

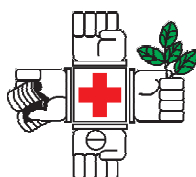
Study of Procurement & Distribution System of Medicines, Availability of and Budgetary Provisions for Medicines in Maharashtra



Report Prepared by

SATHI

As part of the project supported by
International Budget Partnership (IBP)



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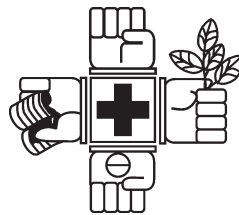
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Preface

We are happy to present the report on study conducted as part of the project on 'An assessment of budgetary provisions, procurement and supply system concerning essential medicines in Maharashtra'. The aim of the project was to provide evidence regarding current drug procurement and distribution system to the ongoing advocacy initiatives in order to improve the availability of essential medicines in the primary health centres in Maharashtra. The research undertaken as part of this project focused on studying overall availability of essential medicines in PHCs in Maharashtra, budgetary allocations for medicines, and the procurement and distribution processes.

There are four chapters in this report. First chapter explains methodology employed for studying all three components of this project. Findings of study regarding availability of essential medicines in primary health centers are mentioned in the second chapter. Next chapter elaborates the existing process of procurement and distribution in the state of Maharashtra for supply of medicines to the PHCs and observations about it. Tamil Nadu model of procurement of medicines is also explained in this chapter. Forth chapter delineates findings related to budgetary allocations for essential medicines. Report ends by giving recommendations for improvement in availability, procurement-distribution system of and budgetary allocation for medicines.

This report is a product of collective efforts of several persons. We express our gratitude to all the doctors, pharmacists and other staff from select PHCs for sparing their valuable time and facilitating the access to required documents. This study would not have been possible without their cooperation. We would also like to express our gratitude towards all the health officials and staff from Zilla Parishad-health department (Pune), National Rural Health Mission (Maharashtra), Department of Medical Education & Research and Directorate of Health Services, Mumbai for providing important information relevant for the study.

We express our special thanks to Dr. Anant Phadke for his inputs and feedback throughout the conduct of this study, from conceptualization to the review of draft report.

We would also like to acknowledge Ms. Rashmi Padhye's contribution in editing this report. We acknowledge Mrs. Sharada Mahalle for her support in layout of this report.

Our special thanks to IBP (International Budget Partnership) team for the financial as well as technical assistance for making this study possible.

We hope this report would be useful in understanding different aspects linked with the problem of medicine availability and furthering advocacy related to it.

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Ms. Deepali Yakkundi

Dr. Abhay Shukla

Abbreviations

AYUSH	- Ayurveda Yoga Unani Siddha Homeopathy
BMC	- Bombay Municipal Corporation
CBM	- Community Based Monitoring
CEO	- Chief Executive Officer
CS	- Civil Surgeon
DGS & D	- Directorate General of Supplies and Disposal
DHO	- District Health Officer
DHS	- Directorate of Health Services
DMER	- Directorate of Medical Education and Research
DS	- Double Strength
EMD	- Earnest Money Deposit
EPW	- Empowered Procurement Wing
ESIC	- Employees State Insurance Corporation
ESIS	- Employees State Insurance Scheme
FDA	- Food and Drug Administration
GMP	- Good Manufacturing Practices
ISO	- International Organization for Standardization
MoHFW	- Ministry of Health and Family Welfare
MIS	- Management Information System
NRHM	- National Rural Health Mission
NSDP	- Net State Domestic Product
NSSO	- National Sample Survey Organisation
OPD	- Out Patient Department
ORS	- Oral Rehydration Solution
PHC	- Primary Health Centre
PO	- Purchase Order
QA	- Quality Assurance
QC	- Quality Control
RC	- Rate Contract
RH	- Rural Hospital
RKS	- Rugna Kalyan Samiti
RNTCP	- Revised National Tuberculosis Control Programme
SC	- Sub Centre
WHO	- World Health Organisation
ZP	- Zilla Parishad

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Executive Summary

Background

Availability of essential medicines in public health facilities is one of the serious concerns regarding healthcare services in Maharashtra. This is also one of the major reasons for lower utilisation of the public health system. The proportion of expenditure on medicines to total expenditure is higher in public health facilities as compared to the private health facilities. Thus to get better understanding of the problem of medicine availability, SATHI initiated a project which looked into overall availability of essential medicines in PHCs from Pune district of Maharashtra, medicine procurement as well as distribution process and the budgetary allocations for the same.

Key Objectives

1. To monitor availability of select medicines in select PHCs from Pune district of Maharashtra
2. To understand the procurement and distribution processes in the state of Maharashtra
3. To study budgetary allocations towards medicines purchase for primary health centres.

Key Research Areas

- Actual availability of various essential medicines with reference to standard norms in select PHCs of Pune District
- The procurement system of essential medicines in Pune district and at state level to understand key gaps, bottlenecks and areas of delay
- The budgetary allocations for essential medicines at district level in Maharashtra

The aim of the project was to provide evidence regarding the current drug procurement and distribution system to the ongoing advocacy initiatives in order to improve the availability of essential medicines in the primary health centres in Maharashtra.

Methodology

For assessing availability of essential medicine, stock of total 64 select medicines in two select PHCs from Pune district of Maharashtra was monitored. These 64 medicines were selected from the list of around 112 essential medicines for PHC prepared by Directorate of Health Service. Data were collected in six rounds of monitoring in both the PHCs, during April 2010 to September 2010.

Besides monitoring of medicine stock, case paper audit and exit interviews were also conducted. Data regarding medicines prescribed in both the PHCs for 122 patients was noted. Exit interviews were conducted using short interview schedule. Around 48 exit interviews were conducted from both the PHCs.

Information regarding procurement, distribution system and budgetary allocations was mainly gathered through review of existing literature and discussions with health officials from state as well as district level.

Key Findings

Availability of Medicines

- Finding from the present study shows that average 37 percent i.e. 24 out of 67 select medicines were not available in the studied PHCs. While on an average only 23 percent of medicines were found to be available at satisfactory level.
- There were several essential medicines having zero stock and were still not supplied to PHCs

for a very long period. Around 11 essential medicines having NIL stock were never supplied to these PHCs.

- Besides the problem of unavailability of medicines, problematic excess is also a matter of concern, which needs serious attention. In both the PHCs on an average 9 percent, medicines were found in excess.
- The pharmacists from selected PHCs were unaware about the Essential Drug list prepared by the Government and the list was not available with them.
- Newly appointed pharmacists are not given adequate training regarding indent & supply of medicines, maintaining registers and managing medicine stocks.
- Lack of demand responsive supply system is one of the crucial areas that lead to frequent stock out and excess stock situations. Supply of medicines was found to be irregular and not in accordance with actual requirement of medicines. There was no congruence between indent sent by PHC and medicines supplied by Zilla Parishad.
- Disposal of medicines, which have crossed expiry date, is another area of concern. It was found that there were seven medicines, which had crossed expiry date, for which there was around 3 times excessive stock while other seven medicines were found to be close to expiry and its stock was also three times excessive.
- It was observed that considerable amount of medicines including commonly required medicines such as Inj. Methargin, Inj. Oxytocin were purchased locally from PHCs without maintaining proper records of these purchases.
- In case of 15 to 16 medicines, there was gross discrepancy between actual stock in storage and stock in register ranging from a difference of 200 to 1000 tablets. It reveals poor documentation, poor record keeping, and lethargic, lenient attitude of the pharmacists towards management of medicine stock.
- From the study, it emerged that 30 percent of the interviewed patients seeking treatment from PHC were asked to buy medicines especially needles from outside.
- In one of the PHCs, some of the patients were asked to pay Rs.10 in the donation box, which was placed in the doctor's consultation room.

Procurement and Distribution System Related Issues

This study has revealed following important lacunae in the existing procurement and distribution system-

- **Multiple Sources for Purchase of Medicines** - Medicines are procured by different health facilities/institutes, by different departments at the state as well as district level. Multiplicity of sources causes delays and also makes it difficult to monitor the procurement process.
- **Lack of Transparency in the System** - The details of medicines purchased, rate of purchase and selected manufacturer and such are not displayed publicly.
- **Lack of Monitoring Mechanisms** – External monitoring mechanism is lacking at all levels in the current procurement and distribution system at any level.
- **Quality Control** - Besides mandatory submission of the FDA certificate at the time of bid evaluation, there are no other provisions towards quality check of the medicine and performance assessment of the manufacturers. There is no provision of pre or post dispatch inspection of stock.
- **Computerization** - There is no computerized linkage among health facilities as well between local levels, district levels and state level.
- **Lack of Procurement Manual** - Due to the lack of procurement manual, there is lack of clarity among staff about terms and conditions related to procurement process, which then leads to

deviations and dilution of the standard procedure.

- **Lack of Trained Human Power Staffing** - In addition to the problem of understaffing, lack of trained staff is yet another problem faced at the state as well as district level as there is no professional procurement cadre. Staff has limited procurement skills, particularly at the lower and middle levels. No formal procurement trainings are provided to new entrants.
- **No Proper Drug List** - Currently Rate Contract is done for around 1800 products whereas there are only 350 medicines in Ministry of Health's List of Essential Medicines. Excessive number of formulations leads to procurement of unnecessary and more expensive medicines even when rational alternatives are present in the list.
- **Supply is Not Need Based** - Estimation of quantities of medicines is not based on actual requirements and the specific disease profile in the area where the health facility is providing care. Secondly medicines are often not supplied as per actual stock position because there is no provision for tracking stock of medicines in PHC.

Budgetary Allocations for Medicines

- In year 2010-11, In Maharashtra 11.38 percent of the total health expenditure was for medicines, while in Tamil Nadu and Kerala, percentage of total health expenditure towards drugs was 15.28 percent and 17.03 percent respectively.
- At state level, the budget for medicines is around Rs. 27 per capita in the year 2011-12. In Tamil Nadu, the budget is same, however, the prices at which TNMSC procures medicines is significantly lower than in Maharashtra, hence the former can provide free medicines to all the patients who seek treatment from public health system.



Introduction

WHO report (2002) mentions that, 'one third of the world's population lacks reliable access to required medicines and the situation is even worse in developing countries'. In India too, lack of access to medicines is an important problem plaguing health care system. An estimated 649 million people in India lack access to essential medicines (WHO, 2004).

Given the high costs of medicines, it is essential that the public health system should provide the medicines. Expenditure on purchase of medicines is one of the biggest heads of the total out of pocket expenditure on seeking health care services (World Bank, 2001). The contradiction is that despite there are over 20 thousands drug companies and over 1,00,000 (1 lakh) formulations of drugs sold in the drug market, medicines are still out of reach of millions of people¹. The major reason that makes medicine beyond the reach of millions of people is its high prices. High prices of medicines have direct impact on affordability and therefore access to the essential medicines.

In the 60th round of National Sample Survey (2004), information regarding the medical expenditure for treatment under different heads of treatment during stay at hospitals as an inpatient was sought. Analysis of this data reveals that the range of proportion of total expenditure on medicines was from 57 to 66 percent. The proportion of expenditure on medicines to total expenditure is higher in the public health facilities as compared to private health facilities. This clearly indicates that though the public health facilities are supposed to provide the healthcare services at minimal costs, due to non-availability of essential medicines in these facilities, the actual costs borne by the patients are very high.

Estimates from the 55th expenditure survey reveal that three fourths of the total out of pocket expenditure (OOP) is spent on drugs, in both rural and urban areas. Household drug spending is high in less developed states (Orissa- 90.64 percent, Bihar- 89.14 percent), while developed states spend less on drugs (Maharashtra- 68.75 percent, Gujarat- 63.90 percent) (Sakthivel, S., 2005).

The other piece of evidence is from research survey undertaken by SATHI. As part of the project, Maharashtra Health Equity and Rights Watch², SATHI had conducted a household survey in 10 districts of Maharashtra. In this survey, information regarding the episodes of illnesses treated on OPD basis as well as the hospitalization cases has been gathered from 1659 households (8373 persons). One of the sections in the survey questionnaire was pertaining to the perceptions of the respondents regarding quality of healthcare provided by the public health system. More than half of the respondents (55 percent) complained about the quality and availability of the medicines provided by the public health facilities citing this as one of the main reasons for not seeking treatment from the public health system. Since the medicines were often not provided from the public health facility and patients had to buy medicines at the market price, they perceived it as similar to private healthcare provider who also gives only prescriptions and not the actual medicines. It is a striking fact that out of the total respondents who cited problems related to medicines as one of the reasons for not seeking treatment from public health facility, 65 percent had complaints about the availability of medicines and 15 percent complained about the quality of the medicines.

A study undertaken by FRCH showed that nearly 60 percent of drugs supplied to PHC were in reality 'not available for more than 75 percent of the year'. While over 70 percent of the drugs were not available for more than half the year (Phadke, Fernandes, L. Sharda, Mane, Jesani., 1995). According to NSSO 60th round (January- June 2004), percentage of amounts spent for purchase of medicines (either from the hospital itself or from outside) as percentage of total medical expenditure for treatment at hospitals as inpatient is 42 in urban areas and 47 in rural areas.

In this context, the present study was undertaken to fill the gaps regarding the causes of non-availability of medicines in the public health facilities in Maharashtra.

1 Documentation by Dr. Sumit Sharma, collector and district magistrate, Chittorgarh (Rajasthan)

2 Details of the project can be accessed at <http://www.sathicehat.org/Site/HealthEquityInIndia>

Chapter 1

➤ Methodology

This chapter gives details of methodology adopted for this study. With the broader aim of improving the availability of essential medicines in primary health centres in Maharashtra, the study is an attempt to understand budgetary allocations towards medicines purchase and current system of medicine procurement and distribution in the state.

The Specific Objectives for the Study are

1. To monitor availability of select medicines in select PHCs from Pune district of Maharashtra
2. To understand the procurement and distribution processes in the state of Maharashtra
3. To study budgetary allocations towards medicines purchase for primary health centres.

Key Research Areas in This Project are

A Study of Availability of Essential Medicines in the Select PHCs from Pune District

In this study, besides assessment of available medicines, other functional aspects linked with stock availability in the PHCs such as inventory management, and different sources of medicine supply were also studied. Analysis of casepapers and exit interviews of patients were also included in the study. Purpose of analyzing casepapers was to assess rationality of prescriptions in terms of gaps between symptoms reported by the patient and medicines prescribed to him or her and extent of unnecessary use of medicines and injections. While rationale for conducting the exit interviews was to know patients' actual experiences and perceptions about medicine availability in the PHCs

B Study of Procurement and Supply System of Essential Medicines in the State of Maharashtra

This study examines existing procurement and distribution systems in the state of Maharashtra for supply of medicines to the PHCs with a view of understanding key gaps and bottlenecks.

C Study of Budgetary Allocations

An attempt is made to calculate the budgetary allocations for medicines at PHC as well as district and state level, and propose the required budget (per capita drug budget) for fulfilling present need and do advocacy for transparent budgetary mechanisms.

Methodology adopted for each of these research areas is as follows.

A Study of Availability of Essential Medicines in Select PHCs from Pune District

A.1 Monitoring of Medicine Availability in Select PHCs

Sample Selection

This study was conducted in Pune district of Maharashtra. Pune district was selected because of two reasons.

1. Pune district is a part of Community Based Monitoring process implemented in Maharashtra since 2007.
2. Due to physical proximity of the PHCs to SATHI office, it was easy to make frequent visits as monthly monitoring visits were planned in both these PHCs for a span of six months.

Selection of PHCs

Out of total 96 PHCs in Pune district, 15 PHCs are covered under the Community Based Monitoring³ process. Out of these 15 PHCs, two PHCs were selected using criteria of geographical accessibility and utilization of PHCs.

PHC 'A' is located remote in a area with limited modes of travelling. Monthly OPD attendance of the PHC is around 600 to 650, which goes up to 800 during Monsoon.

