



Emerging trends in medicine procurement in government sector in India - A critical study

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ABSTRACT

In 1994 a couple of Indian states ventured to introduce innovative methods in medicine procurement with the primary objective of making uninterrupted availability of essential medicines in their government hospitals. It was Delhi, the national capital territory (NCT) of India which took the lead in developing a comprehensive drug policy. Delhi entrusted the responsibility to a non-governmental agency- the Delhi Society for the Promotion of Rational Use of Drugs (DSPRUD) and managed to get considerable financial support from WHO. Tamil Nadu, a major state in India started a corporation styled as Tamil Nadu Medical Service Corporation (TNMSC) registered under the Companies Act 1956 in July 1994. With the help of a well designed and scientifically planned scheme TNMSC could introduce many innovations and thereby revolutionize the public drug procurement system in the country. A team of committed and dedicated bureaucrats and technocrats made TNMSC not only a great success but a model worth emulating for the entire nation and perhaps for the world. Currently the Indian states are competing among themselves in adopting the TNMSC model.

Keywords: Drug procurement; pooled medicine procurement.

INTRODUCTION

Medicines are a special type of commodity where the user/ consumer is not having the freedom to decide what to buy and at what cost. The doctor prescribes the items, the patients pay, buy and use. In India each prescriber decides on his/her own which make or brand is to be written for the patient. The information currently given to the patients in India does not help to make them really informed enough to make a considered choice in selecting their medicines.

The influence of the relationships between the prescriber and the manufacturer, prescriber and the patient and the manufacturer and the patient is very much significant in the area of drug therapy. It is because of this peculiar nature of medicines that the governments often try to interfere in regulating the prices of medicines throughout the world. Perhaps US is the only exception where the governmental intervention in regulating the price of medicines is less or absent. However the pharmaceutical firms and the insurance companies seriously negotiate for the prices of medi-

cines in USA.

Drug utilization is the marketing, distribution, prescription and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences. Policies and practice norms are essential for promoting rational and scientific use of medicines. In 1970s the World Health Organization (WHO) initiated the program to ensure global accessibility to quality medicines at affordable costs. Studies from various countries have shown that different levels of achievement of the objectives were reached in each country. Bangladesh was the first country to put the concepts of essential drugs into practice. In 1982 they introduced their National Drug Policy and issued an Ordinance to control the drugs and banned 1666 items of formulations that were viewed as useless or ineffective. They made a list of essential drugs containing 150 items to meet the most therapeutic needs in the country together with a supplementary list of 100 drugs for specialized use. It could make tremendous change in the nature of pharmaceutical market in that country (R Roy Chaudhry 2005). The essential drug program was started in Myanmar in 1988 and succeeded in making a tremendous impact on improving the quality of health care at the primary level because of public participation (Myint H 1996). Problems of irrational use of medicines and non- availability of essential and life saving medicines in the public sector are often similar in many countries (Hogerzeil 1995, Huff-Rousselle 1996).

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In most of the countries, the regulation of the drug prices is considered necessary to contain public expenditure due to government's role in funding social health and insurance schemes that cover hospital and out-patient drugs. The price regulations are used as a measure to keep their health budgets within reasonable limits. In many countries a substantial proportion of the population is covered through health insurance and public health schemes. As a result, the consumers are not affected directly by the high prices of medicines or high costs of medical services.

Pharmaceutical Price Regulation Scheme is available in UK to control prices of medicines. All European Union (EU) countries too have a scheme for the control of prices of medicines. In order to fix the prices, these countries consider the price of items in other neighboring countries and use therapeutic comparators. Countries like Finland, Ireland, Denmark, Greece, Italy, Netherlands, Portugal, and Sweden fix the maximum price of a product in this way. Belgium, France, and Italy fix prices in relation to the cost in other countries in the EU, and the contribution made to the national economy. In Austria, France, and Spain the cost is often reduced considerably based on the quantity of the order and other discount schemes. United Kingdom fixes the prices to guarantee a reasonable return within a particular profit range. The Patented Medicines Prices Review Board in Canada and the Transparency Commission and Economic Committee on Medicines in France help those countries for setting the prices of medicines. Germany has its reference pricing system. In Egypt all medicines are put under price control. Italy has restricted wholesale margins. Some or other method of price monitoring and price regulation system is available in countries like Japan, Netherlands, China, Indonesia and Colombia. Procurement is one of the frontline areas in health care which is prone to corruption (Eva Ombaka 2009). India is no exception to it and the situation was unearthed by the Lentin Commission in 1987 while probing the cause of death due to adulterated glycerine in a Bombay hospital (Revikumar KG 2008).

The success of governmental and professional interventions in the area of drug utilization depends on a number of factors including the administrative set up, socio-economic conditions, infrastructure facilities, cultural factors and availability of truly motivated and dedicated professionals and human resources (Milovanovic 2004).

