

TABLE OF CONTENTS

<u>S.No.</u>	<u>Title</u>	<u>Page No.</u>
1.	Abstract	4
2.	<u>Section I</u> Introduction	6
3.	<u>Section II</u> Contextual Background of Kottayam <ul style="list-style-type: none">- Overview of Kerala's Health System- Health outcomes- Health infrastructure- Public health financing in Kerala- Increasing cost of care & household expenditures	8
4.	<u>Section III</u> Model for Kottayam District <ul style="list-style-type: none">- Concept of District Based Health Insurance- Proposed Benefit Package- Costing of the Benefit Package- Methodology of costing the Package- Role of stakeholders- Payment systems- Implementation Design<ul style="list-style-type: none">*Financing Intermediary – The DHIBMedical Savings At Village LevelGatekeeper for Referral System	13
5	<u>Section IV</u> Discussion and Conclusion	30
6.	References	33
7.	Appendices	37

TABLES

1. **Devolution and utilization of Plan Funds by Local Bodies – 1997-2000**
2. **% Composition of Out of Pocket Expenditures In Rural Kerala – 1987-97**
3. **Content of a Benefit Package**
4. **Share of Premium- Income Category Wise**
5. **Distribution of Financial Burden Among Stakeholders**
6. **Key Elements of the Proposed Insurance Model**

FIGURES

1. **% Patients Receiving Free Care – 1986-96**
2. **Fragmented System of Health Financing**
3. **Integrated System of Health Financing**

APPENDICES

1. **Financial Expenditures in Kerala – 1981-97**
2. **Demographic and Socio-economic Status – Kerala and India**
3. **Epidemiological Transition in Kerala**
4. **Socio-Economic Characteristics and Health Infrastructure in Kottayam**
5. **% Medical Certification of Cause of Death –1993-95**
6. **Monthly Average Expenditures in Kerala- 51st-55th. Round**
7. **Costing of National health Programmes**
8. **Costing of Out Patient Care**
9. **Costing of Inpatient Care**
10. **Abstract Statement of Costing of Benefit Package**
11. **Detailed Costing of Health Financing**

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Financial Risk Protection in Kottayam District of Kerala : Is it Feasible?

Abstract:

Estimates indicate that every year nearly 2.2% of the population are pushed below the poverty line due to high medical bills, calling for public policies aimed at providing financial risk protection for the poor and near poor. Revenue deficits and competing demands on scarce resources are responsible for stagnant, and in several states declining, health budgets. Low public health spending of less than 0.9% of GDP or 17% of total health spending and fragmentation of these small amounts under various schemes and programs, has eroded governments' ability to provide public funded universal health care, in effect transferring the major burden of health financing to private households. In addition, the absence of regulations or incentives for rational use of modern technology or drugs has contributed to increasing costs. Therefore, formulation of policies for providing financial risk protection needs to be seriously explored. The wide disparities in development and health indicators, technical and administrative capacities and public action are however constraints for implementing a nationally mandated policy across the country. Strategically, decentralized, district based plans with the active involvement of the communities and locally elected bodies seem to be more appropriate and sustainable options.

This paper seeks to conceptualize such a model for Kottayam district in the southern state of Kerala. The model visualizes the creation of a risk pool by merging public funds available with the different tiers of government - Federal, state and local - and private contributions from about 80% of all households. This would facilitate a redistribution of resources from the rich to the poor and healthy to the sick and provide greater access to a comprehensive package of services, consisting of ambulatory and catastrophic care, to be provided in public and private facilities. It is believed that the creation of such a risk pool will enable strengthening the demand side for exercising a greater leverage on provider behavior and cost containment, critical concerns in resource poor settings. Further, it is argued that restructuring public budgets from schematic funding to block grants will enable greater efficiencies in the utilization of resources.

Design features build on the two initiatives of the Government of Kerala, namely, decentralization and self help women groups, as key instruments for the collection of contributions, contracting of services with the providers in the competitive ambulatory markets and negotiation of contracts for hospital care through the District Insurance Board. Therefore, the concept seeks to balance the two important concepts of risk protection – social insurance and community based financing. The paper discusses in detail the composition of the benefit package, its cost implications, payment mechanisms and mode of delivery.

The outcomes suggest that the concept of a community based social insurance is a feasible model but will depend on the priority that the political will accords to the welfare of the people, undertaking of good quality research and development of a critical mass of technical expertise on the functioning of health insurance markets. It is also clear that with increasing technology and cost of care, India will need to reorganize its health system to align it with the shifts in demand. Given the inadequate availability of general taxes, the paper seeks to argue for developing strategies to restructure the existing financing mechanisms to facilitate the redistribution of resources in favor of the poor and vulnerable. Also, emerging from this analysis is the critical message that replicating the US model of health financing

which is based on private for profit health insurance and third party administrator systems onto the poorly developed health system in India could have ruinous implications in terms of widening disparities in access; increasing costs to unsustainable levels; and declining health status. The need of the hour is to re-strategize, restructure and reform the health system to fit in with the vastly different scenarios emerging. But as systems and institutions take time to develop, substantial reform in sectors like health cannot be achieved in short time spans, necessitating incrementalism and drawing up of a road map, making changes in measured steps for achieving the three principal goals of health systems – equity, quality and efficiency.

Section I:

Introduction

This paper seeks to examine the feasibility of public policies that would enable: 1) protection from financial bankruptcy; 2) improvement in access, quality and efficiency resulting in improved health outcomes; and 3) providing a system of resource pooling for sustaining the health system.

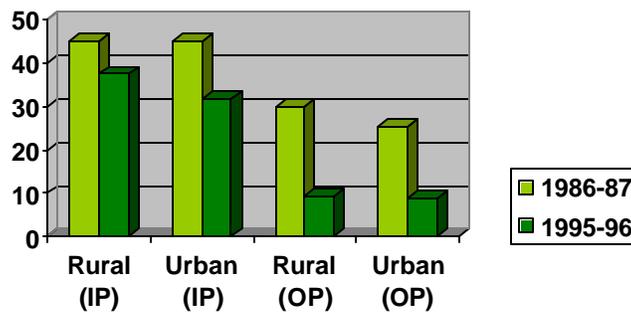
Given the uncertainty that is associated with illness episodes and the lumpiness of the investment required for its treatment, the impact of unplanned expenditures on household incomes can be devastating. Surveys show that irrespective of income class, one episode of hospitalization is estimated to account for 58% of per capita annual expenditures pushing 2.2% of the populations below poverty line (World Bank, 2002). Studies carried out in Kerala indicated similar findings. Almost 37% of the hospitalized have had to borrow money or sell their assets. A household survey showed that 61.12% of the households surveyed spent less than 5% of their annual incomes on health, a quarter spent between 5 to 20%, 5.43% spent between 20-99% of their incomes while nearly 9% of the households spent over 100% of their income (Narayana, 2001). Other studies also indicated similar findings of high expenditures in Kerala ranging from Rs. 482 to Rs. 548 percapita during 1993-95, up from Rs 52-90 per episode during 1986-87¹. These averages however hide the fact that the poor bear disproportionately more of the financial burden without necessarily gaining access to good quality care (NSSO 42nd and 52nd., NCAER,1993 and KSSP,1987 and 1997).

Part of the reason for the crisis afflicting the health sector, is constrained budgets and complex systems of financing. While at the national level, health budgets have stagnated at 1.3% of the total central budget, states have indicated a declining trend. For example, Kerala's health budgets has fallen from 6.6% of the total state budget to an estimated 5.5% during the last decade(NIPFP, 2001). Over 75% of it goes for salaries and wages (Kutty, 2000, NIPFP, 1995), leaving little for drugs, buildings or equipment (**Appendix I**) Besides, since expenditure control is the dominant motive, the budgeting system is fragmented making aggregation laborious and any deviations to address a felt need impossible² (Rao, 1997). In response to the declining budgets, Kerala charges user fees in all its facilities, reported to account for almost 15% of the total amount being spent on health, the highest in the country (Mahal, 2001). However, in order not to affect access, user charges, are fixed far below even average variable cost by over 60% (Purohit,1995). Besides, shifts among private physician practices towards a more aggressive use of technology has generated competitive pressures and adversely affected government budgets as well as the ability of charitable institutions to continue providing free care (Fig.1) significantly hurting the poor.

¹ Iyer and Gita Sen estimate the percentage change during the decade to be 436% for inpatient care in rural areas and 320% in urban areas with a private:public ratio having slightly come down to 2.07 and 2.43 respectively (Iyer and Sen, 1997)

² The budgeting systems in India aim at controlling expenditures and do not easily provide flexibilities for midcourse corrections or changes. This affects the management of public health facilities in being able to change service mix in accordance with need. For example, as a result of increased environmental pollution, the number of asthma cases have increased. There is a time lag for public hospitals to be able to bring in the desired shifts in facilities and trained manpower to address this demand, thereby creating conditions for the emergence of the private sector to fill in this unmet need.

Figure 1: % Patients Received Free Care



Source : NSSO in Gumber, 2001

Despite such compelling evidence of increasing medical expenditures by poor households, public policy response on extending risk protection has been ambivalent on account of three reasons: One, restricted health budgets, as it is clear that in the absence of government subsidies private health insurance is affordable only to the affluent. Two, the cost effectiveness and public goods argument (Gupta,2002) driving the perception that health of the poor is essentially a function of malaria, TB, leprosy and now HIV, or that of the women as safe pregnancies . While these concerns are important and require to be pursued with great vigor, such a narrow focus on disease control programmes has been responsible for India's inability to come up with a comprehensive strategy concerned with overall welfare (Hammer and Berman,1997). And three, the non-availability of technical competence required for designing appropriate interventions in insurance markets³. While the IRAD Bill of 1999 enables entry of private insurance it is largely acknowledged that without accompanying sector reforms, this policy is likely to have limited social gains, contribute to increasing cost of care and exacerbate existing inequities (Mahal 2001) calling for new strategies based on pilot projects in the first instance⁴. Besides, the IRAD Bill itself needs to be amended in the future, as the present bill is too limited, as it makes no distinction between life insurance and health insurance –a distinction that is critical due to the differing complexities in both markets.

However, recently, with a view to alleviate financial distress due to rising health costs among poor households, the Government of Kerala, committed itself to providing financial protection to all the 3 million persons below the poverty line. Broadly, the proposal seeks to provide premium amounts on a capitated basis to a parastatal for profit insurance agency for treatment in government facilities for a maximum amount of Rs. 20,000. A feasibility study has however not been undertaken nor a clear strategy delineated to deal with problems of free riders and moral hazard; cost containment; settlement of claims and grievances; increased pressures for government finances in future years etc. After all, a large body of international research has concluded that such partial interventions in Africa and elsewhere failed due to inadequacies in the designing of the institutional frameworks and implementation strategies (Atim, 1999).

³ Experience is limited to two heavily subsidized social insurance programs of the central government for central government employees and factory workers; a few community based insurance programs as detailed by Sen, 1997 and employer paid insurance in metro cities.

⁴ Draft National Health Policy, page 23, 2002.

This paper attempts to address some of the issues raised above and design a hypothetical financing model for Kottayam district of Kerala state. Following the introductory paragraphs, the paper has three more sections – Section II provides the contextual background of the health system in the district. Section III provides the outline of the proposed framework for a district based health insurance system that includes a benefit package, its cost, the financing and payment systems and the organizational design for its implementation. Section IV is the concluding section that highlights the risks, limitations and benefits of the proposed framework.

Section II:

Contextual Background – An Overview of the Health System in Kottayam District : Socio-Economic Background

Impressive health indicators have placed Kottayam, the fourth most developed district of Kerala, in a unique position. Its success however needs to be understood within a broader context. Densely populated, it is an urban-rural continuum, with excellent communication facilities; a sound public distribution system; high literacy levels; high access to health facilities, safe drinking water etc. Though a district in a low income country, health indicators compare favorably with the more developed market economies, such as for example, life expectancy of 74 years, an IMR of 12, MMR of below 1 and a CDR of 5.9 per thousand, a remarkable decline in communicable diseases and the corresponding increase in life style diseases as cause of death etc. (**Appendix 2&3**).

The gains indicated above were due to mass movements and concerted public action spread over a hundred years in Kerala state. Affirmative action towards educational opportunity and income equality resulted in expanding access to education and agrarian reform, providing Kerala with an enviable accumulation of social capital, a prerequisite for the ability of transforming money to programmatic outcomes (Parayil,2001, Hsiao,2001).

Health Outcomes : Current status of morbidity and mortality

Morbidity and mortality are interrelated to the demographic features, occupational structure and income differentials. These socioeconomic characteristics of Kottayam district and the health infrastructure may be seen in **Appendix 4**.

