An Assessment on Availability of Essential Drugs in Health Facilities (HP and SHP) in Nepal

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Contents

Contents

Figures and Tables

Acknowledgements

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The Government of Nepal (GoN) introduced the policy of free health care services along with the provision of providing essential drugs (ED) to health facilities at free of cost. With this, Ministry of Health & Population (MoHP) has been struggling to provide sufficient quantity of ED to these health facilities. It has always been argued that governmental supplies of ED are not available sufficiently throughout the year, and most of the people who generally visited the sub-health posts (SHP) and health posts (SHP) may remain deprived from getting the full course of ED as and when necessary. Consequently, particularly poor and underprivileged people have not able to access and utilize the required amount of ED as anticipated. Although MoHP is in operation with frequent monitoring and supervision to the free health service sites, there is no concrete studies yet conducted that guide policy makers to identify the exact status of availability of ED in health facilities particularly HP and SHP in Nepal. In this context, the ED availability in HP and SHP has intensively been debated among policy makers including its quality. The MoHP wants to stimulate debate and dialogue on this topic.

The study by Mr. Pushkar Raj Silwal along with the backstopping team comprised of six people namely Mr. Parashu Ram Shrestha, Ms. Rita Joshi, Mr. Ghanshyam Pokherel, Mr. Satya Deo Prasad Yadav, Ms. Savitri Gurung and Dr. Rajendra Kumar BC has been conducted in order to assess availability of ED in health facilities (SHP and HP). It constitutes a timely and most valuable input into the ongoing discussion and ensures the availability of ED in these health facilities. So, the MoHP would like to thank the study team.

The MoHP would like to appreciate the technical and financial support provided by GTZ/GFA Consulting Group GmbH, and acknowledges the inputs of the Thematic Task Team members (Dr. Baburam Marasini, Mr. Yogendra Gauchan, Mr. Giri Raj Subedi, Mr. Parashu Ram Shrestha, and Dr. Rajendra Kumar BC) to steer the whole process. Suggestions and cooperation from Dr. Friedeger Stierle, Dr. Susanne Grimm, Professor Dr. Konrad Obermann, and Mr. Christian Caspar have helped carrying out this study.

Finally, the MoHP would like to thank all those involved in the study.

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Acronyms

ASL	Authorized Stock Level
CDP	Community Drug Programme
DHO	District Health Office
DoHS	Department of Health Services
DPHO	District Public Health Office
ED	Essential Drugs
EHCS	Essential Health Care Services
EOP	Emergency Order Point
FCHV	Female Community Health Volunteers
FEFO	First Expiry First Out
FHCP	Free Health Care Policy
FHCS	Free Health Care Service
GoN	Government of Nepal
HF	Health Facilities
HFMOC	Health Facility Management and Operation Committee
HP	Health Posts
LMD	Logistics Management Division
MD	Management Division
MoHP	Ministry of Health and Population
ORS	Oral Rehydration Solution
PHCC	Primary Health Care Center
RMS	Regional Medical Center
SHP	Sub Health Posts
TTT	Thematic Task Team
VDC	Village Development Committee
WHO-GMP	World Health Organization-Good Manufacturing Practice

Executive Summary

Introduction

The universal program of free health care services commenced in January 2008 and provides essential health care services free of charge to all citizens at Health Posts (HP), Sub-Health Posts (SHP) and Primary Health Care Centers (PHCC) nationwide. However, it is being argued that essential drugs (ED) allocated for the health facilities are not regularly available in most of the health facilities. Although the Ministry of Health & Population (MoHP) is monitoring and supervising the implementation of the free health service program, no specific study has so far been undertaken that reveals the exact availability status of ED in health facilities. In this context, this study assesses the status of availability of ED in selected health facilities of Nepal.

Methodology

A longitudinal study was conducted and primary data in relation to drug availability were collected from 14 health facilities (7 HP and 7 SHP) of seven districts (Baitadi, Dailekh, Surkhet, Kapilvastu, Rasuwa, Lalitpur and Sunsari). During the field study, logbooks were reviewed and availability including quality & storage situation of ED in store and dispensary was observed and recorded. In each of the districts, one HP and one SHP were selected that represent either the highest or the lowest population catchment in the corresponding district.

Three consecutive visits to each of the sampled health facilities (HF) were carried out to collect data. The time interval between first two visits was one month while the interval was two months between the last two visits. Health facility in-charges were not informed about the longitudinal nature of the study in order to minimize possible Hawthorne effect[1].

