

**Improving the Efficiency of Public Health Care Units in Tamil Nadu, India**

*Organizational and Financial Choices*

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### **Abstract**

Tamil Nadu is one of the two Indian States (the other being Kerala) where the health care infrastructure is considered to be good. However, its performance is not encouraging and the reasons are partly financial and partly organizational. Recurrent expenditure on drugs, fuel and maintenance is under-funded and there is a total lack of referral system. These factors considerably limit the effectiveness of health care staff rendering the system inefficient. Inefficiency signifies wasted resources and its elimination means an equivalent increase in the resource availability. Drawing lessons from various countries and given the overall policy and economic climate in the state, this study provides an alternative policy framework to enhance its efficiency. A package-based health care system suiting the local community even while retaining the basic structural framework of the public sector would be useful in this context. Such a system will enhance the productivity of the manpower without eroding equity. Manpower is the major sunk cost (its share in total expenditure in the case of public sector is nearly 90 per cent in some cases) in Tamil Nadu and it is crucial to improve its productivity if the efficiency is to be achieved.

### **Introduction**

A significant proportion of mutable factors influencing the utilization of a health care system (either public or private) by the population stem out of the supply side characteristics such as accessibility, appropriateness, effectiveness and efficiency (Kenneth Lee, 1983 and Michel Wensing et al., 1998). Under-utilization of the public health care system in many developing countries can be explained by this reasoning (World Bank, 1987). Recurrent expenditure on drugs, fuel and maintenance in these countries is under-funded and patients often face shortage of drugs and deteriorating buildings and equipment. Such factors considerably limit the effectiveness of health staff rendering the system inefficient. Inefficiency signifies wasted resources and therefore, could mean a lot to a developing country like India. In fact, elimination of inefficiency acts as a source of finance as it is equivalent to a significant increase in the resource availability (Peter Berman and Suomi Sakai, 1989).

Tamil Nadu is one of the two Indian States (the other being Kerala) where the health care infrastructure is considered to be good (Government of India, 1997-2002). Public sector has a dominant presence here and owns 78 per cent of the hospitals, 44.6 per cent dispensaries and 77.7 per cent of the beds in the State (Ramesh Bhat, 1991). However, only about 30 per cent of the patients actually seek care from this sector (Anil Gumber, 1994 and World Bank, 1995); in other words, utilization of public health care facilities is close to 50 per cent in this State. Primary Health Centers (PHCs), in particular, accounted for extremely low level (3-4 per cent) of illness episodes (Seeta Prabhu, 1997). Consequently, non-government providers treat a significant

proportion of infectious diseases such as TB and malaria, which should be a major focus of public services.

The efficiency of public health care system is reflected in the utilization of the services by the people for whom they are intended. Utilization is poor in Tamil Nadu despite the fact that physical access to such facilities is better here. One of the reasons for sub-optimal utilization is the significant reduction in State's recurrent expenditure on various facilities and schemes; the rate of decline was found to be 7.6 per cent (NCAER). The expenditure cut was more pronounced in rural areas and on non-salary components. Consequently, in addition to the widening of rural-urban gap, man-material ratio too has gone up from 1.4 in 1974-75 to 2.3 in 1985-88<sup>1</sup>. Another reason is the absence of proper referral system; this has led to the paradoxical co-existence of under-utilization and crowding. Nearly half of the hospitalizations in the State in the past did not have any clinical referral or prior consultation. Moreover, there does not exist any formal coordination between public and private providers on the one hand and between various types of public providers on the other hand, resulting in the avoidable duplication and wastage of limited public resources.

The State is now gearing up for second-generation economic reform which is likely to inflate the proportion of the population below the poverty line. Therefore, efficient functioning of the public health care system is all the more relevant now; it will serve the poor better and also guard the society at large against any private market failures. This study attempts to provide a policy framework to improve the efficiency of public health care units in Tamil Nadu so that the carefully developed infrastructure over a fifty-year period is not wasted through under-utilization. It specifically focuses on financial and organizational choices enhancing efficiency. The paper is organized as follows. The following section explains the concept of efficiency while the next section provides the normative framework of public health care infrastructure in Tamil Nadu. Section-4 brings out the imperfection and inefficiency in Tamil Nadu public health care sector. Various financial choices, their objectives and their countries of existence are described in section-5 and the subsequent section deals with the organizational options in the same manner. The penultimate section reviews country experiences with an aim to draw lessons for Tamil Nadu. The final section draws the conclusions.

## **The Concept of Efficiency**

In general economic terminology, efficiency means absence of waste, or using the resources as effectively as possible to satisfy people's needs and desires. The concept of efficiency encompasses at least three components viz., allocative efficiency, technical efficiency and X-efficiency. Allocative efficiency or Pareto efficiency, at times simply denoted as efficiency, is the benefit attributable to the reorganization of the inputs (Samuelson and Nordhaus, 1992). Technical efficiency, on the other hand, is concerned with the technical relationship of the inputs with the outputs (Button and Weyman-Jones, 1992). X-efficiency may be described, in crude terms, as the residual portion of efficiency not explained by the above two forms. It is often related to managerial aspects of a unit and is generated by elements such as motivation and incentives (Leibenstein, 1966).

'Efficiency' carries varied connotations in health care depending upon the context in which it is employed (World Bank, 1987, Peter Berman and Suomi Sakai, 1989, Mahapatra and Peter Berman, 1994, William C. L. Hsiao, 1995, Mukesh Chawla and Alex George, 1996, Carlos Avila, 1996, Jin-Hyun Kim, 1997, Ravi P. Rannan-Eliya and Aprnaa Somanathan, 1999, and WHO, 1999). Generally, allocative efficiency occurs when the resources are devoted to right activities while technical efficiency is achieved when a given health intervention or outcome is obtained through few resources (WHO, 1999). Misallocation of resources between the primary, secondary and tertiary sectors gives rise to allocative inefficiency where as an imbalance between installed capacity and recurrent resources to maintain it lead to technical inefficiency. Over-centralization of financial decision-making and under-funding of specific complementary inputs (such as drugs) can be cited as examples of X-inefficiency.

Defining efficiency with respect to the public sector is further complicated because it is people-oriented rather than profit-oriented. Consumers often try to influence supply behavior and staff too behaves differently as they assume a much broader role than their private counterparts. However, this does not imply that efficiency is irrelevant to public health care units. They do have targets and objectives and failure to accomplish them should be construed as inefficiency. Moreover, they perform curative role much similar to the private sector. Therefore, efficiency is very much applicable to public health sector and the concept should be consistent with its overall objective. State Policy in India is to provide health care to entire population through integrated health services and basic framework of the country's public health sector was determined in tune with this policy (FRCH, 1987). The objective of individual units, planned on the basis of population norm set by Government of India, is to cater to the entire demand arising out of their catchment population. Any deviation from this objective may be termed as inefficiency in a broader sense.

## **Normative Framework of Public Health Care Infrastructure in Tamil Nadu**

As health is a State subject in India, respective State governments are primarily responsible for public provision of health care. States exercise major control over health related finance and administration and so, forces responsible for efficiency or lack of it operate at the State level. Hence, it is pertinent to approach efficiency issue at this level. In order to understand efficiency in perspective, it is important to know what an 'ideal' system is with respect to a State. Since initial formation of basic infrastructure was based on population norm, the infrastructure visualized by norm can be seen as an 'ideal' system. However, its size varies across States depending up on population size.

As shown in figure-1, normative infrastructure consists of five types of health care units viz., Sub-Centers (SC), Primary Health Centers (PHC), Community Health Centers (CHC), Dispensaries and Hospitals. The first three were designed to jointly address entire rural morbidity where as the last two cater to urban demand. In rural areas, a CHC is superimposed on 4 PHCs and 24 SCs; that is, one set of these 29 units is expected to take care of the overall morbidity emerging from a population of 100,000. As these units are required to collectively meet the demand, each type is functionally different from others. The direction of arrows in figure-1 indicates the nature of morbidity targeted by each type. While SCs target demand for preventive

care and a portion of curative (out-patient) care not requiring attention of a physician, PHCs are equipped to deal with curative (out-patient) care and a portion of preventive care requiring physician's attention; and CHCs exclusively deal with curative care. CHCs are the first referral link for the rural inpatients. Unlike rural areas, there has not been any organized effort to evolve a well-structured public health care system in the urban areas. Broadly speaking, dispensaries are the functional equivalent of PHCs where as the hospitals are expected to function as CHCs for the urban areas.

The estimated population of Tamil Nadu in 1997 was 59.6 million<sup>2</sup>. Therefore, population norm suggests the presence of 396 CHCs, 1,584 PHCs and 9,504 SCs in Tamil Nadu. Similarly, staffing norm (as given in Table-1) indicates a strength of 4,752 doctors, 35,244 paramedical workers and 14,256 administrative staff to complete the normative infrastructure. As per staffing norm, SCs are staffed by paramedical workers and first contact with a physician occurs at PHCs. Patients are required to visit CHCs to see the specialists because doctors' strength here includes a physician, surgeon, obstetrician & gynecologist and a pediatrician.

