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**Essential Drugs in Government Healthcare:
Emerging Model of Procurement and Supply**

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Abstract

Medicines are important in curing and preventing diseases, and hence, the ultimate goal of 'Health for All' cannot be achieved if people do not have adequate access to essential drugs. Evidences show that substantial savings can be achieved by improving the selection and quantification of drug requirements through the use of essential drug lists and by purchasing drugs competitively. In India, though there exists a national drug list, different states have their own list of state formulary which may or may not necessarily be based on the list of essential drugs. A few state governments in India have their formulary based on the list of essential drugs. The state government of Tamil Nadu besides adopting a list of essential drugs has also streamlined the procurement and distribution of the same which is being looked upon as a model by other state governments. This paper details the procedures adopted by the Tamil Nadu Medical Services Corporation in procuring and supplying essential drugs to the government health care which is a positive measure in ensuring 'health for all'.

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Essential Drugs in Government Healthcare: Emerging Model of Procurement and Supply

N. Lalitha

1. The Concept of Essential Drugs¹

According to the recent report on Access to Medicines, one third of the world's population does not have access to basic and essential drugs and this figure raises to one half if the poorest parts of Africa and Asia are considered (Dukes and Paula, 2004). Though the diseases pattern may differ in such developing countries, one common problem that prevails in such countries is the inadequate access to medicines. Keeping in mind that medicines are important in curing and preventing diseases, the ultimate goal of 'Health for All' cannot be achieved if people do not have adequate access to essential drugs. It is an ironical fact that a high proportion of deaths/ailments in the developing world is preventable/ curable in principle with the available medicines, though accessibility is restricted due to factors such as cost of the drug, purchasing power of the people, physical availability of the medicine in the market and health care centers, and so on. Where government is involved in providing the medicines, accessibility can be impeded by lack of funding, inappropriate procurement and selection, and lack of prioritization due to absence of data regarding the essential demand for the right medicines. In the absence of this crucial data, government's meager resources are spent on unnecessary piling of drugs, which might not be used within their shelf life at all.

Accessibility to medicines is increasingly debated in the context of: (a) structural adjustment programmes introduced by various government that resulted in reduction in social expenditures; (b) growing globalisation of trade; (c) exclusive rights provided to the inventors of medicines; and, (d) the growing inequity in health between the north and south. These issues have made the governments to concentrate more on providing access to medicines to the needy. While access to the patented medicines is a complex issue, access to the off patented

¹ In this paper, terms drugs and medicines have been used interchangeably.

essential drugs have been initiated through spearheading the concept of essential drugs by the World Health Organisation (WHO) and drug donations through bilateral agreements etc.

The concept of essential drugs refers to those drugs that satisfy the health care needs of a majority of the population and therefore need to be made available in adequate quantity and at a price that individuals and the community can afford. WHO created in 1946, earlier limited its role in the field of medicines to the standards of manufacturing and quality control. Later, it went on to advocating drugs that are safe and affordable and that would meet the health requirements of the third world and thus, the concept of essential drugs was introduced. The first list of essential drugs consisted of 224 drugs and many countries drew their list of formulary from this template. The WHO list is frequently modified reviewing the health scenario of different countries.

At the beginning of the year 2000 as many as 198 countries have adopted the WHO's list of essential drugs. Medicines, which account for 10 to 30 per cent of public spending for health in most countries, are the most promising area for efficiency gains. Very large savings can be achieved by improving the selection and quantification of drug requirements in part through the use of essential national drug lists and by purchasing drugs competitively. Evidence documented by WHO shows that as a result of adopting a rational drug approach, countries have cut down the drug costs within the health expenditure. Because of improved availability of drugs in public utilities, public utilization and image of the utilities have improved.

As far as India is concerned, though there exists a national drug list, different states have their own list of state formulary that is not necessarily based on the list of essential drugs. Tamil Nadu, Delhi, Maharashtra, Andhra Pradesh, Himachal Pradesh, Karnataka, Punjab, Rajasthan, Uttar Pradesh, Madhya Pradesh, Orissa and West Bengal are some of the states that have taken initiatives towards adopting a rational drug approach. Chart 1 shows the status of the WHO-India Essential Drugs Programme in 2002. As evident, not all the states that have adopted a wholistic approach or an approach as propagated by WHO. Hence, there could be differences in their achievements in terms of operationalising the essential drug list across different health care in a state, rationalizing their budget expenditure, and availability of medicines in public health utilities. In this paper, we focus on the efforts of Tamil Nadu (herein

referred to as TN) government in adopting a rational drugs approach to provide supplies to its government supported health care system. Before we actually discuss this process, a brief note on social spending of TN will be apt for understanding the reform measures, which is presented in Section 2. Section 3 presents the pre reform scenario regarding medicinal supply in TN. Section 4 and the various subsections of 4 discuss the details of the government efforts in supplying rational drugs to its various health care system. Sections 5 & 6 discuss the implication and replicability of this model. Section 7 presents the conclusion.

2. Social Spending in Tamil Nadu

Social spending by states i.e., allocation on education, health, water supply and sanitation depends on the social priorities of the state and there are obvious differences observed in the social spending of the states. However, expenditure on medical and public health expenditure for any state ranks next to the expenditure on education (Lalitha, 1998). This expenditure includes salaries, administration, capital expenditure and medicines. Because of such continued allocation, a huge infrastructure of government health care is available in India to provide health facilities, which range from hospitals for specialized treatments and research to preventive health care in rural areas. However, as Dreze and Sen (1995) observe 'India has poor health achievements despite spending a comparatively large part of its GNP on health (if the public and private spending is added). Much of the mismatch between the resources and achievements is due to the functioning of the public health care system especially in rural areas. In some states, this system is little more than a collection of deserted primary health centers, filthy dispensaries, unmotivated doctors and chaotic hospitals' (p.101). Traditionally, while states with higher growth and higher per capita income spend more on social services such as education, health, nutrition and water supply as compared to the states with less income and are still developing, yet some of the states are able to target their social spending to get the desired effects. A few authors have observed that social spending in southern states is better targeted than other states. Particularly the experience of southern states such as Kerala, Tamil Nadu and Andhra Pradesh in targeting health subsidies (Mahal et al 2003) and public distribution system respectively has been the focus of many studies. Dreze and Sen (1995) point out that 'most of the initiatives in social security measures taken in south Indian states were in the context of electoral politics. They point out that by contrast in large north Indian states social security and related issues have little place in party programmes

and electoral debates there..... And little time being wasted on real issues such as under nutrition, illiteracy, unemployment or ill health' (P.104). Particularly, TNs emphasis on human development rather than human resource development and their positive impact on poor clearly emerge in the works of Guhan (1989) and Seeta Prabhu (2001).