On the other side, PHC B is located in a village, which is well connected, and it has a monthly OPD attendance of around 1200 to 1300, which goes up to 1700 to 1800 during Monsoon.

Selection of Medicines

Around 116 medicines are included in the list of essential medicines for PHCs prepared by the Directorate of Health Services. Out of these 67 essential medicines were selected for monitoring. Based on this list, medicines were selected considering their frequency of use in the selected PHCs. Medicines in different forms such as tablet, capsule, powder, syrup, cream, ointment as well as surgicals such as syringe, I.V. sets were selected. List of selected medicines is annexed herewith⁴.

Data Collection

In the beginning, tools for medicine monitoring used under Community Based Monitoring process were reviewed and modified significantly on the basis of literature review to conduct this study.

Tools were finalised after pilot testing. Besides availability of medicines, the study collected information such as,

- Stock in register vis a vis Actual stock in storage,
- Expiry dates of the medicines,
- List of indent and supply
- Date and quantity of latest received stock from ZP

During each visit, date and quantity of latest received stock from ZP was noted to study the frequency of supply of medicines. Data were collected through monthly monitoring visits. Six rounds of data collection during April 2010 to September 2010 were completed in both PHCs. In case of incongruence in the data in different registers, clarifications were sought from Medical officers, Pharmacist and other staff members in the PHCs. To understand the supply system in details data were also collected from the District Health Officer's office and state level departments such as Directorate of Health Services and Directorate of Medical Education and Research.

Data Analysis

Data on availability of medicines were analyzed using Microsoft-Excel, using three-month medicine requirement as a benchmark for evaluation. According to the Maharashtra State Government guidelines (Government of Maharashtra 2000), every PHC should have medicine supply adequate for three months. For the purpose of this analysis, following categories of stock availability were defined.

Table 1.1 - Categorization of 'Medicine Availability' in Terms of Stock

Categorization of medicine availability situation	Parameter used in terms of Stock level
Nil availability	Nil stock of medicines in PHC
Deficient availability	Stock is less than 60% of benchmark
Satisfactory availability	Stock is 60% to 600% (sufficient for 1.5 years) of benchmark
Problematic excess availability	Stock is more than 600% of the benchmark

³ Since 2007, Community Based Monitoring process under NRHM has been implemented as a pilot in selected nine states of India of which, Maharashtra is one state. Five districts are selected from Maharashtra namely Amaravati, Nandurbar, Osmanabad, Pune and Thane. SATHI is given a responsibility of state nodal NGO for ensuring implementation of the CBM program in

⁴ List of selected medicines is attached as annexure no.2

A.2 Prescription Analysis

122 prescriptions from two selected PHCs were reviewed to check the rationality of treatment. Monitoring of medicine stock was done during April 2010 to September 2010. In order to get representative data, it was decided to review 10 to 15 prescriptions from each month of monitoring visit, to get a broader picture about prescription practices.

Data Collection

Following details were noted from the prescriptions analyzed-

- Date of patient's visit to the PHC
- Age
- Sex
- Symptoms reported by the patient
- List of medicines prescribed to the patient

A.3 Exit Interviews

In both the PHCs, one visit was dedicated for conducting exit interviews. When OPD patients were walking out of the PHC, they were told about the study and oral informed consent was sought for participation.

A short interview schedule was prepared for conducting exit interviews. The interview focused on whether the patients received all prescribed medicines from the PHC or were asked to buy these medicines from outside and if any extra charges were taken from patients. . Around 48 exit interviews were conducted from two PHCs.

Limitations

This study adopts 'case study' method as purpose of the study was to assess stock of medicines and functional problems affecting supply of medicines in the PHCs. Because of the case study approach, the findings of the study cannot be generalized for the entire state.

B Study of Procurement and Supply System of Essential Medicines in the State of Maharashtra

Data Collection

Information regarding procurement and distribution system was mainly gathered through review of existing literature and discussions with health officials who are currently working in the public health system as well as former health officials at the state and district level.

C Study of Budgetary Allocations

Data Collection

To study the budgetary allocations, data were required from state as well as district level. Budgetary information was also gathered through review of existing literature and discussions with health officials at the state and district level.

Challenges faced during Data Collection

Procurement and Supply System related data-

Major challenges encountered during the study were availability of data regarding procurement process at the state and district level and access to the available data. SATHI's role as State Nodal NGO in facilitating CBM under NRHM was instrumental in accessing information.

Another major problem in obtaining information was multiplicity of levels and sources while handling procurement and distribution system. There were lacunae and inconsistencies in the information provided by different officers. The information was mostly received in fragments and research team struggled to organize this information in a coherent manner. Retired officials were found to be more candid about sharing information.

During the year 2010, Government had proposed changes to revamp the procurement system, which were challenged in the Court by the manufacturers with whom rate contracting was done. Since the matter was subjudice, the officers refrained from commenting about the process.

As part of the research, the team had requested access to following documents:

- Tender evaluation reports
- Payment vouchers
- Documents related to actual tendering process
- Quantity of pooled requirement for PHCs and Subcentres
- List of purchases made from ZP level

Besides RC book from DMER, no other specific manual or set of guidelines regarding procurement was available in public domain. Despite several attempts of written communication and discussions with higher authorities, access to above mentioned documents was denied.

Budgetary data-

It was quite challenging to obtain budgetary data, as access to any budgetary data was limited. It was further difficult to obtain budgets for medicines as in the total budget, medicine budget is incorporated under the head of material and supplies and there is no separate head for medicines.

■ ■

Chapter 2

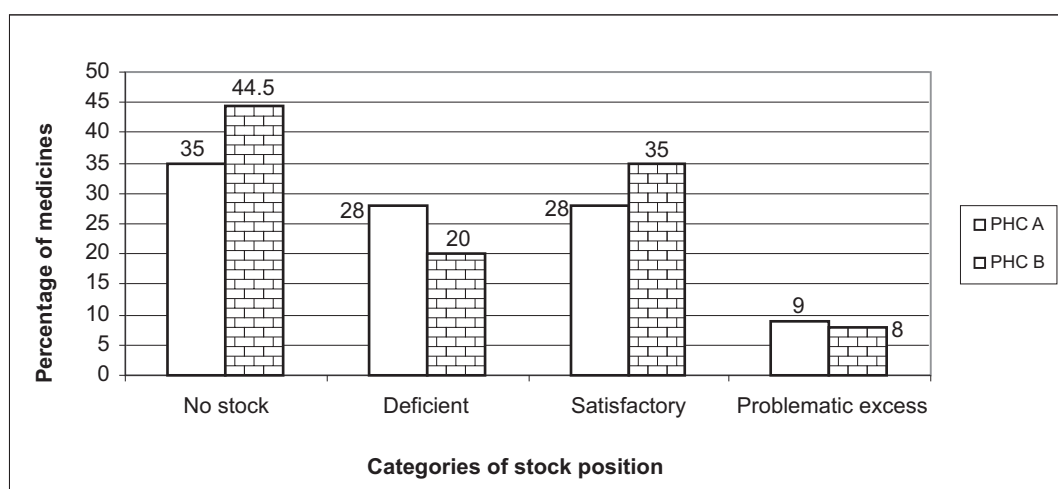
➤ Status of Availability of Essential Medicines in selected Primary Health Centres from Pune district

In the present study, total six rounds were conducted to study the availability of 67 selected essential medicines in two PHCs from Pune district.

Availability of medicines was assessed using following criteria⁵ -

- Nil stock of medicines in PHC
- Deficient stock defined as stock less than 60 percent of benchmark i.e. sufficient for 3 months
- Satisfactory stock defined as stock ranging from 60 percent to 600 percent of benchmark.
- Problematic excess stock defined as stock more than 600 percent of the benchmark.

Graph 2.1- Situation of availability of medicines in both the PHCs



1 Findings about situation of medicine availability in select PHCs

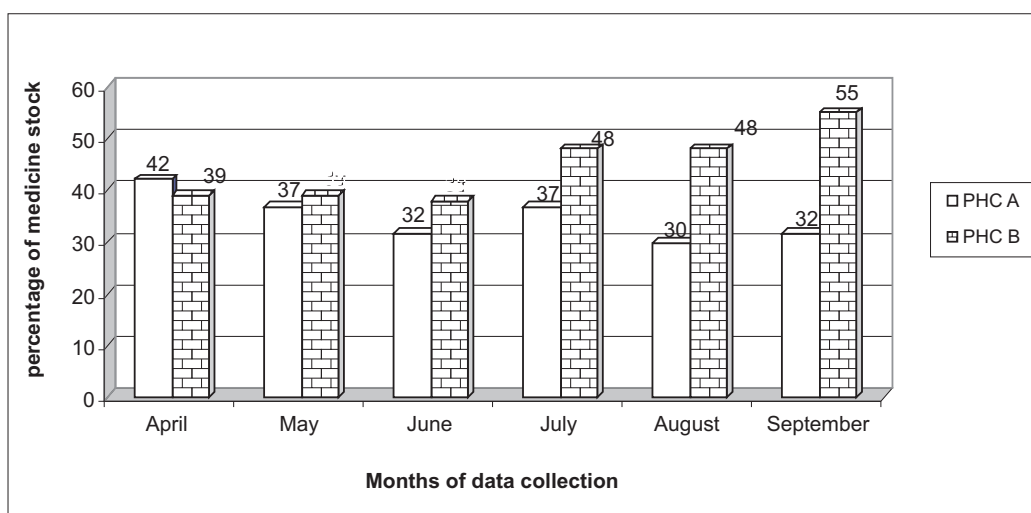
Nil stock

This exercise of monitoring revealed that in PHC A out of 67 essential medicines selected for the study, around 35 percent i.e. 21 medicines were not available in the PHC during all six rounds of monitoring (Graph 2.1). Out of these, 10 essential medicines were never supplied to the PHC.

While in B PHC on an average 44.5 percent, i.e. 25 essential medicines were found to be out of stock in the PHC during the span of 6 months (Graph 2.1). Out of these, 11 essential medicines were never supplied to PHC.

⁵ Data on availability of medicines were analyzed using Microsoft-Excel, using three-month medicine requirement as a benchmark for evaluation. According to the Maharashtra State Government guidelines, every PHC should have medicine supply adequate for three months.

Graph 2.2 - Situation of NIL stock in both the PHCs



Month-wise analysis of the stock reveals that, in PHC A maximum NIL stock was found in the month of April (42 percent) while in PHC B Nil stock was maximum in the month of September (55 percent) (Graph 2.2). While going into details about NIL stock position in the PHCs, following three patterns emerged from the data:

Table 2.1 - Pattern of NIL stock

Pattern of NIL stock	PHC A	PHC B
Medicines those were never supplied to PHC	10	11
Medicines those were not supplied to PHC since last six months	7	5
Medicines with NIL stock only at the time of taking stock but otherwise supplied regularly to PHC	4	9

Table 2.2 - Medicines never supplied in both the PHCs

<i>List of medicines never supplied to both the PHCs</i>	
1) Inj. Aminophylline	5) Inj. Neostigmine
2) Dextrose 25%	6) Inj. Oxytocin
3) Tab. Dulcolax	7) Tab. Roxid
4) Inj. Hydrocortisone	

Deficient stock

In PHC A on an average 28 percent, i.e. 16 out of 67 studied medicines were deficient in stock (Graph 1.1). Out of which, stock of five medicines was deficient throughout six months of data collection activity. Even during the Monsoon season when communicable diseases are more prevalent, medicines like Tab. Albendazole (for deworming), ORS (for rehydration) and Ringer Lactate were not available in PHC A.

PHC B shows that, on an average 20 percent i.e. 11 essential medicines were found to be deficient in stock as compared to standard three months' stock requirement (Graph no.1). Out of these seven medicines were found to be deficient in stock during all six rounds of data gathering. Month-wise analysis denotes that maximum deficiency in stock was observed in August-September (39 percent) and in April and June (23 percent) respectively in PHC A and B (Graph 2.3).

Graph 2.3 - Situation of deficient stock in both the PHCs

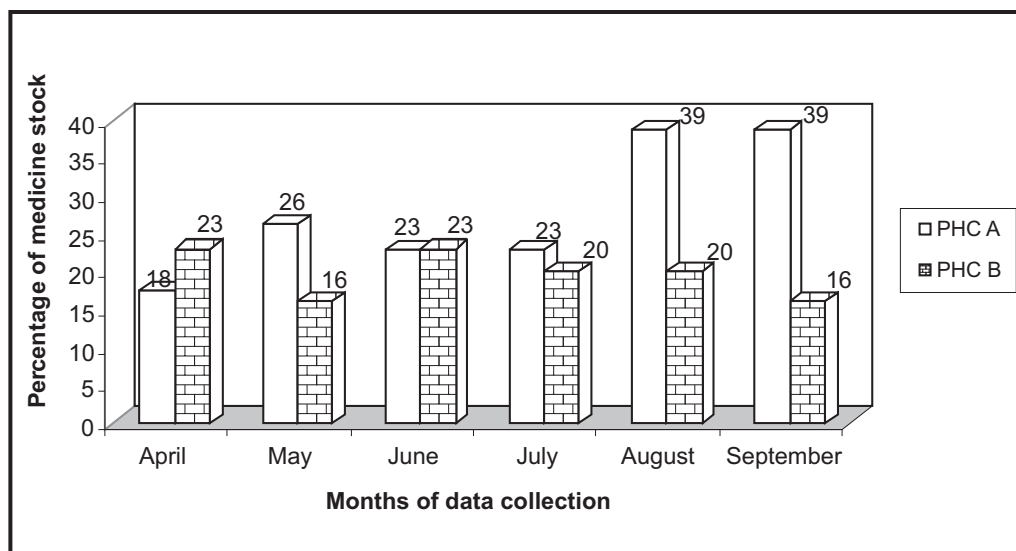


Table 2.3 Deficient stock during 6 months of monitoring in PHC A

List of 5 medicines showing stock deficiency in all 6 months of monitoring in PHC A	
1) Tab. Albendazole	4) Ringer Lactate
2) Oint. Gamma Benzene hexachloride	5) Tab. Theophylline
3) ORS	

Table 2.4 - Deficient stock during 6 months of monitoring in PHC B

List of 7 medicines showing stock deficiency in all 6 months of monitoring in PHC B	
1) Soframycin cream	5) Ringer Lactate
2) Oint. Gamma Benzene Hexachloride	6) Tab. Theophylline
3) ORS	7) Inj. Rabipur
4) Inj. Dexamethasone	

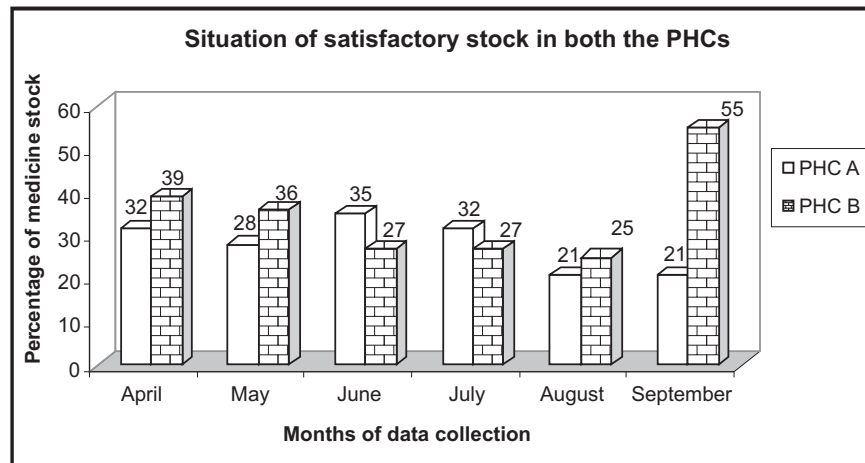
Satisfactory stock

Graph 2.3 denotes medicines in satisfactory stock position in A and B PHCs. On an average 28 percent i.e. 15 medicines and 35 percent i.e. 19 medicines were found to be in satisfactory situation in A and B PHCs respectively. In PHC A, maximum amount of stock was found to be in satisfactory situation in the months of April and July (32 percent), June (35 percent) while in PHC B, maximum amount of stock was found to be in satisfactory situation in April (39 percent) and September (55 percent) (Graph 2.4).