What is good or ideal in one country may not be good or effective in another country. However international comparisons help to analyze the experiences of sister countries even if it is of limited application in resolving the local issues. The objective of this study is to provide information on the methods and strategies adopted by various state governments in India during the last two decades in tackling the medicines related issues in government hospitals.

National situation

India with its 3,287,590 sq km (1,269,346 sq miles) area extending from the snow covered Himalayan heights to the tropical rain forests of the south is the 7th largest country in the world. It accounts for 2.4 percent of world's surface of 135.79 million sq.kms. Population wise India is second in the world and is expected to overshoot the world leader China by 2050 with its growth rate of 1.93 percent. Currently it supports and sustains 16.7 percent of the world population. According to the 2001 national census Indian population was 1028 million with 532.1 million males and 496.4 million females with an overall literacy of 64.8 % and life expectancy of 61.8 years for males and 63.5 for females. Life expectancy is expected to reach 68.8 for male and 71.1 for female by 2020. The country has acquired all round socio-economic progress during its post independence period and became one of the top industrialized countries in the world (National Family Health 2006).

The 2010 budget of India has taken many measures to improve access to health care, particularly for the poor and rural population. The budget allotment for the National Rural Health Mission (NRHM) has been increased from Rs 19,534 crores in 2009-10 to Rs 22,300 crores which is a 14% increase over the previous year. By the end of the year 2010 the insurance coverage for people below the poverty line will be able to cover 20 percent of the Indian population covered under the National Rural Employment Guarantee Act (NREGA) program there by making 10 million families covered by the insurance scheme. It makes the eligible families to get hospital coverage up to Rs 30000 (Sujay Shetty 2010).

For administrative purposes India is divided into 28 states, 6 centrally administered Union territories and the national capital territory of Delhi. The health expenditure is about 4.5% of the GDP out of which 0.84 % is public expenditure and 3.32 % private and the remaining from other sources including external flow. According to the National Health Profile 2006, Government of India, the per capita health expenditure was rupees 1201 in 2005. The total health expenditure measured by central and state governments was rupees 2,84, 540 million out of which 73.53% was the share of the states. As a share of total state expenditure, public expenditure varied within a range of 3- 4% for all major states except Maharashtra where it was 2.88%. In terms of spending 67.12% was for medical public health and 14.38% for family welfare purposes. At the central level 40.70% of health expenditure was incurred by defense, railways, post and telecommunications and re-imburement for employees. Of the total health expenditure, 55% was spent on allopathic system of medicine with considerable variation in share between the centre and states. At the state level more than 60% of the expenditure was incurred on allopathy (See Table 1).

Table 1: State-wise government drug expenditure in India (2001-02)

State	Drugs	Materials and supplies	Total	(Rs in lakh) Health expenditure	Drug Expenditure as % of Health Expenditure
Andhra Pradesh	7923.09	4781.45	12704.54	131424.08	9.67
Assam	0.00	1530.10	1530.10	32690.82	4.68
Bihar	1996.90	206.29	2203.19	71348.49	3.09
Chhattisgarh	1822.47	680.22	2502.69	22587.10	11.08
Gujarat	1253.76	1440.06	2693.82	71547.95	3.77
Haryana	N.A	3096.12	3096.12	31470.98	9.84
Karnataka	6927.17	856.82	7783.99	98633.19	7.89
Kerala	N.A.	12420.68	12420.68	72931.59	17.03
Maharashtra	10.00	20295.91	20305.91	178379.51	11.38
Madhya Pradesh	3965.86	3956.04	7921.90	66689.30	11.88
Orissa	1768.98	361.30	2130.28	42135.78	5.06
Punjab	N.A.	916.32	916.32	61826.45	1.48
Rajasthan	3952.80	5092.25	9045.05	97311.61	9.29
Tamil Nadu	16428.68	1668.57	18097.25	118432.85	15.28
Uttar Pradesh	5938.25	1166.04	7104.29	135578.81	5.24
West Bengal	5005.25	793.23	5798.48	131948.35	4.39
Central Govt.		72649.23	72649.23	597700.00	12.15
All India	56993.21	131910.63	188903.84	1962636.86	9.63

The expenses on purchase of medicines were higher in public hospitals in rural areas of states like Haryana, Rajasthan, Jharkhand, Madhya Pradesh and Uttar Pradesh. In the urban areas states like Bihar, Punjab, West Bengal, Rajasthan, Uttar Pradesh and Chhattisgarh spent more for medicines. In the public sector, by and large, doctors fee has been negligible in total out of pocket expenditure except in Chhattisgarh rural where it was 37.8% and Punjab urban at 17.2%. Cost of medicine incurred has been high across all states both in rural and urban areas.

