme mainly implemented in rural areas. Government officers and workers and their families are covered under another scheme for which the government will pay full medical costs if treated in a public hospital and half the out-patient costs if treated in a private hospital. Workers in public enterprises are also covered either on a reimbursement basis or in the hospitals/clinics owned by the enterprises.

Panarurothai and A. Mills (1993) studied the equity of out of pocket expenditures for health care services of the households in a large urban area in Thailand. The poor pay more health related inequalities in Thailand - Social Science and Medicine, 44 pp 1781 - 1790.
Thailand. The level of out of pocket payment related to both individual's choice and reimbursement policy of the different health insurance schemes. The study observed that the households with poor income paid highest percentage of annual household expenditure to health care. Per capita health expenditure was high in the lowest and the highest income groups and families with members who had secondary or university education. The proportion of health expenditure reimbursements through insurance schemes was higher for higher income and higher educated households. In other words, the poor income brackets did not utilise the insurance services according to their requirements.

C. Studies in India

The area of health insurance has not obtained much emphasis in the Indian health system research compared to a varied and vast number of studies on different aspects of health services. The limited literature covers either such broad aspects as general trends in the level and pattern of health expenditure or some special topics of limited interest.

The Giridhar study\(^\text{32}\) puts forward four approaches for enhancing resources available in India for health services beyond the use of direct public sector budgetary support. These are: community financing, user charges, expansion of the role of private sector and health insurance.

Community financing refers to voluntary contributions made by individuals, families or community groups towards health care. User charges are usually out of pocket fees paid by service users. They may increase the revenue to service providers and also rationalise the utilisation of existing services. This method can be used as a disincentive for by passing lower level facilities. Alternatively, it can be paid through health insurance, or by the employer as a reimbursement to the employee.

In recent years the involvement of the private sector as a means to enhance the resources to the health sector and improve its efficiency has received greater attention, particularly in the urban oriented curative services. The IIMA study 1987\textsuperscript{33} estimated that the share of private sector in the total health expenditure was about 63\% of which a large part is from households, representing expenditure towards medicines and profession fees.

The fourth approach relates to health insurance. Insurance mechanisms can play a role in each of the above three approaches mentioned above. For example, through community based insurance schemes, user charges paid through insurance arrangements or private insurance company providing medical facilities or providing insurance coverage to employees. In India, all these arrangements exist. However the concept of risk sharing is still not a popular one, particularly in the health sector.

\textsuperscript{33} \textit{Ibid}-page 263.
According to Mazumdar\textsuperscript{34} health insurance should function on two important principles. (1) it should cover persons who are in greater need because of their financial deficiency and (2) while the contribution or premium should be related to the person's ability to pay, the services provided must meet the medical needs and be totally unrelated to the quantum of premium paid.

Duraiswamy (1991) Krishnan (1996) and NCAER (Sheriff 1996) have analysed the burden of medical treatment on the households. These studies have considered only the direct expenditure in examining the burden of treatment. This idea was further highlighted by Krishnan (1996) and he suggests health insurance as an alternative to reduce the burden of treatment. He assessed that the burden of treatment ranged between 40% to 160% of annual per capita consumption expenditure in the poorer households.

He\textsuperscript{35} estimates that the private expenditure on health constitutes around 2/3 of total health expenditure which a majority of Indians can afford, but a population of 250 to 400 million below the poverty line find it extremely difficult to pay for minimal treatment. They are forced to borrow at exorbitant rates of interest to meet the cost of medical treatment. Enormous financial strain frequently deters many from even availing basic health care services, thereby perpetuating poor health. For the prevention of the erosion of the low income of the poor people, he suggests a Health Insurance Plan for them.

\textsuperscript{34} P.I.Mazumdar; Health Insurance Business in Journal of Insurance, Institute of India. January 1993 p.25.

especially the rural poor which would be an income protection plan for them for hospital treatment.

He recommends this hospital insurance scheme for families falling below the poverty line, and suggests that over a period more families could be included who are just above the poverty line. This recommendation is made, because India does not have a comprehensive health insurance programme, with the result only small groups of people belonging to the organised sector alone enjoy some measure of financial protection against illness. The justification for this hospital health insurance protection for the poor rests on the premise that an episode of illness imposes undue economic burden on the income of the poor.