Problematic excess stock

Along with inadequate stock of certain medicines, excessive stock was another problem faced by selected health facilities. Following graph shows that in both the PHCs on an average 9 percent of medicines were found to be in excess during the period of stock monitoring.

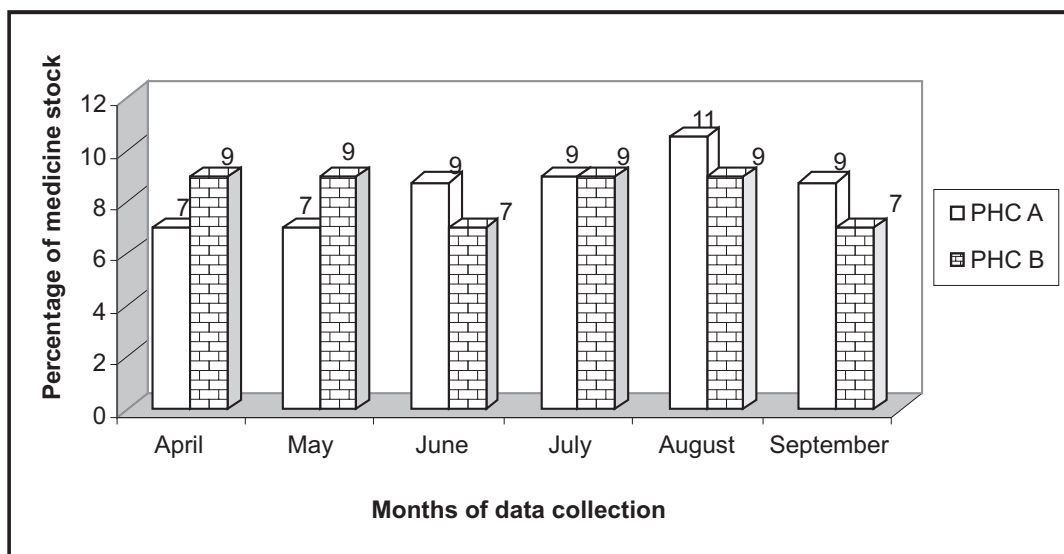
Graph 2.4 - Situation of satisfactory stock in both the PHCs



In PHC A, injections and tablets such as Inj. ASV (Anti Snake Venom), Tab. CPM, Tab. Fluconazole, Tab. Paracetamol, and Tab. Septran DS were found to be in excess by 10 to 30 times (1000 percent to 3000 percent) of the three months' standard requirement. As mentioned before, A is hilly and dry area where snakes are rarely found hence episodes of snakebites are occasional. Despite this, PHC A receives regular stock of Inj. ASV, which has now led to excessive stock of Inj. ASV.

In PHC B stock of Tab. CPM and Tab. Fluconazole was found to be in excess by around 25 times.

Graph 2.5 - Situation of problematic excess stock in both the PHCs



Pharmacists from both PHCs did not have list of essential medicines in the PHC and were not even aware of any such list prepared for PHCs.

An attempt was made to check the list of supplied medicines in both the PHCs. It appeared that this list was exactly same for both the PHCs. ZP staff also admitted that, available stock is divided equally among number of PHCs in the district. For example, if 10 lac tablets of paracetamol are received from supplier, it is equally divided among 96 PHCs present in the Pune district and 10417 tablets are supplied to each PHC.

During informal discussions with ZP staff, it was reported that ZP had taken some initiative towards monitoring of stock position from PHCs. ZP has given two to three types of formats to PHC pharmacists and asked them to submit them weekly, monthly and on quarterly basis. In spite of this initiative from ZP, there was no improvement in stock situation or in supply from ZP.

2 Findings regarding Systemic Issues affecting Availability of Medicines in the Public Health Centres

Poor Inventory Management in the Pharmacy Store of the PHC

As mentioned in the methodology, stock in register and in actual storage was noted down during the monitoring visits. This data was additionally collected to find out if there is any discrepancy in stock noted in register and stock present in actual storage. Data from PHC A points towards urgent need for streamlining the system of stock keeping. In this PHC, there was gross discrepancy between actual stock in storage and stock in register for 15 to 16 medicines. The difference was ranging from 200 to more than 1000. While in PHC B, few cases of discrepancy were observed and record keeping was comparatively better than in PHC A.

Table 2.5 - Discrepancy between actual stock in storage and stock in register

PHC A						
Range of discrepancy in the stock	April	May	June	July	Aug	Sep
1 to 200	Tab. B complex /Leoplus	Inj. ASV	Tab. B complex /Leoplus	-	Tab. Cal-lactate, Inj. ASV, Tab. B complex /Leoplus	Tab. B complex /Leoplus
201 to 500				-	Tab. Ciprofloxacin Cap. Omeprazole, Cap. Doxycycline	Cap. Amoxicillin, Cap. Doxycycline, Cap. Omeprazole, Tab. Paracetamol
501 to 1000	Tab. Cal-lactate			-		
Above 1001			Cap Amoxicillin, Tab. Diclofenac, Tab. Paracetamol	-	Cap. Amoxicillin, Tab. Diclofenac, Cap. Doxycycline, Tab. Salbutamol /asthma fort,	Tab. Paracetamol, Tab. Salbutamol /asthma fort,

PHC B	
Range of discrepancy in the stock	April
1 to 200	-
201 to 500	Cap. Doxycycline, Tab. Norflox
501 to 1000	-
Above 1001	Tab. Diclofenac

Medicine stock beyond the expiry date-

In PHCA

- **Stock of medicines beyond expiry date at the time of visit** - In a span of six months, it was found that there were seven medicines with significant amount (8 to 40 times excess) of stock available beyond the expiry date.
- **Stock of medicines close to expiry date** - Stock of seven other medicines was close to expiry date. On seeing its stock in register and actual consumption of medicines in PHC for three

months it shows that, entire stock cannot be spent before the expiry date of these medicines and significant amount of stock would remain in the PHC (table 1.6).

In PHC B

There were no medicines, which had crossed expiry date. The pharmacist in PHC B informed that he mainly transferred these medicines to other PHCs and sub-centers within the district before the medicines cross expiry date.

Table 2.6 - Medicine stock beyond the expiry date

No.	Name of medicine	Period remaining for expiry	Stock in register	3 months actual consumption in the PHC A	As per consumption, present stock will last for
1	Cap. Doxycycline	1 month	1500	385	15 months
2	Ringer lactate	2 months	180	30	18 months
3	Cap. Amoxycillin	1 month	2000	1000	7 months
4	Tab. Diclofenac	2 months	12200	2700	12 months
5	Tab. Norflox	1 month	600	420	4 months

Discrepancy in quantities of medicines and large amount of stock with crossed expiry date indicates poor inventory management in the health facilities.

It should be noted that, the pharmacist from PHC A had joined an year back. Pharmacist told that there was no proper handover of tasks from previous pharmacist hence instead of continuing the existing registers she has started maintaining records in new register since joining. She has not been given any training about the medicine management system. She did not even know that indent could be sent as per stock requirement. This highlights the problem of lack of provision of training to the newly employed staff.

Storage conditions for medicine storage

Ideally, the medicine storeroom in the PHC should have following provisions:

- Adequate area
- Sufficient light
- Ventilation
- Facility for cold storage
- Proper racks and cupboards for placing medicines

In one PHC storage room was indeed ideal while the other one was improper. The room was dark. There was no window and hence no provision for sunlight. It was very crowded. Medicine boxes were lying on the floor; door could not be opened fully as it was towards patients waiting area. There was no scope for ventilation. Within all these constraints pharmacist had tried best to arrange the stock. Stock was placed as per expiry dates in three to four cupboards.

Lack of demand responsive supply system

Correspondence between indent and supply is one of crucial factors that determine availability of the medicine in the PHC. During an informal discussion, the pharmacist told that, the indents are not sent periodically. Only annual requirements are calculated and sent to ZP, which is calculated by taking average of past three years consumption plus 15 percent of the three years average consumption.

Following graphs show patterns of supply of medicines to the PHCs. On an average only 4-5 medicines were supplied regularly in both the PHCs (Graph 1.5). During the span of six months, 23 and 32 of the medicines were never supplied to PHC A and B respectively.

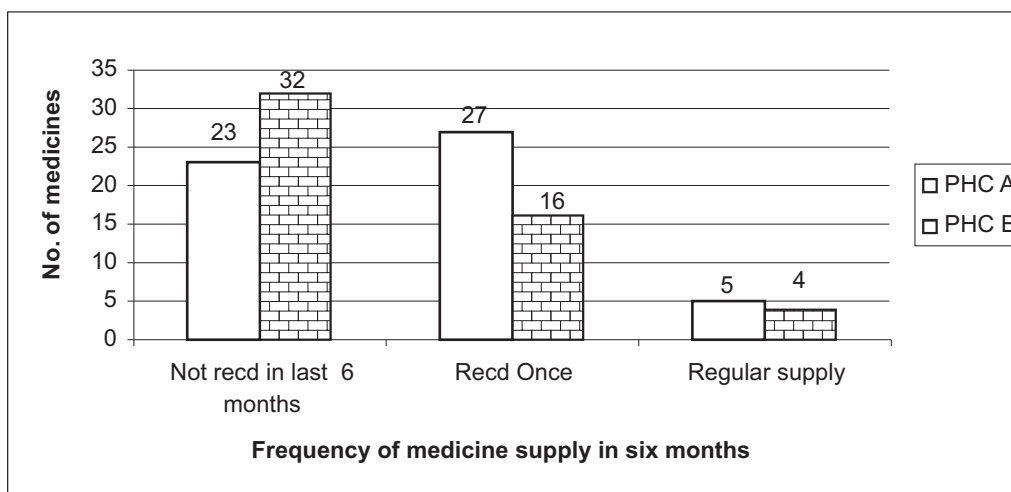
It was further observed that the supply of medicines was not commensurate with the requirement in the PHC. It was reported by the staff that all PHCs get a standard quota of medicines irrespective of their needs and the indent sent by Medical Officers.

Following table (Table 2.7) shows list of medicines that are already in excess in PHCs and were Still Supplied twice or thrice in the span of six months.

Table 2.7 - List of medicines that are already in excess in PHCs and were still supplied twice or thrice in the span of six months

Name of medicine	Stock in register	3 months actual consumption in the PHC A	As per consumption, present stock will last for
In PHC A			
CPM tab	55000	2500	22 times in excess
ASV Inj	250	12.5	20 times in excess
Paracetamol tab	98000	12500	8 times in excess
In PHC B			
CPM tab	59500	2500	24 times in excess

Graph 2.6 - Pattern of supply of medicines in both the PHCs



Multiple sources of medicine supply to the PHC

There are three different sources of medicine supply to the PHC such as,

- ZP (Zilla parishad), Pune
- National schemes and programs such as RCH, RNTCP, and Vector born disease control program etc.
- Directorate of Health Services (DHS), Mumbai (medicines purchased from Haffkine)

Zilla parishad acts as a major source for medicine supply for PHCs. Frequency of supply of

medicines is mentioned in the previous section. Generally, medicines under national programs or schemes are supplied once or twice in a year. DHS provides one medicine kit to the PHC and two kits to the sub centre on annual basis. There are certain medicines, which are provided through multiple sources of supply. Medicines such as Inj. Aminophylline, Inj. Neostigmine, Dextrose 25%, Inj. Oxytocin, Tab. Diazepam, Inj. Pethidine, DNS, Inj. Phenargan and Inj. Hydrocortisone are supplied through ZP as well as through national program. These were still NIL in stock for all six months of monitoring visits.

Delay in collecting stock of medicines

Availability of drugs in the PHC also depends on proximity of the PHC from ZP warehouse. Since many PHCs are located 40 to 50 kms away from Pune ZP, pharmacist from these PHCs cannot afford to visit ZP only for collecting medicines so they generally try to combine it with other works (such as attending meetings, submitting some forms etc.) which causes delay in collecting medicines and then shortage of medicines in PHC. Availability of vehicle, driver and fuel in the PHC also determines collection of medicines from ZP warehouse. Studied PHCs were located at 60 to 70 kms away from the ZP office.

Such logistical issues become important reasons for non-availability of medicines in the facilities.

Local purchase

Under NRHM, Government has made provision of flexible funds such as untied fund and RKS (Rugna Kalyan Samiti-Patients Welfare Committee) funds. At PHC level RKS funds can be used to purchase medicines, in case of emergency (State Health Society Maharashtra 2006).

It was observed that medicines were purchased locally from PHC B. Details of it could not be obtained as the pharmacist informed that register is not maintained for keeping the records of the local purchase. It was informed that the details and bills of these purchases are with MO, which could not be verified. Similarly, in PHCA, records of local purchase were not maintained.

Following table indicates the difference between rate of local purchase of medicines and rate under RC (Ministry of medical education and drugs 2008) (Rate contract) of medicines made by the Government.

Table 2.8 - Difference between rate of local purchase of medicines and rate under RC (rate contract) made by the Government

No.	Name of medicine	Quantity	RC rate (Rs.) (year 2009)	Local purchase rate (Rs.) (year 2009)	Local purchase prices are higher than rate under RC by (%)
1	Inj. Aminophylline	1 Amp	2.45	6.73	300%
2	Tab. Ciprowin 500 mg	100 tabs	97.2	250.24	250%
3	Tab. Ciprowin 250 mg	100 tabs	53.1	170.14	300%
4	Inj. Dexamethasone	1 Amp	2.3	24.04	1000%
5	Inj. Diclofenac	1 Amp	1.3	7.93	600%
6	Tab. Paracetamol	1 box	128	153.85	100%
7	Tab. CPM	100 tabs	3.08	21.64	700%

A. Review of prescriptions

Case papers of 122 patients who visited PHCs during the monitoring visits were reviewed. To assess the rationality of medicines prescribed, the symptoms reported by the patients were also noted. It was observed that prescriptions were written on the OPD case paper itself. Separate paper was not used for this. Diagnosis as well as duration of doses was not mentioned on any prescription that was studied. Pharmacist informed that medicines were being given for three days as standard practice. However, dosage of the medicines was not mentioned in any of the prescriptions. Dosage is explained to the patient while issuing three medicines. Data of prescription audit was analyzed using parameters such as -

- Prescribing more than three medicines
- Use of analgesics
- Use of injections

Analysis of the data reveals that in more than 50 percent of the cases four to five different medicines were given to the patients and in six cases, two or more than two analgesics were prescribed, which reveals over use of analgesics. In addition, Tab. Chloroquine was being prescribed to all the patients who reported fever irrespective of presence of other symptoms. No mention of Injections

Table 2.9 - Prescriptions with more than 3 medicines

No	Age in years	Symptoms	Medicine 1	Medicine 2	Medicine 3	Medicine 4	Medicine 5	Medicine 6	Medicine 7
1	17	Knee joint pain	Tab. Brufen	Tab. Diclofenac	Inj. Piroxicam	Tab. Calcium	Rheumax		
2	14	Fever with chills	Tab. Chloroquine	Tab. Norflox	Tab. Tinidazole	Tab. Paracetamol	Tab. Furazolidone		
3	2	URTI & Diarrhoea	Inj. Gentamycine	Tab. Paracetamol	CPM Centriline	Tab. Furazolidone	Tab.	Vit C sachet	ORS
4	67	Bodyache	Inj. Piroxicam	Tab. Diclopara	CPM	B complex	Apcal	Tab. Gelusil	
5	3	Cough cold fever	Tab. Chloroquine	Syp. Nise	Tab. Ciprofloxacin	Syp. Metronidazole	Syp. Furozolidone	Tab. Cetirizine	ORS sachet
6	50	Sneezing, headache, bodyache	Tab. Numol	CPM	Tab. Apcal	Tab. Azithromycin	Tab. Rantac		
7	62	Neck pain	Tab. Amoxicillin	CPM	Tab. Numol	Tab. Calcium	Tab. Gellucil		
8	51	Fever, chills cough	Cough syrup	Tab.	Tab. Ranitidine	Tab. Cmox Chloroquine	CPM	Tab. Paracetamol	
9	6	Ear discharge, pus	Tab. Ciplox	Inj. TT	Tab. Centriline	Tab. Paracetamol			
10	14	Vomiting, fever with chills	IV Dextrose	Tab. Ranitidine	Syp. Gellusil	Tab. Chloroquine	Tab. Centriline	Tab. Paracetamol	

B. Exit Interviews of Patients

1 Receiving prescribed medicines from the PHC

- It was found that 70 percent of the interviewed patients received all prescribed medicines free from the PHCs.