## **Imperfection and Inefficiency**

The way normative framework was structured, it appears that Indian planners considered it an ideal one to sufficiently deal with entire morbidity. Failure to establish health care units as per the norm can then be termed as imperfection<sup>3</sup>; Table-2 reveals the degree of imperfection in Tamil Nadu. The extent of deviation in this State is as high as 81.8 per cent in the case of CHCs, the backbone of rural infrastructure. Although the situation is not alarming in the case of PHCs and SCs, the gap is widening. The last of the existing units was created in 1990-91 and not a single unit has been established during Eighth Five Year Plan (1992-1997). This can not be attributed to any conscious policy shift because the government had, in fact, set targets for the creation of new units during this period (Government of India, 1997).

Present strength of infrastructure indicates that a CHC serves a population of 550,000 instead of the normative 100,000. This increases the burden on PHCs and SCs though these two are not perfect substitutes for CHCs. Ideally, *ceteris paribus*, this should have resulted in over-utilization of the existing units. However, the reality is different as reported earlier and the system does not even serve the people for whom it is intended. An NCAER survey revealed that the annual incidence of morbidity in 1990 was 2,681 per thousand population for rural Tamil Nadu and 1,664 per thousand for urban Tamil Nadu (World Bank, 1995). While rural morbidity has grown at an annual rate of 23.4 per cent between 1973-74 and 1990-91, the rate is 12 per cent for urban morbidity during the same period. Extrapolation of these results yields a total morbidity of 206.7 million episodes (168.0 million rural and 38.7 million urban) in the State during the year 1997. Of these episodes, public sector treated 59.1 million episodes<sup>8</sup> (52.2 million outpatients and 6.9 million inpatients); it works out to be 28.6 per cent of the total morbidity.

While overall objective of the public sector is to treat entire (100 per cent) morbidity, the actual achievement is close to 30 per cent. Even if we take into account the infrastructure gap in relation to norm, the utilization would still be less than 50 per cent. This is State average and the rate among individual units varies; some are over-crowded while some others are deserted. With

limited resources at its disposal, the government often finds it proper to allocate more resources to those units that are being utilized more frequently. This act of the government further widens the resource gap and forms a vicious circle.

Over-crowding of units badly affects the quality of care and leads to corruption and nepotism too. Since patient prioritization is not based on the severity of illness, seriously ill patients are left unattended. Under-utilization, on the other hand, leads to wastage of resources. As a result, rural poor, the targeted beneficiary of public sector, ends up spending considerably on travel to make use of this 'free service'. Moreover, seeking health care from a far place leads to considerable loss of income through wastage of time and of the time itself. The loss is significant for rural poor because a vast majority of them is agricultural casual laborers and there is no provision for them to avail any sick leave either. Opportunity cost in the form of home nursing also exists for inpatients that fail to be admitted. Government of India seems to be aware of the existing inefficiency in public health care sector (Government of India, 1997-2002). It has specifically identified the following issues:

- Availability and utilization of services are poorest in the most needy districts;
- Majority of the tertiary care institutions in government sector lack adequate manpower and face an increasing resource crunch;
- Persistent gaps in manpower at the primary health care level;
- Plethora of health care units not having appropriate diagnostic and therapeutic services and drugs;
- Widening spectrum of possible interventions due to technological advances;
- Escalating costs and ever-widening gap between what is possible and what is affordable;
- Poor referral services and sub-optimal intersectoral coordination;

Although issues have been acknowledged, no specific goals are set for the States to achieve during the Ninth Plan period (1997-2002); it is left to the State governments to act.

### *Sources of Inefficiency*

The common thread connecting the problems listed above is the shortage and improper utilization of resources. However, resource adequacy is a necessary but not sufficient condition for achieving efficiency. Broadly, there are three types of basic resources involved in the public provision of health care; they are building, manpower and materials. Of the three, building is the major resource for the very existence of health care units and therefore, is the key component of the infrastructure. The remaining two are built around this key resource. Nevertheless, proper balance among them needs to be maintained in order to achieve the desired level of efficiency.

Table-3 reports the inadequacy of building in relation to both normative and actual requirements. Nearly 40 per cent of the existing sub-centers do not have proper building for their regular functioning. Sub-centers are the first contact points for rural population and absence of basic structure even for those units that are described as 'functional' sends a wrong signal to the public regarding the character of public sector. Resultant lack of confidence sows the first seed of under-utilization.

Manpower is also in short supply and the shortage ranges between 1.3 per cent in the case of female health assistants and 100 per cent for pediatricians (Table-4). About 5000 of 8681 sub-centers do not have male health workers giving an impression that the sub-centers target only female population. This, by design or default, excludes a specific sub-group of population from using the service of public sector<sup>4</sup>. Similarly, 58.6 per cent of the PHCs do not have laboratory technicians. Physician shortage is not a major issue in this State and all the PHCs in the State are represented by a physician<sup>5</sup>.

Unlike manpower, there are no supply norms for materials and their supply depends on availability of resources rather than based on any demand assessment. Hence, it is often easy for the government to meddle with this resource and so, it is difficult to measure their real shortage. World Bank (1995), relying on qualitative assessment of PHC medical officers, indicates (Table-5) that the level of inadequacy in this State could be in the range of 0.8 - 48.8 per cent<sup>6</sup>; note that the peak corresponds to emergency medicines. The shortage is not evenly distributed among the units, as the government does not follow any uniform pattern while distributing the materials.

Balance in the use of resources also seems to be slipping away from optimum. Resource allocation for manpower has been on the rise at the cost of other two inputs; the share of manpower in health care expenditure increased from 51.6 per cent in 1975-78 to 63.0 per cent in 1985-88. Therefore, shortage exists at two levels - absolute shortage in relation to needs and relative shortage in comparison to other inputs. Absolute shortage is due to sluggish growth of health care resources in relation to both morbidity and escalating costs<sup>7</sup>; relative shortage of some input is attributable to the lion's share enjoyed by manpower in the health care budget.

Resource shortage results in focussed spending on some units or facilities and pro-hospital bias in resource allocation is particularly more pronounced in Tamil Nadu (NCAER). Since resource supply for non-hospital units is insufficient, facilities in such units remain idle either due to lack of complementary inputs or due to lack of maintenance. Inadequate maintenance of building and equipment and insufficient supply of materials together constrain the performance of the manpower.

In all, public health care sector has clearly deviated a lot from normative expectations. First, it did not grow at a rate either prescribed by the norm or necessitated by demand. Second, those units that are in place are not able to function satisfactorily due to several inadequacies. Setting up of health care units based on the population norm itself is questioned on the grounds that the country's population can not be treated as a single uniform entity. In fact, population based resource allocation *per se* is opposed by southern States like Kerala and Tamil Nadu because it acts as a disincentive for population control. Notwithstanding the opposition, various allocations including Plan allocations will continue to be determined on the basis of population norm until a viable alternative is found.

Below par performance of public sector coupled with increasing share of middle and upper classes in the population created enough space for the private and voluntary sectors to occupy. In fact, they are growing much faster than the government sector (Ramesh Bhat, 1991a). Yet, this

fact is neither recognized nor clearly defined in the government policy documents (Ramesh Bhat, 1996 and Peter Berman, 1997). Description of the public health care sector itself is incomplete if one excludes other forms of medicines such as Ayurvedic, Naturopathy, Sidha and Unani; this is specifically true for Tamil Nadu. About 600 PHCs (nearly 40 per cent) in this State utilize the services of Indian medicine practitioners as of 1998; in addition, 146 out-patient departments of government medical college hospitals, district and sub-district hospitals had Sidha wings (Government of Tamil Nadu, 1999).

In this context, the strength of the arrows and their reverse flow (i.e., patient reaction) in Figure-1 are not in tune with expectations. Forward arrows are weakened by the inefficiency of public sector where as the reverse flow is influenced by interplay of so many factors that are both internal and external to public sector. In fact, there appears to be a clear segmentation of the health care market in reality and an informal coordination between all the players including the public sector already exists in some form or the other (World Bank, 1995). While private sector targets a large chunk of out-patients (curative care) and a portion of in-patients, practitioners of Indian medicine compete for preventive care and part of curative care (out-patients) leaving the public sector to play a residual role. Markets for diagnostic techniques and pharmaceuticals, which account for a major chunk of private health care resources (and expenditure), are left unchallenged by the public sector.

## **Financial Choices**

Under the changed scenario, the public sector would have to review its position and look for alternative policy instruments to enhance its efficiency. Government can think of four ways to achieve this objective viz., (1) financing, (2) organization, (3) regulation, and (4) rationing. Each one has a range of choices to approach efficiency from a varied perspective. This study focuses on the first two strategies i.e., financing and organization. Financing is the principal structural component of a health care system and tries to achieve allocative efficiency. The primary task of financing is resource mobilization and it can be accomplished in a variety of ways such as community financing, private insurance, social insurance, tax financing, and user financing. These financing mechanisms, either independently or in combination, try to achieve more than one objective though the overall aim is to mobilize resources. This section briefly describes each choice and reviews its performance in different countries. Table-6 provides the list of countries, their financing mechanisms and the objectives behind their implementation.