Findings

Stock-in of the Essential Drugs

All of the HF surveyed had stocked-in majority (average of 94%) of the ED during the last two years. However, out of 22+3 and 32+3 ED provided for SHP and HP respectively, 2 ED (Atenolol 50 mg, and Ciprofloxacin eye ointment, 0.3% w/w) were not stocked-in in

1 Improved results are often achieved simply from the knowledge on the part of the subjects of the study that they are receiving special attention

either of the health facilities over the last 2 years. The stock-in interval ranged from 1 week to almost 3 months with an average of 34 days. There was no major difference between the stock-in of ED by the types and location of health facilities.

Availability of Essential Drugs

On an average, 76 (range: 54 to 91) percent of the ED items were available in the health facilities. The availability was higher for SHP (79%: range - 70 to 91) compared to HP (72%: range - 54 to 81). While considering location, the ED availability among rural and urban health facilities were 73 (range: 52 to 81) percent and 80 (range: 71 to 91) percent respectively. The overall availability of ED was lower (72 versus 81%) in the health facilities that have the lowest catchment population compared to those belonging to highest.

Quality of Essential Drugs

Only 18 percent of the pharmaceutical companies (out of a total of 44) whose products were available in the health facilities at the time of study were WHO-GMP certified companies. Seventy-seven percent companies were non-GMP certified and rests were unidentified. Similarly, more than one-third of the ED (range: 33 to 41%) had some quantities of drugs with the expiry date of less than 6 months and for around one tenth (range: 9 to 16%) of the ED, some quantities were already expired.

Storage Situation of Essential Drugs

On an average, 98 percent of the ED were stored on a raised platform, 90 percent of the ED were arranged in order, and 86 percent of the ED were stored in cool and dry place. There are no significant differences in the storage of ED by the location and catchment population of the HF other than the arrangement condition.

Conclusion and Recommendations

The average stock-in gap in the health facilities is 34 days and there are no major differences in the stock-in frequency of ED in the health facilities by their type, and urban-rural variation. However, no stock-in record was found for two of the ED items namely; Ciprofloxacin eye ointnment and Atenolol tab. in the health facilities during the last two years. The underlying reason behind this fact could be explored to identify whether the problem is associated with supply and management of drugs or with the relevance of those items in the ED list.

There are large gaps in the stock-in frequency of health facilities located in the remote districts and particularly in the remote areas in comparison to those situated in the urban areas. It needs to be determined whether this gap is significant or not, and whether the gap variation is due to the consumption pattern (patient flow) of the ED in the health facilities or if there is problem in supply of the ED.

Overall, there is still a large gap to meet the national target of 95 percent since only an average of 76 percent of the ED are available in the health facilities. Some of the items are virtually absent in the health facilities and percentage of ED availability varies considerably (range: 54 to 91) across the health facilities. Similarly, quality of the drugs in terms of GMP-certification is also found to be poor. Ensuring the quality of the ED appears to be another challenge for the government since about 10 percent of the drug categories available in HF at the time of study contained expired quantities as well, and 40 percent of ED categories contained the drugs with the expiry date of less than 6 months. Further, only 18 percent of the pharmaceutical companies whose products were available at the time of study were WHO-GMP certified.

Thus, it is recommended to strengthen the monitoring and supervision system of MoHP to trace out the health facilities where the ED availability is low and determine its underlying factors so that timely supply of the ED can be made. In addition, it is suggested that the monitoring mechanisms be strengthened to improve the drug quality in terms of drug manufacturing companies and expiry situation. Government may consider developing and distributing a clear guideline on the drug procurement systems focusing on the quality assurance to orient all the stakeholders involved in the procurement of ED. This study recommends exploration of whether the problem is associated with the system or the implementing agency. If the problem is within the implementing agencies, consideration can be given to re-training of the staffs responsible to procure, distribute and handle the drugs. In addition to this, rewards or incentives should be considered to encourage the health facilities to perform good year-round management of availability of quality ED. If the problem relates to the system, re-design of the drug procurement and supply management system should be considered.

Despite the above-mentioned pitfalls in availability of ED in the health facilities, the storage condition, drug placement and drug arrangement condition was found to be good. Although the flow of drugs can be expected to have increased along with the Free Health Care Policy, ED were stored on raised platforms, in a cool & dry place and arranged in proper order in the health facilities.