- Remaining 30 percent patients, who belonged to PHC B only, shared that they were asked to buy medicines from outside. 25 percent of the patient who were prescribed injection, were asked to buy needle from outside. When the explanation for this was sought from the pharmacist, he reported that the needles supplied from ZP are not to be used for OPD patients, those are exclusively for camps and home visits. Hence, all the OPD patients were asked to buy needles when they required injectable medicines. However, there was no such official communication from ZP office.

- Besides this, stock of needles supplied from ZP was not sufficient to fulfil overall requirement in the PHC. However, pharmacist had never indented more number of needles from ZP.

It was noticed that Medical officer prescribed medicines to be purchased on the same case paper (on which symptoms and medicine dosage are mentioned) instead of writing it on separate prescription paper. Hence medicines prescribed from outside could not be identified.

2 Additional charges from patients

In PHC B, around one tenth of patients reported that they were asked to put Rs.10 in the donation box, which is placed in the doctor's consultation room. The details of utilization of funds gathered in this way could not be obtained.

3 Satisfaction about medicine provisioning

85% of patients expressed satisfaction and the rest showed dissatisfaction about medicine provisioning from PHCs, largely because

- They were asked to buy needles from outside.
- They were asked to put Rs.10 in the DANPETI (Donation box).



Chapter 3

➤ Key Aspects of the Procurement and Distribution System of Medicines in Maharashtra

This chapter elaborates the existing process of procurement and distribution in the state of Maharashtra for supplying medicines to the PHCs.

At present in Maharashtra, medicines are procured by following rate contracting system.

Background of setting up rate contract cell

In 1986, in J.J. Hospital, Mumbai, 14 patients died due to administration of contaminated glycerol. To investigate these deaths, the state government appointed a commission under the Commissions of Inquiry Act, 1952, which was headed by Justice Bhaktawar Lentin. Lentin commission (The Indian Express November 30 1997) recommended to establish a procurement cell and to procure medicines by rate contracting. Some important recommendations given by this commission were-

- High quality medicines should be made available in government health facilities,
- Quality of medicines should not be compromised for price,
- Quoted prices in tenders should not be less than the costs of the raw material,
- The firms that are submitting tenders should have good market standing i.e. should be in the field for at least 7 to 8 years,
- Batch wise quality control testing should be done

As an outcome, RC cell was formed in 1992. Since then rate contracting method is used for procuring medicines and supplies in Maharashtra.

The existing process of procurement and distribution for supply of medicines to the PHCs

In Maharashtra, procurement of medicines and supplies is performed at different levels and by different ministries. Medicines are supplied to all health facilities and hospitals through various sources of supply. Details of the present procurement and distribution system for the supply of medicines to PHCs are mentioned below.

Medicines are supplied to PHCs through different sources and are procured at different levels, viz. national, state, district and facility level.

Figure 3.1- Different sources of medicine supply to PHCs

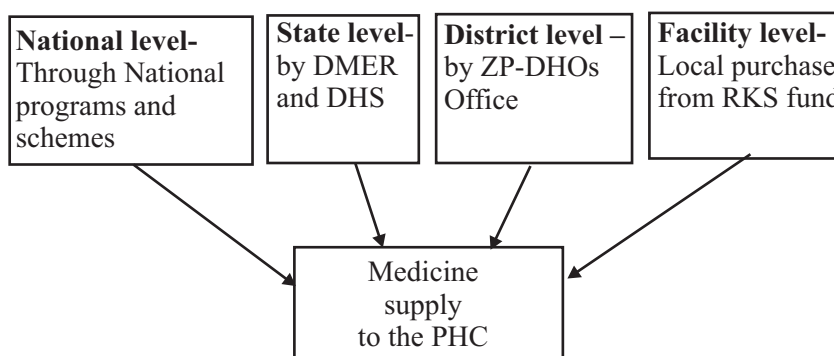
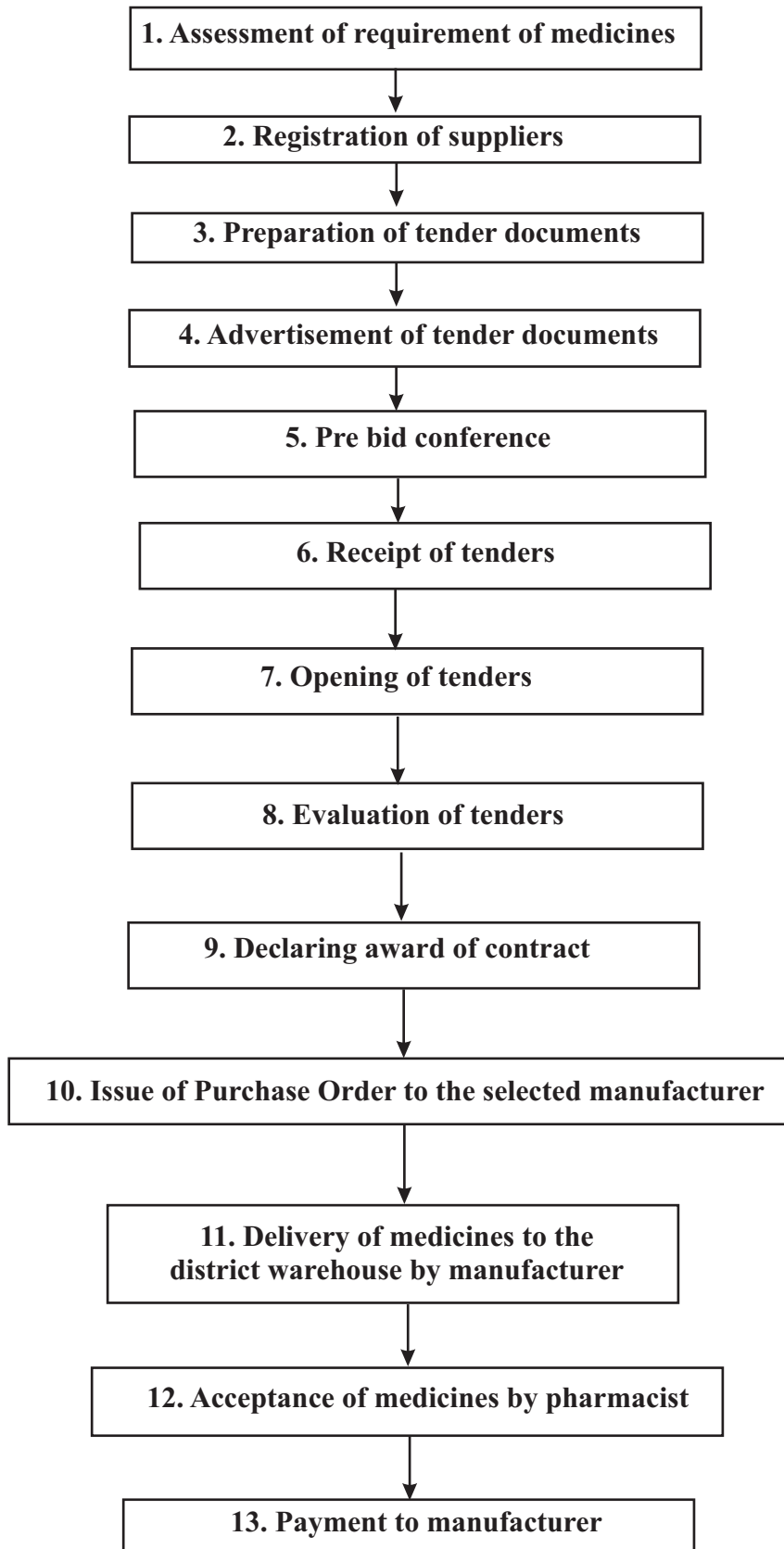
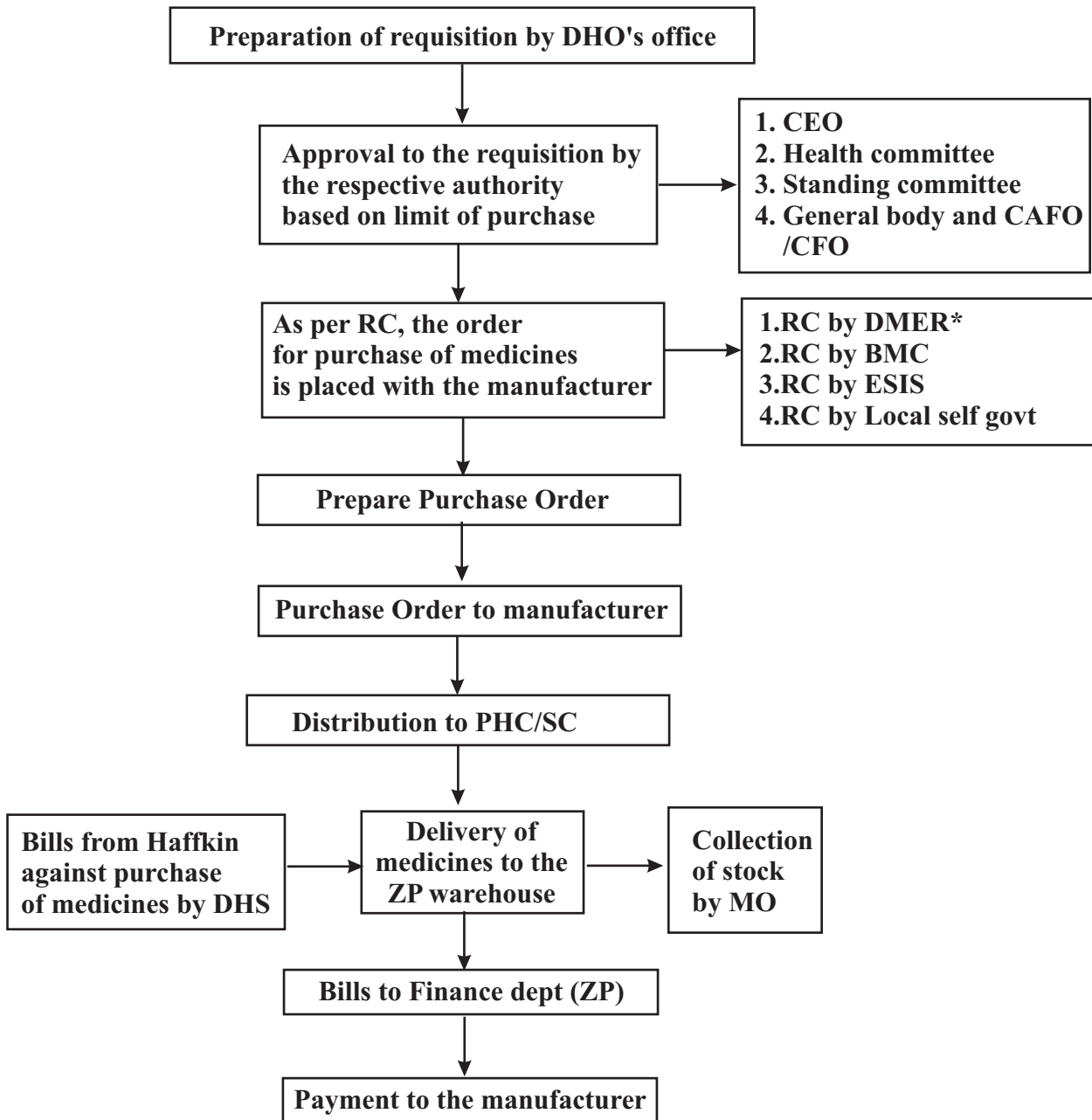


Figure 3.2- Steps in procurement

Activities performed at the state level



**Figure 3.3 - Activities performed at the District level by
Zilla Parishad Health Department**



1. Purchase of medicines at the national level

There are different national programmes and schemes such as Vector Borne Disease Control Programme, RCH⁶ (Reproductive and Child Health), RNTCP (Revised National Tuberculosis Control Program), National Leprosy Eradication Programme etc. which are implemented at the PHC level. Medicines under all these national programmes are supplied to PHCs by the central Government. Supply of these medicines is completely managed by the central Government through national program offices and medicines are provided directly to health facilities.

⁶ List of medicines under RCH programme is attached as annexure no. 7

2. Purchase of medicines at the state level⁷

Majority of medicines required for public health facilities in Maharashtra are procured at the state level following the rate contracting method.

For PHCs, both DMER and DHS procure medicines at the state level.

A. DMER (Directorate of Medical Education and Research)⁸

DMER procures medicines following rate contracting method for following public health facilities:

1. All 17 teaching hospitals (14 medical, 3 super speciality hospitals and 3 dental colleges) under DMER
2. All health facilities under Directorate of Health Services (32 district hospital, 1800 PHCs, 10000 sub centres, 10 maternity hospitals, 4 mental hospitals and 2 super speciality hospitals)

DMER pools medicine requirement from all health facilities under jurisdiction of DMER and DHS. All these medicines are divided into three categories (A, B and C) based on their costs and utilisation. Medicines under category A are utilised more and are purchased at the state level while medicines under category B and C are purchased at the district level.

B. Directorate of Health Services (DHS)

DHS deals with two kinds of medicine procurement. It procures medicine kits from Haffkin pharmaceutical which are supplied to all 1800 PHCs and 10,000 sub-centres in the state. It should be noted that, DHS is responsible for only procurement while bills of this purchase are sent to respective ZPs and paid by the ZP finance department. One medicine kit⁹ worth Rs. 1418 (price as in 2010) is supplied to every PHC on annual basis.

Following open tender method, DHS procures medicines that are not covered in RCs done by DMER. As and when medicines are required, tenders are invited and medicines are purchased from selected manufacturer.

3. Purchase of medicines at the district level

At the district level, medicines for the different health facilities are purchased by different departments following the rate contracts made at the state level.

At the district level,

- Medicines are purchased by ZP and DHO's office for PHCs and SCs,
- The medical superintendent (MS) and civil surgeon's (CS) department purchase medicines for rural hospitals, cottage hospitals and civil hospitals.

For all purchases, it is mandatory for these departments to purchase medicines at rates decided at the state level.

7 Healthcare system in Maharashtra is comprised of following four directorates.

- All 17 teaching hospitals under DMER
 - 32 district hospitals, 10000 PHCs, 10 maternity hospitals, 4 mental hospitals and 2 super specialty hospitals under DHS
 - 10 insurance hospitals under Directorate of employee state Insurance Corporation.
 - 3 Ayurvedic teaching hospitals under directorate of Ayurveda.
- DMER is responsible for fixing rate contracts of medicine, surgical items and medical devices for all these state run hospitals.