### *Community Financing*

Community financing is a form of community participation and includes the contributions, in cash or kind, of both patients and non-patients; it also enables the community to manage its own finances. Cooperative Medical System (CMS), a form of community financing, existed in China prior to economic transformation in 1980's. Collective financing, prepayment and organization of health services through a three-tier system characterized it. The funding of CMS emerged from three sources viz.,

- (1) Premium paid by community members to CMS fund
- (2) Welfare fund from village collective farming
- (3) Subsidies from upper level governments.

Government subsidy to CMS during its peak functioning was 34 per cent and the remaining 66 per cent of the finance was generated from the community (Yuanli Liu et al, 1995).

Thailand's health card system, introduced in 1983, is also a kind of community financing. Under this system, households are sold a card entitling the bearer to treatment for a specified number of times during the period of card's validity (World Bank, 1987). The card also entitles the purchaser to unlimited visits for preventive services such as maternal and child health care and immunizations. Thus, the health cards are expected to encourage the use of preventive health care, increase the use of local health centers (as there was a referral system), reduce congestion and waiting time, raise enough capital to finance the health services better, and allow households to protect themselves against catastrophic health costs.

Financing in sub-Saharan African countries under the Bamako Initiative has the ingredients of both community participation and user charges. The Initiative started when the government budgets were unable to meet the health care expenditure towards salaries, drug supply and the maintenance of equipment and vehicles (Barbara McPake et al, 1993). The Initiative visualizes community participation in the form of retention and management of local resources in addition to generating the resources. The idea is to induce the community to play a pro-active role in the financing, organization and management of health care. Resource mobilization part is to be fulfilled through user charges and pre-payments in the curative care and government subsidy in the case of preventive care. Adverse selection is prevented by universal coverage of the participating village and moral hazard is avoided through local monitoring.

### *Private Insurance*

Insurance is another form of finance that enhances the health care seeking behavior of the population. It is a voluntary arrangement whereby individuals can make a prepayment in order to avoid possibly catastrophic out-of-pocket expenses in case of major illnesses. That is, it provides the means by which risks, or uncertain events, are shared between many people. Insurance relies on the fact that what is unpredictable for an individual is highly predictable for a large number of individuals. Therefore, the important phenomenon here is that there must be enough individuals insured in order to spread the risk widely.

The advantage of insurance includes freedom of choice, redistribution effect, efficiency, sustainability and achievement of purchaser-provider split. The voluntary nature of the insurance offers freedom of choice to its consumers. About redistribution effect, its nature and magnitude depend on the financing of the schemes and the way in which premiums are fixed. Since the occurrence of the event, being insured against is uncertain, some participants will draw out more than they pay in, thus resulting in redistribution from the healthy to the sick. Improvements in economic and social efficiencies are achieved through risk coverage because risk coverage is seen as an efficient way to use scarce resources. Moreover, the insurance system has the potential to encourage providers to contain costs and the consumers to make least cost choices of type and sources of health care.

Insurance may be organized on a public or private basis and can be categorized as

‘government’ or ‘private’ depending upon who holds the common pool of funds. An individual’s demand for private health insurance will be determined by the price of insurance (i.e., the premium to be paid), the individual’s assessment of the probability of loss (especially financial) resulting from illness, the likely magnitude of that loss, his/her income and attitude towards risk (Anne Mills, 1983). An individual’s premium in the case of private insurance would be based on the actuarially determined likelihood of illness of that individual.

Private health insurance is an important source of finance in developed countries like USA and, to a lesser extent, Australia; it also exists in developing countries such as Ethiopia, India, Kenya, Namibia, Nigeria, Tanzania and Zimbabwe (Charu C. Garg, 1999 and Mukesh Chawla and Peter Berman, 1996). Although present, private insurance is not a major source of finance for developing countries and the proportion of population covered is less than 5 per cent. In developing countries, the share of private insurance in total insurance ranges between less than one per cent in most African countries and 16.5 per cent in Zimbabwe; it is 4 per cent in India.

### *Social Insurance*

Health insurance organized by the government or a public body is usually termed as social insurance, social security or sometimes compulsory health insurance. Social insurance is compulsory for all individuals falling within the scheme and is seen as a source of community welfare. The conventional funding source for social insurance consists of payroll taxes levied on workers and employers, often supplemented by user fees and tax revenues. The contributions by employees and employers are considered not as insurance premiums but as an earmarked tax.

Unlike private insurance, it is possible that total contributions, not individual payments, can be determined actuarially leads to cross-subsidization between haves and have-nots and healthy and sick. Social insurance also has no eligibility rules and there is often no ceiling on actual benefits either<sup>8</sup>. Other advantages of social insurance (Charles Normand and Axel Weber, 1994) are:

- it can provide a stable source of revenue for services;
- the flow of funds into the health sector is visible;
- it can help establish patients’ rights as customers of the health care providers;
- it combines risk pooling with mutual support, by allocating services according to need and distributing financial burdens according to the ability to pay;
- it can operate in pursuance of government health policy goals and at the same time, it can maintain a degree of independence from government;
- it can be associated with the efficient provision of services.

In addition, social insurance serves varied objectives from self-reliance in Latin America and Singapore to equitable access in Japan, Germany and South Korea.

Social insurance in Latin American countries is typically self-financing and is funded primarily by payroll taxes. It does not include government subsidy to any considerable extent; government subsidy for social insurance in this part of the World varies between zero and 26 per cent. In comparison, Singapore emphasizes accountability by requiring patients to pay when they demand health services. The country has *Medisave* plan to cover hospitalization and expensive

outpatient costs and *Medishield* to treat catastrophic illnesses. In the case of *medisave*, workers pay 3-4 per cent of their income to the account according to their age and in addition, employers match their employee contributions. In the case of *medishield*, the premiums are paid from the *medisave* account. The government also uses its tax revenue to subsidize the cost of public polyclinics and lower class wards in public hospitals. Patients can choose any class of service and pay accordingly. While the patients using the lowest class of service are required to pay 20 per cent of the cost, those using the highest class have to bear 80 per cent of it.

Japan has a well-knit comprehensive social insurance system to cover the entire Japanese population. To begin with, there are three broad categories namely, employee insurance, insurance for self-employed and pensioners, and old age insurance. Among the three, first two cover the dependents too. Each one of them branches out further to include specific sub-groups of the population. Employee insurance, for instance, has four types within itself: government-managed insurance for those who are employed in small companies; society-managed insurance for those employed in large companies; seamen's insurance; and mutual aid associations for national and local government employees and private school employees. The first two are major ones and cover about 52 per cent of the total population. Insurance for self-employed and pensioners also has two types: National Health Insurance (NHI) with the municipal government acting as insurer and NHI associations with members in the same trade (physicians, barbers etc.) with the first type covering about one-third of the population; old age insurance is for those who are seventy years and older.

Government-managed employee insurance is financed by the premiums paid equally (about 8 per cent of the salary each) by both employees and employers; government subsidizes the remaining portion of the total cost. The employers' share is larger in the case of society-managed employee insurance and government bears the administrative expense. Concerning NHI, contributions are based on the individual's income and assets. The national government subsidizes about 50 per cent of the costs while the gap, if any, is filled by the municipal governments. The national government (30 %), other governments (10 per cent) and the insurers (60 per cent) finance old age insurance.

Insurance benefits in Japan vary across various types of insurance and between the payers and their dependents. Employee insurance pays 90 per cent of the fees to the employees and 70 (outpatient) to 80 (inpatient) per cent to their dependents. NHI pays 70 per cent to both payers and their dependents. All the health care expenditure incurred by those who are seventy and older are paid; however, some copayments are to be paid by the insurers directly to the provider. In all, over 50 per cent of total health expenditure in Japan are funded by insurance contributions, one-third by the government and the rest by patient charges.

German social insurance system is relatively simple. Under this system, health insurance is compulsory for 90 per cent of the population and the remaining 10 per cent (wealthy) may opt out. Employers and employees jointly pay the premium and the insurance is administered through non-profit insurance plans called *Sickness Funds*. In Korea, government has mandated that all citizens must be insured for health services. While 90 per cent of the population is covered by insurance schemes, the remaining 10 per cent (below poverty line) are covered by government-

initiated public assistance programs. Like Japan, Korea also has different plans for different groups of people. Employees of corporate sector contribute 3.4 per cent of their income where as civil servants pay 4.6 per cent. For others, contributions are determined by the value of family assets and wage earnings. Financing responsibility of meeting the recurrent expense of their members rests with 313 independent nonprofit corporate and regional insurance societies known as *sickness funds*. The government determines the extent and the level of benefits. Essentially, most outpatient and inpatient services are covered with the exception of some less common and high cost services. However, patients are expected to make a copayment and the rate varies between a flat rate and 55 per cent of the cost.

### *Tax Financing*

Tax financing is the traditional source of health care financing. Countries that fear serious market failures in health care and aim at providing equitable access to all the citizens usually finance health care by tax revenues. Tax-financed programs can assure that every citizen has equal access to reasonable health care, the financial risks of catastrophic illnesses are pooled widely, and the tax burden is more equitably distributed (William C. Hsiao, 1999).

Australia, Canada and UK predominantly depend on tax revenues for financing health care. Dependence of Australian health service on tax financing is 75 per cent and the remaining 25 per cent are contributed by private insurance. In Canada, the dependence of health services on tax revenues is total; the national and provincial governments share the burden in the ratio of 40:60. National Health Service (NHS) in the UK receives 88 per cent of its finance from tax revenues and the remaining 12 per cent from social insurance premiums paid by selected industries. Patients do not contribute any significant user fees in all these countries.