Despite the high unemployment and the prevalence of casual labour, the government did not take recourse to schemes such as employment guarantee scheme. It appears that since transfers via wage payments per se are a very expensive and inefficient approach in helping poor.... (hence) welfare programmes for SC&ST, basic needs provision and social assistance is likely to be more cost effective (Guhan, 1995) and Tamil Nadu follows this by allocating more on social protectionist measures rather than on employment creation programmes. For instance, the noon meal scheme started as a voluntary scheme with contributions from local people but was soon adopted by the government. Over the years it covered other targeted groups of people like children between 2-15 years, pregnant women and pensioners. Beside directly benefiting these targeted population, the labour intensive nature of the programme opened up several employment opportunities for destitute women. Similarly, old age pensions that were introduced in 1962, two years after the formation as a separate state, still goes on and the coverage has been extended to cover widows and handloom weavers.

An important distinction between the schemes announced by TN and the central government schemes such as IRDP is that, in IRDP type of schemes, because of the ceiling on the overall budget, if the non-poor gets a larger share, then the eligible poor do not get the benefits. But in TN schemes all those who are eligible, benefit by such schemes and hence a non-poor getting a benefit doesn't exclude an eligible poor getting the benefits (Guhan, 1988). Though, such expenditures have their budget implications, successive governments have added or continued such schemes maintaining the 'pro poor' image and concern because of the positive impact of such schemes on primary education and health. Especially in the area of health, due to large government efforts through various health campaigns, people of TN have also become vocal regarding their basic rights and do not shy away in bringing any lapses to the notice of the authorities who are thereby forced to take action. The decision to revamp the system of procurement of medicines for the government health care system was also as a result of public outcry about the non-availability and shortage of

medicines in the government health care sector, which is detailed in following sections.

3. The Pre Reform Scenario

In TamilNadu, until 1995, the responsibility to procure and supply drugs to the government health care was with a 'Centralized Purchasing Committee' (CPC). Some of the state governments follow this type of procurement even now. In Tamil Nadu the CPC functioned under the chairmanship of the Health Secretary and comprised of the three heads of directorate's viz. Directorate of Medical Service, Directorate of Medical Education and Directorate of Public Health. The CPC used to invite tenders. The requirement in the tender was based on the demand for drugs arrived at by consolidating the requirements of all the institutions that are meant for providing medical care in the state (Chart 2). For PHCs and taluka hospitals, the drug indents were consolidated and orders were placed at the district level. In the invitation to tender, preference was first given to public sector units, and if they fail to meet the demand, then private manufacturers were approached which obviously meant delay in the supply of medicines. Hence, when the system was changed to that of inviting tenders for the supply of medicines, competitive prices were achieved but supply continue to suffer because, tenders were given without regard to the units' production capacity and quality of the products. Rent seeking behaviour was not uncommon. Understandably in this situation, supplies did not arrive on time. All this resulted in acute shortage of medicines in the government health services. Hence, to meet the demand, drugs were bought from the open market at higher prices and hospitals themselves placed orders directly with the suppliers, which meant different prices prevailed for the same drug.

A major shortfall of this system was that it resulted in buying and stocking lot of irrational and unnecessary drugs of poor quality, because the procurement was based on consolidation of requirements. About 1000 drugs were in use and no scrutiny was made about the therapeutical use of each drug. Further, medicines were bought in their brand names in bulk but in loose packing. Even dealers and stockists could apply for tender and supply to the hospitals. Showing favours to a particular company was not uncommon and no scrutiny was made about the firms selected to supply the drugs. This resulted in very small firms getting huge bulk orders, who were not in a position to supply on a timely basis. In this chaotic

situation, hospitals reeled in shortage of drugs and patients had the option of either to buy the medicines from open market, which they were supposed to get free of cost or go without medicines. Poornalingam (1998) aptly describes this situation: `...The concept of budgetary control was unknown to the hospitals. They (the concerned authorities) indented for drugs without any reference to the budget allocation. As a result, the overall budget allocation for the department was exhausted quite early, and non availability of funds was then cited as the reason for the shortage of drugs, whereas drugs not immediately required were stocked in large quantities. No one had any idea of the stock position. A particular drug would be in short supply in a hospital despite a surplus stock in another hospital. The district and state level officials in charge of drug procurement and distribution did not have any information about the stock position of any drug. If they wanted any such information, they had to collect it from all the institutions. By the time the information was received, it would become outdated. Pilferage and wastage of drugs were common. Since there was overstocking of drugs in some hospitals and a regular mechanism to transfer such excess stocks to needy places was not routinely available (and hence) some drugs became time-barred and were wasted' (p101-102).

While this method resulted in exhausting the budget allocated for medicines, essential drugs and drugs that are used for common ailments and surgical items were highly inadequate which resulted in public outcry. Several of the print media carried news stories on the rentseeking behaviour in the purchase of drugs and highlighted the shortfall of drugs in government health care system. This resulted in government taking some stern action. As a result of this, the old system was completely dismantled. A new administration started working on improved ways of procuring and distributing drugs. This paved way for setting up of the Tamil Nadu Medical Services Corporation.