From four sources, the morbidity pattern of Kottayam has been constructed. While the Report of the Census directorate for 1981-91 shows an impressive decline in child mortality rates per thousand from 59 to 36 among the poorest quintile groups, the NCAER household survey of 1993, shows that overall, there is a higher concentration of morbidity among the low income groups. While the reports obtained by the district surveillance system from public and some private facilities (803 sources in 2001) regarding 14 notified diseases showed a substantial burden of illness on account of infectious diseases, household surveys indicate an equally increasing burden of chronic and non communicable diseases, in particular diabetes, cancer, hypertension, heart diseases and injuries (Kuty, 2002, Thankappan, 2002) CVD alone is estimated to cause more than half the total deaths, with 12.2% of them among young adults, before the age of 30 years, as compared to 3% in the market economies (Reddy,2002) (**Appendix 5**)

Health Structure in Kottayam District – Public & Private

The health structure in Kottayam district consists of a public and private mix. Allopathy is the preferred choice of medicine for about 79% of the population but Ayurveda, Homeopathy and Unani – the three traditional systems of medicine – are popular for various chronic ailments.

Alongside, the three tiered decentralized health infrastructure consisting of about 360 Subcenters, 54 Primary and 63 Family Welfare Health Centers and 32 Community Health Centers, Kottayam has a Medical College with 1101 beds and a district hospital with 374 beds. Utilization of public facilities is on an average 40%, except in the medical college, which has full occupancy. While low budgets affected availability of drugs and access to modern technology, fixed salaries and rules permitting specialists' private practice affected accountability and patient care. It is significant that 40% of the reasons for non-utilization of public health facilities were on account of system deficiencies – no drugs, poor quality and no doctors.

The expansion of the private sector since the late eighties was on account of the fiscal crisis and a favorable external environment:- a) an effective unmet demand for secondary and tertiary services; b) custom duty exemptions and credit facilities for import of medical equipment provided by the Central Government; c) an unfettered environment; d) rising incomes; e) increasing life expectancy and shifts in epidemiological status; f) a health seeking behavior for quality care partly due to expansion of female education, increasing awareness and good communications; and g) access to capital due to repatriation of funds from the gulf countries resulting in an expansion of the private sector in rural areas reducing distance to be traveled by half and increasing access to new technology (Kannan et al 1991, GOK, 1995). Today, Kottayam has a large presence of the private sector⁵ with 402 beds per 100,000 population compared to about 180 in the public sector. More than fifty percent of the private sector consists of missionary hospitals. Of the estimated 188 private hospitals, 39 have more than 100 beds and provide specialist services. About five hospitals provide non-invasive treatment for CVD - one among them has been recently established by the Indian Leasing and Financing Corporation on modern lines with hundred percent computerization of records etc. The rest are small hospitals consisting of 10-50 beds and nearly 370 solo practitioners/ proprietorships (GOK, 1998) providing general health care. In terms of spatial spread, there are 2.15 private hospitals for every 10 kms as compared to 0.38 in the public sector (Kutty, 2000). The private sector has improved quality of care and expanded access but also increased costs, since the increased number of facilities has set off a “technology race” for achieving the required competitive edge for maximizing profits, in addition to the other important factors of timings, distance and flexible payment systems. Typically, the private sector behavior is known to maximize profits; fail to address public health goals; lack integration with government health services; draw professionals from the public sector instead of supplementing; and often and particularly in unregulated markets provide inappropriate or poor quality care (Sara Bennett, 1994).

It is interesting to observe the shifts taking place in investment patterns, reflecting three developments taking place in Kottayam :- (i) the growing effective demand for health care services for non communicable diseases such as CVD; (ii) the entry of Corporate

⁵ The private sector also consists of public sector practitioners. Broadly, rough estimates indicate that one third each of the total number of physicians work in government facilities, private facilities and government and private.

financing which will contribute to increasing cost of care; and (iii) the demand for quality care as witnessed in the growth and existence of informal credit markets around specialist hospitals⁶.

Private sector, based on fee for service, provides nearly two thirds of health care services, but its utilization is dependent on the ability to pay. For example, the fall in rubber prices in the last three years, due to lowered tariffs on imported rubber, has resulted in the financial crises of small hospitals of 10-50 beds, forcing closure of several facilities. Local enquiries revealed that in such times of financial stringency, the poor resort to self care, seeking treatment when it is too late, necessitating specialist care and costly treatment for which money is borrowed at high rates of interest, resulting in irreparable financial ruin of the families. This interconnection between a macroeconomic policy and health access at the micro level is very critical as Kerala is already facing serious problems of unemployment, underproduction and lack of innovation, which are likely to worsen its economic base in the present surge of globalization and competitive markets. Thus, the current situation prevalent in Kottayam district has four critical implications for policy : 1) a further impoverishment of the poor; and 2) closure of small hospitals affecting access to health care with potential to jeopardize the health gains achieved so far; 3) further increases in costs by private providers due to the absence of any regulations and cost controls and the declining importance of the public health system as a viable alternative; and 4) increasing pressure on government for subsidized/ free care.

Sources of Public Health Financing - A Decentralized Approach

The health system in Kottayam is financed through four principal sources: central and state budgets; user fees; and private capital; and since the recent past, from local bodies.

Central and State Government Budgets are released to the District Medical Officer who is the drawing officer for the health budgets. The district also has five district health societies, one each for leprosy, TB, blindness, cancer and HIV/AIDS, constituted under the chairpersonship of the District Collector, directly receiving central grants. In addition to government grants, the health facilities also mobilize resources from **user fees**. Constitution of Development Committees for government hospitals, such as the one for the Medical College has facilitated mobilizing additional resources from the market through commercial loans to be repaid from earnings realized from hospital charges.

The most recent and promising development having potential for strengthening district health systems is the devolution of 40% of the state plan budgets to the **local bodies** being subjected to certain criteria⁷, and strengthening local decision making within broad societal goals.

In 1995 Kerala established the three-tiered structure of Gram Panchayats, Block Panchayats and Zilla Parishads at the village, block and district level. Substantial planning and investment went into upscaling of capacity for enabling local bodies prepare development plans with peoples' participation and make choices with responsibility. The

⁶ Personal communication from District Collector, Kottayam who recounted the manner in which the vicious cycle operates, starting with the distressed patient required to undergo several high cost diagnostic tests for which money is borrowed from the professional moneylenders whose clout with law enforcing authorities being extensive.

⁷ Population, geographical area, area under paddy, own income of the local body, composite index of agricultural and informal workers; and composite index of backwardness.

local bodies are also empowered to mobilize resources and lay down spending priorities as finalized by the village committees, giving immense scope to address locally felt needs.

The local bodies at the district, block and village level receive finances from own taxes (building and profession tax); assigned taxes (surcharge on stamp duty); shared taxes (motor vehicle tax); non tax revenues, grants and loans. During 1998-99, the local bodies realized in per capita terms Rs. 20.4 from property taxes, Rs. 11.3 from profession taxes, Rs. 3.2 from entertainment tax and Rs. 16.5 from stamp duties etc. Balanced spending was ensured by earmarking sectoral allocations into three broad sectors: 40-50% productive, 30-40% to service and 10-30% to infrastructure. Share of health and related services in spending by local bodies for Kerala as a whole during the three year period 1997-99 was as follows - Table – 1

Table-1 % Devolution and Utilization of Plan⁸ Funds by Local Bodies in Kerala–1997-2000
Rs. /million

Indicator	1997-98	1998-99	1999-2000	Achievement 97-2000(No.)
Total Outlay	10250	11160	11540	327170 projects
Health	1.83	1.98	1.67	90021 M sq.building
Drinking water	3.79	5.61	4.51	179305 water sources
Sanitation	4.73	5.37	3.76	413174 toilets constructed
Nutrition	1.92	0.82	2.10	NA
Social Sector	39.30	38.44	49.59	36% of total projects

Source: Economic Review, GOK, 2000

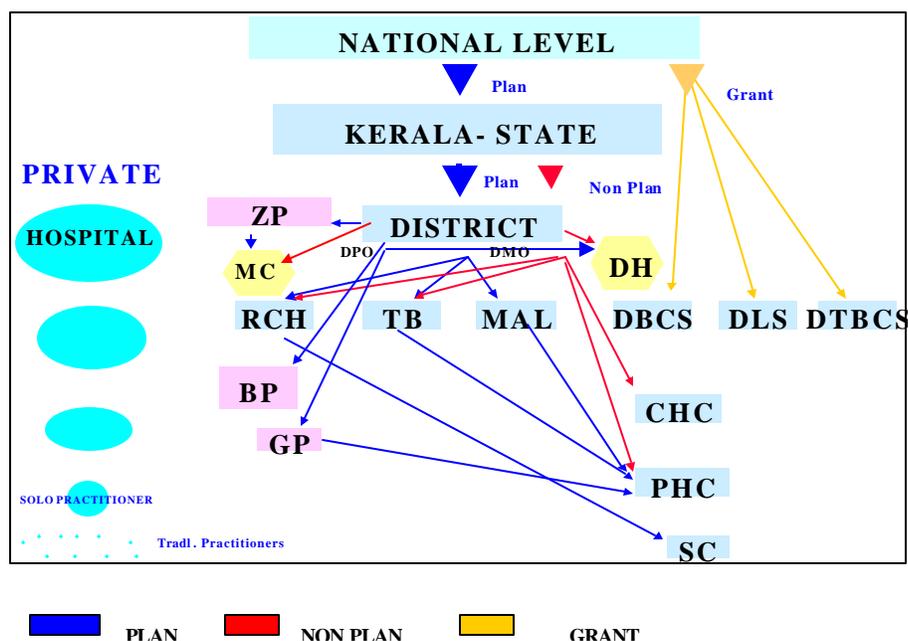
The subcenters, primary health centers and the Community hospitals get their development budget from the District Panchayat Officer, while the District Hospital receives the grants from the Zilla Parishad. Financial devolution has also been accompanied by the handing over of some control over functionaries. Almost all public health facilities have been placed under the governance of locally elected bodies, who have been endowed with the responsibilities of maintenance of the facilities, supervision over the functioning of the staff and hiring of additional personnel, as per need.

In principle, Kerala’s policy of decentralization is remarkable. Yet its impact in the context of health needs to be studied. During 2000-2001, Kottayam received an amount of Rs. 600 million of which about Rs.140m. was spent on health activities. Inequitable distribution of resources among all village Gram Panchayats, not linked to disease burden has led to fragmentation, hurting investment decisions. For example, the medical college hospital and the district hospital, two centers in dire need for investment, are denied access to plan funds as they are located in a particular panchayat, despite the fact that its patients are from throughout the district. Secondly, fragmentation also reduces the purchasing power of the money. For impact in health markets, it is the size of the aggregated amounts that matters. Thirdly, such decentralization of budgets in health have now widened the number of payers, increasing the number of channels for financial flows and reducing efficiencies in utilization. Finally it is significant that such decentralization and local level planning of public health budgets exclude the interface with the private sector though it is responsible for providing over two thirds of the health care services and is instrumental for increase in costs.

Figure 2 is an organogram of the fragmented system of health financing in Kottayam district.

⁸ Plan funds are for new activities taken up during the Plan period which is usually for five years. It does not cover revenue expenditures or recurring costs, but can be used for capital investment.

Figure: 2 Fragmented system of Health Financing



Increasing Financial Protection and Reduction of Household Expenditures:

Partly due to restricted budgets and partly due to low accountability and inefficiencies in resource use, there is increasing dependence on the private sector for delivery of health care resulting in the corresponding increase in private expenditures. Kerala’s households spend the highest amounts on health in the country compared to other states (NIPFP, 2001⁹). This explains the urgency and the concern to protect the middle and poor income groups on spending substantial proportions of disposable incomes on medical care as it carries high opportunity costs of forgoing more essential expenditures such as on food. **(Appendix 6)**. Therefore, in the given context there are three steps that should be initiated for reducing household expenditures-

- 1) increase public spending and concomitantly review existing deficiencies to achieve higher optimality in the investments already made. With relatively modest resources, and a better use of the investments already made, a substantial increase in subsidizing the services for the poor can be achieved, lessening their expenditures;
- 2) ensure a more rational use of technology and lower cost drugs through standard protocols, increasing public advocacy for promoting generic drugs, regulation of prices of diagnostic tests etc. and
- 3) identify incentives for controlling physician and patient behavior since supply side control through regulation has serious problems of enforcement, and oversight of the private sector based on exhortation to good values is particularly hard. Strengthening of the demand side by changes in the financing and payment systems is one such alternative.