### *User Financing*

Private financing of public services is increasingly seen as an alternative mechanism to enhance their efficiency and sustainability. By sending 'price signals', user financing can make the referral system work better enhancing the cost effectiveness because highly expensive technology and personnel are reserved for more complex and referred illnesses. When the prices are close to zero uniformly across the whole health care system, there will be a tendency among the consumers to converge on the most expensive health service even for minor illness because there is no incentive for not doing so. Further, user financing is expected to create a sense of 'ownership' among the users resulting in greater responsibility and accountability.

User fee sends signals to providers too as to what services and how much is being demanded. In the absence of user fee, allocation of medical care is determined by travel and waiting time. This kind of allocation mechanism gives rise to inefficiency as 'time-price' can not be traded, borrowed, or stored. Moreover, while the consumers pay something (time) to buy health care, the providers can not generate anything out of it. The practice of user financing exists, either partially or fully, in several developing countries; almost all the sub-Saharan African countries have implemented it in the health sector especially after the launch of Bamako Initiative

in 1987.

## **Organizational Choices**

Financing is a necessary but not sufficient condition for enhancing efficiency. Financial reforms may be proved ineffective if they are not ably supported by other complementary measures. In fact, some of the root causes of inefficiency emerge from the institutional structure and internal organization of the public health care system. Performance of the public health care system can be enhanced through purposeful changes in the structure and function of health care provision such as autonomy, building partnerships with other sectors, formalizing proper referral system, improving financial viability, and provider incentives. These choices have the potential to make the public sector technically efficient through improved productivity and without imposing any significant financial burden on it. Country experiences with respect to the above organizational options are reviewed here in this section.

### *Autonomy*

Autonomy signifies the introduction of certain private elements such as competition, decentralization, financial autonomy and managerial freedom into the public sector. Nevertheless, it is difficult to conceptualize autonomy, as it is either country or context-specific. In a broad functional sense, the level of autonomy can be determined in two ways: the extent of decentralization in decision making; and the range of policy and management decisions possible at the local level (Mukesh Chawla et al, 1996). It is possible to introduce autonomy at five levels (domains) such as strategic management, procurement, financial management, human resource management, and administration. Yet, autonomy does not automatically mean privatization and mere private ownership need not necessarily signify autonomy.

The aim of granting autonomy is to achieve both technical and allocative efficiencies; autonomy increases accountability on the part of providers and satisfaction on the part of consumers. More importantly, it takes advantage of local information and gives individual units control over their affairs. Besides, autonomy widens the scope of operations and improves cost efficiency, financing, quality of care, staff morale and productivity.

Many countries such as Ghana, India, Indonesia and Kenya tried hospital autonomy as a strategy to enhance efficiency *albeit* to a limited extent. Ghana's history of autonomy dates back to the 1920's though a formal version took shape only in 1988 (Ramesh Govindaraj et al, 1996). The Andhra Pradesh Vaidya Vidhan Parishad (APVVP) in India, with a recent origin (1986), is an autonomous quasi-government body to govern all the district hospitals in the state of Andhra Pradesh (Mukesh Chawla and Alex George, 1996). Its major objective is to ensure efficiency, patient satisfaction, and financial sustainability and to improve quality of care. The ultimate aim is to allow the district hospitals to function on their own and the task of APVVP is to facilitate the district hospitals to accomplish this goal.

Indonesia initiated a program of hospital autonomy in 1991 with an objective to encourage hospitals to recover costs by allowing them to control and manage the fees they collect, within

some boundaries (Thomas Bossert et al, 1997). The autonomy here is more concerned with financial aspects and allows only limited extra 'decision space' to the hospital managers. In the case of Kenya, the objective of granting autonomy to national hospital in 1987 was to improve the quality of care (David Collins et al, 1996). Kenyan autonomy is near perfect in which the power to manage the hospital, policy making, resource utilization, hiring and firing of staff, procurement, maintenance and overall administration has been completely transferred from MOH to a board comprised of civil servants and some individuals appointed by the government.

### *Building Partnerships*

The World Bank and other donor agencies have reflected the new ideas of the role of the state in the health system and more emphasis is being placed on competition as a means to improve efficiency (Anne Mills, 1998). Contractual relationship between public and private sectors as well as within public sector is seen as a new public management possibility. According to this option, the public sector units can let the private sector to provide those services that can not be provided by the public sector in an efficient and cost effective manner. Here, financing is done by the public sector while the service is provided by the private sector.

The advantages of private sector are brought in through partnerships without bringing in its disadvantages since contracting introduces market elements in a selective way by eliminating the chances of market failures. Other reasons for entering partnership with the private sector are

- to reduce management or administrative burden;
- to offer service at a cheaper price;
- to minimize wastage;
- to avoid services being affected by local service environment;
- to improve the quality;
- to obtain the latest technology;
- to avoid bureaucratic delays;
- to provide certain services that are otherwise not available.

Partnerships can also be established among various public sector units, including the non-health sector ones, in order to exploit the comparative cost advantage existing within the public sector.

The package for partnership can include clinical and/or non-clinical services. Clinical services are equipment or material supply, ambulance service, provision of other hospital services etc. while non-clinical services are dietary services, cleaning, security etc. Selected units of public health care sector in Ghana, India, Papua New Guinea, South Africa, Thailand and Zimbabwe have entered into some sort of contracts with the private sector in a limited manner (Anne Mills, 1998 and George Larbi, 1998). The partnership is limited to in-house ancillary hospital services in Ghana where as it is dietary services in India and hospital security and cleaning in Papua New

Guinea. South African partnership is to make use of private capital for hospital construction. It is confined to the provision of medical equipment in Thailand while private sector is involved in the provision of hospital services in a specific district in Zimbabwe.

### *Formalizing Referral System*

The purpose of a referral system is simple and straightforward. The primary considerations are costs, efficiency and quality at all levels (primary and secondary) of medical care. Gate keeping is one way of ensuring proper referral system in the public sector. As per this system, the doctors at the PHCs must act as gate keepers for more specialized and more expensive services. Patients will be required to have a referral from the PHC doctor to be able to use these services. In order to improve patient compliance, fast tracking can be employed as a supplementary strategy. Fast tracking would enable the referred patients to get preference over others and the gain to them will be in the form of reduction in waiting time. Referral system exists in European countries such as Denmark, Norway, Spain, the Netherlands and UK (Isik Kulu-Glasgow et al, 1998).

### *Improving Financial Viability (Budget Holding)*

Profitable deployment of available resources through organizational changes is another way of improving efficiency. There has been an emphasis in the past on enhancing the financial viability through budget holding which aims at securing efficiency at a more desegregated level by providing a set budget to the local provider; it can be in the nature of global budget, line-item budget or performance budget. Under global budget system of resource allocation, physicians are allocated set budgets for their patients' treatment and are responsible for how that budget might be spent on patient care. Budget holders are motivated to obtain services at the lowest cost and receive a kind of constrained autonomy to the local providers.

Line item budgeting allows the provider to spend the budget only on line items (salaries, drugs etc.). Rules and regulations prohibit public managers from switching funds across line items. Public managers in this case have limited accountability for performance; the only responsibility for them is to ensure that the budget is completely spent. The intention of line item budgeting is to control spending, particularly on staffing levels, and limits the consequences of weak local management. Budgets determined on the basis of performance criteria are called performance budgets and the incentives depend on the specific indicators of performance chosen for this purpose.

Global budget has very recent origin and now exists in New Zealand, UK and the USA (Paula Wilton and Richard Smith, 1998). In New Zealand, independent practice associations (comprising 10-330 practice members) and other umbrella organizations act as budget holders. In UK, budgets are set according to historical levels of spending achieved in the previous year; hospitals and associated services are developed as independent trusts here. In the case of USA, primary care physician (General Practitioner) acts as a 'case manager' and is responsible for coordinating patient care within budgetary constraints. Australia is another country that is seriously considering the incorporation of a global budget. Line item budgets are common in the

health sector especially in developing countries like India. Performance budgeting existed in Hungary prior to the implementation of case-based hospital reimbursement; accordingly, hospital budgets were based on occupancy rates.

### *Provider Incentives*

The fact that a significant portion of health care expenditure is incurred by the clinicians has provided powerful argument for the use of provider incentive as a vehicle to minimize the cost and thereby improve the efficiency. The incentive can be either financial (income, rewards, monetary control, etc.) or professional (status, career progression, congenial work atmosphere etc.). The incentive curve for the staff will be such that the impact of financial incentives on efficiency would be higher than that of professional incentive up to a certain income level beyond which the rewards of professional incentives would outweigh financial ones (Sue Llewellyn et al, 1999).