4. The Reform Measures

The WHO recommends that any governmental effort to provide access to medicines has to take care of the following four crucial factors. These are: (1) Sustainable finance; (2) affordable prices; (3) Rational selection of drugs and use; and (4) reliable system of medicine supply (quoted in Dukes and Paula, 2004). In other words, when the government is involved in the supply of drugs, it has to ensure that it does not suffer from (a) inadequate buying practices; (b)

improper estimation of demand for drug; (c) inefficient procurement and distribution of drugs; and (d) irrational prescription. All these flaws lead to improper utilisation of the budget allocation with a net result being less value received for the amount spent by the government/consumer. Hence, different countries have adopted different methods to supply drugs². These are: (1) Central medical stores, (2) Autonomous supply agency, (3) Direct delivery system, (4) Primary distributor system and (5) fully private supply. In India models of central medical stores and autonomous supply agencies are prevalent among a few states. The Central medical stores (CMS) approach is followed by some of the states in India and countries like Ghana, Oman and Zimbabwe. In this, drugs are financed, procured and distributed by the government, which is the owner, funder and manager of the entire system. Selection, procurement and distribution are all handled by an unit within the health ministry. It had been a logical approach if the medicines were all imported through one channel. However, CMS's have experienced problems with financial management, quantification of requirements, management of tenders, warehouse management, transport and security of drugs. These problems have been exacerbated by political or administrative influences and weak financial discipline.

Autonomous supply agencies are constituted as parastatals, either under the ministry of health or as independent organisation with a board of directors including representation from other (than health) government ministries. Their primary and priority client is government health services and they may or may not operate on a non-profit basis. Examples of countries that have adopted this are Benin, Haiti, Sudan, Tanzania, Uganda and Zambia. The board is autonomous in running the agency but reports to a higher official from the ministry of health who may be involved in the appointment of the chairman of the board or the executive officer. The purpose of establishing an autonomous supply agency is to achieve the efficiency and flexibility associated with private management and private sector employment conditions. At the same time, presence of public sector is also maintained to ensure that the autonomous services provide a range of essential drugs at reasonable prices with adequate control of quality. The basic concept is that under the right conditions, a well constituted management board or board of directors will have the freedom to appoint qualified senior managers

² The details of the drug supply models discussed here have been drawn from Essential Drugs Monitor, Issue no. 25 & 26, 1998.

who will in turn ensure an efficient accountable supply agency. Features that will ensure success of autonomous service models are: (1) supervision by an independent management board; (2) professional pharmaceutical supply managers; (3) adequate financing; (4) public accountability and sound financial management; (5) focus on essential drugs; (6) focus on quality assurance, both in terms of products and of services provided. While many of these features of an autonomous supply agency have been incorporated in giving shape to the Tamil Nadu Medical Services Corporation (TNMSC) set up by the TN government to manage the entire drug delivery system, yet it is difficult to pin point whether it is based on any particular model³. The credit goes to the team of bureaucrats and technocrats who had the vision to meticulously plan and implement the activities and a supportive government, which was willing to introduce the reform measures.

4.1 Organisational Set Up of TNMSC

TNMSC was set up as an autonomous corporation in July 1994 under the Companies Act of 1956, for the purpose of supplying the essential drugs and services. It commenced the services to buy, store and distribute drugs and medicines in January 1995. Health Secretary, Tamil Nadu Government is the chairman of TNMSC. An officer from the Indian Administrative Service is posted as the managing director and looks after the day-to-day operations of TNMSC. Compared to any government office, which usually has huge manpower, TNMSC works with skeleton staff (chart 3). There is hardly any permanent employee of TNMSC, except for the company secretary, who functions as chief accounts officer; all others are on deputation from other government departments. The staffs in charge of electronic data processing (EDP) are employees of the company that has established the computer network. This arrangement helps in keeping the overheads and administrative expenditures to a minimum. Currently TNMSC supplies drugs to the following institutions: Government teaching medical colleges and hospitals; district headquarters and taluka headquarters hospitals; all primary health centers and through them the health sub centres; juvenile homes; ESI hospitals; all prisons and police department hospitals; Cooperative sugar factories and tea plantations; government dispensaries; veterinary hospitals, road transport corporation hospitals; and all local body hospitals.

³ During 1986-88, DANIDA was providing a kit of 15 essential medicines to the sub-centres in its area of operation. Though found to be useful, it was not operationalised or adopted for other health centers.

4.2 Selection of Drugs and Quantification

The root cause of problems in government supplies is often due to lack of identification of appropriate drugs and their quantification, which was detailed in an earlier section. Hence, the first task in the hands of TNMSC was to identify medicinal needs and arrive at a list of essential drugs. For this purpose, a drug committee consisting of Professors of medicine, pharmacology, therapeutics, a representative from World Health Organisation, health secretary and the managing director of TNMSC was formed. After detailed discussions and looking at the prevailing morbidity pattern and the diseases calendar prevailing in different areas of the state, a list of 240 generic drugs was arrived at. A VED analysis- Vital, Essential, Desired analysis of drugs was also carried out in the selection of the drugs. Vital are the important drugs needed for the disease; essential are those identified by the WHO for the disease and desired drugs are those suggested by the deans and head of the departments to be included in the list. Sticking to the WHO recommendation that the drugs should be of single drug ingredient and not multiple combinations except a few, TNMSC does not have combination drugs. The problem with multiple combinations is that they have side effects and it is difficult to identify the cause of such side effect. Quantifying the demand for drugs proved to be difficult for the task committee because, under the previous system hospitals kept on buying drugs without any accurate assessment. So in the initial days, the drug committee procured drugs on a rough estimate and over a period of time it was stabilized. However, now from the movement of drugs from the warehouse, the demand for a drug is arrived at and drugs are transferred from one place to another if there is more demand in a particular place. Besides this, computerisation of the drug movements has also made it possible to monitor any particular health units' over or under use of allocation.

Besides selecting the drugs, the drug committee also worked out the cost of each medicine, taking into consideration the costs of raw material and manufacturing cost, cost of packing, excise duty paid, and a certain minimum profit margin. This exercise was also useful in identifying the quality of the drugs. For instance, if the raw materials have been bought from places of dubious quality then the supplier can quote very less price. However, if the supplies have been brought from qualified suppliers then the prices cannot go beyond a certain level.

Another important decision that was taken by the committee was to do away with the earlier practice of procuring and dispensing the drugs in loose, which reduces

the quality of the medicine and its impact on the disease. The committee decided to get the supplies in aluminium foils and blister packs, syrups in 60 ml or 40 ml packs and ointments in small five or 10 gram tubes. This also helped in avoiding wastages and preventing the reduction in the shelf life of the drug in store. Most importantly, it helped in improving the image of the public health care system among people, since they were getting medicines, which 'looked the same as the ones that were brought from the pharmacy'. Incidentally, according to a survey done in TN in the year 2000, 20 per cent of the 50 best selling drugs in the private drug outlets are also on the drug list of TNMSC. In order to avoid pilferages, it was also stipulated that all the tablets and capsules carry the logo TG meaning TamilNadu government and the message that the said drug is meant for the supplies of Tamil Nadu Government and not meant for sale. Sutures do not bear the logo since it is difficult to emboss the logo on them.