⁹ The analysis of out of pocket expenditures for 1995-96 showed that in Kerala Rs. 441.2 was being spent, while the next highest spending was in Punjab (381.2) followed by Haryana (376); UP (312.5) and among low spenders being Rajasthan (123.3); Bihar (133) and Karnataka (145.7) with the All India Average at 222.7.

Section III:

Kottayam District Model For Financial Risk Protection

Justification for a district based health insurance system is on three grounds – 1) the demographic and epidemiological shifts towards diseases requiring high cost treatment that are unaffordable to most and impoverishing many; 2) the urgent need to provide access to the more beneficial systems of prepayment over out of pocket or user fees which are cause for much distress; and 3) the necessity of rationalizing the financing and delivery systems for achieving better efficiencies in resource use.

The Concept of a District Based Health Insurance :

Of all the control knobs¹⁰, the most powerful is the financial architecture of a health system in determining health outcomes. In public-private mix environments insurance systems work well only if there is a potential to fulfill two conditions: (i) adequate population coverage with a balanced mix of the healthy and the sick, the rich and the poor, so as to enable risk pooling and cross subsidization; and (ii) an adequate population with a willingness to pay, which would implicitly assume both an ability as well as the perception of benefits exceeding costs (Hsiao, 2001).

Obtaining an optimal size and securing willingness to pay can either be made mandatory, as in most western countries, or by making it attractive where the individual is able to perceive the benefits. Given the limitations of enforcing legal mandates in India's context, it is advisable to consider financial instruments such as a voluntary prepaid health insurance scheme built upon community-based approaches to achieve maximum participation and sustainability. Of the several aspects of such a financial instrument, there are five, which are critical. The first is the quantification of benefits that the contributor would be entitled to with the benefits approximating felt needs. Any perception that the benefits do not exceed the perceived opportunity cost of the contribution being made will result in a reluctance to participate. This explains why it is necessary to ensure the comprehensiveness of the benefit package providing an expanded scope of services to suit different needs and expectations. Second is the costing of the package and the determining of the quantum of subsidies to make the scheme inclusive and affordable to the poor. Non-provisioning of subsidies would result in the poor being left out seriously affecting equity. Third, is the role of all stakeholders to ensure the participation of the people and local governments to lend accountability and sustainability to the program. Fourth is the system of provider payment as it has an impact on the nature and quality of care being provided and consequently on health outcomes. And finally, the organizational structure providing institutional mechanisms to discharge the major functions of a prepaid system of health insurance, namely, collection of contributions, contracting of providers and payment for services. These aspects are discussed in the following paragraphs.

The Proposed Comprehensive Benefit Package - The value of the concept of a defined Benefit Package to be delivered against a defined amount to be paid in advance is that it addresses two objectives: financial protection and improved health as a result of timely access to services. However, the key to ensuring participation for creating the required size of the risk pool is the content of the benefit package as it provides the consumer / beneficiary,

¹⁰ Prof. Hsiao has developed the concept of defining health systems as being determined by five knobs -or subsystems - organization, regulation, financing, payment systems and information.

means of assessing its value vis-à-vis the contribution being asked for. With 80% of morbidity self limiting requiring ambulatory care and an estimated 4% of illnesses requiring hospitalization, in an environment of financial stringency, it is tempting to consider risk protection for outpatient services, or restrict inpatient treatment to public hospitals or exclude cost of drugs etc. However, experience in several African countries show that prepaid insurance covering only outpatient services does not necessarily address the real needs of the poor resulting in loss of interest in continuing to participate over time (Tanzania, Viroj T, 1999). This fact is borne out also in some willingness to pay studies carried out in India (Mathiyazhagan, 1998, IIMR, 2001) which showed that people would be willing¹¹ to contribute only if the package was comprehensive and covering both out patient as well as inpatient care. Assessing peoples' perception of what constitutes value could also be obtained by analyzing what they are spending their money on. For example, the KSSP analysis of the out of pocket expenditures being incurred over time showed that the main items of expenditure were drugs and "others" viz diagnostic tests making it clear that inclusion of the two items is necessary for securing acceptability. **Table 2.**

Table – 2. %Composition of Out of Pocket Expenditures in Rural Kerala – 1987-97

(Per Capita in Rs.)					
Indicator	QI	QII	QIII	QIV	ALL
Medicines	31	44	50	70	50
Doctor Fees	20	19	20	7	18
Others	49	37	30	23	32
Total in Rs	55	42	126	161	89
% to Income	14.4	9	6.8	4.4	7.1
1996 Repeat Survey	477	467	538	570	548
%to Income	39.6	16.11	5	2.4	6.7

Source: KSSP Survey Reports, Kannan et al,1991,1997

Based on the above understanding, the proposed benefit package consists of three components that seek to address over 85% of peoples' health needs and thereby fulfill the criteria of comprehensiveness and facilitate participation of atleast 80% of the population required for the risk pool:

- a) the package of services already being provided under the national health programmes covering preventive services, diagnosis and treatment (**Appendix 7**);
- b) out patient treatment of minor ailments and other services containing also an expanded menu of preventive care ranging from a commitment to water and sanitation to community based screening for non communicable diseases such as anti tobacco, diabetes, cervical and breast cancer etc (**Appendix 8**); and
- c) inpatient treatment covering secondary care for a limited range of high cost, low incidence diseases, major surgeries and a range of diagnostics in district level hospitals (**Appendix 9**)

A serious limitation in designing a comprehensive package has been the near absence of reliable epidemiological information and cost data of services being provided. Therefore, household surveys carried out by NSSO, NCAER, KSSP and recent research on community based prevalence levels for hypertension, CVD, cancer and diabetes have been used as the basis for information. Thus, for deriving incidence, broad assumptions have been made such

¹¹ Willingness to pay is defined as the maximum prices without reducing individual welfare (Gupta,2002)

as, for example, the number of CVD cases has been derived by multiplying the number of deaths on the same ratio as reported cases and deaths.

The conceptual underpinnings of the comprehensive benefit package suggested above are **three**: one, the fact that unlike ever before, technological advances have, by and large, made physical access possible to life saving interventions. Access to such developments is of great importance to the poor as the savings on account of indirect expenditures can be substantial. But these technological advances entail costs. The more sophisticated, higher the cost, imposing financial barriers to access.

Two, as already noted, the comprehensiveness or otherwise of the benefit package influences the extent of participation. Therefore partial coverage of focusing only on primary and preventive care or catastrophic care can result in either not solving the problem of financial risk protection or entailing an avoidable increase in disease burden and resources to treat them. Therefore, a mix of low cost and high incidence and high cost but low incidence disease treatment would be needed to attract a wider section of people for facilitating the required level of risk pool. In other words, the designing of the benefit package will need to address a set of multiple concerns - the size of the disease burden or prevalence of risk factors, the changing demographic profile and cost of intervention, public perception and expectations of the people etc. Considering these factors, the benefit package may consist of the following set of services as given in **Table-3**:

Table 3 – Content of a Benefit Package.

Content	Age-group/ years	Approx Coverage/gender	Cost	Ranking in Poor People's perception	Ranking in Perception of Middle Classes
I. OP consultations	All	All	Low	High	High
Preventive services –	0-6, 14-45	Children and women	Low	High	High
i)Immunization &ANC					
ii)Health Education	14-45	Adolescents and productive age groups	Low	Medium	Low
iii) Diagnosis & Treatment of Infectious diseases	19-60	All	Low	High	Low
iii) Screening for CVD,Hypertension and common cancers	29-59	All	Medium	Low	High
Curative Services- Minor ailments	All	All	Medium	High	High
II. Hospitalization	All	All	High	High	High
i) Emergency	All	All	High	High	High
ii)Reproductive Services & Pediatric Care	0-6, 14-49	Children, women	Medium	High	High
iii) Surgeries –Minor	19-59	All	Medium	High	High
iii)Selective Elective Specialist Care	35-60	All	High	Medium	High
Chronic diseases of the old	50-65	All	High	High	High

* Author's perception

The above table needs to be read with a caveat. If the poor do not consider elective surgeries as high priority, it is because the cost of treatment is beyond their reach. At the same time, excluding high cost treatment would not attract the middle classes who value it as a potential risk, while not considering communicable disease treatment to be a priority

concern. And as can be seen, for both groups, geriatric care is considered high largely on grounds of expenses involved in chronic care on a person who does not contribute to family income.

And three, the implementability of the package. While the package suggested above is feasible for Kottayam district, it is not relevant to large parts of the country where even delivery of basic services is problematic. In other words, given the uneven distribution of skills and infrastructure and the wide divergence in the epidemiological, social, economic and demographic status, differential approaches need to be adopted. Though theoretically, a centrally determined and uniformly mandated benefit package (Enthoven, Fuchs) would ensure inclusion of all persons; enable predictability; and easier calculation of risk premiums, it however, assumes the availability of and a uniform access to the required infrastructure.

On the face of it the argument for adopting differential approaches may appear to be iniquitous. But the issue is to design policies that will enable equity in the long run. Therefore, in the lesser developed areas, focus would need to be for delivering a basic package of services combined with policies to increase investment in health infrastructure¹². Thus, I argue that in present conditions, the concept of designing district specific multiple plans within broadly laid down conditions and focusing on developing over time a national standard is a more pragmatic approach. In the absence of such an approach health insurance will be possible only for the few poor living in the developed pockets of the country, exacerbating the existing divide and segmenting the market in such a manner as to stress the overall health system into an unsustainable paradigm.

(ii) Costing the Benefit Package : Quantum of Public Subsidies

The proposed benefit package covering 80% of the district population is estimated to cost Rs. 1807 million of which government subsidy has been proposed to be 44% (**Appendix 10**). To ensure the cross subsidization between the rich and the poor, beneficiary contribution has been distributed in accordance with income status, notwithstanding the difficulties in the identification of income groups. Utilization of the facilities have been apportioned (Column 3 of **Table 4**) keeping in view four factors: a) the existing utilization pattern as indicated in the NSSO surveys; b) the likely increases in use as a result of insurance particularly by the poorer sections, who are at present underutilizing the facilities on account of financial barriers.; c) the reduction in the likely overuse by the affluent sections by introducing co-sharing for some of the expensive procedures; d) and finally the likely incidence and nature of disease burden among the different income groups.

Table 4 : Share of Premium Income Category Wise

1	2	3	4	5
Income Category/Rs	% HH	%Proposed Share/ Treatment	HH Contrbn /PA.	% to HH Income/PA
86,000	15	10	6232	7.25
68,000	25	20	4580	6.74
35,000	35	35	1625	4.64
12,500	25	35	320	2.56

¹² For example, in the whole of Madhya Pradesh state there are no cardiac treatment facilities. In such conditions, implementation of such a benefit package would not be possible, while excluding heart treatment would affect the comprehensiveness of the package. Therefore, there is need to initiate measures to increase investment in establishing such facilities through public budgets or by instituting policies to make increase the viability of private investment.

Methodology for Costing The Package

Ideally, for costing a benefit package three sets of information are required : 1) the incidence of disease in order to arrive at an annual estimate of the sick distributed over ages and disease patterns; 2) the unit cost of providing the most appropriate treatment for each of the diseases to be covered; and 3) agreed protocols containing minimum standards for the treatment to be provided to ensure quality and accountability.

1) Estimation of Disease load: In India, estimation of disease incidence of even the widely prevalent communicable diseases are not available. Therefore for the component covering the National Health Programs, mostly actual reported figures have been adopted, while for OP, the 52nd NSSO incidence data has been extrapolated to Kottayam district. For estimation of inpatient case load, the data available with the District Hospital and the Medical College in Kottayam regarding the categories of services provided in any given year has been taken as the basis for apportioning patient flows for different services: acute medical, minor and major surgery, emergency and deliveries. These again are estimates and reflect the imperfections of recording systems. They are however fairly consistent with the data obtained for AP district hospitals which have over the years developed a relatively reliable system of records for middle level hospitals.

Theory states that insurance induces demand. Therefore, it is assumed that 85% of existing hospital capacity would be utilized, allowing for individual preferences for traditional medicine. An average length of stay of 7.2 (as calculated for Kerala by Tulasidhar and Sanyal, 1995) has been adopted to arrive at the number of hospital bed days and proxy for the number of admissions. These then have been distributed among different categories accordingly.

2) Cost estimations: There is a serious limitation on this front as no unit cost estimations for most services included in the package have been undertaken in the country. Therefore, costing of the benefit package proposed in this paper consists of derivatives based on available data: the unit costing for the national health programs are based on an analysis made for Andhra Pradesh in 1997 (Rao et al,1997); for the OP package the expenditures being incurred by the different income groups has been adopted from the NCAER Report of 1993, while quintile wise incidence is from the NSSO. For counseling services Rs. 50 per household as indicated in World Bank projects has been adopted. The cost for the IP package is however made up two sources of data: -

- a) average of the amounts paid by the GOI to purchase services from private sector hospitals under the CGHS program;
- b) average of actual charges of 5 private hospitals that includes a corporate hospital, one missionary hospital, two for profit medium sized hospitals and one NGO hospital.