8 In addition to DMER, at the state level, rate contracting is performed by other three departments, ESIC, BMC and local self government. 1. ESIC (Employee's state Insurance Corporation) procures medicines for the health facilities under ESIS, 2. BMC (Bombay Municipal Corporation) procures medicines for the hospitals under BMC, 3. Local self govt (RC by DGS & D-Directorate General of Supplies and Disposal) procures medicines for the health facilities under local self govt.

9 List of medicines in Haffkin kit is attached as annexure no. 7, 8, 9.

For any PHC, Supply of medicines from ZP-DHO's office is the principal source.

ZP pools the medicine requirement from all the PHCs and sub-centres in that particular district. With prior sanction from the respective authority, Purchase Orders are placed with the manufacturer with whom RC is made at the state level. Further activities such as accepting stock of medicines from manufacturer, storing it in the warehouse, making payments to manufacturers and distributing stock of medicines to health facilities are conducted at the district level.

In short, for PHCs, medicines are procured by rate contracting done by DMER at the state level. Medicine requirement of PHCs and Sub centres is pooled by DHS and presented to DMER and purchase, storage, payment and distribution are carried out at the district level, by ZP-DHO's office.

4. Local purchase at health facility level

When a particular out of stock medicine is needed in the health facility, it is purchased locally. The Medical Officer of the PHC is the single authorized person to make this purchase. Local purchase is done by utilizing medicine purchase and referral fund from RKS fund made available through NRHM.

Table 3.1 - Differences in tendering method and RC method

Tendering by DHS	RC by DMER
Contract is not done with the manufacturer. As and when medicines are required, tenders are invited and purchase is made from the selected manufacturer.	Contract is made with a selected supplier for the supply of specified goods at specified price. Terms & conditions are applied during the period covered by the Rate Contract.
Required quantity is clearly specified in the tender.	Neither quantity nor minimum drawal is mentioned in the Rate Contract.
Tendering as well as Purchase Order is issued from DHS only	Once RC is made by DMER, Purchase Order is issued from respective department / hospital following the same RC.
Tenders are invited as and when there is requirement of medicine.	RC is done based on requirements pooled from various departments and at the time when previous contract ends.
Tendering can be done even though quantity required is small.	When medicines are required in small quantities, rate contracts are not done
DHS procures only those medicines by tendering that are not procured by DMER	DMER does rate contracting for commonly used goods needed on recurring basis by various health facilities.

Key findings and discussion

Some of the strengths of the present procurement system are

- Rate contracting is done directly with the manufacturers.
- No brand names are specified. Generic names are used.
- The quality of medicines is of export quality (as per W.H.O./GMP guidelines).
- Because medicines are purchased in bulk, the rates are economical.
- Multiple suppliers are involved. Thus, there is no monopoly.
- Vendors are registered and purchases are only done from these empanelled vendors.

- No extra cost is required for the establishment and maintenance of regional warehouses and thus for pre-distribution testing as medicines and supplies are directly transferred to the health facilities.
- Contract is made with more than one manufacturer to ensure that supply of drugs is continued in case of irregular or delayed payment to the contractors.

Though the process of procurement of medicines is well laid out, there are certain inadequacies in the system which result in inadequate supply of medicines in PHCs.

Delays in procurement (tendering) process (At the State level)

Normally a tendering cycle takes around six months from advertisement of tender till award of contract. Timelines for each step in tender cycle were studied. Data were obtained from DMER and DHS websites. The dates shown in Annexure 1 are scheduled dates for that particular activity as mentioned in the tender notice. Concerned person informed that, normally the process is held strictly on the time and date specified in the tender.

Table 3.2 - Timelines for different steps in tender submission

No.	Name of Item	Date of sale of tender document	Date of pre bid meet	Date of actual conduction of pre-bid	Time gap between date of sale and pre bid meeting	Date of submission	Time gap between date of sale and date of tender submission	Date of opening envelope	Time gap between tender submission and opening of envelope	Date of 1st extension	Date of 2nd extension
1	Tab. Diazepam 5mg	13/01/11	20/01/11	20/02/11	7 days	3/02/2011	20 days	3/02/11	same day	21/02/11	10/03/11
2	Tab. Donepezil 5mg	13/01/11	20/01/11	20/1/11	7 days	3/2/2011	20 days	3/02/11	same day	21/02/11	10/03/11
3	Small surgicals -ear surgery	2/12/10	9/12/10	14/12/10	18 days	23/12/10	21 days	23/12/10	same day	17/01/11	15/03/11
4	Instrument -C arm machine	14/01/11	24/01/11	24/1/11	10 days	7/02/11	21 days	7/02/11	same day		

In case of tender extensions, it requires almost two to three months just to get tenders submitted. Otherwise timeline for the regular tender submission is 20 to 30 days only. Minimum three tenders are required to conduct the process of tender evaluation. In case of less number of tenders, tender submission date is extended. If sufficient number of tenders are not submitted in spite of extending tender submission date twice, one out of two available tenders is selected. It seems extension of tender submission is one of the major reasons that causes delay in the entire process.

Multiple sources for purchase of medicines

The most problematic aspect of the system is that purchase of medicines is done at multiple levels. PHC receives medicines from different sources i.e. from national, state and district level. In addition to these levels, medicines are purchased locally also. Multiple levels in the procurement system make it more difficult to monitor the process. It was also observed that, despite supply of same medicines

through multiple sources, some medicines were found to be in NIL stock for e.g. Medicines such as Aminophylline Inj, Neostigmine Inj, Dextrose 25%, Oxytocin Inj, Diazepam tab, Pethidine, DNS, Phenargan Inj and Hydrocortisone Inj. are supplied through ZP as well as through national program, still they were found NIL in the studied PHCs. This implies lack of coordination between ZP, DHS and the national level.

Delayed payments to the manufacturers

Finance department of ZP makes payments for purchase of medicines by ZP and purchase of Haffkin kits by DHS. DHS purchases medicine kits by Haffkine Bio- pharmaceutical corporation Limited, for all PHCs and sub-centres in the state DHS forwards these bills to the ZP finance department for payment. After the stock delivery, original invoices against supplied stock are forwarded to the finance department and payment is made.

There was no access to verify the payment transactions, but it was observed that the problem of delayed payments is common in the system and yet unresolved. Discussions with government officials also suggested that there is delay in payment from the Government's side. Manufacturers are also aware of this inherent problem. They recover their delayed payments by quoting increased rates of medicines in the tender. Hence it ultimately causes the Government to pay more.

Improper need assessment

ZP asks MOs of all PHCs to submit annual requirement of medicines for that PHC to the ZP, which is then forwarded to DHS. DHS collates annual requirement of medicines for PHCs and sub-centres from all districts within the state and submit it to DMER for further process of rate contracting. Requirement is simply derived using average of three years' consumption plus 15 percent of the three years' average consumption, which does not take into account the morbidity load in that area. In addition, the supply of medicines to each PHC is not commensurate with the usage of medicines hence there exists problem of stock outs in some places and excessive stock in others.

Supply of medicines is not commensurate with indent

PHCs are expected to submit regular indents to the ZP. ZP is expected to provide stock as per the indent submitted. But during discussions with ZP staff it emerged that supply is not always in accordance with the indent. They said that, by and large only 75 percent of the medicines are furnished as per demand. For example, the total quantity received at Pune ZP is divided roughly into 96 parts and distributed to 96 PHCs without considering different requirements in different PHCs.

One of the pharmacists informed that, at the time of collecting medicines, the list of supplies is handed over to the pharmacists after issuing the medicines. This does not allow pharmacist to cross check the quantity of medicines mentioned in the supply list and quantity actually issued.

At DHO level, the system of updation of the stock position of different PHCs is not functional.

Lack of monitoring mechanisms

Monitoring as a mechanism does not exist with regard to procurement and distribution system at any level. Lack of monitoring mechanism encourages malpractice, delay in payment, false payment, false bills, stock with short expiry date and lead to poor control on bidding process.

Lack of transparency in the System

Several obstacles faced while conducting this study (non-co operation in sharing information and documents related to procurement system, not allowing to see documents or visit warehouses) indicate non transparency in the procurement system in Maharashtra. Information regarding names of selected suppliers, quantities of medicines ordered is not displayed on the website for public access.

Financial information was even more inaccessible. At the ZP level, information related to purchase was not disclosed.

Mechanism of distribution at ZP level

Medicines are first delivered to the ZP warehouse and then dispensed to all 96 PHCs and 539 sub-centres in Pune district.

After the delivery of medicines in the district warehouse, DHOs office sends circulars to PHCs to collect the medicines. SC kits are also collected by the PHCs and supplied to respective sub-centres. It was observed that, medicine distribution sometimes gets delayed even by two to three months. This is mostly because of the distances between PHCs and the ZP warehouse. Some internal practical difficulties such as unavailability of vehicle, driver or petrol, also cause delays. According to MOs, it is not reasonable to travel 60-70 kms only for collecting medicines. Such delays ultimately affect medicine availability in the PHCs.

District warehouse

The warehouses in Maharashtra have a very limited role of storing and distributing medicines. There is no dedicated staff appointed for warehouses. In fact, at times help of staff from other departments is also sought for activities related to distribution.

Limited use of computerization

In the whole system, use of computers is limited. There is no computerized linkage between PHCs and ZP or between ZP and DHS, which makes it difficult to monitor.

Lack of procurement manual

RC cell of DMER has published a book on RC entailing details of each RC. DHS does not publish results of tender evaluation for the public. It was informed that DHS follows GR of 1992 and Manual of purchase 1978 by the State Department of Industries. Standardized procedures are not yet formulated by the department. ZP also does not have any customized manual for purchasing medicines. One of the consequences of absence of manual was lack of clarity among staff about standard operating procedures related to procurement.

At the time of accepting stock, it is expected to check

- Expiry date,
- Correct manufacturer as mentioned in RC,
- Test report of drug,
- Proper labelling,
- Country name,
- Specification

But in reality only quantity and copy of test report is checked.

Absence of proper drug list

Currently Rate Contract is done for around 1800 products whereas there are only 350 medicines in Ministry of Health's List of Essential Medicines. Tamil Nadu also has a limited list of 260 Essential Medicines and 200 other 'Speciality Medicines' (National Institute of Pharmaceutical Education & Research 2006).

Lack of pre or post dispatch Quality Assurance

Besides mandate to submit FDA certificate at the time of bid evaluation and checking batchwise test report at the time of stock delivery, there are no other procedures towards quality check of medicines and performance assessment of manufacturers. The responsibility of quality assurance with regard to procurement is given to FDA. Quality checks are not conducted routinely because of lack of adequate staff in the FDA. Quality checks are done only if the complaint is received from users against supplier or product. Lack of intense quality control may lead to supply of substandard drugs, poor packaging of medicines, allow suppliers to make manipulations at different fronts.

At ZP level also, during acceptance of stock in warehouse, only batch report is checked for assuring quality. There is no further provision of quality check or inspection conducted after the supply of stock.

Initiative by the Government in improving the process of procurement-

Empowered Procurement Wing Empowered Procurement Wing (EPW) was a development initiative of the Ministry of Health and Family Welfare (MoHFW) under National Rural Health Mission (NRHM). EPW was initiated in the year 2005. The main objective of the EPW was to-

- Provide single window support in achieving efficiency, economy and transparency in health sector procurement of the Central and State Governments
- Act as a model for all states
- Help in capacity building of the states and increase their absorptive capacity for funds

Material and supplies procurement committee at the district level

District health material and supplies procurement committee had been set up in Pune district in September 2003. The main objective of the committee was to bring transparency in the purchase of medicines, material and supplies.

The committee was formulated by DHS to undertake purchase of medicines, material and supplies for district hospital, RH, mental hospitals, other health centers and also for various health programs like RNTCP, Communicable Disease Control, Malaria Eradication Program And Leprosy Eradication coming under the DHS.

Changes in procurement system of Maharashtra

In the month of **April 2010** the state government made an announcement of change in the existing drug procurement system in the state of Maharashtra and implementation of the new system of procurement from month of May 2010. As per new plan, it was proposed to have eight warehouses in the state out of which three warehouses were already purchased by the Government.

However, by the **end of July 2010** this change was challenged in the court by one of the drug manufacturer. If the system was changed and given contracts were discontinued, it would have been a breach of contract with the manufacturers with whom rate contracts (RC) were already made hence state government withdrew the change and continued older system.

Recently in July 2011 the Government of Maharashtra has decided to employ e-tender system to procure generic medicines for public health facilities. Tenderers can submit tenders online. Decision of e-tendering is definitely a step forward but it is too inadequate as e-tendering is just a little modification in one of the steps of entire lengthy tendering process. It will only save time in tender submission.

TNMSC is proclaimed as one of the best models for procurement and distribution of medicines in the country. Hence, this model was studied in details to understand its features and strength.

TNMSC model of procurement and distribution system of medicines

Key features of tnmsc model are as follows:

- **Full Autonomy** - A major initiative taken by the TN State Government was to set up a Government Company, Tamil Nadu Medical Service Corporation (TNMSC). TNMSC is set up under the Indian Companies Act. All decisions on procurement are taken by the board without any reference to the state health ministry. Ministry is responsible for only procurement policy and administration.
- **A demand sensitive/driven supply system**- In order to ensure a regular supply of medicines and for preventing stock-outs, TNMSC has established a chain of godowns to stock all drugs. Each district has a drug warehouse as a point of distribution for all medical institutions in the district. The suppliers are required to supply the drugs to these district warehouses, which would keep a working stock of three months requirement at any point of time. Each institution is given a passbook indicating its annual entitlement (i.e. budgetary allocation) within which it can draw drugs from the district warehouse. There is no need for an advance indent because any drug in the approved list could be obtained within the entitled financial limit. This system ensures that there is no stock out. The supply of medicines is responsive to changing needs (National Institute of Pharmaceutical Education & Research 2006).
- **Transparent procurement system**- All relevant and important information about the bidding process, purchase, quality testing reports and distribution of medicines is on the website.
- **Updated and limited list of essential medicine**- TNMSC procures medicines from a limited list of medicines (260 Essential Medicines and 200 other 'Speciality Medicine')

Table 3.3 - Comparison Between existing procurement system of Maharashtra and Tamil Nadu

Points	Maharashtra	Tamil Nadu Model
Medicines Procured by	Different departments/ministries for different type of health institutes	TNMSC
Drugs Supplied to	Health facilities under select departments	All Government health facilities
Purchase	Bulk purchase by rate contracting or open tendering from manufacturers	Bulk purchase at competitive prices, an open tender system is followed and purchases are made only from manufacturers and not through agents or distributors
Need Assessment	Without seeing changing disease profile, requirement is simply derived using a common formula for all health facilities	Three months actual requirement is pooled from every facility and then it is converted into annual requirement
Supply	Irrespective of need	Demand driven
Placing Order	By indent system	By passbook system
Local Purchase	It is performed from facilities when there is shortage of stock	Local purchase is an exceptional event
List of Essential Drugs	List of 1800 medicines	List of essential 246 + 200 speciality medicines
Transparency	No transparency. Recently taken a step forward by announcing e-tendering process	The tender processing details are published on official web site.

Points	Maharashtra	Tamil Nadu Model
Monitoring Mechanisms	There is no monitoring mechanism	Due to computerised linkage among warehouses and between warehouses and TNMSC head office, stock monitoring can be done.
Procurement Manual	Other than RC book published by DMER, there is no manual explaining standard operating procedures of procurement.	There are manuals defining standardised operating procedures for procurement.
Legal Constitution	There is no legal framework towards procurement of medicines.	Procurement act is in place since 1998.
Warehouse	Warehouses have limited role of storing medicines.	Each district has a drug warehouse as a point of distribution. Along with receipt, storage and issue of medicines, activities such as quality assurance, MIS updation are done in the warehouse.
Quality Check	Except submission of quality assurance certificate from FDA during the tendering process, there is no provision of pre or post dispatch quality check.	Samples of stock in each batch are chosen at the point of supply or distribution/storage for testing. If the sample is collected for testing at the time of supply of stock to the warehouse, stock of medicines cannot be distributed to the health facilities until report of testing is available.
Payment	There are multiple levels or sources for making payment to the manufacturer.	Payment is made through TNMSC only. Payments are released only on receiving report of quality testing.
Feedback from Users	There is no such concept in the system yet.	Feedback forms are being filled by users (MOs of health facilities) and by warehouse staff.