4.3 Financial Resource Allocation

Reallocation of financial resources meant for the purchase of drugs from the institutions to TNMSC is one of the reform measures and hence TNMSC does not have a separate budget allocation to carry out its activities. Table 1 provides the allocation towards health expenditure by the TN government for recent few years, where the total allocation has increased in absolute terms from Rs.1264 crores to Rs.1652 crores. Unfortunately, the allocation for drugs by each of the directorate is not available for the recent years. In 2002-03, out of the total allocation of 1264 crores for health, allocation towards medicines accounted for 93.09 crores or 7.36 percent. Allocation for medicine works out to be 13.4, 9.8, and 5 per cent for Directorate of Medical and Rural Health Services (DMRHS), Directorate of Medical Education (DME) and Directorate of Public Health (DPH) respectively of their budget. The three directorates pass on 90 per cent of the budget meant for the purchase of drugs to TNMSC. Table 2 provides this data. TNMSC uses this amount to pay the suppliers. The remaining 10 per cent is retained with the directorates to purchase any drug outside the list, but considered essential. There is an application form in the TNMSC drug list, which the doctors can utilize to suggest inclusion or exclusion of a drug. Depending on the number of such applications TNMSC will take decision. TNMSC charges 0.5 per cent of each transaction as service charge as against the permitted 5 per cent. This is used for maintaining the office and the warehouse infrastructure.

4.4 Selection of Suppliers

TNMSC has laid strict and elaborate procedures to identify suppliers for its drug procurement to ensure uninterrupted and quality supply, since, making medicines available at the government health institutions is the primary purpose of setting up of this organisation. Accordingly, rules and regulations were laid out. The first and foremost condition is that only manufacturers and direct importers of medicines can participate in the tender process. TNMSC invites tender by advertising in various dailies, pharmaceutical newspapers and in its own website. Tender document consists of cover A and Cover B. The salient features of cover A are; (1) the manufacturer should have license for the product quoted (loan licensing is not allowed) and should be manufacturing in her/his own premises; (b) the said company should have a minimum turnover of Rs. 35 lakhs and the manufacturer should have market standing for the drug issued for a minimum period of 3 years; (c) the company should have the 'Good Manufacturing Practice' certificate issued by the state government authorities and should not have suffered any legal conviction cases. If the tender committee is satisfied with details provided in cover A, then a technical team visits the unit (without prior notice to the unit) to assert the facts stated in the tender and the company's production capacity. On the basis of recommendation from the team, the samples of drugs are obtained from the unit and sent for quality checks. On the positive recommendation from the quality control department, those manufacturers who satisfy the entire criterion mentioned in cover A are invited for the opening of cover B. These manufacturers are asked to bring sufficient number of photocopies of their quoted prices and a soft copy containing the prices of the products tendered by them. While photocopies are distributed to all those who are present in the tender process, the prices are simultaneously displayed on a huge screen. This method apparently helps in keeping the system transparent since every bidder gets to know the price bid by the other. Obviously, the one who has quoted the lowest price (called as L1) gets the tender. But if there are couple of more manufacturers whose prices are close to the L1 rates, they are asked to match the price of L1. And the entire purchase order is distributed accordingly. Price fixed during the tender process holds good for the whole year⁴ and cannot be changed. In the whole tender process, there is neither

⁴ These prices are also posted in the TNMSC website and available at www.tnmsc.com.

any special preference for SSIs nor for public sector units⁵. Interestingly, suppliers in the current year do not automatically become eligible to supply in the next year. They will have to go through the same procedures but for the inspection of units. This ensures transparency in the operation.

The other interesting feature is that, once the order is placed, the selected supplier should start supplying within 30 days of the contract and complete the same within/on 60th day. A late delivery fee of 1.5 percent of the entire purchase order is levied on the supplier, if the supplies are delayed even by a day. The supplier will have to send the supplies directly to the designated drug warehouses. On receipt of the drugs, the drug warehouse issues a material received certificate (MRC) to the TNMSC office. A certain quantity of drugs drawn from each batch is sent for quality control to the designated laboratories all over the country again selected through the tender process. This is done in spite of the fact that suppliers send their goods with Q C certificate, a testimony that the products were checked before they were sent. Quality control takes about two weeks to test tablets and capsules and three weeks to test the injections. Cold storage items are not sent for quality checks because appropriate temperature will have to be maintained throughout their journey. Surgical and sutures are selected based on the recommendation of experts. Drug distribution takes place only after the receipt of report from the QC. If negative reports are received on a particular product, then that product is sent for QC to another laboratory. If it fails in the second time also, then the entire batch is sent back to the supplier, who will have to supply fresh stocks. If this happens twice, then the supplier is blacklisted. From May 2003, warehouses have been advised not to send samples of the same batch for testing, if samples of a particular batch have already been sent for QC. Similarly, if the QC passes a drug of a particular batch, then other warehouses can also start distributing. TNMSC makes payment to the supplier only after the report from quality control is received. An automated cheque clearance system of payment to the suppliers also helps in maintaining the transparency of the system.

⁵ There was a recent news item which said that with the change in the top officials in TNMSC, SSI's again want to take up their case and ensure that preference is given in the selection of suppliers.

4.5 Storage and Distribution of Drugs

In order to store the drugs, 24 warehouses have been built in 23 districts of the total 29 districts (Chennai has two warehouses, also see District Map of Tamil Nadu). All the warehouses are of uniform design and structure. Of the 24 warehouses, two were built with DANIDA's assistance and 11 were built with World Bank's loan and the state government built the rest. All the warehouses except the one at Sivaganga are housed in their own building. Electronic trolleys are also available in the warehouses for facilitating loading the medicines in order within the warehouse. The total staffs at the warehouse consist of two pharmacists, (who are on deputation from government hospitals) one data entry operator (on a consolidated pay) and two helpers (outsourced) who help in loading and unloading operations. These two are also not regular employees of the corporation. The pharmacists have been trained in drug handling, storage and distribution.