The final cost is based on an approximate average median cost of a and b above.

The costs indicated above are market prices and are therefore expected to include profit and administrative overheads, expenses on publicity etc. Their validity as proxy for unit costs lies in the fact that they form the basis for any negotiation for payment, be it government or private insurers. In such a system the sufferers are clearly the insurer, insured and the fee for service consumers who are paying far more than actual costs but are unable to bargain better

rates in the absence of information on unit costs. For example, the unit cost of an IOL surgery (ie. cost of inputs) would not be more than Rs.1000. For high quality, excellent amenities and reasonable profit margins etc. the base cost could perhaps be multiplied by a factor of five to ten times. Yet private hospitals charge more than 20 to fifty times the cost. Therefore, the costs arrived at based on the prevalent market rates are higher than would be the case if unit cost estimations were taken as the basis. Proper pricing would enable reducing the premium amounts and improving overall affordability.

Further, the percapita premium amount has been arrived by making two assumptions:

-

- a) that 100% of the people will utilize the OP services within the district at the rates indicated as it would not be cost effective to go outside the village/district for routine care. Besides, it is unlikely that a provider in a village community setting would be able to enforce differential pricing of services; and
- b) an estimated 80% of the district population being enrolled in the scheme for inpatient care.

Based on the exhaustive analysis of available data, the benefit package has been costed which may be seen at Appendix 8-10. As can be seen, less than 5% of the patients account for more than 50% of the total cost. But if for economic considerations such catastrophic events are excluded, it would dilute the comprehensive nature of the package in peoples' perception, affecting their willingness to participate.

(iii) Role of Stakeholders for Ensuring Participation:

Basically, irrespective of felt needs, the content and design of the benefit package will ultimately depend on the relative priority accorded to health and the financial affordability of the payers involved, namely government and households. In this respect two facts clearly stand out: one, that health is not free - it is paid for either through taxes or directly from out of pocket by households; and two, government intervention is unavoidable - due to externalities and the inherent market imperfections. Therefore, the financing of the benefit package is proposed to be a partnership at four levels - a) the central government; b) the state government; c) the locally elected bodies; and d) the beneficiary households. The apportionment of the amount over the four principal stakeholders is depicted in **Table 5** (See Appendix 11 for details).

Table 5. Distribution of Financial Burden among Stakeholders in Rs/pa

Stakeholder	Existing Amt of exp./ per capita.	Addl Am Reqd/per Capita	Total /per capita	Total Contrbn – Rs. In millions	%to Total Cost	Mode of payment	In \$/m@ 1:Rs.48
Centl Govt	50	140	190	296	16.4	Block Grant on percapita basis	6
State Govt	150	40	190	296	16.4	Drugs in kind and rest in percapita basis	6
GP	-	127	127	200	11	Health Cess on Property and Profession tax	4
Per Capita Expenditure	546	104	650	1016	56	Total Premium	21
a)Admission Fee- /IP Care/Per capita	-	100	100	39		To be paid in cash at time of admission for IP care. Amt. Equivalent to Annual PerCapita OP care	
b)CoPayment-OP Care/Percapita	-	30	30	47		Rs. 10 every consultation x 3 consultations per capita/ year.	
Net Premium	-		520	930	56	To be paid at beginning of fiscal year adopted for the programme.	
Total	746		1157	1808	100		37

The financing arrangement suggested above is a fair distribution of resources, ensuring transfer essentially from the rich to the poor and the healthy to the sick through general tax and local health cesses to be levied by the local government. However, the redistributive function between the rich and the poor is in actuality a notion as the better off tend to live longer and more vulnerable to non-communicable diseases that are far more expensive to treat. Even so, risk pooling enables reducing expenditures from the existing 83% to 56% by increasing the share of public funding while also realizing better system efficiencies.

In fact, the role of the government as a key stakeholder is based on three central concepts of public policy – access, equity and efficiency. Concerns for access and equity justify government subsidy. But then, subsidies would need to be substantial as well as judiciously applied so as to make the intended target groups visualize the benefit exceeding their costs and carefully strategized to counter problems of free riders and misuse. The manner of administering the subsidy can also profoundly impact on behavior and sustainability. For example, blanket subsidies as a proportion of a potential estimated cost extended on considerations of age or income can result in escalating costs and overuse of services, resulting in the poorest and the high cost cases getting nudged out by the system.

For enhancing efficiency and thereby ensuring substantial social gains, government intervention is critical for optimizing resources and reducing average costs to become competitive. These objectives can be achieved by undertaking a series of measures, such as: incremental increases in budgets, decentralization of implementation, enforcing referrals, tightening supervision, rationalization of procurement systems, enhancing availability of resources for improving efficiencies in the public sector by broadening the tax base and improving efficiencies in tax collections, ploughing back into health a portion of the revenues collected from excise on tobacco, effecting a better convergence with poverty alleviation programs, and mobilizing additional resources by co-sharing some expenditures such as ambulatory services being available for a specified amount per head/family; co-payment for diagnostics above a certain amount or branded drugs only of those falling within a fixed price

range, a flat admission fee at time of entry into hospital to be paid for by all regardless of income and charging full cost for all self referred patients etc.

More specifically, for achieving the three goals of access, equity and efficiency, the role of all the four principal stakeholders in financing the benefit package is visualized as under:

a) **The central government** will need to fulfill its avowed commitment of funding the treatment costs of the centrally sponsored national health programs, which as per government policy are to be provided to all without charge. I have however, proposed user charges for delivery, individual counseling, and cataract surgery as these are not unplanned expenditures and do not have externalities. For purpose of estimating the number of persons that would be covered under the National Health Programmes 50% of the total estimated patient load under infectious diseases and the number of reported cases under malaria, leprosy, RCH (minus deliveries) and TB have been taken. Calculations show that out of the total estimated 5.5 million cases, an estimated 1.9 million cases would fall under the NHP schemes requiring an investment of Rs.420 million per annum, major share of which, in all fairness ought to be paid for by the central government. The per capita / episode cost of treating the NHP cases comes to Rs. 215, against which not more than Rs. 50 is being incurred by central and state governments put together. Enhancement of the amounts can be achieved by increasing health budgets, improving system efficiencies for reducing costs, and / or integrating health with other sectoral programs such as poverty alleviation, empowerment of women, social security for the elderly etc.

To enable system integration, central government grants should be provided as block grants on a capitated basis to the District, instead of the existing practice of vertical programmatic releases. The releases will need to be conditional to achieving certain parameters and indicators of performance. There are two advantage of such an arrangement: one, the risk of excessive expenditures will then be on the implementing agencies and not the central budgets; and two, it will provide incentives to the implementing agencies to be prudent as savings if any can be utilized for other needs. To ensure that such prudence is not at the cost of neglecting the poor, programmatic goals could be combined with coverage of families below the poverty line and individuals belonging to vulnerable sections – children, women, old and poor. The share of the central government indicated in Table 5 is a total of the subsidies that can be availed of under different schemes being implemented by the Ministries of Health, Women& Child Development, Rural Development and Welfare. These are Departments mandated to cover the welfare of the poor, the old, women and those belonging to the marginalized sections.

b) **The state government** is expected to continue providing the recurrent budgets for the public health facilities, but accompany these releases with appropriate managerial and financial delegation of authority at all decision-making levels for improving internal efficiencies. Labor markets are tightly regulated in the public sector hospitals. Given the strong union power, it may not be easy to amend these regulations that provide job security without linkage to performance. Another major constraint on improving system efficiencies is the significant distortions that have crept into the mix of workforce. For example, the adverse ratios of doctors and nurses; or the inadequate number of critical specialists such as cytologists and anesthetists; or shortages among conservancy staff to cope with the increased load of patients etc. Thus hospitals will become more competitive only after powers are delegated to them for undertaking appropriate manpower policies and deployment strategies

for enhancing quality and reducing duplication or excess. Public sector presence is critical purely for providing an “insurance function” (Kutzin), containing cost by providing the benchmark for prices and a rational utilization of technology and quality. However, while block grants will enable taking up new initiatives, control on capital investment or deviations from the prescribed drug list must be subject to prior approval. Attempts to give autonomy on these two critical aspects in several states indicate tendencies to use substantial proportion of revenues on acquiring sophisticated equipment or prescription of high cost drugs without regard to implications to future costs, needs of the target groups or program goals.

c) **The local bodies (Gram Panchayats)** have been conferred with powers to levy taxes. With the strong commitment of the government of Kerala to decentralization, the local bodies should be able to raise additional resources by levying a health cess of Rs.81 per household per month or Rs974 per annum from 65%¹³ of the families by way of additional tax on property and professions. This tax is proportional to the amounts required to bridge the deficit. If this is deliberated in all village councils and the linkage between tax and benefit established, opposition to this additional taxation can be reduced. Infact, economic efficiency requires that the costs of public goods having a distinct local reach should be paid for by taxes or user fees within its own space (Rajaramani, 2002). Secondly, mobilization of resources through local taxation by the Gram Panchayats do not add to fiscal deficits as they do not borrow. Finally, inherent in such taxation at local level is the concept of equity and redistribution between the rich and poor (those living in cement and tiled houses against thatch) and by implication between the richer and poorer panchayats (determined by taxable capacity of the respective panchayats). Additional taxation as proposed above is however an area which can be expected to be contentious and receive substantial political resistance requiring skillful advocacy and a sound strategy for mobilizing public support.

d) **The households** will need to contribute about 56% of the total premium in two ways - through contributions at the beginning of the fiscal year for gaining eligibility and as co-payments for identified services as detailed in the following paragraphs. It is often argued that fixing co-payments to services tend to deter the poor from availing them. But then in India a major problem is the insistence of patients for certain services, which they perceive to represent quality, namely injections and saline bottles, irrespective of the medical need. Curbing such undesirable notions of quality is therefore necessary. Preventive education, self care of minor ailments and self limiting illnesses through home remedies and increasing use of traditional medicines etc. would be strategies that will need to accompany these measures and strongly advocated to reduce moral hazard and unnecessary consumption of high cost drugs or services.

(iv) Payment Systems for Improved Efficiency

Normally, payments are retrospective, made on claims preferred by providers for services rendered. But this system is time intensive and administratively expensive (Bhatt, 2001). Instead, payments made in the form of a block grant against program targets related to volume and case mix or in other words, delivery of a certain package of benefits, has several advantages: ease of administration, lesser scope for delay and corruption, and more time for monitoring. From providers point of view also, it gives room for innovation and an incentive to save and thereby keep costs low. This then is the basis for the suggestion that the

¹³ Identified on criteria of type of housing and amenities such as electricity etc. (NCAER, 1993)

providers, be they government hospitals or private, be paid in the form of a block grant at periodic intervals - monthly or quarterly. This has the advantage of control with flexibility. Further, the last quarter grants can be released based on the reasonableness of the total billing at the end of the year.

The nature of payment systems influences consumer and provider behavior. Under the system of prepayment, there is likely to be an increase in the utilization of facilities as there is an “accumulated deficit” due to the financial barriers that had deterred usage, particularly among the low-income categories. But then, as argued by Gupta, with the poor more sensitive to price and a disproportionately higher burden of disease, access to services by removing the financial barriers can produce large increases in welfare (Gupta, 2002). Therefore, increased utilization by low-income groups should be seen as indicative of the successful functioning of the scheme. More important is the factor of induced demand. Zero price of services do often result in malpractices¹⁴ among providers and entail substantial welfare losses on account of the marginal value of the service being lower than the cost of producing the service. To discourage such resultant overuse cost sharing mechanisms on the demand side – deductibles, coinsurance, co-payments etc. need to be incorporated. But again the suitability of these instruments will however depend on the relative elasticities prevailing in the different markets. For example, enforcing a co-payment or deductible for ambulatory care can be expected to contain use but would be meaningless or regressive for emergencies due to the inelasticities associated with emergency care¹⁵. Similarly, induced demand can also be contained by insisting on obtaining preauthorization for admissions, second opinion for any expensive test or treatment, strict utilization reviews etc.

Despite the intractability of controlling costs and the contentiousness involved, it is necessary that unit cost estimations of rates of the procedures and services to be provided under the package be undertaken. Pricing of services is perhaps the most difficult part of the scheme but is central to its success as given the fragility of the financial position of the government and households, frequent increases in the premium amounts will be unsustainable. Secondly publicizing of the agreed upon rates to curb any attempts of providers circumventing the system by resorting to underhand cuts taking advantage of the general level of gullibility among patients would be necessary. And finally computerised record keeping, ID cards for each member household, reporting and inspection systems, patient record keeping, supervision and rewards, such as bonus, to those providers following best practices etc. to minimize fraud and malpractice are other aspects that need to be addressed.