The way the providers are paid (budgetary transfers, capitation, fee-for-service and case-based payments) also affects the production of service. The traditional budget is set out as line-item allocations from government health authorities to specific programs or facilities. Under capitation, providers are paid a periodic (say, annual) fixed amount per person to finance the costs of a defined package of services. Capitated providers bear financial risk for providing these services and, in this sense, are insurers. Thus, the important aim of capitation is to motivate the providers to control costs. Capitation is also more likely to improve efficiency under a set of given conditions<sup>9</sup>. Fee-for-service is another form of provider payment and encourages productivity. Under case-based reimbursement, the provider is paid a predetermined amount per case or per episode of illness covering all services. The basic method is to bundle services into distinct case categories that are reasonably homogenous with respect to resource use and reimburse a fixed amount per category. This gives providers an incentive to produce care more efficiently.

Countries such as Australia, Ireland, Norway and Portugal make use of global budgets; the size of the budget depends on historical trend in Ireland and is based on expected case mix and utilization in Australia, Norway and Portugal (Howard Barnum et al, 1995). Capitated plans exist in Dominican Republic, Germany and the Netherlands. The fee-for-service system is being followed in Canada and the UK. Case-based reimbursement as an incentive exists in Brazil, Hungary, Indonesia, the USA and Zaire.

In Canada, the incentive is tied with productivity (i.e. treating more patients or treating them more intensively). It also provides incentive for fragmented service delivery in order to encourage cross-reference. In contrast, the salaried health service in the UK does not provide any scope for direct financial incentive for productivity although trust status for the hospitals and fundholding do offer some financial incentives to the doctors. However, rewards in the form of career opportunities (teaching and research) exist in the UK. In Germany, physicians are paid on the basis of individual services provided where as general practitioners in the Netherlands receive a fixed amount per patient for the year from the sickness funds (Howard Barnum et al, 1995).

## **Policy Framework for Tamil Nadu**

The previous two sections presented a list of structural choices, their objectives and existence in more than seventeen countries including Australia, Canada, China, Germany, India, Indonesia, Ireland, Japan, Latin America, New Zealand, Singapore, South Korea, sub-Saharan Africa, Thailand, The Netherlands, UK and the USA. An alternative policy framework for Tamil Nadu public health care system is provided in this section after taking into consideration the performance of various policy choices elsewhere and general policy environment in the state.

### *Performance of the Choices: International experience*

Among the financing options, all but tax financing have received much attention recently and are seen as potential alternative mechanisms for tax financing. The choice of appropriate financing mechanism depends on the objective of the government; it can be resource mobilization, allocative efficiency or both. There could be a third dimension too in the form of people's participation; this dimension is relevant especially in the case of community financing. Therefore, the performance of the choices should be viewed from these angles.

The Cooperative Medical System of China seems to have fulfilled the objectives of resource mobilization and people's participation. Community resources financed 66 per cent of the total health expenditure and 90 per cent of the rural population participated in the process (Yuanli Liu et al, 1995). But, was it efficient? Well, it can not be said so. The decision to collect funds was arbitrary and there was no technical base for premium assessment. The fund managers lacked management skill and explicit quality and cost control mechanism was not built into the system either. Financial instability too existed, as there was not any adequate protection against *adverse selection* and *moral hazard*. Moreover, corruption was often identified as the number one problem.

The health card system in Thailand system is not doing all that well in terms of both financing and efficiency; the third objective (i.e., people's participation) is partially fulfilled (Reisman, 1999). First-of-all, the self-reliance goal is defeated as the Central government contributes a matching sum to the system. Population's out-of-pocket expenditure has not come down and people are forced to spend considerable amount on health care despite being 'insured'. The contribution of insurance to total health care expenditure is only 26.3 per cent although the coverage is 70 per cent. The contribution of health card to total health care expenditure is a mere 3 per cent. In the efficiency front, the referral system also does not work since the patients either by-pass the local health centers or use them to get only the reference slips and functional efficiency of public health care units has not improved either.

Although the Bamako Initiative was visualized as a community based program (for the community and by the community), it ultimately ended up as a resource mobilizing exercise. The community participation (management) portion of the Initiative remains as a non-starter. Whether the community would be involved in the decision making process has not been resolved. The level of technical expertise required for substantive participation may restrict the level of any meaningful involvement by the community. As far as efficiency is concerned, it is difficult reach conclusions. The utilization rate of health services declined; but, the declined use can not be listed

as frivolous as the decline was associated with immunization and other preventive services (Sanjay Reddy and Jan Vandemoortele, 1996). Moreover, over-prescription of drugs in order to generate resources resulted in lopsided allocation of resources.

Private insurance is another mechanism that has received much attention recently; however, it still remains as the choice for the developed countries. Advantages apart, private insurance appears to promote inequality. In the United States, for instance, private insurance left the elderly and the disabled uncovered because they are the high financial risks. The poor, unemployed and other low-income populations are left out since they can not afford the insurance premium. Despite the existence of *Medicare* and *Medicaid* programs to cover the 'left-out' groups of population, 14 per cent of Americans still remain uninsured (William Hsiao, 1999). The least cost argument in favor of private insurance also does not seem to be working. Even a partial coverage of private insurance has led the nation to a significant health care expenditure inflation in Australia. In the US too, insurance companies try hard to control costs through managed care and there is no mechanism to control the costs incurred by the patients on drugs and copayments. The cost inflation is ascribed more to price than quantity changes.

Social insurance is one option that is found in both developed and developing countries. But, its concept is not the same for all the countries that implemented it. Japan has a very comprehensive social insurance whereas at the other extreme lies Germany's simplified framework. In all, the resource mobilization objective is adequately fulfilled in almost all the countries where social insurance finds a place; this holds good for even the developing nations such as Latin American countries. Nevertheless, in order to be successful, it is important to ensure that the health infrastructure exists to provide required services and that there is some incentive to comply with the social insurance. However, there will be considerable disquiet when people in serious medical need are refused treatment because of their inability to pay or lack of insurance. Often, the most vulnerable groups of the population are agricultural workers and those engaged in the informal sector.

Tax financing is a tested traditional mechanism for financing and people's direct participation in this case will be minimal. How successful is this mechanism in generating resources? The answer depends on so many 'ifs' and 'buts'. Tax financing forces the health sector to compete with other government sectors for funds. Total quantum of tax resources available for allocation depends on the overall performance of the economy (GNP) and decisions on relative share of each sector are based on political bargaining. When the economy expands, the growth in health sector allocation often fails to match the pace; but when the economy contracts, the health sector allocation takes a nosedive. This is the common scenario witnessed by many developing countries in the world.

A limited tax base coupled with escalating health care cost force the public sector to prioritize the allocations in which case the relative powers of different interest groups and bureaucratic rules of operation can greatly influence the decisions. More often, expensive and technology-dependent new treatments have strong advocates and increasingly more resources are dedicated to specialized care at the expense of preventive and primary care. In the end, there are disproportionate resource allocations between urban and rural, rich and poor, curative and preventive and hospital and non-hospital. Thus, tax financing is not the most dependable option

for financing as it is insensitive to health care needs. Is tax financing efficient? Some organizational theories also argue that tax financing may produce the services in the most efficient manner and the military is more often cited as an example.

If people's satisfaction can be considered as an indicator of efficiency, then the outcome is not encouraging in countries where tax financing exists. People's satisfaction in Australia, Canada and UK is found to be in the region of 18-22 per cent despite the fact that they get free care. In Australia, the presence of private insurance has led to high health expenditure inflation and the country faces difficulty in managing it. In Canada, on the other hand, people are concerned about the escalating health care costs where as the provincial governments are busy imposing 'caps' on health care outlays (Robert G. Evans and Maureen M. Law, 1995). In the case of UK, the tight health budget resulted in long queues for elective surgeries and thus, a higher proportion of the population feeling dissatisfied by the system.

Tax financing becomes an even more difficult proposition for developing countries like India where the tax base is not wide enough to satisfactorily accommodate entire health care demand. Government is often caught in a dilemma between high public expectation and poor tax base; increasing morbidity, fast paced technological changes and escalating costs do not help the government either. Faced with this situation, government usually tries to maintain the *status quo* and it can only lead to deterioration because other things fail to remain the same. The immediate fall-out is the unintended user financing in the form of out-of-pocket expense.

Practical experience with user financing as a mechanism to improve revenue, efficiency and sustainability is mixed. Table-7 indicates that the potential of user financing in recovering the cost is found to vary a lot among different countries. The recovery of recurrent cost is 0.5 per cent in Barkino Faso and up to 97.0 per cent in China. Wide variation of potential means that there is a significant role for local factors in determining the success or otherwise of user financing as a potential source of revenue and many of the theoretical benefits of user fee are not realized because of implementation difficulties. Success also depends on whether or not the introduction of user fee is accompanied by a change in quality of care. Quality improvements in health care delivery can more than offset the effect of price increases even among the poor (Jennie Litvack and Claude Bodart, 1993).

A cursory look at Table-7 reveals that the trend is generally looking up with the progression of time. The estimated average recovery during the 80's was 11.3 per cent of the recurrent cost (range 0.5-82.0 per cent) where as it was 31.6 per cent during the 90's (range 3.5-97 per cent). This seems to prove the point that the utilization initially declines at the introduction of user fee and gradually picks up over the years (Asenso-Okyere et al, 1998). This is an encouraging signal for those countries that want to introduce user fee in public sector but refrain from doing so due to the uncertainty regarding the likely impact on the utilization.