1. Introduction

The Government of Nepal (GoN) has been providing curative, preventive and promotive health care services from a total of 4,020 health institutions spread throughout the country[2]. Sub-Health Posts (SHP) and Health Posts (HP) are delivering health services at Village Development Committee (VDC) level. Primary Health Care Centers (PHCC) are provided with three-beds and established in each electoral constituency. Hospitals that have up to 25 beds provide outdoor, indoor, and emergency services and are the top level health facilities at the district level. Although the Government has been struggling to provide sufficient quantity of essential drugs (ED) to these health facilities, people still remain deprived from getting the full course of drugs as and when necessary. Consequently, particularly poor and underprivileged people have not been able to access and utilise the required amount of ED as anticipated[3].

The universal program of free health care services (FHCS), commenced in January 2008, provides essential health care services free of charge to all citizens at HP, SHP and PHCC nationwide. After implementation of FHCS in the districts, the role of Community Drug Programme (CDP), which was regarded as one of the best means to solve the problem of insufficiency of drugs in the health facilities, has been undermined. Therefore, ensuring the availability of ED in health facilities throughout the year remains within the purview of free health care policy (FHCP) as an implementation priority.

It is being argued that ED provided for the health facilities are not regularly available in most of the health facilities. Although the Ministry of Health and Population (MoHP) is monitoring and supervising the implementation of the free health services program, no specific study has so far been undertaken that reveals the exact availability status of ED in health facilities in Nepal.

Therefore, it was felt important to assess the severity of the problem with regard to the availability of ED in primary level health facilities so that appropriate policy implications may be determined and corrective action taken.

2 DoHS, Annual Report-2007/2008

3 MoHP. Procedural Guideline on Providing Essential Health Care Services free-of-cost to poor and underprivileged patients in District Hospitals and Primary Health Care Centers - 2063 (2007).

2. Objectives

The objective of the study was to assess the availability status of ED in selected health facilities with special emphasis on preparing a reference document for policy makers to judge whether the process of increasing the availability of ED is a priority direction or not.

3. Methodology

A longitudinal study was conducted and primary data related to ED availability were collected from the health facilities. During the field visits, logbooks were reviewed and availability of ED in both store and dispensary was counted. Key variables used for the assessment of ED were the date of stock-in, number of ED provided for the designated health facility, ED items available during spot observation, assessment of ED quality, expiry date, storage place (place of keeping the drug) and the GMP status of manufacturing companies.

3.1 Sampling

After discussion with MoHP officials, seven districts (Baitadi, Dailekh, Surkhet, Kapilvastu, Sunsari, Rasuwa and Lalitpur), representing different development and eco-development regions of the country, were selected. Those sample districts are shown in figure 1.

From each district, one HP and one SHP having either the highest or the lowest catchment population representing either rural or urban settings were selected. Altogether 14 health facilities (7 HP and 7 SHP) from seven districts were included in the study as shown in table 1.

In the case of Baitadi district, both the selected health facilities i.e. Hattiraj SHP and Shankarpur HP have the lowest catchment population in the district. Hattiraj SHP has the lowest population among the SHP while Shankarpur has the second lowest population among the HP. Although Rakam Karnali HP has the lowest population; it was excluded from the study because of the time constraints.