The decision of the TN government to have its own warehouses exclusively to handle the medicines is an important aspect in the distribution of the drugs. Since these are situated in different districts health institutions in a particular district can draw their stock from the warehouse in that district. Taking into account factors like the stock in hand, demand from various institutions and the stock that is to arrive, TNMSC places the purchase order worth a few months stock with the suppliers who supply directly to the warehouses. By getting the stock directly to the warehouse, the difficulty faced in the Central Medical Stores office of distributing to the different health institutes is avoided.

On arrival, appropriate entries are made in the computer about the stock that has arrived on that day, pending stock, quantity received until then, drugs distributed to different institutions, expiry date of the drug of different batches, stock at the warehouse and drugs that are sent for QC checks. These help the Chennai office in updating the stock position and also transfer the drugs, from one place to another in case of need. To make the system foolproof, TNMSC has stipulated the system of receiving the information by courier everyday. The warehouses are required to maintain a three-month stock and a safety limit of one-month stock.

All the institutions are provided with two passbooks valid for one accounting year, of which one is retained with the institution and the other with the warehouse,

wherein the budget for that institution is mentioned. Budget for each institution is arrived at looking at the patients inflow and outflow in a particular year, diseases pattern and drugs consumed. All the institutions in a particular district draw their drug stock from the warehouse of that district on their designated day. While teaching medical institutions draw their stock every month, PHCs draw their stock once in three months. TNMSC arranges transport for institutions, which draw drugs worth more than a crore. Each institution submits an indent form which indicates particulars like the stock in hand at the institution, stock required, stock supplied, batch number, expiry date, cost of the drug etc. Appropriate entries are made in the passbooks and in the computer, which helps in finding the movement of the drugs for the TNMSC and in monitoring over and under utilisation of budget allocation for the different district health authorities. While the hospitals can indent any drug from the list, the list of drugs meant for PHCs is limited to 54 essential drugs.

4.6 Prices of the Drugs

One important outcome of this type of pooled procurement is that of low prices of drugs. TNMSC has been able to procure the medicines at a low price and is also able to maintain the price line for many years. Tables 3 to 5 show that: (a) adoption of essential drug list and proper procurement procedure have resulted in enormous reduction in the price paid for selected medicines compared to the earlier regime; (b) with continued vigilance and emphasis, TNMSC procures medicines at competitive prices at the same time of good quality and (c) the impressive price difference between drugs bought in generic name and brand names because of rationalisation of the drug expenditure. All these emphasize that substantial reduction in the government's drug expenditure can be made if only they are rationally prioritised and spent. The point that is emphasised here is that drugs being an important cost in the illness episode of consumers, any savings made in this arena can be used to widen the reach of public utilities to more consumers or in the form of more facilities.

5. Impact of Adopting Rational Drug Approach

As a result of the appropriate planning and pooled procurement procedures, TNMSC was able to show a savings of Rs. 32 crores in the first year of operation itself. With such savings made, now TNMSC has widened its activities to

purchase of equipments to improve the technology available with the public hospitals, which makes them technologically comparable with the private sector hospitals. Thirty five CT scans have been bought at a total cost of Rs. 25 crores and have been installed in the district headquarters hospitals which are available to the general public on payment of fee which depends on the economic criteria. Two MRI scans have also been installed in two government hospitals in Chennai and Madurai.

Though it would have been ideal to compare the TNs expenditure on drugs with a state, which has not adopted a rational drug list, in the absence of such data, we have attempted to compare the average medical expenditure per treated ailment for various states provided by the NSS for the year 1995-96 (Table6). Here the medical expenditure includes expenditure on items like medicines, bandages, plaster etc, fees paid for medical and para medical services, charges for diagnostic tests, charges for operation therapies, charges for ambulance, cost of oxygen and blood etc. These data show that the various states but for Tamil Nadu have invariably spent large amounts of financial resources on medicines. In fact TN has spent the least compared to the other states, which may be attributed to the reforms introduced in the drug delivery system of TN.

6. Replicability of TNMSC Model

The reform measures introduced by TN through TNMSC are highly localised. If such advantages have to be widespread all the state governments should adopt similar systems. Allured by the functioning of TNMSC, several state governments have come and studied the system. TNMSC itself has provided consultancy services to the state governments of Rajasthan, Karnataka, Gujarat, Orissa, Delhi and Andhra Pradesh. Andhra Pradesh has also set up an agency like TNMSC. Orissa has put the system in practice. But some state governments have not found any headway in this. Then, what makes the system work in Tamil Nadu? The following paragraphs provide some explanation to this question.

The entire process adopted to streamline the drug supplies can be broadly called as an effective implementation of drug policy in the state. While setting up of the TNMSC can be considered as the right type of government intervention, the activities undertaken by TNMSC can be classified as an innovative administrative reform (IAR). We call it an IAR because, these are reform measures thought over

and introduced by the government to correct an existing government system of purchase of medicines that was plagued by several problems. Taking appropriate measures and placing them properly have rectified these problems. In nutshell, elements like adoption of an essential rational drug list and efficient administration of the procurement and distribution procedures through an autonomous agency and most importantly, the political support has resulted in the success of the model. Political support is essential to tackle the opposition that could arise from the transfer or reduction of financial powers that institutions hold in the purchase of medicines and, the pharmaceutical industry, which may oppose purchase of generic drugs.

It should be mentioned that since, the government planned the intervention and the team of bureaucrats and technocrats put the system in practice by laying strong principles in such a way that even a change in the government with different ideology did not affect the functioning of the system. Also, it should be emphasised that the successive governments in Tamil Nadu have been only 'pro poor'. So any programme that directly benefits the poor and provides political mileage will only be continued. Further, in the case of TNMSC, setting up of the corporation or planning the purchase and distribution of drugs did not require any separate budget allocation and thus there is no financial burden on the state. All it required was to reallocate the budget and spend it rationally, through a corporation created exclusively for this purpose.