Where does household out-of-pocket expense fit in? Although it is often listed as one of the user financing options, it does not fit into any conscious source of finance. In a sense, it is simply unintended fallout of government undoing and its implications are not the same as user financing. Nevertheless, it does indicate to the government the degree of willingness and ability of

the population to pay for health care. Whether intended or not, out-of-pocket expense is a major source of health care finance in countries such as Egypt, India and Philippines.

Appropriate organizational structure is essential even for the financing mechanism to deliver better. Different types of organizational changes have been effected in many countries and the analysis of their outcomes is a highly complex process as there is no single optimal frontier for the organization to operate. Like financing mechanism, autonomy also needs some support base to successfully deliver goods. Potential benefits of autonomy are unlikely to be realized if it is not complemented by an adequate incentive structure (Ramesh Govindaraj et al, 1996). Autonomy may also induce a loss in economies of scale and scope introducing a different sort of inefficiency. Further, autonomy does not automatically guarantee an increased concern and responsiveness to community needs. The most crucial drawback of providing autonomy to public health care units may be a compromise of equity in financing and delivery of health care. Nevertheless, autonomy as a strategy to improve efficiency is expected to succeed better in areas with long and deep histories of strongly established civic organizations than those localities lacking these networks of associations (Thomas Bossert, 1998).

The outcome of autonomy experience in Ghana is not very encouraging though the experience has been short and limited. It has not yielded any significant benefits in terms of efficiency, quality of care, and public accountability, as the problems are far more deep-rooted. Even the implementation of autonomy is incomplete with MOH unwilling to grant full autonomy and the boards unable to utilize whatever autonomy was allowed. That is, it can be said that the failure is attributable more to implementation difficulties than to the concept *per se*.

APVVP experiment in India is fairly successful in terms of achieving efficiency though the goal of decentralized autonomy could not be completely accomplished. Availability of medicines is much better in APVVP controlled hospitals than any other government health care centers in the State and the quantum of emergency medicines improved after APVVP took control. Autonomy in Indonesia has led to a significant rise in the hospital revenues; still, their dependence on government subsidies has not been reduced. There is no evidence of efficiency improvement; at the same time, access to the poor has been greatly restricted. That is, neither efficiency nor equity could be achieved through autonomy in Indonesia.

In Kenya, the internal revenue generated by the hospital has become an important source of funding after the introduction of autonomy. There has been some improvement in technical efficiency and quality of care due to increased availability of supplies and improvements in maintenance of building and equipment. Zimbabwe also joined the club of countries adopting hospital autonomy in 1995; as its origin is very recent, the experience so far is only limited (Jack Needleman et al, 1996). However, decentralization did not work that well in Hungary and the country had to revert back to centralized system because of deficits at all levels (Miklos Szocska and Peter Gaal, 1999).

Success in the case of partnership depends on its rationale, key features of design, management of partnership process, process of implementation, resultant cost and quality levels,

implications for the staff, and the characteristics of the sector with which the partnership is sought. Practical evidence on contracting's success in improving the cost effectiveness and quality of care is inconclusive. Contracting proved to be somewhat successful in non-clinical services where as the evidence is not impressive in the case of clinical services (Anne Mills, 1998).

The referral system is a good way to regulate the care-seeking behavior of the population; it also aims at minimization of health care costs. It seems to be working well in wherever it exists and gate keeping is an accepted method of ensuring the functioning of referral system. Experiences with the referral system in the past show that it generally results in lower health care costs as well. However, its implementation depends on local environment and the cooperation of insurance providers, if any. There appears to be a significant tendency, especially in the Netherlands, to skip General Practitioners ironically due to cost considerations.

Budget holding has the potential to enhance efficiency though its extent varies across countries. The system works well in the UK and patients have been empowered here using this measure. The flip side, however, is that the use of historical trends as the basis for budget allocation is being questioned. Global budgets based on historical trends tend to sustain the wastage and efficiency differences among various units. There is also under-treatment of patients in the UK as there is no financial incentive for the doctors to engage in core patient work. In fact, budget holding in this case gives a financial incentive not to order treatment. In contrast to the UK, none of the efficiency incentives was realized in New Zealand. In the USA, this measure has contributed to the containment of costs; but its impact on the quality of care is not known. The common element found in all these countries is that budget holders more carefully consider the wider resource implications of any prescribed care and this in turn, should contribute to improved efficiency.

Incentives in the Canadian system operate differently; they increase the tendency to work by exclusion encouraging the use of multiple options until the correct diagnosis and/or treatment is identified. The one problem - one visit syndrome also triggers multiple patient visits; as a result, even the co-existing problems are treated separately. Moreover, the barriers between primary and secondary care are not strong and allow the patients to indulge in 'doctor-shopping'. All these factors contribute towards the escalation of medical care costs. Therefore, the Canadian system is ineffective from efficiency perspective.

### *Lessons Learned*

Each one of the options analyzed in the preceding sections consists of both positive and negative elements; their composition depends on how well the policy is implemented. So, the success of a choice is only partially determined by its conceptual base; for the rest, one has to look for international experience. Experiences of more than seventeen countries with respect to ten policy choices such as autonomy, budget holding, community financing, incentives, partnerships, private insurance, referral system, social insurance, tax financing and user financing were analyzed for this purpose.

Autonomy is the most common organizational approach to improve the efficiency as it is

considered as the first step to inform the local managers of the consequences of their actions and provide incentive to improve their performance. Kenya provides the example of a successful autonomy where as Ghana's experience is just the opposite; two other countries - India and Indonesia - fall in-between. A more close observation of these four experiences indicates that success is associated with the degree of autonomy. While Kenya provided complete autonomy, Ghana offered limited autonomy; the level of autonomy in the case of India and Indonesia was also not comprehensive enough to make any significant changes in the performance. Governments are often reluctant to hand over sufficient responsibility, particularly financial authority, to the autonomous units; control over the staff is also retained at the higher level.

The way budgets are being determined is crucial for budget holding to deliver results. Global budgets based on historical trends, as is the case of UK, bring with them all the disadvantages of tax financing. On the other hand, performance budgeting with utilization as an indicator for performance may lead to over-prescription. Other forms of budgeting such as line item budgeting, program budgeting or functional budgeting are also not free from drawbacks. Therefore, budget holding, in whatever form it exists, is not the best way to organize the resources as the past experiences haven't been successful to any considerable extent (Abdulai Issaka-Tinorgah and Catriona Waddington, 1993).

Community empowerment is the major driving force behind community financing because it not only generates resources but also allows the community to participate in management (at least theoretically). But, this vision is not accomplished in practice and only the 'financing' portion of it receives attention. Cooperative Medical System in China and Bamako Initiative in Africa were the two major community-financing initiatives in the World so far. Chinese health care system moved from one extreme to the other - from centrally-planned to market-determined, from a 'prevention first' approach to a curative approach and from community financed to user financed within a span of 20 years. While community-financing approach drew people in, the current market-oriented approach drives people out. The objective of the market-oriented approach is to overcome the drawbacks (e.g. inefficiency) of the earlier approach. In the process, it has already lost many advantages of the old system without scoring much on the efficiency front. In fact, the market-oriented approach has brought in a new dimension to inefficiency.

The Bamako Initiative covers a broad spectrum of countries and so, it is unreasonable to expect it to be a grand success. Nevertheless, it is doing reasonably well in terms of financing although it depends on which cost one wants to recover. If it is full recurrent cost including the staff salary, it may not be doing so well because the proportion of cost recovered in that case is not very significant. But, the program will be doing well if it covers at least the non-salary recurrent expenditure because it is this cost many public health care systems in the developing world are unable to meet. Therefore, Bamako Initiative should be termed as a success purely from financing point of view. The community portion of it is not well addressed and the community's participation so far is limited to financing alone. It will take time to make progress because it requires some skill to manage a specialized system like health care. Hence, the Initiative can be said to have made a beginning and it is up to the individual countries to make a progress.

Like budget holding, provider incentives too work differently under different

environments. One major element common to all incentives is that staff motivation is driven up as incentives are tied with productivity. Evidence suggests that profit incentives may lead to efficient use of resources because there is incentive for showing managerial competence (John A. Nyman and Dennis L. Bricker, 1989). The level of achievement, however, depends on the nature of the incentives. The negative side of the incentives often witnessed is that they tend to create a new kind of inefficiency as an unintended by-product even while correcting the existing one. Yet, proponents argue that benefits accrued to incentives often outweigh the damage caused by them.

Partnership exists predominantly in the form of contracting out and had only limited domain to operate wherever it was implemented as an option to improve efficiency. It met with partial success within its limited domain and the available evidence is not conclusive enough to indicate any concrete trend. The quality of service improved in the majority of cases whether it is clinical or non-clinical but its cost effectiveness has not been proved beyond doubt. Nonetheless, the field of partnership is potentially rewarding and so, it is still wide open.

Private insurance has something to do with the purchasing power of the population. At least this much can be inferred from the experience as its root of success mostly lies in the developed world. The scope and the functioning of private insurance are complex enough for the common man in a developing world to understand even if he/she has the ability to pay the premium. No wonder then that it is confined only to rich and literate societies. Although private insurance has the potential to generate adequate resources for the health sector, its success also opens up inequality.