Provider Payment: Keeping international experience and ground realities in view and pending further research on different aspects of provider payment systems, government will need to continue with the existing system of salaries to providers but consider ways of introducing incentives for achieving higher performance standards. As already suggested by making block grants available to hospital units with emphasis on performance outcomes and delegation of managerial decision-making, there is scope to stimulate and motivate better quality of services by introducing some financial and some non-financial incentives. Reasons for the inability to set in motion such initiatives so far, in the existing environment is the historical practice of establishing equivalence of specialists with other categories of employees on the criteria of the number of years of formal study. Such a procedure ignores

¹⁴ Under or over prescribing/treating patients for making profit is construed as malpractice.

¹⁵ An imperfect understanding of elasticities often result in recommendations to make outpatient care free and impose charges for hospital care creating distortions in resource use and patient behaviour.

the fact that specialist skills are acquired over a period of time and the investment returns on specialists begin to accrue only when on reaching a certain level of expertise, measured either in terms of the volume of cases handled in a unit of time or in reduced number of wrong diagnosis/ outcomes. Non attention to these critical dynamics of health care often result in public hospitals losing out on competent specialists who actually add value to and give the required comparative advantage in a highly competitive environment.

In the private sector, payments can be made on a monthly or quarterly basis in accordance with conditions laid down. In fact in Germany or Canada only 90% of the bills are paid by the insuring agency with the remaining subject to the total claim amount not exceeding the original agreement and the promptitude with which the providers have furnished information, records and returns. As in UK, cost containment will necessarily have to be the single most important concern: with penalties and rewards to facilities and providers who focus on prevention and promotion and reduce costs of care.

Co-sharing by Consumers: For co-sharing by consumers, two systems are proposed. For OP services at clinics and in hospitals, payment will need to be fee for service, with the amount being claimed from the designated authority on a reimbursement basis. Since, with the development of technology many procedures that previously required hospitalization are now being performed in OP clinics, such automatic reimbursement will need to be restricted to a fixed amount. For procedures and services exceeding this ceiling amount a co-payment of about 20% of the estimated cost could be charged from the consumers. Besides to deter frivolous use, Rs.10 per visit subject to a maximum of 3 visits per capita per year is suggested.

For IP, the service will have to be zero at point of service, except for a small admission fee that is equivalent to the estimated per-capita amount of annual expenditure incurred on outpatient care. In this case this comes to about Rs.100. The present system of fee for service payment is no solution as for most part people of the poorer income groups are unable to mobilize the required money as has been described in detail in earlier paragraphs. Therefore systems have to be developed that will ensure that the patient is not subject to any payments once admitted in hospitals. Infact, the hospitals need also to ensure, particularly for the poor, free transport and diet while at hospital. This single intervention would enhance the acceptability of the scheme as often the poor are deterred from availing hospital treatment on account of the un-affordability of indirect expenditures. To check abuse of this facility however, admissions will need to be subject to guidelines, referrals and in high cost cases except accidents and injuries, may even require a second opinion or pre admission approvals from another authority.

(v) Implementation of the Package - Restructuring Institutional Mechanisms and Reorganizing Relationships

For the delivery of services I have proposed induction of two institutional players on the demand side controlling considerable market power - 1) the Health Insurance Board at the District level; and 2) the Gram Panchayat and women groups at the village level, combining thereby the two concepts of social insurance and community based insurance. Introduction of these two players will have implications for restructuring existing relationships in 3 ways: a) The Government providers and health administrators would be required to focus on health prevention, reduce disease burden and make the public health system more competitive; b) the private sector will need to shed its insular existence and be more accountable to both the individual patients as well as societal goals; and c) the people will have to become more

active players in the adoption of better health behavior and lifestyles as well as in making the health providers more accountable based on the knowledge that in the ultimate analysis it is their earnings that makes the system work.

The concept: Organizational structures are normally shaped to suit the objectives of financing systems. Be it India or UK, expenditure control being an overriding objective there is centralization of all spending decisions – costing, sanctioning, releasing, accounting, mandating referrals through gate keepers etc. While such concerns seem justified, in the context of under funded facilities and illiterate consumers the trade offs are low patient satisfaction and poor accountability among providers.

Besides, in a prepaid insurance system the key actor is the consumer on whose willingness to contribute rests the whole system. But the individual consumer due to his vulnerability further accentuated by the low level of literacy and social standing, cannot be expected to negotiate lowered costs of care as he is heavily outweighed by the vastly superior strength of the provider. Therefore, Enthovens' idea of a sponsor merits attention (Enthoven, 1983, 1993). The underlying concept of a strengthened demand side to provide for a market, which allows for a level playing field and perhaps even tilt it to the advantage of the consumer has force. It implies that the purchasing function needs to be centralized into one entity large enough to make a difference to the practice and earnings of the providers. The concept also draws from the power of a single payer being able to negotiate better terms as in Canada than in a multipayer environment as in US. This concept is the basis for proposing the District level Health Insurance Board as the sponsor.

Economy of scale that comes from a large risk pool is an important consideration for covering hospitalization. The district is an administrative and an economically viable unit with potential to fulfill the two preconditions for a health insurance programme: (i) adequate population; and (ii) broadbased coverage in depth and breadth i.e. covering a larger population and a wider range of services for enhancing the willingness to pay. By laying down a minimum level of say 75-80% population coverage at the village panchayat level as the eligibility criteria for receiving government subsidies, it could be ensured that neither the healthy nor the better paying sections slip out of the scheme. And in order to achieve the willingness to pay and optimal participation, substantial subsidies targeted to the poor, a need based standardized benefit package and linkage to provider networks within the district have been incorporated as the three core elements of the design.

However, a district-based sponsor negotiating the financing of OP care can be problematic as the market for ambulatory services in India is disorganized and unregulated. Therefore, there are two approaches for this component of the package: One could be notifying specific centers, where the insured members would be eligible for subsidized care. Non-members would then have choice of provider but at full cost. In other words, in such a system, choice would be restricted in lieu of subsidized care. The difficulty in such a model is the sheer impossibility of monitoring.

The second approach could be based on the principles of community financing where women groups within villages, consisting of 30-50 households, become medical saving and financing units for carrying out the three principle functions of collecting contributions, purchasing care for the group at the most favorable rates and paying the provider. The groups by federating with each other within and nearby villages could then acquire for themselves the bargaining power to negotiate favorable terms with the providers for the package. In such

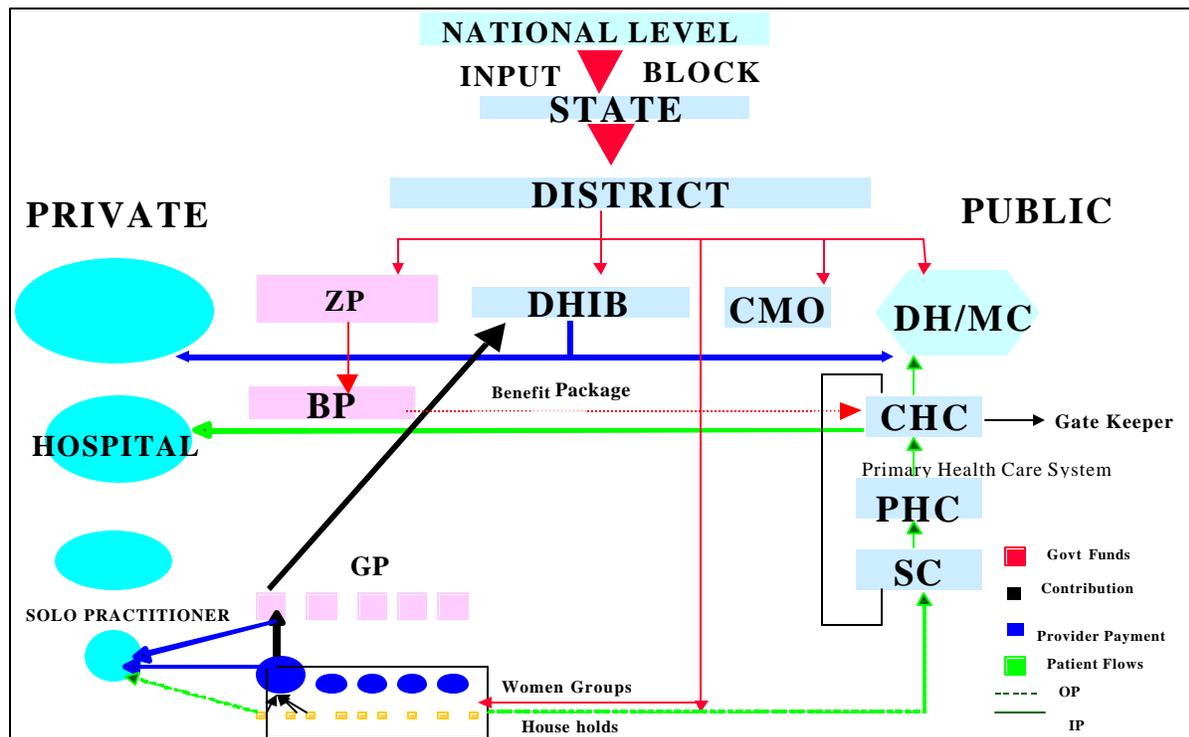
an arrangement, the risk will be equally shared between the provider and the payer as the provider will lose a good clientele in case of poor service delivery. Such arrangements of community financing are not strange in India, where over 5 million women in the state of Andhra Pradesh command over Rs. 1.3bn. for group lending facilities for taking up economic activities.

Due to the absence of social homogeneity at the village level forging solidarity necessitates extraordinary leadership. The village community though identified as an administrative and political unit, is fragmented vertically into various caste groups and horizontally across communal lines. These social segments have serious political overtones, making the elected local bodies, the most accepted authority (Sen Dave, 1997) necessitating their active participation alongside the women groups. Therefore, the working of the model will be heavily dependent on the extent to which Kerala will further the course of decentralization and ensure accountability of the system. At present there is the concept of accountability, but to the superiors in Government and the Legislative bodies who sanction funds but not to the patient and ordinary consumers of health services. With the patients now "sanctioning funds", the accountability will have to shift outwards and downwards.

Secondly, decentralization cannot be partial - the anachronism of centralized control over functions constitutionally delegated to local bodies has to be corrected. For example, while the local bodies are responsible for water and sanitation, funds come from the central government, absolving them of their responsibilities as it were. Therefore, whatever be the soundness of organizational principles, success will be contingent upon the extent of decentralization of funds, functionaries and facilities to the district level and below, allowing space for local communities to play a role. Besides, the extent to which providers are atomistic entities and the extent to which they are integrated horizontally or vertically will also impact upon the relative efficiencies in price and delivery. Integration of certain services, particularly of scarce categories such as anesthesia could improve outcomes. Similarly, vertical integration of the primary health care system could make referrals more smooth and efficient. But excessive integration can also lead to monopolistic trends.

The organogram at Figure 3 below depicts the organizational restructuring and revised relationships between institutions that would be required for implementing an insurance programme. As can be seen, the model envisages that village households individually and collectively identify the package of OP services they want and negotiate its price with local providers, while also availing services as available in the public health facilities - sub-centers and primary health care centers. For Inpatient treatment, the Gram Panchayats will collect the premium amounts and pool the money in the DHIB, which in turn will contract services from private and public hospitals to be identified as "partners" based on the fulfillment of laid down standards and proximity to the population to be served. However, referral for secondary care will have to be done by the public run CHC established at 100,000 populations, which will play the gatekeeper role. The financial structure envisages the central government as releasing block grants with conditions laying down certain program targets, and the state government making available these funds to the DHIB, the local bodies as well as the District Medical Officer for implementing the various national health programmes and strengthening the public health infrastructure. Details of the 3 new and key components of the structure, namely the District Health Insurance Board, the collection system through Village based groups and the gatekeeper are described below.