However, it can be argued that there are hundreds of corporations elsewhere set up exclusively for the development or sustainability of a particular sector, that are functioning below their capacity though. What makes TNMSC as a distinct entity is that, this corporation works as an autonomous body within the overall framework of the state government. As a corporation, the overheads are kept at a minimum level because of its limited manpower and outsourcing of other employees. Secondly, as an autonomous organization, which is in charge of purchase of drugs and equipments, its procedures and operations are transparent.

The other important factor is that adoption of a rational drug list. This list identifies the important drugs that have to be bought, so a sizeable percentage of wastage of expenditure is controlled at this point itself. Further, the freedom given to the institutions for purchase is limited to 10 per cent only and centralized purchase covers 90 per cent of the budget, which again restricts pilferage. In

some other states where a state formulary exists, shortages are often the case since; the percentage of procurement with the institution is high and varies from 50 to 90 per cent allowing wastages, pilferages and also favouritism leading to corruption. Critics may argue that such a centralised purchase could also lead to pilferages. However, as long as the procedures and guidelines remain transparent, the system would be effective. It should also be noted that after TNMSC started its operations, technology available in public hospitals have also started improving. While it would be extremely difficult to extend the rational drug approach to the private sector, any government with the political will and commitment can implement this model in its public utilities and also in the government funded/aided voluntary organisations.

7. Conclusion

The perspective on role of government in providing health ranges from social welfare approach, public private partnership to user fee based market economy approach. However, if majority of the population does not have any health cover and if people below poverty line are dependent on the government health care system then a social welfare approach is desirable. One of the objectives of the Pharmaceutical Policy 2002 of Government of India is to ensure abundant availability of good quality essential medicines of mass consumption at reasonable prices to the general public. It is a known fact that in India, private health expenditure is very high since people without medical cover bear their own expenditure. From this percentage of population, though it can be debated about the number of people accessing the government health care facilities, the NSS survey (1995-96) observes that households Below the Poverty Line (BPL) relied substantially on public services for all categories of health services and their utilization is significantly more than that by households above the poverty line (Sarveskshana, 2000). This combined with the fact that cost of medicines account for substantial share in the treatment of an ailment and considering the socio-economic cost of illness, the TN model only emphasizes that governments should strengthen the access to medicines in its health institutions.

TNMSC type of autonomous agencies may incur difficulties if the authorities working in such agencies are political appointees and do not have authority to take independent decision, which is why many state governments are not able to adopt such a system. The TN model will continue to be a successful one as long as the systems remain transparent and uninterrupted medical supplies are

ensured. The model ensures that the system is in place. To actually transform the availability of medicines in the government health care system into positive health outcome of people depend on further reforms.

Table 1: Budget for Health, Tamil Nadu 2002-06

(Rs. in Crores)			
Particulars	2002-03 (RE)	2003-04 (BE)	2005-06 (BE)
Secretariat	3.24 (0.26)	3.37 (0.24)	3.23 (0.2)
DM&RHS	254.23 (20.11) 13.40*	267.96 (19.41)	256.07 (15.5)
DME	389.04 (30.77) 9.78*	461.99 (33.47)	550.90 (33.34)
DPH	420.45 (33.26) 5*	500.59 (36.26)	487.92 (29.53)
Directorate of Family welfare	114.45 (9.01)	67.28 (4.87)	66.97 (4.05)
Directorate of drug control	4.59 (0.36)	5.16 (0.37)	4.99 (0.30)
Directorate of Indian medicine and homeopathy	46.60 (3.68)	52.29 (3.78)	80.74 (4.88)
Directorate of TN state health transport	8.17 (0.65)	8.54 (0.62)	8.57 (0.52)
DANIDA	6.39 (0.51)	1.06 (0.077)	
Reproductive child health	16.85 (1.33)	11.99 (0.87)	73.96 (4.47)
Total	1264.05	1380.28	1652.04

Note: Figures within parentheses indicate the percentage to the total

* indicates the percentage of funds allocated for drugs by the directorates. RE and BE refer to the revised and budget estimates respectively.

Source: Demand for grant, Demand No.18, Health and Family Welfare Department, 2003-04, Tamil Nadu government, Budget publication No.18, figures for the year 2005-06 available at www.tnhealth.org

Table 2: Allocation of Budget to TNMSC for the Purchase of Drugs and Surgical

(Rs. in Crores)

Year	DME	DMRHS	DPH*	Total
1	2	3	4	
1995-96	26.07	27.74	10.68	64.49
1996-97	29.47	31.44	13.39	74.3
1997-98	32.32	33.19	14.28	79.79
1998-99	33.54	35.52	16.85	85.91
1999-00	34.76	32.53	18.16	85.45
2000-01	36.79	35.53	21.62	93.94
2001-02	37.77	35.73	18.03	91.53
2002-03	38.02	34.04	21.03	93.09

Notes: *includes medicines to PHCs and the Public health schemes

Source: TNMSC

Table 3: Comparison of Prices Before and After TNMSC

(in Rs.)

Year/Drug	Pyrazinamide Tablet 10x10	Cloxacillin Capsule 10x10	Norfloxacin Tablet 10x10	Atenolol Tablet 14x10	Ciprofloxacin Tablet 10x10
1992-94	135	158.25	290	117.12	525
2003-05	51.88	58.48	54.55	12.00	82.00

Source: TNMSC

Table 4: Prices of Drugs Purchased by TNMSC, 1998-03

(In Rs.)