The Indian health delivery system works at three levels - i) rural comprising of primary health centers to Taluk level hospitals, ii) district hospitals and iii) tertiary care and teaching hospitals which are generally situated at urban centers. About three quarters of the health care is provided from private sources and the underprivileged population does largely depend on the public health care system. Among the rural population, health care is the second leading cause of indebtedness after dowry. About half of the health care costs go to medicines.

The overall evaluation of India's health sector can be made through two indicators, education and health service. The educational indicators will cover medical (including systems like allopathy, Indian systems of medicine and homeopathy) dental, nursing, pharmacy and other paramedical colleges and their courses. The service structure covers hospitals, clinics and other health care facilities. In 2006 there were 262 medical colleges, 240 dental colleges and about 3500 nursing, pharmacy and other paramedical institutions in the allopathic system which increased 10 to 30 percent by 2010. There were 7663 hospitals with 4,92,698 beds

out of which 4256 hospitals (132,475 beds) were in rural area and 3300 hospitals (340,308 beds) were in the urban areas. Others could not be grouped in either. Another 21000 dispensaries and 3191 clinics or mini hospitals were also providing medical care. As per 2005 statistics, there were 6,60,801 allopathic, 78096 dental, 2,16,858 homeopathy, 4,43,634 ayurveda, 46230 unani, 17560 sidha and 541 naturopathy doctors. There were 35,330 health assistants and 2,15,206 health workers in the rural India during the period. The number of registered pharmacists was 5,78,179 in 2006 (National Health Profile 2006).

Among the leading causes of death other than natural calamities and accidents, communicable diseases rank first causing considerable burden of treatment and care. Among the communicable diseases pulmonary tuberculosis ranked top with 38% (7073 deaths out of the 7,89,135 cases) in 2006. The other diseases included acute respiratory diseases (19%) causing 3467 deaths out of the 2,580,7722 cases, pneumonia (18%) causing 3216 deaths out of the 6,72,173 cases, acute diarrhoea causing 3124 deaths out of the 10079262 cases, viral hepatitis(4%) causing 673 deaths out of the 1,46,433 cases and enteric fever (4%) taking 651 deaths out of the 7,26,484 cases. Next to communicable diseases non-communicable diseases like blindness, cancers and coronary heart diseases (CHD) diabetes are also causing heavy disease burden to the country. There were 1,62,257 cases of HIV in the country (National Family Health 2006).

There were 270,40,912 CHD cases in 2000 which became 358,86789 in 2005 and is expected to reach 61 million by 2015. In 2000 there were 258,14117 cases of diabetes which became 310,39932 in 2005. The esti-

mated prevalence of blindness is 11.2 per 1000. Over 40.7% of the deliveries were conducted in medical institutions and another 48.2% deliveries were assisted by medical professionals in 2006 and 56.3% of the couples with females of child bearing capacity are using one or other method of contraceptives (Centre for chronic diseases 2005).

Indian pharmaceutical scenario

The pharmaceutical industry in India was started only in 1901 when a small factory known as Bengal Chemical and Pharmaceutical Works got established in Calcutta in Bengal. There was no significant growth during the British rule and the nation was largely depending on countries like UK, France and Germany for modern medicines. In 1947, at the time of independence India was producing drugs worth only Rupees 1000 lakhs (hundred million). By 2009 Indian Pharmaceutical market has grown to reach 10.75 billion US \$ and according to the Department of Pharmaceuticals, Government of India, Indian Pharmaceutical Industry is one of the world's largest, ranking 3rd in terms of volume and 14th in terms of value in the global pharmaceutical market. Today there are more than 20,000 pharmaceutical manufacturing units, large and small, located across the country.

An important objective of the national health policy is to ensure the availability of quality medicines at a reasonable cost to the society and to promote the growth and development of the domestic pharmaceutical industry. The enforcing authority is the drugs control department which is a joint effort of the central and the state governments. The public expenditure on medicines is comparatively very low and is about rupees 45 (US\$ 1) per capita (R.Roy Chaudhury 2005).

Indian medicines could meet the world products in quality. However they are the lowest priced in the world. In spite of all such positive aspects the medicines are not affordable to the ordinary Indian society (All India Drug Action 2008). It is generally observed that in markets where competition exist the cheapest or low priced brand is sold most and the producers try to bring down their prices. However the concept of completion is not effectively working in Indian pharmaceutical formulation market though it works in the case of active pharmaceutical ingredients (API) or bulk drugs market. The same drug is sold at vastly different prices by equally reputed manufacturers and sometimes by the same company. It is interesting to note that the brand leader often becomes the price leader and volume leader. The most popular brand is the highest priced. It is something strange and equivalent to a situation where majority of the people are buying 'Cross' or 'Parker' pens instead of other brands.