- **Quality Control-** For quality management all batches of drugs supplied undergo a quality check. Two samples are sent to two different laboratories confidentially. Laboratories are chosen by all India tendering-with pre-finalization inspection of labs. Payment is made only if quality checks are passed. If quality checks fail, the batch has to be replaced. If they fail thrice, the firm is black listed. Proper process of black-listing and de-listing is also in place. Manufacturing units are also visited before the quality check.

- **Computerized linkage-** One of the outstanding features of TNMSC is the total computerization. Each district warehouse has a computer linked to the Head Office via the Internet. Other activities such as accounting, quality control, warehouse monitoring and administration are also conducted through computers for total error free strong logistical management (National Institute of Pharmaceutical Education & Research 2006).

As described above, there are several advantageous systemic attributes in the TamilNadu model. It has proven to be cost effective. After the TNMSC was set up, there was cost saving of up to 36 percent on drugs. Although, the corporation has been permitted by the Government to spend 5 percent of the annual turnover on its overheads, it is only around 1.5 percent at present, with a better inventory management, MIS and improved access to medicines (National Institute of Pharmaceutical Education & Research 2006). As per National Sample Survey Organization's survey in 2004, (NSSO 2004) in rural Maharashtra, for admitted patient in a Public Health Facility, out of pocket expenditure was Rs. 2243 while it was only Rs. 667 in Tamil Nadu. It should be noted that more than 50 percent of these out of pocket expenses are on medicines. NSSO 2004 shows that the proportion of patients not receiving medicines from public health facilities is 12 times (12.2 percent) in Maharashtra compared to Tamil Nadu (1 percent). The annual per capita Government expenditure on medicines in Maharashtra and Tamil Nadu is almost same, i.e. about Rs. 28 (The Indian Express August 7 2011). Within the same budget, Tamil Nadu provides all medicines free to outdoor patients in Government health facilities

**Table 3.4 - Comparison of prices
before and after implementation of TNMSC (in Rs.)**

Year \ Drug	Ciprofloxacin tab 10*10	Pyrazinamide tab 10*10	Cloxacillin capsule 10*10	Norfloxacin tab 14*10	Atenolol tab 14*10
1992-94 (Pre TNMSC)	525	135	158.25	290	117.2
2003-04 (Post TNMSC)	88	62.8	72.6	51.3	14.68
Difference in pre and post TNMSC prices	437	72.2	85.65	238.7	102.52
<i>Source: www.tnmisc.org</i>					

and hence now 40 percent of patients seek care in these centres. This is possible mainly because of the effective model.

When procurement prices of medicines in Maharashtra and TN for the most commonly used 10 essential medicines were compared (Chokshi.,2008), which account for about 75% of the procurement of Essential Medicines in TN's govt. health facilities, it was found that for 2008-09, Maharashtra's Rate Contract prices were 29% to 57% higher.

**Table 3.5 - Comparison between procurement prices in Maharashtra (Rate Contract) and
Tamil Nadu for highest expenditure (75% of the expenditure) items**

Medicine	TNMSC rate, per 100 tablets (Rs.)	Maharashtra RC rate, per 100 tablets (Rs.)	Maharashtra RC prices higher by (percent)
Aluminium Hydroxide	5.85	13.4	128
Amoxicillin	93.96	123.5	31
Amylodipine	5.1	13.5	165
Atenolol	10.72	13.2	23
Calcium Lactate	6.3	11.5	83
Chlorpheniramine	2.6	3.1	18
Diclofenac	7.6	8	5
Enalapril	6.15	12	95
Ferrous sulphate with Folic Acid	8.73	9	3
Glybenclamide	3.9	8	105
Metformin	12.16	18	48
Metronidazole	14.72	19	29
Paracetamol	12.69	12.8	1
Ranitidine	18.19	30	65
Salbutamol	4.45	7	57
Average (percent)			

Note: TNMSC and Maharashtra Rate Contract prices are for year 2007-08 and for year 2007-09 respectively.

Chapter 4

➤ Budgetary Allocations for Essential Medicines

Introduction

Medicine purchase represents one of the largest components of health expenditure. The value of the global pharmaceutical market is increasing at a faster rate than the total health expenditure and even more than the growth of the GDP worldwide. In 2009, the total value of the pharmaceutical market was estimated at US\$837 billion (Baghdadi-Sabeti, Serhan.,2010).

Indian pharmaceutical scenario

In 1947, at the time of independence, India was producing drugs worth Rs. 100 million only. By 2009, Indian pharmaceutical market has grown to reach US \$10.75 billion. 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 large and small pharmaceutical manufacturing units, , located across the country. The health expenditure is about 4.5 per cent of the GDP out of which 0.84 percent is public expenditure, 3.32 percent is private and the remaining are from other sources including external flow. According to the National Health Profile 2006, Government of India, the per capita health expenditure was Rs. 1201 in 2005. The total health expenditure measured by central and state Governments was Rs. 2,84, 540 million out of which was the share of the states 73.53 percent. As a share of total state expenditure, public expenditure varied within a range of 3- 4 percent for all major states except Maharashtra where it was 2.88 percent. In terms of spending, 67.12 percent was for medical public health and 14.38 percent for family welfare purposes (Veena, R. et al.,2010).

In the present study, the budgetary allocations for medicines at PHC level as well as district and the state level were studied.

Budgetary allocations towards health

Public health budgets reflect the priority of the Government in terms of financial allocation towards health sector. In India, the public health expenditure accounts for less than 2 percent (the public health expenditure as percent of GDP in India was reported at 1.37 percent in 2009) of the Gross Domestic Product and it accounts for less than 20 percent of the total health spending. In Maharashtra, though there is a consistent demand for increase in budgets for health, a decline has been observed in health budgets from year to year. Health expenditure as a percentage of NSDP (Net State Domestic Product) at current prices has declined from 1.0 percent in the 80s to 0.7 percent in 2001-2002, and as a proportion to total Government spending from over 6 percent in the 80s to 4.6 percent in 2001-2002 (Duggal, Dilip and Raymus.,2005)

It can be seen in the table 4.1 that, in 20 states of India, per capita health expenditure is less than National Average of per capita health expenditure. It also shows that many other small and underdeveloped states have per capita health expenditure (Mizoram, Sikkim, Nagaland has per capita health expenditure Rs. 1611, Rs. 1446 and Rs. 794 respectively) more than Maharashtra.

Table 4.1 - Statewise per capita health expenditure for the Year 2008-09

No	States / UTs	Per capita health expenditure	Number of Government hospital beds available per 100,000 Population	Reference Period*
		2008-09 (Rs.)		
1	Mizoram	1611	128	1/1/2008
2	Sikkim	1446	173	1/1/2009
3	Andaman & Nicobar (UT)	1347	233	1/1/2009
4	Pondicherry (UT)	1333	284	1/1/2009
5	Lakshadweep(UT)	1315	274	1/1/2008
6	Goa	1149	178	1/1/2009
7	Himachal	884	123	1/1/2009
8	Jammu & Kashmir	845	36	1/1/2008
9	Delhi (UT)	840	141	1/1/2009
10	Chandigarh (UT)	798	225	1/1/2008
11	Nagaland	794	85	1/1/2009
12	Arunachal Pradesh	771	188	1/1/2008
13	Tripura	740	66	1/1/2008
14	Manipur	695	94	1/1/2008
15	Meghalaya	690	106	1/1/2007
16	Uttarakhand	630	84	1/1/2009
States which are below National average of per capita Health Exp. 2008-09				
17	Assam	471	11	1/1/2004
18	Kerala	454	82	1/1/2008
19	Dadra & Nagar Haveli (UT)	430	87	1/1/2009
20	Karnataka	419	86	1/1/2009
21	Andhra Pradesh	410	43	1/1/2007
22	Tamil Nadu	410	72	1/1/2008
23	Daman & Diu(UT)	405	105	1/1/2004
24	Chhattisgarh	378	41	1/1/2008
25	Punjab	360	40	1/1/2008
26	Jharkhand	328	18	1/1/2008
27	Uttar Pradesh	293	18	1/1/2007
28	Rajasthan	287	51	1/1/2008
29	Haryana	280	32	1/1/2009
30	Maharashtra	278	28	1/1/2009
31	Gujarat	270	53	1/1/2009
32	Orissa	263	37	1/1/2009
33	West Bengal	262	58	1/1/2008
34	Madhya Pradesh	235	29	1/1/2008
35	Bihar	173	24	1/1/2008
36	All India	503**	43	

* Calculations are based on the Health Expenditure by Central & State Governments in 2008-09 published in National Health Accounts India-2004-05 (with provisional estimates from 2005-06 to 2008-09) and Population figures published in Census of India 2001-Population Projections for India and States 2001-2026 (Report of the Technical Group on Population Projections-May 2006).

State Domestic Product (SDP)

Following table reveals the declining trend of public health investments and expenditure (Table 4.2). In 1986, Maharashtra was spending 1 percent of its SDP on public healthcare and two decades later in 2006, it was less than half of that. Even in the state budget, the proportion allocated to the health department declined from six percent to four percent during the same period.

Table 4.2 - Expenditure on healthcare in Maharashtra Ministry of Health and Family welfare (Amounts in Rs. Million)

Year	1985-86	1990-91	1995-96	1998-99	1999-00	2000-01	2001-02	2003-04*	2006-07*
Total Health Expenditure (Rs. In Millions)	2767	4976	9061	11855	13432	15816	17755	17679	23381
Per capita (in Rs)	63.73	63.04	105.95	131.07	142.33	163.89	183.51	178.58	228.10
Per cent to revenue expenditure	5.97	5.68	5.18	4.51	4.54	4.22	4.63	4.14	3.97
Per cent of SDP	1.0	0.8	0.7	0.6	0.6	0.74	0.73	0.54	0.49

Source: Mishra, S., Duggal, R., Lingam, L., Pitre, A. (2008). *A report on health inequities in Maharashtra*, CEHAT, Mumbai., p:43

*Only revenue expenditure for these years

In Maharashtra, 18.7 percent of the total health expenditure was for medicines, while in Tamil Nadu and Kerala, percentage of total health expenditure towards drugs was 65 percent and 72.3 percent respectively (Table 4.3).

Table 4.3 - State wise Government drug expenditure in India (2001-2002)

State	Drug Expenditure as percent of health expenditure
Andhra Pradesh	9.67
Assam	4.68
Bihar	3.09
Chattisgarh	11.08
Gujarat	3.77
Haryana	9.84
Karnataka	7.89
Kerala	17.03
Maharashtra	11.38
Madhya Pradesh	11.88
Orissa	5.06
Punjab	1.48
Rajasthan	9.29
Tamil nadu	15.28
Uttar Pradesh	5.24
West Bengal	4.39
Central Govt.	12.15
All India	9.63

Source: Ministry of health and family welfare, India. (2005). *Report of National commission on macroeconomics and health*. Government of India.

As per National Sample Survey Organization's survey in 2004, (NSSO 2004) in rural Maharashtra, for admitted patient in a Public Health Facility, out of pocket expenditure was Rs. 2243 while it was Rs. 667 in Tamil Nadu. The data reveals that almost half of this expenditure was on medicines.

As mentioned above, in the Maharashtra state health budget, budget for medicines is clubbed under the budget head of material and supplies, Hence, data regarding exact amount of expenditure on purchase of drugs was difficult to estimate.

In Maharashtra, average annual budget of a PHC is between Rs. 7, 00, 000 to Rs. 8, 00, 000. Out of which approximately Rs. 1,20,000 is spent on medicines, which means that per capita drug expenditure of a PHC is around Rs.4/- (Duggal,R.,1992).

For the year 2010-2011, Maharashtra has spent Rs. 300 crores towards purchase of medicines, which comes to Rs. 29 per capita drug expenditure for 11 crore population. As per **WHO recommendation, required per capita public expenditure on drugs is approximately Rs. 50/ (NHSRC 2009).**

NSSO 2004 reveals that in Tamil Nadu, per 1000 distribution of ailing persons medically treated but not receiving medicines from health facility was 10 while in Maharashtra it was 122. The proportion of patients not receiving medicines from public health facilities is 12 times higher in Maharashtra than in Tamil Nadu.

■ ■

➤ Recommendations

This study indicates that there are several lacunae in the existing procurement and distribution system in Maharashtra, which results in the inadequate medicine availability in the public health facilities. Some of the important problems plaguing the system are lack of transparency and monitoring of procurement, nonfunctional computerized linkage, poor MIS and improper need assessment.

To address these problems, there is an urgent need for complete overhaul of the system. Given the positive experience of TNMSC for efficient procurement and distribution of medicines, it would be worthwhile to adopt the key features of TNMSC system by Maharashtra Government.

To improve the availability of medicines, major reforms in the current procurement system are required. One of the major steps required urgently is setting up of an autonomous body for handling procurements. Autonomy, demand-sensitive supply system, monitoring mechanisms and transparency would be the core requirements of the effective and efficient procurement system.

Pending this overhaul of the Maharashtra's medicine procurement and distribution system, following measures are suggested towards forming a system which would ensure adequate supply of medicines to the patients in the Public Health System.

Key aspects of an effective medicine procurement policy are-

- | |
|---|
| <ul style="list-style-type: none">a) Effective and efficient agency to handle procurement, storage and distributionb) Adequate budgetary allocationc) Essential drug list and its periodic reviewd) Scientifically designed warehouses with facilities for proper storagee) Effective logistics and management information system (MIS)f) Efficient quality assurance set upg) Facilities for periodical training |
|---|

Suggestions for improvement in procurement system

- **List of Essential Drugs-** There is an urgent need to prepare essential drugs list for the state. This list could be a modified version of NLED-2004. Currently Rate Contract is done for around 1800 products when there are only 350 medicines in Ministry of Health's List of Essential Medicines. It is essential to follow Essential drug list as many of the drugs which are being procured at present are irrational. This would save time and money in medicine procurement.

- **Autonomous Agency-** It is needed that the agency doing procurements should be autonomous in nature. The basic advantage of forming an autonomous body would simplify the functioning of system, create accountability and reduce complications of the system.

- **Professional Cadre-** Need for trained staff (like professional managers) who can manage procurement and logistics and regular training to Pharmacists/Doctors

- **E-Tendering-** Need to set up e-tendering system for procurement of medicines and equipment. E-tendering may help in saving time in procurement process.

- **Disclosure of blacklisted vendors-** List of blacklisted vendors should be displayed on the website.
- **Evaluation report on website-** Tender evaluation report including the name of the medicine, its rate and name of selected manufacturer/supplier should be put up on the Health department's website, which will help in bringing transparency in the system.
- **Procurement Manual-** State should formulate its own customized procurement manual defining the process clearly.
- **State Monitoring Committee-** A State monitoring / review committee to oversee medicine procurement should be constituted. The committee should include **civil society representatives and public health experts** and should have the mandate to regularly monitor the system for procurement of drugs.
- **Legal Constitution-** There should be a formal legal framework for procurement processes.