Figure 3: An Integrated System- Financial and Patient Flows



a) The Financing Intermediary - District Health Insurance Board

The issue that arises before us is whether the current vertically and horizontally fragmented structure can deliver and administer a comprehensive package based on an integrated dynamic. Since, organizationally, health insurance plans require institutional mechanisms to mediate the transfer of finances from the consumer to the provider and service provision from provider to the consumer, a commercial insurance agency, a health facility or even a government body can be options to choose from. Third party commercial insurance (public or private but run on commercial lines) entail substantial overhead charges, invariably increase premiums and exclude the needy by one stratagem or another for the sole purpose of profit maximization and therefore need to be viewed with extreme caution¹⁶. The second option of a HMO type of institutional development will take a long time to evolve in India. Its ability to contain costs is also not established as the HMO's are found to choose the young and healthy and thereby keep their premiums and costs low. This leaves the third option of having a government constituted parastatal functioning on non-profit lines. Besides, insurance requires institutional mechanisms for costing of services; accrediting participating facilities; contracting and negotiating the benefit package; marketing the policy to ensure coverage of 80% of the population; collection of premiums, settlement of claims, redressal of complaints; and monitoring of the participating units for fraudulent billing or default; and the gatekeeper function to screen patients and also attending to health preventive activities to reduce cost etc.

¹⁶ The Public Sector Insurance Company has doubled its premium amounts for similar benefits within a span of two years, under a scheme where the government pays the premium amount on behalf of the poor populations for hospital care subject to a fixed amount.

3.18 District Health Insurance Board - objectives, composition, functions

Since insurance systems require new skills in costing and contracting and a thorough knowledge of the functioning of insurance markets, it is essential that a professionally managed institution be established at the district level, such as a District Health Insurance Board. The DHIB should function as an independent body under the direct control of the IRAD with a technically competent expert appointed as CEO for a fixed period of five years. Membership of the DHIB should not be more than 30-50 persons and should consist of officials, locally elected leaders of the ZP and PS; village based community/ women groups and village Panchayats; NGO activists with experience in health; and professionals. Besides, making meetings of the Board open to public with the right to information and dissemination of information on those cheating the system, overcharging, indulging in abuse or against whom claims have been filed etc. could be effective ways of ensuring that free riders do not get in, corrupt practices are minimized, disproportionate amounts are not consumed by the rich or the less needy by collusion between the elites and private sector hospitals etc. For more frequent policy direction, a smaller executive committee may be constituted, with the CEO having full fledged departments with experts for contracting, accounting, auditing etc.

The functions of the proposed DHIB could be broadly five; 1) collecting finances from all stakeholders; 2) contracting providers (public and private facilities / professional organizations) for providing the package of services, demarcating also the geographical jurisdictions as per need; 3) instituting eligibility criteria for participation in the scheme, for which the concerned individual or institution should be charged a fee; 4) settling claims and redressing complaints within a stipulated time; and 5) conducting medical audit to reduce misuse and fraud. Of all these functions the most challenging are two - prompt collection of premiums and enforcing the gatekeeper function to which we now turn.

3.19 Collection of Premiums Through Village Based Organizations

Given the informal structure of the market, marketing and collection of premiums can become a very expensive proposition driving up the costs. Besides, in the absence of a legal mandate, the success of the scheme will depend upon the principles of solidarity and social cohesion. Therefore for minimizing administrative costs, collections will need to be decentralized to the Gram Panchayat, which as collectors of taxes already have the full listing of households. To ensure the sustained participation of the poorer classes and enabling them to access funds for making timely contributions a system of medical savings may be introduced among the women groups organized by NGO's or under the flagship program called "Kudambshree" the features of which are detailed below. These groups can then become the nucleus for availing of central subsidies from the different departments under the ongoing schemes¹⁷.

3.20 Medical Savings – Community /Village based Women Groups

Kerala launched Kudambshree, a flagship program of women empowerment in 1995, under which gram panchayats and municipalities are empowered to form neighbourhood groups of 15-40 poor¹⁸ women to undertake micro-credit activities and lending among

¹⁷ For example, the Department of Rural Development under the DWCRA programme provides 50% matching subsidy for groups savings. The same department also provides Rs. 500 for every pregnant woman.

¹⁸ Kerala has developed an interesting 9 point index for reducing bias in the identification of the poor by the community. Called the "risk index" it consists of variables such as substandard house, no access to latrines, safe

themselves with total autonomy in planning and management. The Neighbourhood Groups are then federated into Area Development Societies (ADS) and Community Development Societies(CDS) at the panchayat levels to converge with the structures of governance. Such convergence of women groups and local bodies helps avoid conflictual relationships and also makes the local bodies responsible for nurturing these groups. As on today there are 1,11,000 NHG's, 15,616 ADG's and 1049 CDS's who have mobilized Rs. 2bn. and invested over Rs. 880 million with 99% recovery rate. Constituted mainly for increasing incomes, the activities of the women groups have been so far focused on economic, income generating micro enterprises. The participatory process of economic empowerment has contributed to the development of social capital, fostering perceptions of collective strength, social security and social action and a mutual support system (GOK, 2002, Narayana, 2001) The women groups have also enabled access to various government programs.

Given the close association of poverty and ill health, the high out of pocket expenses for health and the fact that in the destitution of the family, it is the woman who becomes most vulnerable, it is ideal to base the collection of family contributions for health insurance in the women groups. The groups can be motivated to earmark a portion of their savings for health and also be permitted to take loans from their group savings for paying their contributions to the Community Development Societies. The CDS's along with the Gram Panchayat can be the unit for negotiating contracts with local health facilities for all OP treatment. The CDS and GP will be provided technical help to collect the premiums, contract services and settle individual claims. As almost every village has a minimum of 3 doctors and easy access to ayurveda and homeopathy medicine, the CDS +GP combination would be the appropriate unit to work out the details of the payment and utilization limits with a view to ensure gender sensitivity as well as minimizing moral hazard. Once rates are fixed and contract for servicing the benefit package finalized, the beneficiaries could be given the choice of provider.

drinking water, family having children below five years of age, one adult illiterate member, getting barely 2 meals a day, having one alcoholic or drug addict and having one or no earning member and finally persons belonging to the socially disadvantaged groups. The poor are thus identified on this index by the community and the list validated by the groups. (Source GOK, 2002)

c) **Gatekeeper for a Referral System**

The concept of a gatekeeper is new to India and therefore patient flows are not regulated. Attempts of government to insulate at least the medical colleges from routine care have been made impossible on two counts - the overwhelming demand of patients for specialist care and the gradual decline in the credibility of the non specialist. In Kerala the desire for specialist care is what has kept patients prefer treatment in medical college / district hospital, despite the poor quality of the amenities and the significant out of pocket payments to be incurred by them.

Such an unregulated flow of patients could make an insurance scheme very unviable. Due to the non-feasibility of earmarking populations to a particular gatekeeper, it would be necessary for designating the Community Health Centers as the gatekeeper for referral. For operationalizing this a mapping exercise would need to be undertaken to ensure that distance does not become a barrier for access. Till such rationalization of resources emerges and the system of working with the private sector firmly grounded, government facilities will have to be the sole channels for referral to specialist care in the public and private sector.

Summing up, the Table below gives in brief the key elements of the proposed design of the model:

Table 6: Key Elements of the Proposed Insurance Model

Indicator	Design Features
Beneficiary Coverage	80% of Population
Basis of Enrolment	Voluntary – Bonafide resident; Payment of Premium at beginning of Year
Benefit Package	Comprehensive – 85% of needs – Preventive care + OP + IP; Choice of Provider
Restrictions	Co-payments for OP; One time Admission Fee for IP; Exemptions – all tertiary care, HIV/AIDS etc.
Provider Eligibility	Public and Private subject to compliance with standards laid down; Provisioning of services at agreed rates and provisioning of reports/records as prescribed for full payment.
Financing	Mixed – Government through General taxes, Health Cess by Local Bodies and Household Contributions
Nature of Financing	Block Grants by Central and State Governments; Contributions by local bodies and households.
Premium Rates - Basis Key Institutions	Community Rating but indexed to four income slabs The DHIB at District level; Medical Savings at Village level through Women Groups and Gram Panchayats; and the CHC as Gatekeeper.
Expected Outcome	Improved Access; Rational use of resources and optimal utilization of public facilities; peoples control over provider behaviour due to strengthened bargaining power; greater accountability and better quality of patient care

Section IV:

Discussion

Extrapolating the financial estimates arrived at in the proposal detailed in this paper to the country is not possible or advisable as these have been made keeping in mind the specific district epidemiological and demographic data. As argued earlier, a more generous package is possible in this district due to its endowments. In most states such a package would be unrealistic for want of the carrying capacity of the health system to deliver.

The critical point to note is that the district is already incurring an estimated Rs. 1295 million¹⁹ based on the figure of Rs. 200 per capita public spending constituting 17% of the total as indicated in the NHP2002 (Page 4). Yet, the poor are hardly able to access secondary care and are getting impoverished when they do. Therefore, if the financing system could be restructured and the amounts pooled, better efficiencies can be obtained. Against this background, the proposal seems extremely viable and feasible at Rs. 1808m providing a guaranteed package of services to all the poor and not so poor. In fact as already indicated, if more rigorous costing of services is undertaken, referral systems enforced and the unfinished agenda of the huge burden of infectious diseases through aggressive health promotion and education undertaken, the costs will come down further and so will premiums.

The welfare benefits of such a prepaid system of health care delivery are clear and need no further reiteration. But the risks are several. The model assumes a large number of possibilities that are volatile and quite beyond reckoning. First the political will. This can act in two ways. The political will that is interested in long-term sustainability and willing to undertake strategic reform as was done by Singapore in 1982, can hope to achieve real paradigm shifts and a more efficient and equitable system of care. The second is the political will, which sacrifices detail for short-term political gains by making lump-sum assumptions to suit a programmatic activity. Without a clear strategy based on a full-fledged consultation and debate and the full understanding of the future implications, government intervention in insurance markets can be ruinous. As it is India is vulnerable. Without regulating its health system, India has allowed entry of the private sector in health insurance markets and is fast moving towards a system consisting of commercial insurance companies and third party administrators as in the US. It is not being appreciated that in the US, the health system is not only high cost but despite spending over \$4500 per capita on health still has over 17% of its population without access to basic health care. Administrative costs are estimated to account for almost 20%. It is for this reason widely acknowledged that it is one of the most inefficient systems of health care in the world. Therefore, adoption of such a model can have disastrous consequences for a country like India that is poor in resources and has such wide disparities. Therefore, which way the political will seeks to express itself will determine the acceptability of this model. Second is the ability of the current day administrators (civil and medical) at central and state levels to so time and pace the change as to overcome resistance and imagined fears that normally occur when anything new is proposed. The proposal is new for it envisages a new paradigm, demands a shift from current practices and is based on the principles of trust and equity. But bureaucratic resistance can also be overcome if the overriding political will to change and shift gear is there. Besides, like all bureaucracies in the

¹⁹ Calculation : Rs.200x 1952000 (17% public spending of total) = Rs.390 million and Rs.976 x1952000 (80% household contribution) = Rs. 905 million . Total Rs.1295m.This is only the health department. In addition would be further government spending on other health enhancing activities.

world in India too, the tendency is to sacrifice the long-term implications for short-term gains. Third, inadequate marketing of the proposal to secure the cooperation of all stakeholders can create needless resistance. Fourth, and most importantly lack of good quality research on all related aspects – epidemiological, behavioral, financial disaggregated to income, age and social classes could be a serious constraint as such evidence is critical for assessing the true financial implications of the model. Fifth, the ability of the professional organizations to self regulate and adopt rational practices as in almost all developed countries.

Conclusion

The present system of financing and payment systems raise several important concerns on the suitability of the structure to meet current day problems and future challenges. Can this system be changed so it can generate better health outcomes, enable wider participation of civil society, provide more choices to consumers, increase provider accountability, achieve more optimal utilization of existing capacities and promote more need based deployment of resources? The large size of out of pocket expenditures seem to suggest a willingness to pay giving scope to a possibility of individual households getting together to pool their funds which would enable them to convert unpredictable lumpy expenditures into small installments of predictable amounts at regulated intervals; enable the spread of risk from individuals to the wider community and redistribute resources to the needy - the ill and the poor. Given the inelasticities of demand for acute care, in poor households, the expenditures could be at the cost of foregoing more essential consumption, namely food. In short the social benefits of instituting social insurance as a financial instrument to replace the existing fee for service system of payment, which is causing so much financial distress, outweighs the possible risks of moral hazard and increased costs, typical outcomes of prepaid insurance. How to minimize these two market failures has been of concern and sought to be addressed in the model for a district based but community anchored insurance system covering the majority of the poor and middle classes. It has been argued that it is not advisable for governments to intervene in health insurance markets in a partial manner as it only causes several distortions. Health is much too integrated and complex a sector for across the board solutions. Therefore, restructuring and reorganizing the health systems to suit present day realities cannot be postponed any further without seriously jeopardizing the health status of the people in the future. Besides, the sooner it is realized that health is expensive and can no longer be a matter of charity or welfare the better for bringing in the required structural shifts.