Year/ Drug	Paraceta- mol Tablet 10x10	Co.trima- xazole Tablet 10x10	Cephat- axime Sodium Inject	Ciprof- loxacin Injection 100ml ffs	Cipro- floaxacin Tablets 10x10	Ranitidine Tablets 10x10
1998-99	13.14	31.0	8.31	8	168	31.2
1999-00	11.95	27.85	5.67	7.5	129.6	28
2000-01	11.50	27.3	5.24	7.2	99.9	26
2001-02	11.42	27.82	5.08	6.75	93.03	23.9
2002-03	11.24	27.82	4.94	6.74	88.0	22.34
2003-05	12.40	24.88	4.41	6.41	82.00	22.05

Source: TNMSC

Table 5: Comparison of TNMSC and Market Prices**(in Rs.)**

Product	Unit of Drug	TNMSC Price	Market Price
Aspirin Tab I P	10x10 tabs	12.17	44.42 (Ecosprin)
Paracetamol Tab IP	10x10 tabs	11.69	68.00 (Fapanil)
Paracetamol syrup I P	60 ml	3.20	19.57 (Calpol)
Co-Trimoxazole oral Suspension IP	50 ml	4.06	10.0 (Septran)
Co. Trimoxazole Tab I P	10x10	28.37	63.20 (Septran)
Metronidaxole Tb IP	10x10	13.21	36.50 (Flagyl)
Amoxycilin Cap Ip	10x10	78.47	366.66 (Novamax)
Erythromycin state Oral suspension	40 ml	8.76	25.27* (60 ml) (Novamax)
Tetanus Toxoid Injection I P	5 ml	6.93	
Anti Rabies Vaccine	3ml	18.00	294.0 (Aventis)
Ciprofloxacin inj IP	100ml	7.00	46.89 (cifran)
Gentamycin eye and Ear drops B P	5 ml	3.56	7.51 (gentic)
Atenolol tab I P	14x10	15.26	310.0 (Tenormin)
Ibuprofen tab I P	10x10	13.10	55.55 (Brufen)

Note: Both TNMSC and market prices are inclusive of taxes.

Source: TNMSC L1 prices for the year 2002-03 provided by TNMSC, and the market prices are the brand prevailing prices collected from a medical shop in Chennai collected during the month of June 2003.

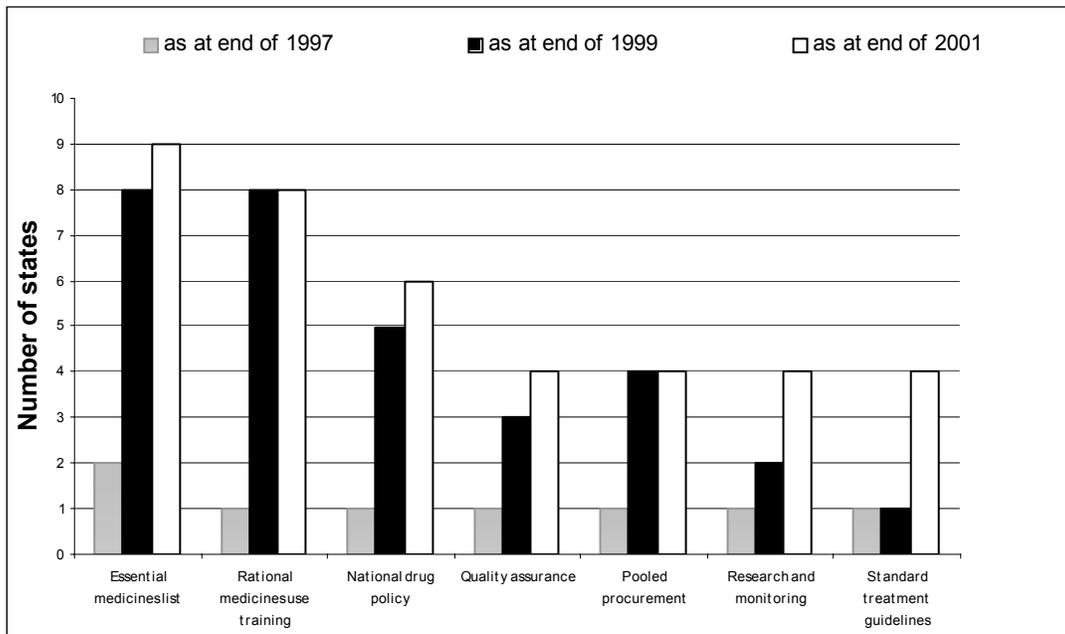
**Table 6: Average Medical Expenditure per Treated Ailment in 1995-96
(in Government Source)**

(in Rs.)

States	Rural	Urban
Andhra Pradesh	44	67
Assam	145	171
Bihar	169	65
Gujarat	61	117
Haryana	198	636
Karnataka	61	120
Kerala	85	78
Madhyapradesh	94	477
Maharashtra	73	91
Orissa	118	128
Punjab	137	201
Rajasthan	181	157
TamilNadu	10	23
UttarPradesh	363	228
West Bengal	157	72
All India	110	146

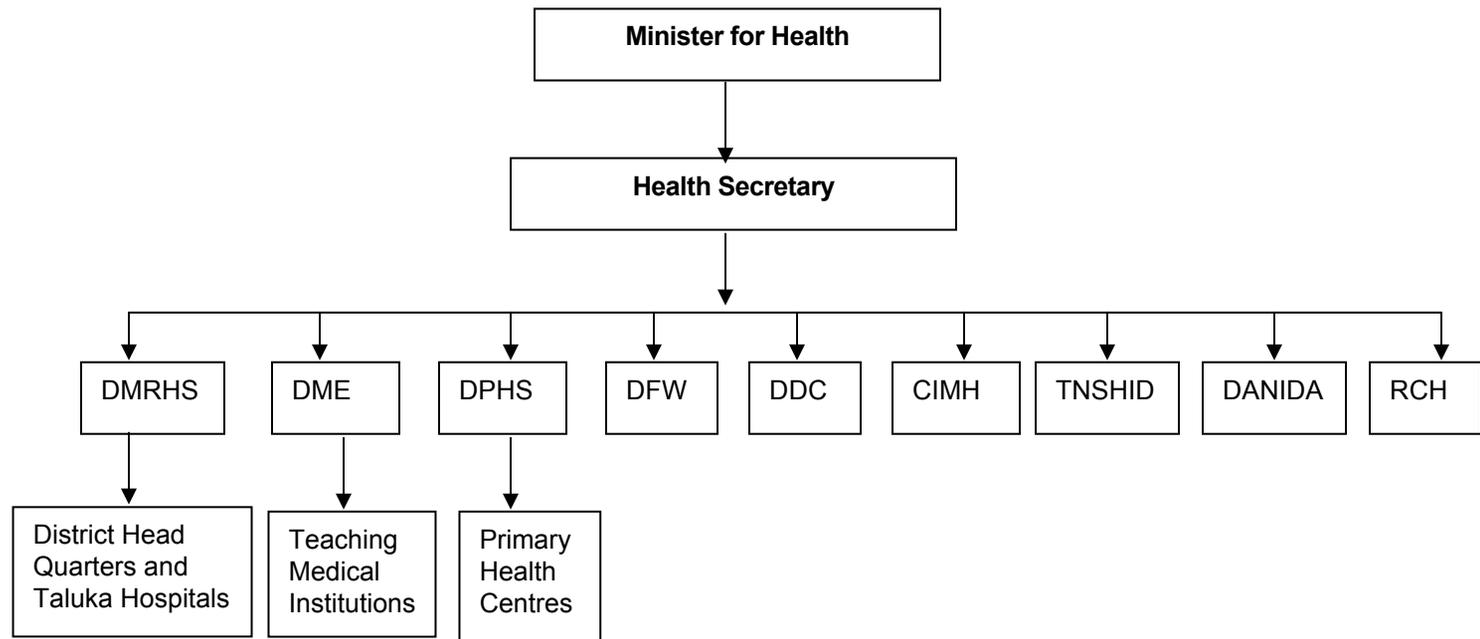
Source: Table No.1.19, Sarvekshana, Vol.23, NO.3, Jan-March 2000.