The referral system is a simple organizational mechanism having enormous power to generate efficiency. But, its implementation often leaves enough holes for the influential persons to by-pass it; the process then easily percolates down so that the whole system breaks down sooner than later. From the patients' point of view, the referral system is seen as an expensive and ineffective option of treating illness though the truth is the other way round (Isik Kulu-Glasgow et al, 1998).

Social insurance has all the good characteristics of community financing and private insurance eliminating their shortcomings. It has a broader risk base than the community financing does and a well-structured social insurance does not exclude any specific sub-group of population, as is the case with private insurance. In this sense, the Japanese system is an ideal one in the sense that it covers the entire population. The Singapore system may be relatively more efficient as it has introduced private elements, making the system more accountable.

Tax financing is not the most reliable source of finance for health care. This is largely the result of factors such as the low political priority of the health sector in national budgetary determination, the instability of the economy, frequent use of public expenditure as a tool of macroeconomic stabilization, and the fluctuating relationship between budgeted funds and their actual availability (Geoff Hoare, 1987). There is virtually no competition for funds and managers know only about the funds directly under their control (Michael H. Hills, 1984). One advantage of tax financing, however, is that it does not impose any direct financial burden on the population.

User financing is considered as one of the sustainable options of health care financing. It is argued that improved quality should reduce welfare losses from the imposition of fees, produce higher utilization levels, and thus make better use of existing capacity. The Bamako Initiative has demonstrated that it is possible to support primary health care services and improve their quality by charging modest fees. However, existing environmental characteristics under which new policy has to play a major role in the success of user financing (Stephen W. Jarret and Samuel Ofoosu-Amaah, 1992 and Barbara McPake et al, 1993). In countries where decentralization already exists in some form, the introduction of user financing is less likely to pose any serious problems. Similarly, if the existing system is in shambles, then the population may readily accept the alternative. In essence, successful implementation of user financing calls for several other supportive measures if they are not already existing.

### *Policy Framework for Tamil Nadu*

International experience gives an account of how the policies work in practice as opposed to theoretical expectations. It shows that the local environment under which the policy operates is all the more important for the success of a policy. One thing is loud and clear: No single choice adequately addresses all the issues such as efficiency, equity, and sustainability of the public health care system. Therefore, a broad package of choices rather than a single one will be helpful in improving the efficiency and sustainability without compromising equity. An ideal package should include those choices containing the elements such as accountability, a broad risk pooling base, community involvement, decentralized decision making, incentives to both providers and patients, local control of resources, and strengthening of local management capacity. Such a package can be expected to promote technical efficiency through decentralization and allocative efficiency through an optimal service package to be offered by public, private and traditional sectors.

Having said that, the local environment is crucial for any package to work. So, it is important to analyze the prevailing environment in Tamil Nadu so as to devise a successful package. The environment includes the functioning of the economy, general policy framework, composition of various health care sectors, general functioning of public health care system and the role of patient-consumers. The economic climate in India has changed for the better after 1991 when the New Economic Policy was first introduced. Openness and autonomy gradually gathered momentum and the government was able to successfully find its way to expand the tax base. The new economic policy is on a stable orbit now since people signaled their appreciation recently through the electoral process in which all the major political parties came out in support of this policy. While this may give rise to additional funding from tax revenues, it will still be difficult for the government to meet the entire health care demand because better economic performance will only lead to higher public expectations and demand. Tamil Nadu is one of the front runner states in pursuing the new economic policy and the state is now all set for second-generation reforms.

The current policy environment in the state favors community involvement in financing. Evolution of a rational user fee policy, allowing health care units to provide high quality care at affordable cost, forms part of the Indian government's broad strategy to gradually phase out non-merit subsidies (The Hindu, 1999). Private insurance is also taking shape in a concrete manner after the passage of Insurance Regulatory and Development Authority Bill 1999 in Parliament

recently (The Hindu, 1999a). In addition to this general environment, the Government of India has also come out with some direct measures for public health care sector. The measures are based on practical experience and their feasibility and usefulness in a broader framework are expected to be tested during the next few years. The guidelines are:

- Recruitment of local doctors on a part-time basis wherever the government cannot position one among the PHC doctors;
- Adoption of a village, PHC, or a district by industrial establishments, cooperatives, self-help groups and religious/charitable institutions;
- Permitting local practitioners to pay rent and practice in the PHCs after office (outpatient) hours.

The Tamil Nadu government on its part has come out with a comprehensive health care scheme in the State (Dinakaran, 1999 & 1999a and The Hindu, 1999b & 1999c). It seeks to take modern medicine to the doorsteps of the people in both rural and urban centers of all the districts. The scheme would utilize the services of non-governmental organizations (NGO), district branches of doctors associations, medical specialists, private and medical college hospitals. According to the scheme, as many as 50 camps would be organized every month in each district and a strong team of doctors would screen the people and render curative services for a host of diseases and health problems including cardiology, diabetes, ENT, eye, geriatrics, gynecology, maternity, pediatrics and tuberculosis. Any person requiring further or continuous treatment would be referred to hospitals and such cases would be followed up with their health details entered into a computer. The main purpose of this scheme is to prevent and detect early the diseases like tuberculosis. It will help those people (an estimated 11.8 per cent of the population) who remain untreated by any sector - public, private or traditional.

The private sector has a substantial presence here and treats a even larger proportion of patients than the public sector (World Bank, 1995). This sector is expected to grow even larger as the income and urban proportion of the population grow (Kara Hanson and Peter Berman, 1998). Traditional medicines like Ayurveda, Naturopathy, Sidha and Unani are practiced widely and are a part of the private sector. The household sector plays a major role in the financing of health care. In fact, it is the single most dominant financing mechanism accounting for 75 per cent of the total health expenditure; out-of-pocket expense for health care is found significant even in rural Tamil Nadu.

One has to keep all these factors in mind while attempting to devise a policy package for Tamil Nadu. The Government of India guideline to recruit the part-time doctors is not directly applicable to Tamil Nadu because every PHC in this state has at least one physician in position. As a matter of fact, only about 10 per cent of the PHCs are not represented by a second physician as required by the norm (Government of Tamil Nadu, 1999). The second guideline (i.e., adoption of a village, PHC or a district) can be tested in areas where public health care units are not functioning efficiently for want of resources. The third option (i.e., permitting local practitioner to use the PHCs) is a kind of contracting-in whereby the local practitioners can contribute some resources in return for their use of the public health care facility. A statewide performance mapping of all the public health care units is required in order to make use of these two options. Another guideline of the Government of India states that states will be encouraged to explore the

feasibility of providing land, water and electricity at lower cost to private entrepreneurs for setting up tertiary care centers if they agree to provide 30 per cent of the in-patient facilities and 40 per cent of the out-patient/diagnostic services free of cost for people below the poverty line. This is also a workable arrangement for Tamil Nadu.

With regard to comprehensive health care scheme, it looks impressive though its sustainability is questionable given the experience of other ambitious government programs. Moreover, the public sector is unable to treat even those who report at the health centers due to lack of facilities (The Hindu, 1999d). Further, the scheme does not provide any scope for community involvement and fails to address the key issue of inefficiency though the purpose of the scheme is fundamentally different. Presently, the functioning of the public health care sector is vaguely defined and people expect 'everything' from the public sector and end up getting 'nothing'. The present scheme will augment the expectation further.

People should know clearly what is to be expected from the public sector so that any failure or mismatch can be reported to an appropriate forum. The slogans of 'Health for All' and 'Right to Health' can be fulfilled only when all the existing health care units are in a position to offer at least a package of basic health care services at all times. The package should be clearly specified for all the levels of the system and failure to adhere to the package must be immediately addressed. The package should be devised at the local level with the involvement of the community and this requires decentralization of decision making. The local unit becomes accountable only when it has a hand in the preparation of the package. Ensuring a unit-specific package acts as a kind of referral system because same service will not be available in two different types of units. Moreover, if the required service were available at the local level, there would be no need to use the higher level service, as patients have to spend considerable time, energy and money in addition to loss of productivity.

Decentralized decision making is a crucial factor for the package to work. Limited autonomy to public health care units can be a successful option for Tamil Nadu because the public sector health care delivery staff in this state are a sincere lot; earlier decentralization efforts worked well here (Nirmala Murthy, 1999). Decentralization does not mean total detachment of the local units from the main system. There should be a coordinating mechanism to monitor the activities of the units; it can guide them if some things go or/are about to go wrong. The monitoring mechanism will have the knowledge about the advantages and disadvantages of the other units and this experience can help to avoid duplication of efforts. It can also help the local units with the information about the package available at other units so that the service can be utilized in case of need. The local units should also be in a position to have a linkage with private and traditional sectors so that the services available in those sectors can be utilized on a referral basis. However, it should be made clear that they can go to other sector if only the service is not available in the public sector within a specified geographic area and/or time.

The public sector needs to consider several factors before thinking of decentralized framework. What is the optimum level of decentralization? - state, district, sub-district, PHC or Sub-Center. How much is too much or too little in terms of decision space? What should be the performance criterion to judge the functioning? Should it include any incentive package? It is vital

to strike an ideal balance between these issues for a successful experiment with decentralization. Any imbalance could lead to corruption, inequality, loss in economics of scale, wastage and X-inefficiency. Too much autonomy along with private information can make it very difficult to internalize externalities resulting in substantial losses in social efficiency (Peter Klibanoff and Jonathan Morduch, 1995).