In conclusion it is reiterated that given the increasingly unstable economic environment, the growing demand for health services on account of the huge disease burden, the narrowing tax base and ineffective tax collection system making it impossible to rely only on public budgets to finance the overwhelming needs of the health sector, the rapidly growing private sector inducing demand on a scale and in a manner that is impoverishing a large number, make the case for some form of health insurance very compelling. Besides, the market failures that make the consumer particularly vulnerable to the power of the physician can be effectively countered either by monopoly purchase by government or by community controlled insurance systems. With the constraints on government to fulfill its original mandate of providing universal access to free health care, insurance can be an important instrument for mobilizing resources, providing risk protection and achieving improved health outcomes and therefore needs to be seriously examined. Finally, the critical issue is not the

failures of insurance markets²⁰ or the merits or demerits of insurance, but the designing of the structures and processes, institutional mechanisms and regulatory frameworks for minimizing distortions so that the outcomes do not result in making the cure worse than the disease. Unregulated markets are inefficient and also inequitable and therefore require governments to intervene so as to ensure no segmentation in the system (G Bloom, 2001). For this, the burden of building partnerships and managing change is on the government, which in turn needs to base its strategy on sound research. If this paper has succeeded in drawing attention to providing some pointers towards a possible pathway to these complex set of issues and stimulate further research on some of the critical gaps it would have served its purpose.

²⁰ The problem of moral hazard and adverse selection are being experienced by the GIC- a public parastatal with the largest market share in health insurance, as witnessed in western countries.(SeeCharu Garg, 1999)

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APPENDIX 1

FINANCIAL EXPENDITURES IN KERALA - 1981-97

<u>Indicator</u>	<u>1981-82</u>	<u>1987-88</u>	<u>1991-92</u>	<u>1997-98</u>
Revenue Exp. as % to NSDP	17.5	22.1	22	30
Capital Exp as % of NSDP	5.87	5.87	4.62	4.68
As % to Total Exp:-				
Social Services	41.7	38.6	36	34.2
Medical & Health	9.6	6.6	6	5.5
%Rev Exp. in M&H to TRevenue	9.7	7.4	6.9	6.1
%Cap Exp in M&H to TCapital	9.6	3.5	1.3	1.5
Per capita Ex. On M &H	*22.3	28	29	36.4
Per capita on Water Supply & S	33	37.3	37.7	45

COMPOSITION OF HEALTH EXPENDITURES *

<u>Sector</u>	<u>1977-80</u>	<u>80-89</u>	<u>90-92</u>	
Primary	15.5	21.3	21.3	
Secondary	36.5	21.3	35.9	
Tertiary	21.5	21.4	21.8	
Total in Rs./million	630	900	1010	
% Distribution. Components '90-93	Salaries	M&S	Maintnce	Conting
Primary	76.6	24	0.22	-12.4
Secondary	95.6	3.6	1.7	1.7
Tertiary	82.8	12	1.2	4

Source: *Raman K , 1993

APPENDIX 2

DEMOGRAPHIC & SOCIO-ECONOMIC STATUS - INDIA, KERALA & KOTTAYAM

<u>INDICATOR</u>	<u>INDIA</u>	<u>KERALA</u>	<u>KOTTAYAM</u>
Population/m	1027	31.8	1.9
Sex Ratio	933	1058	1025
Literacy	65.38	90.9	96
Male	75.85	94.2	97
Female	54.1	87.8	93
Life Expectancy	61.3	71.7	
Male	64.1	71.67	
Female	65.4	75	
Decadal Growth ' 91 -01	21.34	9.4	6.76
CBR/1000 (1997)	26.1	17.9	
CDR/1000 (1997)	8.9	6.2	6
IMR/1000 (1997)	71	12	
MMR/1000 (1997)	4	<1	<1
% Institutional Deliveries	35	92	97
Age Structure			
0-14	33.6	23.5	26.4
15-59	59.4	61.5	62.7
60+	7	15	10.9
Pop Below Poverty Line			
NSDP (1999-2000) /Bn.	15903	625.5	4.2
Per Capita Income (Current Prices)	13,193	19461	21871
Growth Rate of Income% GDP amount prices	11	15.76	20.14
Av. Daily Wage Rates			
Transplantation (F)	44	93.65	
Skilled Labour (M)	42-104	147-172	
Unskilled Labour (F)	39	86	91
Per Ha. Income from Agriculture	14178	31468	
% Connectivity to Villages	47.2	100	100
% Coverage with Safe Water	48	72.9	90
Distance to Health Facility -kms.	2.69	2	2

Source: Government of Kerala, 1998

APPENDIX 3

EPIDEMIOLOGICAL TRANSITION IN KERALA

NON COMMUNICABLE DISEASES	Prevalence / Incidence
CANCER- 35-64 Age	
Incidence /100,000	
*Women	76.4
Men	85.8
% Total Mortality (M)	8.3
(F)	10
**CVD /1000 Pop 25-64 Yrs.	
Overall	12.65
ECG Changes	27
Angina	47
Chest Pain >30 minutes	12
Rheumatic HD 5-15Yr olds	7
% Total Mortality(M)	52.8
(F)	46.5
***Diabetes- Prev	11.6
Urban	13.7
**Hypertension->25yrs-/1000	179
****>30 yrs	30%
Suicides/Accidents	
**** %To Total Mortality (M)	12.5
(F)	10
Asthma/COPD/1000	14.25
%To Total Mortality(M)	5.7
(F)	7

*TVM – RCC

**Kutty , 1993

***Kutty ,1997

**** Field Study - HAP,2001

COMMUNICABLE DISEASES

Indicator	India 2000	Kerala 1986	Kerala 1997
Malaria/cases+ve	2.2m	11878(95)	5141(99)
TB/cases/1000	4.3	6.2	4.16
Leprosy/1000	3.71	2	0.9
Jaundice	9.6 m	2.8	0.65
Diarrhoea		22	1.5
Fever & cold		118.5	68
Respiratory Infections	3.6 m	3	3.62
MMR/1000	4	2	<1
Instl Deliveries	35	78.4	97
%Low Birth Weight	30	19	13.3

APPENDIX 4

Socio-Economic Indicators & Health Infrastructure in Kottayam District

Villages 90; Gram Pts 73; Blocks 11; Municipalities 4						
INDICATOR	KOTTAYAM - Population 1.95 million				Ayurveda	Homeopathy
		Tertiary	Secondary	Primary		
Total Instns.- Government	83	1	29	53	51	33
Beds	3,218	1100	2118	209	150	175
Beds/per 100,000Pop.	169					
% Occupancy for Gynae	16 - 86					
Pediatric	3 - 60					
		>100 Beds	50-100	<50		
Total Instns.- Private	188	15	31	142		
Beds	6455					
Clinics	219					
Beds/100,000	339					
Location						
District HQ - 6						
Block HQ - 153	188					
Villages - 29						
Licensed Medical Shops	679					
No. Of PHC's	60					
No. Inadequate Lab Support	53					
Without Beds	39					
No Labour Room	44					
No Room for Doctor	18					
Number	90					
% Having Electricity	100					
Educational Facility	99					
Health Facility	99					
Drinking Water Source	100					
Post&Telegraph	98					
Communications- All Weather Rd.	100					
Housing (Proxy for Eco Status)						
Thatched Houses	36%					
Tiled Houses	58%					
Cement Houses	10%					
Occupational Structure %	Worker s	Marginal Workers	Cultivators	Agril. Workers		
	29.5	2	18	25.5		
Land Holdings- Distribution	Big Farmer s	Small Farmers	Marginal Farmers			
Number %	1.16	13.8	85			
% Land Owned	17.8	47.2	35			
Households Earning <12,000PA	12137 6					

Income Disparities Between Rich: Poor = 7 times (Kerala 12 Times)

APPENDIX 5

MEDICAL CERTIFICATION OF CAUSE OF DEATH -MAJOR CAUSES 1993- 1995

YEAR	INDICATOR IN %	<1 Yr.	1-4 Yr.	15-44	>45
1993	Bacterial Diseases	9.63	6.93	4.13	1.34
	TB	0.19	2.49	4.32	3.7
	Diseases of Nervous System	5.29	8.03	5	2.1
	Heart&CV Diseases	1.25	4.16	15.56	52.3
	Diseases of Respiratory System	12.42	13	7.6	6.5
	Conditions/ in Perinatal Period	62.95	NA		
	Intestinal Infections	2.9	13.57	4.3	1
	Accidents & Injuries	0.19	14.13	24.8	4.72
	Viral Diseases	0.19	16.34	2.57	1
	Neoplasms	0.58	8.86	11.12	11.5
	Diseases of Digestive System	0.6	5.2	8.9	7.3
	Nutritional Diseases	0.3	0.2	2	6
1995	Bacterial Diseases	9.02	7.12	2.7	3.25
	TB	0.23	3	3.8	3.1
	Diseases of Nervous System	3.94	8.14	3	2.2
	Heart&CV Diseases	1.73	3	16.5	49.2
	Diseases of Respiratory System	10.98	11.5	5.18	7.84
	Conditions/ in Perinatal Period	64.74	NA		
	Intestinal Infections	3.12	12.88	4.13	2.9
	Accidents & Injuries	0.93	14.58	29.4	10.3
	Viral Diseases	0.46	15.25	2.9	2.2
	Neoplasms	0.58	8.47	10	10.6
	Diseases of Digestive System	1.27	5.76	8.73	5.59

Source: Government Of Kerala

APPENDIX 6

MONTHLY AVERAGE EXPENDITURE (Rs)PER PERSON IN KERALA- 51ST-55TH ROUND

<u>ITEM</u>	<u>51st.</u>	<u>52nd</u>	<u>53rd</u>	<u>54th.</u>	<u>55th.</u>
RURAL					
Food	266.6	295.9	321.4	336.4	411.2
Non Food	189.2	210.5	247.0	267.0	354.5
Total Consumption Expdr.	455.8	506.4	568.4	603.4	765.7
%of Food to total consumption	58.5	58.4	56.5	55.8	53.7
RURAL					
Pan	1.1	1.5	1.5	2.4	
Tobacco	6.9	6.3	8.5	9.1	8.7
Intoxicants	3.8	4.7	4.7	8.3	7.6
Education	9.7	18.3	27.9	22.6	20.2
Medical (Instl)	5.2	9.6	16.4	25.8	21.6
Medical (Non Instl)	14.3	17.2	18.9	28.2	39.3
%of medical to Total Non Food	10.3	12.7	14.3	20.2	17.2
URBAN					
Food	273.6	360.3	393.8	392.2	457.4
Non Food	163.2	314.0	400.3	385.8	475.3
Total Consumption Expdr.	436.9	674.3	794.1	778.0	932.6
% OF Food to Total Consmptrn	62.6	53.4	49.6	50.4	49.0
Medical – Instl	5.1	27.6	63.0	8.0	27.4
Medical – Non Instl	15.9	16.0	28.6	43.5	41.1
% of medical to Non Food	12.9	13.8	22.8	13.3	14.0

Source: NSSO, Government of India

51st – June 94 – 95

52nd - 96-97

53rd – Jan. 97- Dec.97

54th – Jan. – June 98.