Most of the drugs included in the essential drugs list are kept out of price control. Non-essential and some which are believed to be harmful medicines like analgin, phenylbutazone, Vitamin E, sulphadimidine, etc

are brought under price control. Medicines for HIV/AIDS, cancer, hypertension, coronary artery disease, multidrug resistant tuberculosis, diabetes, iron deficiency anaemia, ORS, tetanus, filariasis, vaccines (new) for rabies, hepatitis B, sera for use in tetanus, diphtheria, Rh isoimmunization, anticonvulsants and antiepileptic, diphtheria, snake bite, suspected rabid dog bite/rabies, etc. fall outside price control.

In the past much significance was not given for the storage of medicines in the country because there was no need for that as medicines were prepared extemporaneously and used within a short period of their preparation. It was during the latter part of twentieth century that drugs became commercial products necessitating scientific storage and professionally managed distribution.

The actual storage conditions of medicines in Indian community pharmacies and hospital pharmacies are often different from the required or recommended storage conditions. The expiry date and shelf life of medicines are very much dependent on their storage conditions. Studies have shown that many hospitals are still following unscientific and ad hoc methods in the purchase and storage of drugs.

All the principles of Good Manufacturing Practice (GMP) are followed meticulously during the preparation and manufacture of medicines. It is essential that these medicines are stored and distributed at other destinations for their use in a professional and scientific manner that ensures their potency, efficacy and safety as designed at the manufacturing stage. Being a tropical country considerable variations exist in the climatic conditions in various parts of India.

Box 1: Components of an effective medicine procurement policy

The important components of an efficient and effective drug procurement policy are

- a) *Effective and efficient agency to handle procurement, storage and distribution.*
- b) *Adequate budgetary allocation.*
- c) *Essential drug list and its periodic review.*
- d) *Scientifically designed warehouses with facilities for proper storage.*
- e) *Effective logistics and management information system (MIS).*
- f) *Efficient quality assurance set up.*
- g) *Facilities for periodical training.*

The efficiency of a procurement system depends on the capability of the purchasing agency to ensure right item from right source at right time having right quality for right cost and in right quantity. It requires special skills, both pharmaceutical and managerial. Drug use

control is a system of knowledge, understanding, judgments, procedures, skills, controls and ethics that ensures optimal safety in the distribution and use of medications. The components of an effective procurement policy are given in Box No 1.

Medicine Procurement methods in India

About 25 to 35 percentage of the hospital budget in India in government set up is spent on drugs and other pharmaceuticals. Purchasing of medicines starts with the framing of buying policies and ends with receiving, stocking and payment. Those who neglect the buying function have to face difficulties and problems later and operate under a severe handicap at the time of necessity. Selecting the best source of supply and negotiating the terms of purchase are important for scientific purchasing. It has always been a subject of debate in the country "whether medicines are to be purchased by the pharmacist or by the administration?" Experiences have proved that a good medicine purchase system cannot be established and maintained without the support of pharmacists.

Box 2: Procurement methods in government hospitals in India

The commonly followed purchase methods in Indian hospitals include:

- a) *Direct purchase from the manufacturer. Though simplest, direct purchase from the manufacturers may not be possible always.*
- b) *Purchase through bids. Tendering process is usually time consuming and involving various complex formalities like agreement, security deposits and presentation of other related documents along with the rates.*
- c) *Competitive negotiation where the buyer approaches a limited number of suppliers for their price quotations and then bargain with them to fix the deal.*
- d) *Purchase through a contract. The contracts can be fixed quantity contract, running contract or rate contract.*
- e) *Local purchase. It is also known as emergency purchase and is made to meet an emergency situation. Sometimes it is needed due to the failure of the supplier to supply the ordered item.*

Medicine procurement in government set up in India is a complex process and involves many steps, formalities, agencies and ministries. There are numerous mechanisms by which governments and their agencies procure medicines and other merchandise needed for the health care (see Box No2). The policies, rules and norms are found inadequate, delaying and complicating.

Genesis of Centralized purchase

During the World War II difficulties were experienced in the procurement of stores in India for the use of government institutions and agencies. It was then decided to make purchases for all central government departments through centralization of purchases in one organization. Thus the central purchase organization, the predecessor of the present Director General of Supplies and Disposals (DGS&D) was formed. The DGS&D is presently responsible for the purchase of most of the stores on behalf of all central government departments (civil and defense). Apart from medicines and drugs required by the health services, they purchase other items required for hospitals like surgical instruments equipments and furniture.

Procurement of medicines in Government set up is often based on their generic names. In generic purchases, brand name suppliers may also compete, but their bids are in generic names. Sometime the brand manufacturers may offer lower prices for certain medicines than generic competitors to keep their public sector or institutional market share.