Suggestions for improvement in the distribution system

- **Computerized linking of health facilities and the district headquarters-** The computerized system of drug management linking all the primary health centres in the district should be in place so that idle stock of medicines can be transferred to those PHCs/RHs where there is a shortage. Linkage should also be there between health facilities and the DHOs office and the state level department so that stock monitoring can be done effectively.
- **Information on website-** Information such as medicine stocks in PHCs as well as details of purchase orders including quantity and names of medicines ordered, quantity and name of medicines supplied and name of manufacturer/supplier should be available to public on the official website.
- **Demand driven supply-** Supply of drugs from ZP should be strictly based on actual requirement in the PHC. Hence medicine requirement from respective facility needs to be pooled properly. Stock positions in PHCs should be monitored at least on quarterly basis.
- **Essential medicines list in health facilities- a standard list of essential medicines that must be available at sub-centre, PHC, RH, District Hospital**
- **Monitoring on RKS fund and local purchase-** State should ensure some kind of monitoring system over local purchase of medicines and on RKS fund utilization.

Suggestions regarding increasing budgetary allocations

- **Increasing the budgetary allocations on medicines-** At present, budget towards drugs is only 11.0 percent of the total health budget. It should be doubled. (At present Rs. 27 per capita. (300 crores/11crores)
- **Timely payment-** Payments to the manufacturers/supplier should be made on time to help ensure timely and effective delivery of medicines by them.
- **Single budgetary source of medicine purchase-** All the different sources of budget for purchase of medicines should be clubbed and there should be a single source of medicine purchase.



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Annexures

Annexure -1

Category wise list of selected medicines used for monitoring medicine availability in the select PHCs

Category	Drug name
Analgesic	Tab. Aspirin, Tab. Diclofenac, Paracetamol (Tablet, Syrup)
Antacid	Cap. Omeprazole
Antiasthmatic	Inj. Aminophylline 10 ml, Tab. Deriphyllin (Deriphyllin), Tab. Salbutamol, Tab. Theophylline
Antibiotics	Cap. Amoxicillin, Syp. Amoxicillin, chloramphenicol aplicaps, Tab. Ciprofloxacin, Cap. Doxycycline, Inj. Gentamycin 2 ml, Tab. Metronidazole, Tab. Metronidazole, Tab. Norflox, Tab. Roxid, Tab. Septran D. S., Syp. Septran
Antidiarrhoeal	Furazolidine (Syp, Cap)
Antiemetics (against vomiting)	Tab. Domperidone
Laxative (relaxes constipation)	Tab. Dulcolax
Antifungal	Tab. Fluconazole, Miconazole Nitrate (Cream)
Antihistaminic	Tab. CPM
Deworming	Tab. Albendazole
For rehydration	ORS
I.V. fluids	Dextrose 25%, Dextrose 5%, DNS, Normal Saline, Inj. Ringer Lactate
Anti Allergic	Inj. Adrenaline
Anti snake vaccine	Inj. ASV
Mydriatics and cyclopegics	Inj. Atropine
Antispasmodic (steroid)	Inj. Dexamethasone 2ml.
Oxytocin (uterine stimulant)	Inj. Methargin
On muscle disease	Inj. Neostigmine
Induce or augment labour	Inj. Oxytocin
Pain mgmt	Inj. Pethidine / Pentazocin
Anti allergic/Antiemetics	Inj. Phenargan
Rabies vaccine	Inj. Rabipur
Antiacidic	Inj. Sodabcarb 10 ml
Antitetanus	Inj. Tetanus Toxoid 5 ml. dose 11
Injections	Water for Injection 5 ml. amp.
Anasthetic	Inj. Xylocaine 1 % 30 ml. Vial
Microbicidal cream	Oint. Gamma Benzene hexachloride 100 ml, Soframycin cream
Sedative	Diazepam (Inj and Tab.)
Steroids	Inj. Hydrocortisone, Tab. Prednisolon tab.
Surgical	Gloves, IV sets, Syringes
Vitamin Supplement	Tab. B complex, Tab. Cal-lactate, Cholecalciferol Sachets (Vit. A & B)
Anti malarial	Tab. Chloroquine, Tab. Primaquine, Syp. Chloroquine
AntiDOTS	Drug kit under RNTCP

List of select medicines with their required quantity for three months as per guidelines

No.	Name of medicine	Strength	Dosage form	Quantity for three months as per guidelines from DHS
1	Adrenaline		Injection	5
2	Albendazole		Tablet	1250
3	Aminophylline	10ml	Injection	2
4	Amoxicillin		Capsule	1250
5	Amoxicillin		Syrup	125
6	Aspirin		Tablet	2500
7	ASV		Injection	12
8	Atropine		Injection	75
9	B complex/Leoplus		Tablet	2500
10	Cal-lactate		Tablet	2500
11	Chloramphenicol aplicaps		Tablet	500
12	Cholecalciferol Sachets (Vit. A & B) /Micronutrients/ Multivitamin		Sachet	250
13	Ciprofloxacin	250 mg	Tablet	2500
14	Ciprofloxacin	500 mg	Tablet	2500
15	CPM		Tablet	2500
16	Deriphyllin	2ml	Injection	37
17	Dexamethasone	2ml amp/vial	Injection	75
18	Dextrose	25%	Fluid	25
19	Dextrose	5%	Fluid	50
20	Diazepam	2ml	Injection	12
21	Diazepam		Tablet	250
22	Diclofenac		Tablet	6250
23	DNS		Fluid	50
24	Domperitone		Tablet	1250
25	Doxycycline		Capsule	2500
26	Dulcolax		Tablet	500
27	Fluconazole		Tablet	50
28	Furazolidine		Syrup	125
29	Furazolidine		Tablet	7500
30	Gamma Benzene hexachloride	100 ml	Ointment	125
31	Gentamycin	2ml	Injection	375
32	Gloves		Surgical	
33	Hydrocortisone	100ml	Injection	6
34	IV sets		Surgical	
35	Methargin		Injection	75
36	Metronidazol /Tinidazole		Tablet	1250
37	Miconazole Nitrate Cream Local (Cotrimazole)		Ointment	125
38	Neostigmine		Injection	2
39	Norflo/Norflo Tinidazole		Tablet	1250
40	Normal Saline		Fluid	50

No.	Name of medicine	Strength	Dosage form	Quantity for three months as per guidelines from DHS
41	Omeprazole		Capsule	2500
42	ORS		Powder	1250
43	Oxytocin	2ml	Injection	12
44	Paracetamol	50ml	Syrup	250
45	Paracetamol		Tablet	12500
46	Pethidine / Pentazocin		Injection	75
47	Phenargan		Injection	75
48	Prednisolon		Tablet	250
49	Rabipur		Injection	50
50	Ringer Lactate		Fluid	500
51	Roxid tab.		Tablet	1250
52	Salbutamol /asthma fort		Tablet	500
53	Septran D. S.		Tablet	2500
54	Septran		Syrup	125
55	Sodabcarb	10ml	Injection	2.5
56	Soframycin cream		Ointment	125
57	Syringes	2 cc	Surgical	
58	Syringes	5cc	Surgical	
59	Syringes	10cc	Surgical	
60	Tetanus Toxoid		Injection	50
61	Theophylline		Tablet	250
62	Water for Injection	1% 30ml	Fluid	250
63	Xylocaine	1%30ml.Vial	Injection	37
64	Chloroquine	150mg	Tablet	
65	Primaquine	2.5mg	Tablet	
66	Chloroquine		Syrup	
67	Drugs under RNTCP		Kit	



Annexure - 3

Tool for monthly monitoring of medicine availability in select PHCs

Drug Name	Drug Strength	Dosage form	Required Quantity for three Months	Stock in register	Actual stock in storage	Date of stock last received	Quantity of opening stock	Quantity of received stock	Date of Drug expiry



Essential Medicines must for Primary Health Center

(List prepared by Directorate of Health Services, Mumbai)

No.	Group of Medicine	No	Medicines
1. Anaesthetics			
1.1	Oxygen	1	Oxygen for inhalation (Along with mask & binasal tube)
1.3	Pre operative medication & sedation for short term procedures	3	Inj. Atropine
		4	Inj. Pethidin
		5	Inj. Phenargan
		6	Inj. Diazepam
2. Analgesics, Anti Pyretics, Non Steroidal Anti Inflammatory Medicines			
2.1	Analgesic, anti pyretic & anti inflammatory	7	Tab. Paracetamol
		8	Syrup Paracetamol 50 ml.
		9	Tab. Ibuprofen
		10	Tab. Aspirin
		11	Inj. Diclofenac
2.2	Antispasmodic	12	Tab. Dicyclomine
		13	Inj. Dicyclomine 2 ml. Amp.
3. Anti Allergics & Medicines used in Anaphylaxis			
		14	Inj. Adrenaline
		15	Inj. Dexamethasone
		16	Inj. Hydrocortisone
		17	Inj. Chlorpheniramine Maleate
		18	Tab. CPM
		19	Syrup CPM
		20	Tab Cetrizine
		21	Tab Prednisolone
4. Antidotes & other Medicines used in Poisoning			
4.1	Antidotes	22	Inj. Atropine
		23	Inj. PAM
		24	Inj. Neostigmine
5. Anticonvulsants			
5.1	Anti Convulsant	25	Inj. Diazepam
		26	Tab Diazepam
		27	Inj. Eptoin
		28	Tab. Eptoin
		29	Inj. Phenobarbitone
		30	Inj. Magnesium Sulphate (For eclampsia)



No.	Group of Medicine	No	Medicines
6. Anti Infective Medicines			
6.1		31	Tab. Albendazole
		32	Syrup Albendazole
6.2	Anti Bacterials	33	Cap. Amoxycillin
		34	Tab. Ciprofloxacin
		35	Tab. Septran D. S.
		36	Tab. Septran S. S.
		37	Tab. Doxycycline
		38	Syrup Amoxycillin
		39	Syrup Septran
		40	Inj. Ampicillin
		41	Inj. Ciprofloxacin
		42	Inj. Benzathine Penicillin 12 Lakh
		43	Inj Crystalline penicillin
		44	Inj. Gentamycin 2 ml. Amp.
		45	Inj. Metronidazole
6.3	Anti Leprosy Medicines	46	Colour Coded MDT blister Packs containing standard 2 medicines for PB leprosy and 3 medicines for MD leprosy
6.4	Anti Tuberculosis Medicines	47	Category wise boxes of DOTs medicine used under RNTCP
6.5	Anti Fungal Medicine		Clotrimazole Vaginal Tablets 100 mg.
		49	Tab Fluconazole
6.6	Anti Amoebic	50	Tab. Metronidazole
6.7	Anti Malarial	51	Tab Chloroquine
		52	Syrup Chloroquine
		53	Tab Primaquine
7. Medicines Affecting Blood			
7.1	Anti Anaemia Medicines	54	Tab. Iron Folic Acid
		55	Inj B 12
		56	Tab B12
8. Cardiovascular Medicines			
8.1	Anti Anginal Medicines	57	Tab. Glycerine Trinitrate
8.2	Medicines used in Heart Failure	58	Inj. Frusemide
		59	Tab Aspirin
9. Dermatological Medicines			
9.1	Scabicides	60	Gama Benzene Hexachloride
10. Diuretics			
10.1		61	Inj. Frusemide
		62	Tab Frusemide

No.	Group of Medicine	No	Medicines
11. Gastrointestinal Medicines			
11.1	Antacids	63	Tab. Gellucil
		64	Syrup Gellucil
		65	Inj Rantac
		66	Tab. Ranitidine
11.2	Antiemetics	67	Tab Domperidone
		68	Tab Metchopramide
11.3	Laxative	69	Tab Dulcolax
12. Medicine Used In Diarrhoea / Dysentery			
12.1	Oral Rehydration Salt	70	ORS as per WHO Formula
12.2	Medicines for for Diarrhoea / Dysentery	71	Tab. Metronidazole
		72	Tab. Furazolidine
		73	Tab Norflox
		74	Syrup Metronidazole
		75	Syrup Furazolidine
13. Hormones & Other Contraceptives			
13.1	Oral Hormonal Contraceptives	76	Mala N
13.2	Intra Uterine Devices	77	Copper Containing Devices
13.3	Barrier Methods	78	Condoms
14. Vaccines			
14.1	EPI Vaccines	79	BCG
		80	OPV
		81	DPT
		82	Measles
		83	DT
		84	TT
14.2	Other Vaccines	85	ARV
		86	ASV
	Other	87	Anti scorpion venom (In problematic area)
15. Ophthalmological Preparations			
15.1	Anti infective agents	88	Ciprofloxacin Eye Drops
16. Oxytocics and Antioxytocics			
16.1	Oxytocics	89	Inj. Ergometrine
		90	Tab Methargin
		91	Inj. Oxytocin
		92	Inj Prostidine

No.	Group of Medicine	No	Medicines
17. Medicines acting on Respiratory tract			
17.1	Anti asthmatics	93	Tab. Salbutamol
		94	Tab. Theophylline
		95	Syrup Salbutamol
		96	Inj. Aminophylline 10 ml.
		97	Inj. Deriphyllin
		98	Nebulised Asthaline
18. Solutions correcting Water, Electrolite and Acid Base Disturbances			
18.1	Oral	99	ORS
18.2	Parenteral	100	Glucose with Sodium Chloride
		101	Sodium Chloride
		102	Sodium Lactate
		103	Dextrose 25%
18.3	Mislleneous	104	Inj. Soda bicarb
19. Vitamins and Minerals			
19.1		105	Cap./Syp. Vit. A
		106	Tab Iron Folic Acid
		107	Inj Thiamine
		108	Tab B 12
20. Disinfectants and Antiseptics			
20.1	Antiseptics	109	Ethanol
		110	Povidone Iodine
		112	Sodium Hypochlorite Solution
20.2	Disinfectant	113	Tab. Chlorine
20.3	OT Fumigation	114	Formalline
		115	Potassium Permanganate



Questionnaire for interviews with patients

Age-

Sex-

1. For what complaint did you visit the PHC?

2. Who prescribed you the medicines?
 - Doctor
 - Pharmacist

3. What was prescribed to you?
 - Tablets
 - Saline
 - Injections
 - Syrup
 - None of the above

4. Did you get all the prescribed medicines from the PHC?

5. Were you told to get medicines from outside? If yes, which medicines?

6. Did the pharmacist tell you about the dosage of medicines?

7. Were you asked for any money except for the case paper fees?

8. Are you satisfied with the treatment given from the PHC?

Date

Signature of the patient



Timelines for different steps in tender submission

No.	Name of item	Date of sale of tender document	Date of pre bid meet	Actual conduction of pre-bid	Time gap between date of sale and pre bid meeting	Date of sub-mission	Time gap between date of sale and date of tender sub-mission	Date of opening envelop ¹	Time gap between tender submission and opening of envelop ¹	Date of 1st extension	Date of 2nd extension
1.	Tab. Azithromycin 250mg	22/10/2010	29/10/10		5days	18/11/10	<1month	18/11/2010	same day		
2.	Tab Domperidone	22/10/2010	29/10/10		5days	18/11/10	<1month	18/11/2010	same day		
3.	Cap. Omeprazole 20mg	22/10/2010	29/10/10		5days	18/11/10	<1month	18/11/2010	same day		
4.	Small instruments	09/01/2009				11/02/09	1month	11/02/2009	same day		
5.	Medical abortion kit	03/12/2010	10/12/10		7days	24/12/10	21 days	24/12/2010	same day		
6.	Resperidon	10/04/2009				05/02/09	<1month	05/05/2009	same day		
7.	Medical instruments	03/12/2010	10/12/10		7days	24/12/10	21 days	24/12/2010	same day		
8.	Tab. Diazepam 5mg	13/01/2011	20/01/11	20/01/11	7days	03/02/11	20 days	03/02/2011	same day	21/2/11	10/3/11
9.	Tab. Donepezil 5mg	13/01/2011	20/01/11	20/01/11	7days	03/02/11	20 days	03/02/2011	same day	21/2/11	10/3/11
10.	Small surgicals - ear surgery	02/12/2010	09/12/10	14/12/10	18days	23/12/10	21 days	23/12/2010	same day	17/1/11	15/3/11
11.	Instrument - C arm machine	14/01/2011	24/01/11	24/01/11	18days	07/02/11	21 days	07/02/2011	same day		