55th – July 99 - June 200

APPENDIX 7

Cost of National Health Programmes

<u>SERVICE</u>		<u>Estimated /Cases</u>	<u>Unit Cost</u>	<u>Total Cost/ Dt.</u>
Total Population	19,52,000			
Curative Services Under National Health Programmes at the PHC				
Domiciliary/Ambulatory/Emergency	% Pop			
TB				
Sputum Exmn and Drugs	1.50	29280	1200	35136000
Malaria				
Treatment		570	500	285000
Leprosy				
Examination and treatment (old+new)	0.28	5466	500	2732800
HIV/AIDS				
Health Education/Care-Support	0.70	13664	50	
STD/RTI				
Diagnosis & Treatment >15 years	15	218136	250	54534000
Blindness/560224	1.30	7283	600	4369747
RCH				
i) ANC /1000 cases	18.40	6878	210	522270
3 ANC+2post Natal checkups			150	
IFA Tablets			6	
Blood& Urine,HB,Mal Exmn			50	
TT injections			4	
ii) Delivery				
Normal - Instl.				
Referral of High Risk Cases				
iii) 6 Immunisations (>1 years)		77104	75	168000
Infectious Diseases				
Diarrhoea Group/Actuals in 2000/episode		40000	30	1200000
Other Infectious diseases		940000	250	235000000
<i>Respiratory infections/Reported</i>		582000	132	76824000
Family planning				
Sterilisation Surgery		9842	955	9399110
Exmn & Tests for IUD Insertion	5	9345	50	467260
Counselling for Nutrition etc.				
Counselling for infertility care				
TOTAL No. of Cases		1939568		
TOTAL/Rs.				420638187
Cost/ Episode/NHP/Rs.				217

APPENDIX 8

COSTING OF OUTPATIENT CARE

MONTHLY INCIDENCE OF ILLNESS PER 1000 : AGE WISE*

<u>ALL - Age-pop-%to Total Pop.</u>	<u>Population</u>	<u>PM/1000</u>	<u>Episodes /Per.</u>	<u>PA /Cases</u>
0 to 4	130,768	233	30469	365627
5 to 14	276,496	131	36221	434651
15 to 34	792,473	190	150570	1806838
35 to 59	155,184	348	54004	648048
60+	593,837	312	185277	2223327
TOTAL	1,948,758		456541	5478493

MONTHLY INCIDENCE OF ILLNESS PER 1000 : QUNITILE WISE

INDICATOR	Q1	Q2	Q3	Q4	Q5	TOT '000
Estd/ Persons/episodes/PM	68481	76242	93591	100896	114592	454
Estd./ Persons/episodes/yr.	821774	914908	1123091	1210747	1375102	5446
Expenditure in Rs./Episode**	162	142	118	58	43	
Total Expenditure/ Episode/Rs. Episodes /1000***	133127369	129916973	132524735	70223318	59129370	524922 2,790
Prevention						
Households @ Rs.50						19295
Free Health Check for 15 - 59 age group Women						
School Health - Deworming						
Growth Monitoring						
Nutrition counseling and Anti Tobacco, Drug and Alcohol use						
Health education against HB, Heart & Lung Diseases, Diabetes And Breast Cancer						
HIV/AIDS Prevention and Care & Support						
Promotion of use of Safe Water, Hygiene & Sanitation & Focal Spraying						
TOTAL in Rs.						547006
Per capita/ Rs .						281
Per Episode /Rs.						100
Sources of Data						
* Gumber Anil, 2000						
** NCAER, 1993						

***Compares well with 2054/1000 morbidity estimated by NSS 52nd. Round and 2196 by NCAER, 1993

APPENDIX 9

Costing of Inpatient Treatment

ASSUMPTIONS	Public	Private	Total
Total Number of Hospitals	85	188	273
Total Number of Beds	3,379	6,455	9,834
Estd Inpatient Bed Days /Year	1,233,335	2,356,075	3,589,410
Estd Admissions @ 7.2 ALOS	171,297	327,233	498,529
At 85% utilization			423,749

	Estd No/ Cases	Estd. Unit Cost/Public	Av. Private- Range (Rupees)	Ave. Cost	T= '00,000
1.Acute Medical-34%					
Respiratory Infections-Asthma/COPD	10,700	2,200	6500-9000	3,000	321
Cancer Chemotherapy/Siting	3,685	200+drugs	200+drugs	7,500	276
Infectious Diseases	64,700	1200-3000	3000-26000	3000	1,941
Non Infectious Diseases	64,989	1200-3000		3000	1,950
Subtotal 1.	144,074				4,488
2. Reproductive Health – 3% (97%Instl)					
Normal Deliveries75%	6,878	1,300	1000 – 4660	1300	89
Ceasarian & Others22%	750	4000	3000 – 13400	4000	30
MTP	5,000	2000	3000	2000	100
Subtotal 2.	12,628				219
3. Minor Surgeries -20%					
Skin lesions, Biopsies, IND, Injuries	84,748	500-1000	2000-3500	750	636
Subtotal 3	84,748				636
4. Major Surgeries -10%					
Appendicitis, Hernia, Prostrate, Hydrocel	31,452	1064-5600	2200-15000	6000	1,887
Breast lumps, Thyroidectomy					
IHD _ MI	2,349	7200-15000		15000	352
CABG	1,566	120000	90,000-230,000	75000	1,175
IOL, Glaucoma etc.	3,800	1,000	8400-20000	1500	57
Injuries	3,207	2200	6500-9200	4000	128
Subtotal 4	42,374				3,599
5. Emergency-10%					
Trauma, emergency (50%)	21,187	1000-5000		2000	424
Others	21,187			750	159
Subtotal 5	42,374				583
Sub Total 1+5	326,198				
Remaining Cases – 23%	97,551	500			488
Grand Total	423,749				10,013

Hospitalization Per 1000*

* Compares well with Srilanka at 200/1000

Diagnostic Tests/Persons	500,000	100-1000	100-1500		
20% Serious Cases	100,000			1000	1,000
80% Minor	400,000			75	300
Clinical pathology (15 tests)					
Haematology (20 tests)					
Blood Bank(8 tests)					

TB ELISA					
Biochemistry(32 tests)					
T3T4TSH					
Other Hormone tests					
Bacteriology					
Sputum					
Pregnancy Test					
Urine AFB					
CT Scan(11 tests)					
Endoscopy					
Echo & other tests					
ECG					
Radiography(30 tests)					
X RAY(40 Tests)					
Laryngoscopy					
Pap Smear					
Ultrasound Tests					
Biopsy					
Histopathology &Cytology (7 tests)					
Endocrinological Disorders					
TOTAL					11,313
PER ADMISSION /Rs.					2,670
PER CAPITA at 80% Pop /Rs.					725

Appendix 9

(Continued: Sources of Data)

Costing of Inpatient Treatment

ASSUMPTIONS		Source of Data
Total Number of Hospitals		GOK
Total Number of Beds		
Estd Inpatient Bed Days /Year		
Estd Admissions @ 7.2 ALOS		
At 85% utilization		
EstdNo/Cases		
1.Acute Medical-34%		
Respiratory Infections-Asthma/COPD	10,700	Ratio of admissions and deaths of MCH TVM
Cancer Chemotherapy/Sitting	3,685	16% Deaths*2
Infectious Diseases	64,700	Actuals - GOK
Non Infectious Diseases	64,989	Residual to make up 34%
Subtotal 1.	144,074	
2. Reproductive Health - 3% (97%Instl)		
Normal Deliveries75%	6,878	CBR of 0.7
Caesarian & Others22%	750	Ramankutty et al
MTP	5,000	7.8/1000
Subtotal 2.	12,628	
3. Minor Surgeries-20%		
Skin lesions, Biopsies, IND, Injuries	84,748	
Subtotal 3	84,748	
4. Major Surgeries-10%		
Appendicitis, Hernia,Prostrate,Hydrocel	31,452	BDU of ASCI - 5% of >30Yrs.
Breast lumps, Thyroidectomy		
IHD _ MI	2,349	34%of Deaths*3
CABG	1,566	40% of IHD- BDU + Unit cost (ASCI Study)
IOL, Glaucoma etc.	3,800	1.3%of 60+population estd to be 15% of total
Injuries	3,207	Actual Reported Cases
Subtotal 4	42,374	
5. Emergency-10%		
Trauma, emergency (50%)	21,187	Derived based on AP Hosp data
Others	21,187	
Subtotal 5	42,374	
Sub Total1+5	326,198	
Remaining Cases - 23%	97,551	Assumption
Grand Total	423,749	
Hospitalization Per 1000*		
		217
* Compares well with Srilanka at 200/1000		
Diagnostic Tests/Persons		
	500,000	Assumption, could be an underestimation
20% Serious Cases	100,000	
80% Minor	400,000	

Appendix 9

(Continued: Sources of Data)

Assumptions	Estimated /Cases	Source of Data
1.Acute Medical-34%		
Respiratory Infections-Asthma/COPD	10700	Ratio of admissions and deaths of MCH TVM
Cancer Chemotherapy	3685	16% Deaths*2
Infectious Diseases	64700	Actuals – GOK
Non Infectious Diseases	64989	Residual to make up 34%
Subtotal 1.	144074	
2. Reproductive Health - 3% (97%Instl)		
Normal Deliveries75%	6878	CBR of 0.7
Caesarian & Others22%	750	Ramankutty et al
MTP	5000	7.8/1000
Subtotal 2.	12628	
3. Minor Surgeries-20%		
Skin lesions, Biopsies, IND, Injuries	84748	
Subtotal 3	84748	
4. Major Surgeries-10%		
Appendicitis, Hernia,Prostrate,Hydrocel	31452	BDU of ASCI - 5% of >30Yrs.
Breast lumps, Thyroidectomy		
IHD_ MI	2349	34%of Deaths*3
CABG	1566	40% of IHD- BDU + Unit cost (ASCI Study)
IOL, Glaucoma etc.	3800	1.3%of 60+population estd to be 15% of total
Injuries	3207	Actual Reported Cases
Subtotal 4	42374	
5. Emergency-10%		
Trauma, emergency (50%)	21187	Derived based on AP Hosp data
Others	21187	
Subtotal 5	42374	
Sub Total1+5	326198	
Remaining Cases - 23%	97551	Assumption
Grand Total	423749	21708 (Hosp /100,000)
Diagnostic Tests/Persons	500000	Assumption, could be an underestimation

Appendix 10

Costing of the Benefit Package:

Key Findings	Amt in Rs.
Total Estimated. Expenditure {IP+OP}	1,678,306,000
10% loading Fee	167,830,600
Total Expenditure.	1,846,136,600
Total Cases OP+IP	5,869,749
Amount / IP/Bed Day	2,670
Amount OP Case/episode	100
Amount NHP Covered Cases	420,638,187
Estimated .No. of NHP Cases	1,939,568
Amount Per NHP Episode	217
Premium /Per Capita	1,182
Amount Govt. Subsidy	860,449,721
Per Capita Subsidy/ 80%Pop	551
% Subsidy to Total Premium	47
Amount to be Paid by Ben	985,686,879
Ben Contribution/Per Capita	631
Total Contribution/Per Household/PA	3,156
Contribution. Per HH/PM	263
37.5%Contribution of Central Government	207
37.5% Contribution of State Govt.	207
25% Contribution by Local Body	138
Amount Local Tax/Total Pop	268,890,538
No. Taxable HH@65%	253,760
Amount Additional Tax /HH/PA	1,060
Additional Tax Per month/HH	88

Index: IP – Inpatient; OP – Out Patient; NHP- National Health Program;
 HH – Household; PM- Per Month; PA Per Annum; Ben – Beneficiary; Pop- Population;

APPENDIX 11

FINANCING PACKAGE OF THE INSURANCE SCHEME FOR KOTTAYAM DISTRICT In Rs. \$1= Rs. 48

Number of Households -80% **312,320 Family Size 5**

I. Hospital IP Treatment	Cost pa/ Rs.	1,131,300,000		T Bed Days	423,749	Cost/Bed/Rs.2670							
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Income Category	No. of HH	% HH/ Total	% Current Utilization (NSSO 52nd.)	% Utilization (Proposed)	Bed Days/ Utilized	Amt/ Bed /Utilized	Prm/Per	Prm /HH	%HH Income	Amt Subsidy	%Subsidy	T. Amt/ Contribn.	Amt/HH
86000.00	46,848	15.00	31	25.00	105,937	282,825,000	1,207	6,037	7	0	0	282,825,000	6,037
68000.00	78,080	25.00	20	25.00	105,937	282,825,000	724	3,622	5	0	0	282,825,000	3,622
35000.00	109,312	35.00	16	30.00	127,125	339,390,000	621	3,105	9	169,695,000	50	169,695,000	1,552
12500.00	78,080	25.00	33	20.00	84,750	226,260,000	580	2,898	23	203,634,000	90	22,626,000	290
Total	312,320	100.00	100	100.00	423,749	1,131,300,000				373329000.00		757971000.00	

2.Outpatient Treatment	Cost pa /Rs.	547,006,000.00		T EpisodesP/A	5,446,000	Amt/Episode	100	Cost/NH P/Rs.	420,638,187	No/Cases/100%	1,939,568	Percapita/ Episode/NHP	217	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Income Category	No. of HH	% HH/ Total	% Current Utilization (NSSO 52nd.)	% Utilization (Proposed)	Total No./Episodes	Expdr Incurred	Prm/Per	Prm/HH	%HHI	Subsidy/NHPE pisode	%Subsidy/ NHP	T. Amt/HH Contribn.	75% Addl Subsidy	Amt / HH	Total IP + OP
86000.00	46,848	15.00	25	10.00	544,600	54,700,600	234	1,168	1.36	42,093,173	77	12,607,427	0	269	6,306
68000.00	78,080	25.00	22	20.00	1,089,200	109,401,200	280	1,401	2.06	84,186,346	77	25,214,854	0	323	3,945
35000.00	109,312	35.00	21	35.00	1,906,100	191,452,100	350	1,751	5.00	147,326,105	77	44,125,995	33,094,496	101	1,653
12500.00	78,080	25.00	32	35.00	1,906,100	191,452,100	490	2,452	19.62	147,326,105	77	44,125,995	33,094,496	141	431
Total	312,320	100.00	100	100.00	5,446,000	547,006,000				420,931,728			66,188,993		