It is an established truth that the drug availability in the Indian public health system is always remaining as a problem. One can attribute many reasons like shortage of fund, inefficient indenting procedures, poor inventory management, non-rational usage and others for the problem. Recognizing the gravity of the problem of shortage of medicines in the government hospitals, many Indian states have introduced their own set ups for the purchase of medicines required for them. These states started procuring medicines through centralized pooled methods. This type of practice was initiated in Indian states seriously in the 1990s only. The Drug Policy for Delhi introduced in March 1994 by Delhi Government, the Tamil Nadu Medical Services Corporation Limited (TNMSC) started in 1994, and the modified Central Purchase Committee (CPC) established in October 1994 in Kerala, were the trend setters in the country in ensuring pooled procurement of medicines in a scientific and organized manner. The unearthing of corruption and malpractices in the medicine procurement as found by the Lentin Commission (1987) and the Estimate Committee Reports of Kerala Legislative Assembly helped directly or indirectly for the genesis of such systems.

Delhi Model Drug Policy

Delhi with an area of 1483 sq km, 9 districts, 62 towns, 158 villages and a population of 138,00507 is the National Capital Territory (NCT) of India. Its status is between a state and a union territory. Delhi has a per capita income of rupees 61676 and a population density of 9340 the highest in India. It has 18th position in population and 30th in the case of land area among its 35 states and union territories. Public sector health care in Delhi is delivered through the Directorate of Health Services (DHS), Central Government Ministry of

Table 2: Delhi Policy- Price comparison of different years

S. No.	Name of Drug	Cost of drugs in Rupees for different years				
		1996	1997	1999	2000	2002
1	Inj Streptokinase 15 lac vial	1770.00	1625.00	1540.00	1540.00	885.00
2	Inj Cefotaxime 1 g vial	187.72	128.94	124.46	84.41	62.15
3	Polymer degraded gelatin bottle	109.00	99.00	133.58	99.00	68.50
4	Essential Amino acid 200 ml bottle	105.00	109.00	103.00	99.00	77.38
5	Inj Hydrocortisone 1 vial	12.94	9.60	11.42	11.84	10.44
6	Inj Heparin 5000IU/ml amp	36.89	34.78	44.00	47.84	34.80
7	Inj Thiopentone sodium 1 g vial	23.44	23.04	27.00	28.22	26.64
8	Inj Pentazocine 30 mg amp	4.09	4.03	4.18	3.90	3.50
9	Cap Rifampicin 450 mg	2.92	2.95	2.89	2.44	2.33
10	Cap Omeprazole 20 mg	1.15	1.03	0.73	0.64	0.48
11	Inj Diclofenac sodium 1 amp	1.07	1.00	1.19	1.05	0.98
12	Inj Crystalline penicillin 4 Lac unit vial	3.30	3.16	3.00	3.50	3.42
13	Inj Ampicillin 500 mg vial	3.20	3.42	3.45	3.40	3.30
14	Inj Etophylline 1 amp	1.20	1.18	2.12	1.98	1.38
15	Tab Phenobarbitone 60 mg	0.11	0.14	0.25	0.20	0.36
16	Inj Dextrose 5% 1 bottle	5.50	6.47	8.53	8.22	7.56

Health and the Municipal Corporations of Delhi and New Delhi (NCT 2002). Procurement of medicines under the central government is managed by Medical Stores Organization (MSO) and the procurement for NCT Delhi is handled by Central Purchasing Agency (CPA) of DHS. The Municipalities have their own purchase committees (Anita Kotwani 2007).

On 4th March 1994, Delhi government announced a comprehensive 'basic drug policy' aimed at making available carefully selected essential medicines to the people. The policy was aimed to improve the procurement, storage and distribution systems and to strengthen public education and rational prescribing. Dr. Harsh Vardhan, then minister for health was responsible for the Delhi policy. While disclosing the first drug policy for a state in India in Delhi he described the medicine related scenario in Delhi as "Each hospital had its own list of drugs, medicines came to hospitals in many different brand names, supply was erratic and the prescribing, very often, unrestrained. Although 30-50% of the hospitals' budget was spent on medicines, their shortage was chronic. Hospital visits became a frustrated experience for patients." In fact it was not the case of Delhi alone; it was the general and overall condition throughout the country (National Drug Policy 1994).

Through the new policy Delhi could introduce a pooled procurement of drugs for all hospitals in Delhi State and a central drug procurement, storage and distribution centre. However such a central storage and distribution centre can be established with efficiency only in very small states like Delhi. The important ingredients of the Delhi policy include the preparation of a formulary (initially containing 225 essential items), quality assurance, training in rational drug use, drug information, standard treatment protocols, research wing and a monitoring and evaluation section under the ministry

of health. The key objectives of the policy were to ensure uninterrupted availability of safe, effective and quality medicines in Delhi hospitals and for that purpose promote rational use of medicines based on their generic names. The policy further envisaged the steps to be taken for its implementation in Delhi territory including selection of an essential list of medicines, establishment of pooled procurement system, preparation of a formulary for the state, introduction of quality assurance program, drug information, training to the health care professionals to ensure rational drug usage, development of standard treatment guideline (STG) as protocols for treatment, drug usage monitoring and research.