Drugs under RCH for Primary Health Centre

(All the drugs available at the sub-centre level, should also be available at the PHC level, perhaps in greater quantities, if required)

No.	Product	Strength	Formulation Unit	Annual Quantity Per Centre
1.	Diazepam Inj. IP	5 mg per ml	Inj. 2 ml Ampoule	50 Ampoules
2.	Lignocaine Hydrochloride Inj. BP	2% per vial	Inj. 30 ml vial	10 vials
3.	Pethidine Hydrochloride Inj. IP	50 mg per ml	Inj. 1 ml Ampoule	10 Ampoules
4.	Pentazocine Lactate Inj. IP	30 mg per ml	Inj. 1 ml Ampoule	50 Ampoules
5.	Dexamethasone Sodium Phosphate Inj. IP	4 mg per ml	Inj. 2 ml Ampoule	50 Ampoules
6.	Promethazine Hydrochloride Inj. IP	25 mg per ml	Inj. 2 ml Ampoule	50 Ampoules
7.	Methyl Ergometrine Maleate Inj. IP	0.2 mg per ml	Inj. 1 ml Ampoule	150 Ampoules
8.	Ethophylline BP plus	169.4 mg per ml	Inj. 2 ml Ampoule	100 Ampoules
9.	Anhydrous Theophylline IP combination	50.6 mg per 2 ml	Inj. 1 ml Ampoule	150 Ampoules
10.	Aminophylline Inj. BP	25 mg per ml	Inj. 10 ml Ampoule	50 Ampoules
11.	Adrenaline Bitartrate Inj. IP	1 mg per ml (1:1000 dilution)	Inj. 1 ml Ampoule	50 Ampoules
12.	Compound Sodium Lactate Inj. IP		5000 ml plastic pouch	200 pl. pouches
13.	Methyl Ergometrine tap IP	0.125 mg per tablet	Tablet	500 tablets
14.	Diazepam tab. IP	5 mg per tablet	Tablet	250 tablets
15.	Paracetamol tap. IP	500 mg per tablet	Tablet	1000 tablets
16.	Cotrimoxazole combination of -Trimethoprim IP -Sulphamethoxazole IP	per tablet 80 mg 400 mg	Tablet	2000 tablets
17.	Amoxicillin Trihydrate IP	250 mg per capsule	Capsule	2500 tablets
18.	Doxycycline hydrochloride	1000 mg per capsule	Capsule	500 Capsules
19.	Tinidazole IP	500 mg per tablet	Tablet	1000 tablets
20.	Salbutamol tab. IP	2 mg per tablet	Tablet	1000 tablets
21.	Phenoxy Methyl Penicillin Potassium IP (Penicillin V)	125 mg per tablet	Tablet	2000 tablets
22.	Hemostatic capsule Branded item-Gyne CVP	As per Gyne-CVP	Capsule 1000 Capsules	
23.	Vit. K3 (Menadione Inj.) IP	Inj. 10 mg per ml	Inj. 1 ml ampoule	200 ampoules
24.	Atropine sulphate Inj. IP	Inj. 0.6 mg per ml	Inj. 1 ml ampoule	50 ampoules
25.	Nalidixic Acid tablet IP	500 mg per tablet	Tablet	1000 ampoules
26.	Oxytocin	5 I.U. per ml	Inj. 1 ml ampoule	100 ampoules
27.	Phenytoin	50 mg per ml	Inj. 2 ml ampoule	50 ampoules
28.	Chlorpromazine	25 mg per ml	Inj. 2 ml ampoule	50 ampoules
29.	Cephalexin Cap. IP	250 mg per Capsule	Capsule	1000 ampoules
30.	Ritridine HOI USP	10 mg per ml	Inj. 5 ml ampoule	50 ampoules
31.	Dextrose Inj. IP I.V. Solution	5%	Inj. 500 ml plastic pouch	50 plastic pouches
32.	Sodium Chloride Inj. IP I.V. Solution	0.9% w/v	Inj. 500 ml plastic pouch	100 plastic pouches

Medicine kit (Haffkin kits) sent to ZP by DHS

Box - A

Sr.No	Generic/Common name	Quantity with Pack Size
1.	Tablets Paracetamol	1000tab × 2
2.	Tablets Dicyclomine	1000tab × 1
3.	Tablets Cetrizine	10 *10 ×4
4.	Tablets Prednisolon	(10×100)× 1
5.	Tablets Albendazole	(10*410)× 1
6.	Tablets Cotrimaxazole DS	500tab × 3
7.	Tablets Tinidazole	500tab × 1
8.	Tablets Norfloxacin	100 tab × 4
9.	Clotrimazole vaginal tablets	10*10× 1
10.	Syrup Albendazole	10ml× 20
11.	Tablets Ranitidine	10 × (10*10)
12.	Antacid Syrup	210ml × 10
13.	Injection AS V S	10ml× 5
14.	Injection Diclofenac Sodium	1 ml × 30
15.	Injection Benzathine Penicillin	10 vials
16.	Syrup Paracetamol	60 ml × 80

Box - B

Sr.No	Generic/Common name	Quantity with Pack Size
1.	Tab C.P.M.	1000 tab × 2
2.	Tab Ciprofloxacin 500 mg	100 tab × 10
3.	Tab Ibuprofen 400 mg	1000 tab × 1
4.	Syp C.P.M.	30 Bottles
5.	Cap Amoxillin 250 mg	1000 tab × 1
6.	Tab T.M.P. Sulpha s.s	1000 tab × 1
7.	O.R.S (WHO) Formula	100 Pouch
8.	Inj Metronidazole 100 ml	100 ml × 20
9.	Tab Fluconazole 150 mg	1000 tab × 1
10.	Tab Furazolidine 100 mg	1000 tab × 1
11.	Inj Ciprofloxacin 2 mg	100 ml × 20

Box - C

Sr.No	Generic/Common name	Quantity with Pack Size
1.	Syrup Metronidazole	50 bottles
2.	Chlorhexidine - Cetrimide Sol	3 bottles
3.	Tab Antacid	1000 tab× 2
4.	Gama Benzene Hexachloride	10 bottles
5.	Inj. Gentamycin 40 mg/ml	30 ampoules
6.	Inj. Dicyclomine 2 ml Amp	10 amp
7.	Ointment Providone 15mg	10 tubes
8.	Tab Salbutamol	1×1000 Tab
9.	Tab Aspirin	1×1000 Tab
10.	Syrup Salbutamol	10 bottles
11.	Syrup Amoxillin	20 bottles

Box - D

Sr.No	Generic/Common name	Quantity with Pack Size
1.	Syrup Cotrimaxazole	2×50 bottles

Box - E

Sr.No	Generic/Common name Brand Name if any	Quantity with Pack Size
1.	Syrup Calcium	1×50 bottles

How Rate Contracting is done?

Mandatory steps to be followed in procurement as per standard procurement guidelines	Practices observed during the study
Following activities are performed at the state level	
1. Assessment of requirement	<ul style="list-style-type: none"> • Requirement of medicines is assessed prior to the procurement process. PHCs and sub-centres come under the jurisdiction of DHS hence annual requirement of medicines for both is pooled from respective DHO's office and provided to DHS. DHS then provides this requirement to DMER. • List of medicines to be procured is approved by medicine approval committee. Usually only generic medicines are purchased from the manufacturer.
2. Deciding procurement strategy and mode of procurement	<p>Depending on the nature of required goods, quantity & value involved and the period of supply, the appropriate mode of purchase is decided.</p> <p>Ministries/ Departments shall procure goods within their delegated powers by following a standard method of obtaining tenders as follows -</p> <ol style="list-style-type: none"> 1. Advertised tender- For procurement of goods of estimated value of Rs.25 Lacs (Rupees Twenty Five Lacs only) and above tenders should be invited by advertising . Advertisement (in the form of a Tender Notice) relating to ATI should be given on department's website, in the Indian Trade Journal (ITJ) published by the Director General of Intelligence and Statistics, Kolkata and at least in one national daily having wide circulation. 2. Limited tender- This method may be adopted when estimated value of the goods to be procured is up to Rs.25 lakhs. The number of supplier firms in LTI should be more than three. Website publicity should also be given for LTIs. 3. Single tender- This mode of purchase should be resorted in only unavoidable situations. <ol style="list-style-type: none"> i) It is in the knowledge of the user department that only a particular firm is the manufacturer of the required goods. ii) In case of emergency, the required goods are necessarily be purchased from a particular source subject. <p>Reason for such decisions is to be recorded and approval of competent authority should be obtained.</p> <ul style="list-style-type: none"> • In Maharashtra method of rate contracting is broadly adopted for procurement. • Rate Contracting is done by DMER (Directorate of medical education and research) While DHS procures medicines by employing open tendering method. • It should be noted that, only those medicines and supplies, which are not procured by any of above department, are procured by DHS.
3.Registration of suppliers	<ul style="list-style-type: none"> • Registration or empanelment of suppliers is done simultaneously along with the procurement process. Manufacturers are required to get registered as only registered companies can participate in the meeting of opening 2nd envelope of tender. The prospective suppliers have to satisfy several requirements and submit essential documents. • The firm whose previous 3 years financial audit reports are duly certified by CA and does not show 'Loss' in two consecutive years is only considered for registration. • Every registered supplier is liable to be removed from the list of approved suppliers if they fail to abide by the terms of registration.

Mandatory Steps to be followed in procurement as per standard procurement guidelines	Practices observed during the study
4. Preparation of tender document	<p>Generally following details are mentioned in the tender-</p> <ul style="list-style-type: none"> • Date of Sale, submission, pre-bid meeting and opening of technical bid (envelop no.1) • Technical specifications of the product, Special requirements of packing and marking, if any. • List of documents required to be enclosed in technical and commercial bid • Other terms and conditions concerning the tender. • Specifications about packaging of different forms of medicines
5. Advertisement of tender document	<ul style="list-style-type: none"> • Advertising is primarily done through all reputed newspapers and website.
6. Pre bid conference (If required)	<ul style="list-style-type: none"> • Primary objective of pre-bid conference is to clarify queries of tenderers. Normally it is conducted 20-30 days prior to the opening of a bid. Date of the pre bid conference is always mentioned in the advertised tender.
7. Receipt of tender	<ul style="list-style-type: none"> • Technical bid and financial bid are accepted in separate envelops.
8. Opening of tender	<ul style="list-style-type: none"> • Tenders are usually opened within two days from the deadline of submission of tender. The technical bids are opened first. Financial bids are opened only if the tender is technically acceptable. • At least two duly authorized officials of the purchase department jointly open the tenders. <p>(We are unable to note details of this process as we were not given permission to observe either opening or evaluation process of the tendering cycle)</p>
9. Evaluation of tender	<ul style="list-style-type: none"> • Tender evaluation is normally completed in four to five meetings. First technical bid is considered for evaluation. Financial bids are evaluated only if technical bid is appeared positive. • After required documents are checked, fulfilment of required qualification criteria is seen and then the tenderers are ranked as L1, L2, L3 and L4 i.e. four tenderers who have quoted lowest rates are selected for matching and negotiating rates. • A detailed evaluation report (in standardized format) is placed before the Tender Accepting Authority for taking final decision. • Market rates, rates from central government, BMC, ESIC are checked before the tender evaluation meeting. Once the rates are matched, contract is given to two to four tenderers. For example, 25 percent of the contract is given to each of the four manufacturers (L1 to L4) or 33.33 percent of the contract is given to three manufacturers. Such splitting of order is considered as advantageous and distinctive feature of the process. It ensures uninterrupted supply of drugs in case of irregular or delayed payment to the manufacturers.
10. Declaring award of contract	<ul style="list-style-type: none"> • Three committees namely, state level grievance committee, drug approval committee and tender approval committee are involved in entire process and finalization of rate contracting. • Final decision regarding award of contract is taken only by tender approval committee members. • Selected tenderers/ companies are notified in writing.

Mandatory Steps to be followed in procurement as per standard procurement guidelines	Practices observed during the study
<p>How medicines are procured at district level?</p> <p>Following activities are performed at the district level</p> <p>With regard to PHC and SC, ZP-DHO's office performs the task of purchase and distribution of medicines. While department of civil surgeon procures medicines for rural hospital. It is mandatory for both these departments to purchase medicines following the rate contract (rate and manufacturing company under rate contract) made at the state level. ZP-DHO's office has to follow RC made by DMER. However if particular medicine is not inclusive of RC of DMER then ZP can refer to RC made by ESIC or BMC or Local self govt. As in the state of Maharashtra, in addition to DMER, rate contracting is also performed by ESIC, BMC and Local self Government.</p>	
11. Issue of Purchase order	<ul style="list-style-type: none"> ● Purchase Order is a form that is forwarded to the vendor prior to the delivery of good. ● Whenever there is a demand of medicines, request is prepared by DHOs office seeing the availability of budget towards medicine purchase. sanction from different authorities is required to proceed the request. Authorities depend on the limit of purchase. <ul style="list-style-type: none"> sanctioning authorities for different limits of purchase are as follows, <ul style="list-style-type: none"> o Purchase up to 2 million(20 lacs) write in million - CEO o Purchase up to 2 to 3 million(20-30 lacs)- Health committee o Purchase up to 3 to 5 million (30-50 lac)Standing committee o Purchase above 5 million (50 lac) -ZP general body <p>Once sanctioned, purchase order (PO) is prepared and sent to manufacturers. It is prepared in accordance with the rate contract defined at state level. ZP has to give preference to the RC by made DMER.</p>
12. Pre-dispatch Inspection:	<ul style="list-style-type: none"> ● No pre dispatch inspection is conducted for quality assurance. QA is done by FDA only if there is a complaint launched by users. If FDA report gives unsatisfactory impression about quality, punitive actions such as black listing the supplier, canceling contract are taken. ● Sometimes random sampling is also done by FDA however as FDA is understaffed it is not feasible for them to perform quality checks for around 400 tenderers and 2500 medicines. <p>Apart from FDA's role in assuring quality, tenderers are asked to submit quality assurance certificate from FDA during the tendering process.</p>
13. Delivery of stock	<ul style="list-style-type: none"> ● Manufacturer delivers stock to the district warehouse. ● In order to avoid damage and theft it has been stipulated that all forms of medicines should carry logo of Government of Maharashtra and stamp of 'not for sale'.
14. Post dispatch inspection	<p>Post dispatch inspection is not conducted for quality assurance.</p> <p>Though at the time of stock delivery, manufacturers are asked for submitting batch wise test report.</p>

Mandatory Steps to be followed in procurement as per standard procurement guidelines	Practices observed during the study
15. Acceptance of stock	<p>At the time of delivery of supplies, store manager at ZP remains present in the warehouse.</p> <p>While accepting the stock, following things are checked</p> <ol style="list-style-type: none"> a) Batch wise test report of drug b) Correct quantity as mentioned in PO c) Delivery note. d) Correct supplier e) Proper labeling, f) Country name, g) Specification h) Correct manufacture as mentioned in RC, i) Every RC has manufacturing license number As per pharmacy act, this has to be mentioned on every strip/bottle/package of the medicine. This number is checked to ensure correct supply of the ordered stock <p>(Since last year, 4 regional committees are formed to check whether supply is provided as per RC or not. This is practiced for medical colleges (tertiary Health Care) only.</p>
16. Distribution of medicines to PHCs	<p>Once the stock is delivered to the district warehouse, ZP issues a circular informing PHC Medical Officer to collect the stock of medicines.</p>
17. Payment to supplier	<ul style="list-style-type: none"> • Original disbursement vouchers are submitted to ZP finance department after stock delivery • Payments are made by ZP finance department to the supplier against supplied stock.
18. Evaluation of suppliers	<p>Evaluation is not conducted for assessing manufacturer's performance. In case there is any complaint against manufacturers, appropriate actions are taken in due accordance.</p>



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