It is heartening to note that Krishnan’s proposal to provide financial protection to people during episodes of illness through the scheme of hospitalization insurance has been accepted by the Government of India in the 2003-04 budget. The budget has encouraged the GIC to design a community based universal health insurance scheme for those living below the poverty line. Under the scheme an annual premium of Rs.365 for an individual, Rs.547 for a family of five and Rs.730 for a family of seven would entitle a reimbursement of medical expenses upto Rs.30,000 towards hospitalization, Rs.25,000 in case of death due to accident and a compensation of Rs.50 a day for a maximum of 15 days in case of loss of earning because of illness. The Government would contribute Rs.100 per family every year to make the scheme affordable to them.
Alex George, (1997)\textsuperscript{36} reacting to Krishnan's proposal positively, points out that this scheme would be a boon to families below poverty line. This is more so, in the context of government health schemes for the rural poor being under funded, inaccessible poorly managed and suffering from lack of physicians willing to serve in the rural areas. Many South-East countries like Indonesia and also China have found solutions to these problems by setting up community based and financed health schemes, where funds come from the households, the government and industry are managed by the communities themselves.

George study also suggests the setting up of an Insurance Regulatory Authority to put upper limits to administrative expenses and to subsidies. He cautions, however that this authority should not become another bureaucratic heavy weight on the existing health insurance companies robbing them of their desired autonomy.

Since the suggested hospitalisation health insurance scheme is meant primarily for rural poor, the existing Primary Health Centres (PHCs) run by the government should be made to concentrate on the eradication of communicable diseases, while the insurance scheme may be directed to address the non-communicable diseases. The scheme could be tried out in select areas where a minimum amount of social mobilisation has taken place.

Thomas Mathew (1997)\textsuperscript{37} reacting to Krishnan's idea points out that, the hospitalization insurance plan is expected to act indirectly as income

\textsuperscript{36} Alex George "On hospitalization insurance" Economic and political weekly, March 22 1997 pp.616.

\textsuperscript{37} Thomas Mathew-Medical Insurance for all "Economic and political weekly Feb. 15, 1997 pp. 372.
protection plan for the poor, since it prevents the erosion of their already low incomes. The costs of medical care are today steadily rising. Provision of free care for the poor would help to narrow down the disparities in real terms. This will lead to income protection and poverty reduction much more effectively. Moreover, health leads to empowerment and can provide a lever to the development of the weaker sections and thereby, serve to bridge the yawning gap of social inequalities. Free provision, should be strictly restricted to the impoverished persons. Those who can afford to pay must be made to pay.

Since the non-poor are not a homogeneous group in terms of income levels, the extent of subsidy should be inversely proportionate to the income levels. A certain "On an ability to pay approach" would be essential to maintain inter group equity among the non-poor. In the non-poor category, a system of voluntary health insurance should be encouraged. The client's share may be made marginally progressive with the rise in the quantum of medical expenses, so that they have an in-built incentive to keep the costs down rather than take undue advantage of high coverage.

K.S. Sanjeevi (1988) points out that the health insurance must be compulsory and the premium should depend on the income of the family. The membership should be extended for the entire family and not for a single individual. The discount percentage is an added advantage in the mediclaim policy. (Whenever the entire members are included) He also feels that periodic check up, maintenance of health records and preventive procedures

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38 K.S.Sanjeevi-Health insurance planning India's health-updated 1988 p.104.
should be the first charge on the insurer. The government should take care of the poor people whether government employees or not.

The R.P.Ellis, M. Alam and Indrani Gupta (2000)\textsuperscript{39} study states that there is growing evidence that the level of health care spending in India - currently at over 6% of its GDP is considerably higher than that in many other developing countries. This evidence also suggests that more than three quarters of this spending includes private 'out-of-pocket expenses'. Despite such a high share of expenditure by individuals, the provision of health care that is adequate in terms of quality and access, is becoming more and more problematic, particularly, public delivery of health care is poor in quality, presumably for reasons of inadequate financing. According to the authors this fact highlights the need for alternative finances, including provision for medical insurance at a much wider level. The study attempts to review a variety of health insurance systems in India, their limitations and the role of GIC of India as an important insurer agency in the country. It attempts to develop a prospectus of strategy for greater regulation and increased health insurance coverage by making suitable changes - particularly in claim settlements and the exclusion clause. It also highlights the need for a competitive environment and an opening up of private insurance sector.

A. Shariff, A.Gumber, R.Duggal and M.Alam\textsuperscript{40} (1999) have suggested far reaching changes to be adopted by the Government of India in their future


plan of action with reference to health care financing in order to improve the health condition of the country. The new strategies to be adopted are as follows:

(1) new strategies for allocation of public health expenditure
(2) regulating the private sector in the matter of curative health services
(3) important role to be assigned to private providers and NGOs in the delivery of essential health services.
(4) adoption of measures to insulate cost escalations
(5) larger share for health sector from existing and potential resources
(6) more importance to be given to primary health care.
(7) dual pricing system in both primary health and curative care
(8) need to evolve community health insurance schemes on the lines of group insurance schemes and hospitalization insurance system.