The peculiarity of the Delhi Drug Policy was the delegation of powers to implement the technical activities to a non-governmental organization (NGO) known as Delhi Society for the Promotion of Rational Use of Drugs (DSPRUD). Because of the involvement of DSPRUD and people like Dr Renjith Roy Chaudhury, the Delhi policy implementation program got heavy funding from the India- WHO Essential Drugs Program. An Essential Drugs List (EDL) was prepared in 1994 and published in the form of a formulary in 1997 and is maintained as a dynamic list through a Gazette notified Essential Drugs Selection Committee (EDSC).

The hospitals in Delhi were instructed to spend 90% of their budget only on the essential drugs listed under the policy and a centralized procurement agency (CPA) was set up in the DHS. A high level Special Purchase Committee was constituted with a non-official member as its chairman and comprising of seven official members and three non-official members. Health Secretary and the chairman of the EDSC are also members of the Special Purchase Committee. The Delhi policy has been continuously monitored since 1994 and comprehensive surveys were conducted using WHO core indicators.

The first and fifth surveys were conducted by outside agencies. The policy helped to improve the access of quality medicines to the poor at all health facilities in Delhi. The policy also help to keep down the cost of drug procurement and in the case of certain items lowered the cost substantially in comparison with previous years resulting in the reduction in the cost of therapy of certain diseases (See Table No 2). The component of pharmaceutical expertise is lacking in the Delhi policy to the expected extent.

Tamil Nadu model

Tamil Nadu with an area of 130058 sq km, population of 624,05679 and a population density of 480 ranks 6th on population and 11th on area among Indian states. It has the highest urban population and the third largest economy in India. It is known for textile and printing industry and has 31 districts, 832 towns and 15400

purchased leading to inefficient control of health expenditure. The state government decided to act based on the recommendations of the health officials. They managed to get the help of Danish International Development Assistance (DANIDA) project and instituted the centralized drug purchase organization, the Tamil Nadu Medical Services Corporation Limited (TNMSC) first of its kind in the country on 1st July 1994. TNMSC was incorporated under the Companies Act 1956 with the objective of looking after all the activities related to the procurement of medicines for the entire government hospitals and public health set ups in the state. Table No 3 shows the impact of TNMSC in reducing the cost of medicines.

TNMSC started functioning in January 1995 to conduct logistics and supply chain for medical supplies. They had taken purchasing of quality medicines at competitive prices in a transparent manner as a challenge and

Table 3: Price difference of medicines - Tamil Nadu experience

Comparison of Prices before and After TNMSC in rupees					
Year / Drug	Pyrazinamide tablet 10 x 10	Cloxacillin capsule 10 x 10	Norfloxacin tablet 10 x 10	Atenolol tablet 14 x 10	Ciprofloxacin tablet 10 x 10
1992 – 94 (Pre TNMSC)	135	158.25	290	117.12	525
2002-03 Post TNMSC	62.8	72.6	51.3	14.68	88

Source: TNMSC

Table 4: TNMSC prices of selected items during different years

Prices of drugs purchased by TNMSC, 1998-03 (in rupees)						
Year / Drug	Paracetamol tablet 10 x 10	Co. Trimoxazole Tablet 10 x 10	Cefotaxime Sodium Injection	Ciprofloxacin Injection 100 ml	Ciprofloxacin tablets 10 x 10	Ranitidine Tablets 10 x 10
1998 - 99	13.14	31	8.31	8	168	31.2
1999 - 00	11.95	27.85	5.67	7.5	129.6	28
2000 - 01	11.5	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	22.34

villages. There are 25 medical colleges, 27 district hospitals, 100 referral hospitals, 104 city family welfare center, 8920 rural and sub dispensaries, 7 Ayurvedic hospitals and 35 dispensaries, 9 homeopathic hospitals and 46 dispensaries and one unani hospital and 21 dispensaries in the state. It spends the second highest budgetary allocation for health care.

Around 60% of the health care spending is met by individuals. The state government caters to the health care needs of about 30 % of its population through government hospitals. Prior to 1994, the drug purchase, storage and supply to various hospitals of the state government were under the control of district health officers. Over 1000 drug items were purchased in bulk in large containers like jars and stored in unhygienic conditions and people were not having much faith in the public health system. There were several discrepancies in the cost of purchase, quantity and quality of drugs

adopted a well designed, thoroughly planned and scientifically streamlined procedure for procurement, storage and distribution of medicines. It helped to ensure availability of medicines in hospitals throughout the year.