Chart 1: Progress in the WHO-India Essential Drugs Programme 1997-2001



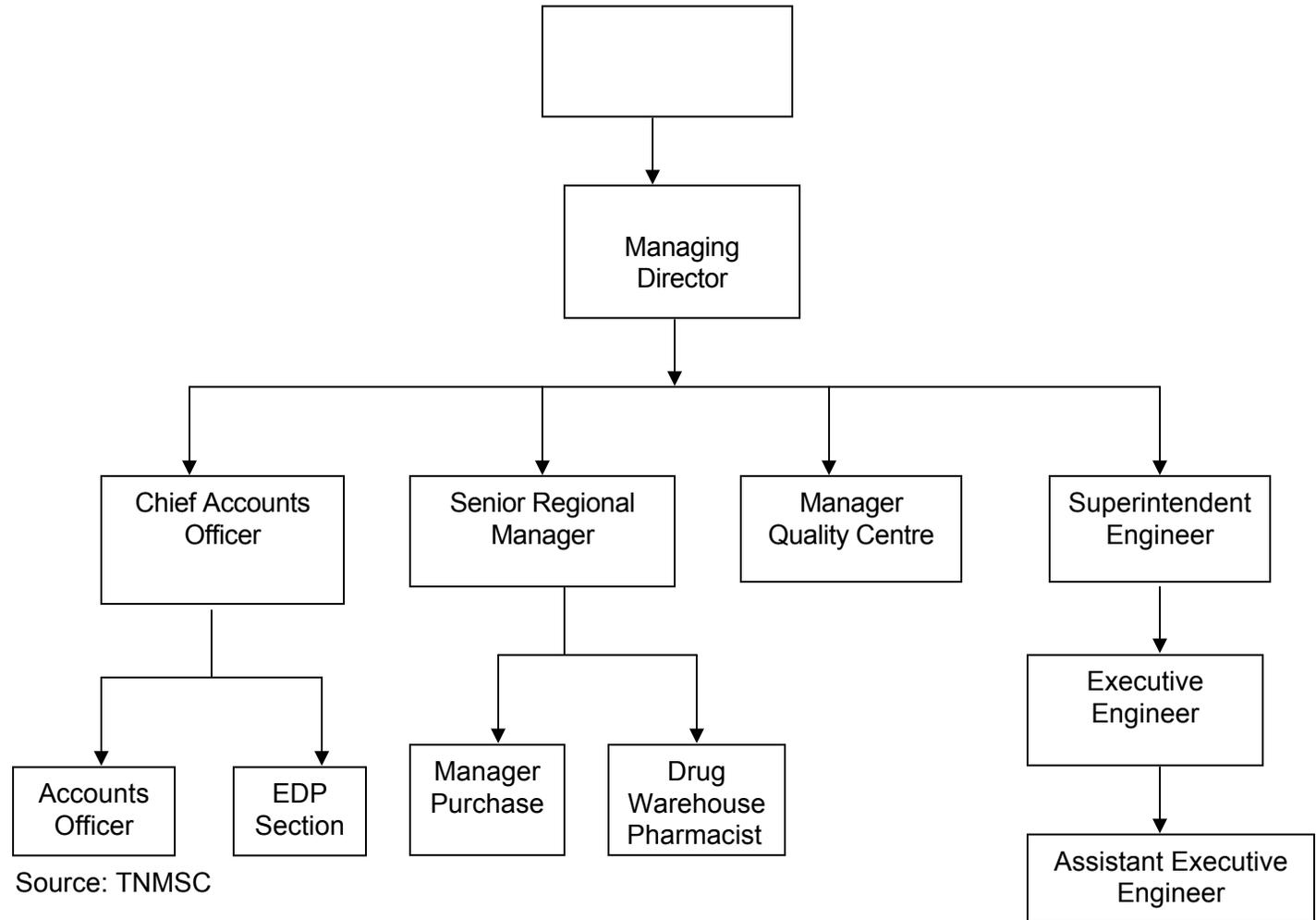
Source: Annual Report 2001, Essential Drugs and Medicines Policy: Extending the Evidence Base, World Health Organisation.

Chart 2: Health Sector of Tamil Nadu



DMRHS	Directorate of Medical and Rural Health Services
DME	Directorate of Medical Education
DPH	Directorate of Public Health and Preventive Medicines
DFW	Directorate of Family Welfare
DDC	Directorate of Drugs Control
CIMH	Commissionerate of Indian medicine and Homeopathy
TNSHTD	Tamil Nadu State Health Transport Department
DANIDA	DANIDA Health Camp Project
RCH	Reproductive and Child Health Project

Chart 3: Organisational Structure of TNMSC



Source: TNMSC

District Map of Tamil Nadu



Note: TNMSC warehouses are in Kancheepuram, Vellore, Thiruvannamalai, Cuddalore, Dharmapuri, Salem, Erode, Coimbatore, Nilgiris, Tiruchirappalli, Pudukkottai, Dindigul, Madurai, Virudhunagar, Sivaganga, Ramanathapuram, Tirunelveli, Tuticorin, Nagercoil, Thanjavur, Villupuram, Chennai and Nagappattinam.

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