Several studies have been conducted in the areas of Employees State Insurance, financing of health care and role of insurance, managed health care models.

Chopra ⁴¹ (1974) studied the medical benefits under ESI scheme with reference to Rajasthan. Anand and Agarwal ⁴² (1985) estimated the cost of


Operation Research group (1985) conducted a case study of health financing with reference to Gujarat and Maharashtra. Likewise the IIM Ahmedabad (1987) also conducted a study of health care financing in West Bengal and Maharashtra. Gupta J.P and Sharma BBL. (1992) discussed the

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role played by corporate institutions and private, voluntary institutions in financing of health care in non-state sectors. Ravi Duggal\textsuperscript{51} (1992).

Anand T.R\textsuperscript{52} (1984) studied the role played by health insurance in financing the co-operatives.

Benerjee D\textsuperscript{53} (1986) study states that insurance is not the answer for funding health for all.

Jajoo, U.N\textsuperscript{54} (1992) study discusses the role played by community finance in meeting the cost of health projects at Sewagram, Wardha.

**Managed Health Care Model For Rural India Baif (Bharatiya Agro Industries Foundation)\textsuperscript{55} Experience**

Pune based, BAIF Development Research Foundation, a non-Government organisation, working for rural development across seven states of India has developed and implemented several models in the field of community health programmes with special reference to financing, for the rural poor to improve their quality of life. These are area specific managed

\textsuperscript{51} Duggal, Ravi -- Health care services and financing in India. Foundation for Research in Community Health, 1992.


\textsuperscript{53} Benerjee, D. -- Funding health for all: Is insurance the answer? World Health Forum, Vol.7(1), 1986, p.3-11.


health care models, qualitative studies carried in rural areas by BAIIF proved that the people were ready to contribute willingly to the extent possible for receiving health care and health related services—a form of health insurance. This fact prompted BIAF to develop several models and implement them which are enlisted below; (A) Primary Treatment Centers (PTC); Local women are trained to diagnose and manage common illnesses at the village level. They use a combination of allopathic and herbal medicines and provide necessary health education. The patient’s are charged a nominal fee for replenishing the medical kit’s. (B) Antenatal care at an affordable cost; The tribal women are provided with appropriate antenatal care for just Rs.125/- per woman. The efforts have been initiated in 1998 only and the long term efforts are yet to be studied. This model is implemented in Maharashtra. (C) Revolving Fund for Self Help Groups, (SHGS) otherwise known as Thrift and Credit Groups.; A revolving fund for medical care usually for Rs.5000/- with low interest per group has been provided by BAIIF. This is revolved around the members as and when they need it. (D) Controlling T.B.; This model is implemented in Uttar Pradesh. T.B. patient’s who cannot afford to pay for the drugs are enrolled in the progress. They are required to pay 50% of the costs. To assist them to do so, suitable income generation programmes are provided and necessary support given. The payments may be made over a period of time, once the income starts flowing in. (E) Addressing service cataract: Trained village health guides identify the cases for suitable referral treatment on a six monthly basis. The costs are borne by the patient’s for survey and further rehabilitation. To assist them various income generating programmes are started. (F) Contribution in kind; In svagram - Madhya Pradesh, contributions are collected from rural families in the form of grain sold by the hospital and basic medical care is provided to the members. All India Institute
of Medical Sciences (AIIMS), New Delhi in its field practice area collects grain on a voluntary basis and provides nutritional supplement to malnourished children and pregnant women.

Managed health care model has proved that people will be ready to pay for improved health services.

2.3 CONCLUSION

A review of the literature in the Indian context reveals that all the studies have focused either on health care expenditures and their financing in general, the role of health insurance, the working of Employees State Insurance, implementation of managed health care models etc. Practically no study has been undertaken to analyse the working of mediclaim policy operated by the GIC that too in Tamil Nadu. Hence it can be treated as a virgin field.

The present research work makes a sincere attempt in reviewing the working of mediclaim policy and utilisation of its financial services by the policy holders with special reference to Chennai city. The optimism is that this contribution would help in filling up the void that currently exists in the literature pertaining to health care financing with special reference to mediclaim policy.

It would prove to be helpful to have an insight into the concept of health insurance and also to study the working of health insurance schemes in India with special reference to mediclaim policy as a prelude to the field study analysis. The next chapter proceeds on the above lines.