TNMSC is governed by a 9 member board of directors. The day to day administration of the Corporation is looked after by the Managing Director. Efficient professionals from various faculties drawn on deputation are working along with the staff of the TNMSC in the Corporation to assist the Managing Director. The State Secretary for Health is the Ex-officio Chairman. R. Poornalingam, IAS Commissioner & Secretary Health & Family Welfare, Govt. of TN, who was motivating factor for its establishment was the first Chairman. If it was Dr Harsh Vardhan, the Health Minister who played a major role in Delhi policy, it was R Poornalingam who made TNMSC launching a great success. Mrs. Smitha

Nagraj another IAS officer was the first Managing Director. They got the technical support and pharmaceutical intelligence from Dr Suresh Jerad the quality control manager who was attached to the Pharmacy College in the Madras Medical College. Later people like Jacob IAS and Leena Nair IAS contributed very much for the growth and development of TNMSC. It was the team spirit, calibre of the team leader and the honesty, dedication and commitment of the team members that made the TNMSC a great success in a state like Tamil Nadu. It is interesting to note that the R.Poornalingam himself found enough time to visit various centers of the TNMSC at regular intervals to monitor the scheme and motivate the personnel from bottom to the top.

In the beginning itself TNMSC managed to take many bold decisions deviating from the traditional pathway of precedence and general procedure. It was such a courage and will power that helped TNMSC to revolutionize the medicine procurement system in the country and got accepted as trend setters. Unlike the Delhi model, TNMSC was totally governed by the government officials, both bureaucrats and technocrats. They decided to purchase drugs only from manufacturers and not through their agents. The manufacturers were required to have good manufacturing practice (GMP) certificate and market standing for at least three years. The TNMSC stopped the previous practice of giving preference to certain suppliers like SSI units. Payments were made quickly, generally within 15 days of the supply or earlier. They managed to introduce changes in the concept of packing for hospital supply of medicines and directed the manufacturers to use only strip/blister packing for all tablets and capsules with inner and outer packing bearing Government logo to avoid their misuse. Bottom up approach was implemented in indenting process and took earnest steps to prevent overstocking and wastage due to expiry.

TNMSC introduced the 'first expiry first out' (FEFO) practice for picking and dispensing process. All transactions including generation of material receipt certificate and inward goods register were maintained through a paperless, IT enabled logistical management information system (MIS) which was supported by periodical physical verifications. MIS generates daily various reports including brief executive summary to enable officers for stock monitoring, forecasting, procurement and distribution. The vendors were directed to supply the ordered items within 30 – 60 days of the order to the designated warehouses. Liquidated damages at the rate of 0.5% per day subject to a maximum of 15% were levied to the vendors for non-compliance. TNMSC introduced separate technical and financial documents for the bid and vendors are rated based on their performance.

In 1994 itself TNMSC introduced the essential drug concept and finalized an essential drug list based on WHO model list consisting of 240 generic medicines.

Hand Books for pharmacists and newsletters for health care professionals were published regularly to educate them on the concept of rational drug use. A reputed private pharmacy college in Tamil Nadu was entrusted with the work related to the publication of the hand book. Taking into consideration the fact that medicines other than those specified in the list may be required in certain cases at certain centers in small quantities, they took a decision to use only 90 percent of the medicine budget for their purchase. The balance of 10 percent is divided among the various health care centers with the condition that funds cannot be used to purchase drugs which are on the TNMSC list. After discussion at various levels the TNMSC also finalized a list of drugs which can be procured locally and circulated to all hospitals. The system of distributing 10 percent of the annual budget to hospitals has helped the Corporation to counter the criticism that the drug list is inadequate (R.Poornalingam 1996).

The TNMSC created a chain of warehouses with all required facilities to provide storage conditions like 'cool place', 'cold place' etc. for the storage of items. Well designed warehouses were established in 23 districts in the beginning which could increase about 30% efficiency of storage system. Distribution schedules were given to the hospitals to enable them timely deliveries. The passbook system introduced helped to make the hospitals aware of their budget utilization at any point of time. The warehouses maintain a minimum of three months stock and hospitals permitted to draw a month requirement at a time. The safety stock limit was fixed as one month requirement though it depends on the turnover of a particular item and its leads time for obtaining supplies. Pre-dispatch and post-dispatch quality tests were ensured for quality assurance. Through random sampling supplied items were sent to designated labs for quality check and punishments including penalty and black listing introduced for quality failure. In 1996 TNMSC got Rajiv Gandhi National Quality Award and in 2004 the World Bank appreciation in beating in-efficiencies in medicines procurement and improving rural health services. No doubt TNMSC became a role model for all other states in India by 1997 itself.