From the consumer point of view, there should be a locally managed prepayment arrangement and the entire population should be made members through a nominal payment. Even a rupee per person per month will make a lot of difference to financing because it means an increase of more than 12 per cent in health care expenditure (because the per capita annual expenditure on health and family welfare in Tamil Nadu was Rs. 67.92 in 1995). This is less than one per cent of the monthly income of even the poorest pensioner (government gives Rs.75 per month as old-age pension). For a family, a mere Rs.5 per month would be a burden for a family size of 5 (which is much less than what they presently spend to access government care). This contribution is significant for the government too because many districts spend much below the state average and the World Bank estimates indicate that an increase of about 15 per cent in health expenditure would achieve a reasonable improvement in efficiency.

In addition to the resources generated through membership, some users can be charged for certain services that are not included in the package. So, those who pay for their service would draw benefits equivalent to their spending. The amount thus generated can be used for bringing in new technology. Under this scenario, the private sector can target the rich and some expensive services in addition to the referrals they get from the public sector. The charges accrued to the referrals should be borne by the community fund at a fixed rate; any charge beyond the minimum would be paid by patients. This would give the patients liberty to choose their own provider. This fixed rate payment should be applicable to only the poor and elderly. The private sector would automatically exclude the package services offered by the public sector.

This package-based system can be first tried in some limited areas (say, in a backward region and an advanced district) before being implemented in a big way. The implementation starts from package development and requires a complete knowledge about the consumer preferences in health care front and the functioning of other health care sectors. Private insurance is not a very good option for the Indian situation if it leaves more than 14 per cent of the population uncovered in a developed country like the US. The purpose of insurance will be defeated if the private insurance is to be accepted as an option in health care because it leaves out the very people who need risk coverage.

## **Conclusions**

This paper attempted to provide an alternative policy framework for Tamil Nadu public health care sector with an aim to enhance its efficiency. It reviewed international experience, covering more than 27 countries in the world, on several policy choices related to finance and organization from an overall perspective of efficiency. The performance of the financial and organizational choices in various countries indicated that a single-choice framework may not work to improve efficiency, equity and sustainability (at least one of the three will suffer in that

case). It is far better to use health care system suiting the local community even while retaining the basic structural framework of the public sector. This will enhance the productivity of the manpower without eroding the equity. Manpower is the major sunk cost (its share in total cost is nearly 90 per cent in some cases) in Tamil Nadu and it is crucial to improve its productivity if the efficiency is to be achieved.

## Notes

1. The share of salary in some cases is as high as 90 per cent (Gupte et al., 1996). As an irony of sort, some of the public health care units are understaffed to the extent of 67 per cent despite the fact that staff salary takes away a major chunk of the recurrent expenditure (World Bank, 1995).
2. Population projection is based on an annual growth rate of 1.1 per cent.
3. It is termed as imperfection because it is external to the system. On the other hand, inefficiency is internal to the system and it can be explained only with respect to the system that is in place (and not with respect to the normative system).
4. This is because patients often prefer to consult health care staff belonging to the same sex.
5. In fact, only 10.9 per cent of the PHCs in the State fall short of the normative requirement of two physicians.
6. These figures are worked out from the data, given in the report, for various health care units in Tamil Nadu.
7. While State morbidity is growing at a rate of about 20 per cent, per capita health expenditure grows at a rate of 3.1 per cent (World Bank, 1995).
8. Only limiting factor here is the capacity of health care facilities.
9. That is, if the defined services covered by the payment does not create any incentive to refer the patients to other more expensive providers.

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**Table-1. Staffing norm for the public sector\***

Type of Unit	Type of Staff	Norm
CHC	Doctor	4
	Paramedical Staff	13
	Administrative Staff	8
PHC	Doctor	2
	Paramedical Staff	7
	Administrative Staff	7
SC	Paramedical Staff	2

\* Number of persons

**CHC** Community Health Center    **PHC** Primary Health Center  
**SC** Sub Center

**Source:** World Bank (1995). *India: Policy and Finance Strategies for Strengthening Primary*

**Table-2. Normative Versus Actual Infrastructure\* (1997)**

Type of Unit	Norm	Actual	Gap	Gap as % of Norm
CHC	396	72	324	81.8
PHC	1584	1436	148	9.3
SC	9504	8681	823	8.7

\* Figures in numbers

**Table-3. Shortage of resources in Tamil Nadu - Building (in numbers)**

Type of unit	Normative Requirement	Actual Requirement	In Place	Under Construction	Shortage as % of Norm	Actual Shortage (%)
CHC	396	72	68	NIL	82.8	5.6
PHC	1584	1436	1341	7	15.3	6.1
SC	9504	8681	4975	248	45.0	39.8

**Source:** Government of India (1997). *Bulletin on rural health statistics in India*. Rural Health Division, Directorate General of Health services, Ministry of Health and Family Welfare, New Delhi - 110011.

**Table-4. Shortage of manpower (number of persons)**

Type of Manpower	Normative Requirement	Actual Requirement	In Position	Shortage as % of Norm	Actual Shortage (%)
1. Physician	3564	2944	2485	30.3	15.6
2. Surgeon	396	72	26	93.4	63.9
3. Pediatrician	396	72	NIL	100.0	100.0
4. Obstetrician & Gynecologist	396	72	26	93.4	63.9
5. Pharmacist	1980	1508	1485	25.0	1.5
6. Laboratory Technician	1980	1508	940	52.5	37.7
7. Radiographer	396	72	28	92.9	61.1
8. Female Health Assistant	1584	1436	1418	10.5	1.3

9. Male Health Assistant	1584	1436	3005	-89.7	-109.3
10. Female Health Worker	9504	10117	8544	10.1	15.6
11. Male Health Worker	9504	8681	5314	44.1	38.8

**Table-5. Shortage of Materials**

Type of Material	Inadequacy (%)
1. General Medicines	24.1
2. Emergency Medicines	48.8
3. Vaccines and Supplies	10.9
4. Contraceptives	0.8

**Source:** These results are derived from World Bank (1995). *India: Policy and Finance Strategies for Strengthening Primary Health Care Services*. Report No. 13042-IN. Population and Human Resources Division; South Asia Country Department II (Bhutan, India, Nepal).

**Table-6. Financing mechanisms for health care and their objectives**

Country	Mechanism	Objective
1. Australia	Private Insurance And Tax Financing	Universal access
2. Canada	Tax Financing (National Health Insurance)	Equity
3. China	Community Financing (Cooperative Medical System)	Access at a reasonable cost and local management of resources
4. Egypt	User Financing (Out-of-pocket), Social Insurance (Public sector funding) and Tax Financing	Adequate coverage to all citizens

5. France	Social Insurance	Universal access
6. Germany	Social Insurance	Equal access and universal coverage
7. India	User Financing (Out-of-pocket) And Tax Financing	Universal access (?)
8. Japan	Social Insurance	Universal coverage
9. Latin America	Social Insurance	Self-financing
10. Philippines	User Financing (Out-of-pocket) And Social Insurance	Universal access
11. Singapore	Social Insurance (Medisave)	Self-reliance and accountability
12. South Korea	Social Insurance (National Health Insurance)	Equitable health care
13. Sub-Saharan Africa	User Financing and Community Financing	Cost recovery and effective resource utilization
14. Thailand	Community Financing (Health Card)	Risk Coverage
15. UK	Tax financing	Equity
16. USA	Private Insurance	Individual freedom of choice
17. Zimbabwe	Private Insurance	Resource mobilization

**Sources:** Barbara McPake et al (1993), Mukesh Chawla and Peter Berman (1996), Naoki Ikegami and Toshihiko Hasegava (1995), Paul Shaw (1995), Peter Berman et al (1995), Reisman (1996), Reisman (1999), William C. Hsiao (1999), World Bank (1987), World Bank (1995) and Yuanli Liu et al (1995).

**Table-7. Cost recovery potential of user financing**

Country	Year	Revenue as % of recurrent expenditure
1. Belize	1989	2.0
2. Botswana	1983	2.8
3. Burkino Faso	1981	0.5
4. Cote d'Ivoire	1993	7.2
5. Central Africa	1990	26.0-94.0
6. China	1990	90-97
7. Ethiopia	1984-85	23.0-32.0
8. Ghana	1990-91	5.6

9. Indonesia	1983	6.2
10. Lesotho	1990-92	9.0
11. Malawi	1983	3.3
12. Niger	1986-87	15.0
13. Nigeria	1986	20.0-82.0
14. Pakistan	1982	2.0
15. Rwanda	1984	7.0
16. Senegal	1993	8.0
17. Swaziland	1988-89	5.0-13.0
18. Tanzania	1992	56
19. Zambia	1989	3.0
20. Zaire	1986	17.0
21. Zimbabwe	1991-92	3.5

**Sources:** Lucy Gilson, 1997, Mukesh Chawla and Peter Berman, 1996, Paul Shaw, 1995, and Sanjay Reddy and Jan Vandemoortele, 1996.

**Figure-1. Normative Framework of Public Health Care Sector in Tamil Nadu**

**Public Sector**

**Rural**

**Urban**