Impact of TNMSC model in the country

Influenced by the success story of the TNMSC, many other states in India adopted the system either as such or with modifications for the purchase of medicines. The Andhra Pradesh in 1998 have notified the A.P Health and Medical Housing and Infrastructure Development Corporation (APMHIDC) as the nodal agency for undertaking centralized drug procurement. The APMHIDC has established a central procurement system for the entire hospitals in the state under the control of i) director of medical education, ii) director of health and iii) commissioner of A.P Vaidya Vidhana Parishad (APVVP). They have emulated many components of the TNMSC like, central drug stores in all dis-

Table 5: A comparison of Delhi and TNMSC prices of selected items

Drug	Strength and pack	Tamil Nadu		Delhi	
		1996	2003	1996	2003
Paracetamol	500 mg 10 tablets	1.19	1.12	1.25	1.17
Norfloxacine	400 mg 10 tablets	10.71	5.13	7.98	6.48
Rifampicin	450 mg 10 tablets	28.80	20.90	29.20	20.90
Cloroquine	250 mg 10 tablets	3.50	2.37	3.94	2.75
Gilbenclamide	5 mg 10 tablets	0.80	0.52	0.72	0.64
Atenolol	50 mg 10 tablets	1.36	1.04	1.45	1.55

tricts (warehouses), pass book, quality control and computerization. The budget of medicines for each hospital will be allotted every year by the concerned head of the department. A number of other Indian states like Karnataka, Kerala, Rajasthan, Orissa, Bengal etc. adopted the basic features of TNMSC model. Madhya Pradesh which promoted Rogi Kalyan Samitis at the hospitals in 1973 revised the scheme in 1999 aiming to solve some of their drug related issues.

Box 3: Advantages of TNMSC as a procurement agency

- a) Procurement of cost effective medicines in right quantities at right time to extend maximum possible benefit to the poor sections of the society with available budget.
- b) Introduction of an ideal mechanism for the selection of reliable manufacturers to ensure prompt supply of quality medicines.
- c) Establishment of a paperless transparent procurement and distribution system that ensures timely deliveries.
- d) Scope for the development of a system that can ensure lowest possible total costs without making any compromise for quality.
- e) Helps to eradicate the issue of counterfeit and substandard medicines in government hospitals through the process of avoiding intermediaries in the supply chain.
- f) Helps to educate the public and the health administration regarding exorbitant trade margins in marketing and sky high profits in pharmaceutical industry in India.
- g) Innovations like publication of pharmacists hand book aimed at promoting rational use of essential medicines.

For certain states, the TNMSC acted as consultant or nodal agency for implementing the procurement policies. Some states like Rajasthan are yet to introduce a true pooled procurement system though created autonomous medical relief societies in 1995 to find fund for hospital needs including medicines. In Rajasthan a number items are procured directly from the public sector manufacturers like the Rajasthan Drugs and

Pharmaceuticals Ltd., (Sakthivel S). The Government of Karnataka also has formed a separate entity known as 'Karnataka State Drugs Logistics and Warehousing Society (KDLWS)' with head office at KHB Colony, Magadi Road, Bangalore. It is under the direct control of state Principal Secretary for Health and Family Welfare. In Karnataka about 60% of the drugs requirement is managed by the zila panchayats at the district level and the remaining 40% by the government medical stores. The state of Kerala, which had taken certain progressive steps in its drug procurement in 1994 waited for years studying on the TNMSC model, finally formed a corporation styled as Kerala Medical Services Corporation Ltd (KMSSCL) in November 2007 as a Government Company under the Companies Act 1956 with three IAS officers of the state Health Department as first Directors (Dr. Vishwas Mehta, Dr.Usha Titus and Dr. Dinsh Arora) and started functioning in 2008.

CONCLUSIONS AND RECOMMENDATIONS

The expenditure on drug is increasing every year. All countries, rich and poor have only limited resources for the procurement of medicines. The problem of counterfeiting and substandard medicines is an important problem as the quality is very much affected by such issues. The prevalence of the problem is 30 times more in developing countries compared to developed countries where it is estimated to be about 1% (Eva Ombaka 2009). An efficient inventory control system with the support of scientific MIS and ensuring the timely use of the resources are critical for the efficiency and effectiveness of the hospitals, both in public and private sectors. Medicines represent a major part of hospital expenditure ranging from 5 to 12 % in developed countries and to as much as 40% in developing countries. (Doloresco F, 2009).

A number of medicine procurement methods are practiced in various places and situations, both in government and private. Experiences have shown that a procurement system will become efficient and effective only if efforts are made at all times and levels to have a transparent and corruption free process and follow the principles of good procurement practices. There should be built in efforts to contain costs through continuous and persistent review and monitoring of the process.

Government of India can undertake cost studies to determine prices of essential medicines as is done in

many other countries. Some countries follow comparable methods of pricing between new products and existing items. Methods like cost benefit analysis, cost effective analysis, cost minimization analysis and cost utility studies can advantageously used for various such studies. Because of the popularization of the subject of pharmacoconomics it is quite easy to conduct such studies in India. The TNMSC model is the best public procurement model in India and it can advantageously incorporate certain positive aspects of the Delhi model and make it worth emulating for the entire states and territories in the country. India can project the TNMSC as a national model and help other countries particularly the developing ones in the world to adopt the positive aspects of it for implementation with necessary alterations or modifications.

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