Figure 1. Districts Selected for the Study

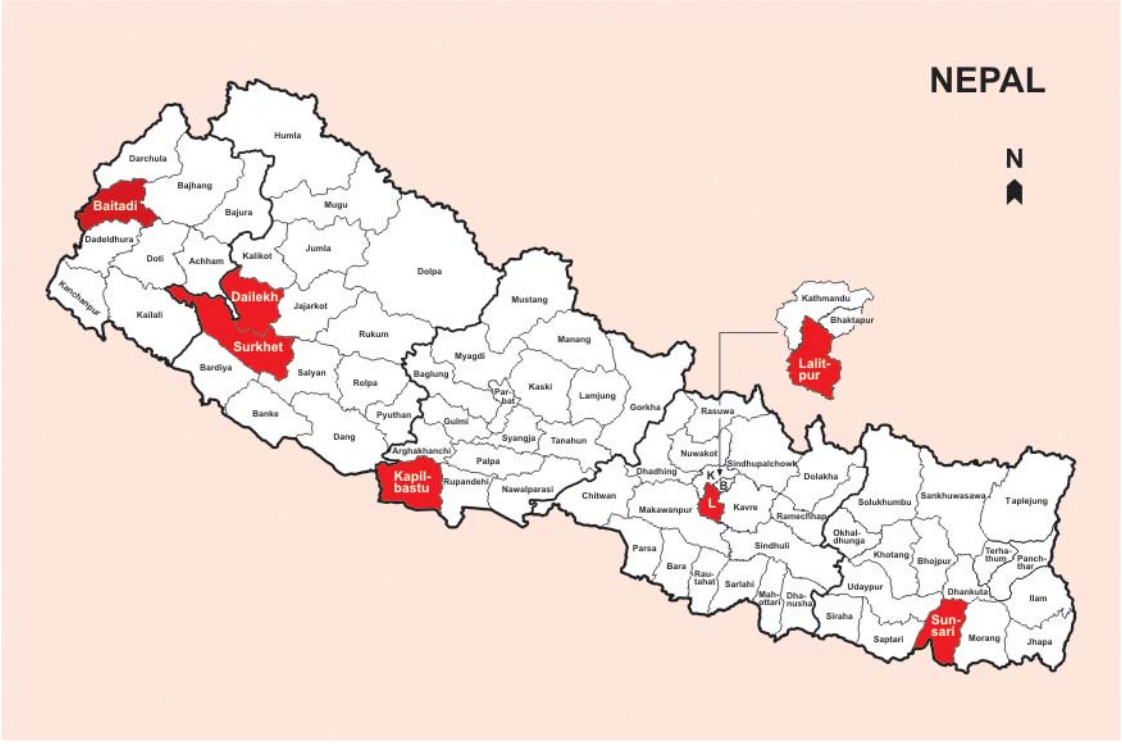


Table 1. HF Selected for the Study

S.N.	Districts	Health Facilities	Selection Criteria	
			Catchment Population	Location
1	Baitadi	Hattiraj SHP	Lowest	Rural
		Shankarpur HP	Lowest	Rural
2	Dailekh	Bhawani SHP	Lowest	Urban
		Triveni HP	Highest	Urban
3	Surkhet	Uttarganga SHP	Highest	Urban
		Kafalkot HP	Lowest	Rural
4	Kapilvastu	Jawabhari SHP	Lowest	Rural
		Krishna Nagar HP	Highest	Urban
5	Rasuwa	Bridim SHP	Lowest	Rural
		Laharepauwa HP	Highest	Rural
6	Lalitpur	Chapagaun SHP	Highest	Urban
		Asrang HP	Lowest	Rural
7	Sunsari	Dharan SHP	Highest	Urban
		Diwangunj HP	Lowest	Rural

HP: Health Post, SHP: Sub-Health Post

3.2 Data Collection

The study is based primarily on the quantitative information collected from both primary and secondary sources. Data collection consisted of (a) desk review of available policy and program documents on the FHCP in Nepal focusing on the provision of ED and review of the health facilities' ED log books, and (b) counting of drugs at store and dispensary.

Information was collected by carrying out three consecutive visits to health facilities during the study period. The first, second and third rounds of data collection were conducted between the period of 17th March to 6th April 2009, 19th April to 8th May 2009, and 19thJune to 10th July 2009 respectively. The second round of data collection was done with a gap of one month after the first visit and the third round of data collection was carried out two months after the second visit.

For collection of all types of information, the study team developed, the data collection tools (Appendix – A) in consultation with the Thematic Task Team (TTT) members. For data collection, six enumerators were selected who were public health / sociology graduates having sufficient knowledge about the ED and FHCP in Nepal. On 7th March 2009, they were oriented on the study design and data collection techniques / tools. On 8th March 2009, pre-testing of the tools was done in Dharmasthali HP and Jalapa SHP of Kathmandu district.

A letter was sent to the selected health facilities from the Management Division (MD), Department of Health Services (DoHS) before visiting for data collection. However, the actual purpose of the study and its longitudinal nature was not disclosed to them in order to minimise potential bias (Hawthorne effect). Neither data collector nor the person identified by District Health Office (DHO) told to HP/SHP Incharges about each round of data collection.

Once the draft report was prepared, a sharing meeting was organized with the key government officials working in the areas of FHCP. The participants of the meeting were from Planning, and Free Health Care and Social Security Unit of the MD, Logistics Management Division (LMD) and TTT. The report was finalized by addressing comments and incorporating feedbacks from the participants.

3.3 Policy Review

Constitutional Provision

The Interim Constitution of the GoN, 2063 (2007) has made a political commitment for improving the health of the people at the highest level by declaring "basic health as human right".

Policy Provision

In order to materialise the constitutional commitment, MoHP has initiated a policy of providing "Free Health Care Services" to the population in a phased manner. In January 2008, government made the FHCS available in all SHP and HP universally at free of charge. Under this program, health services along with the provision of ED (22 for SHP and 32 for HP given in Appendix – B) are provided freely round the year to all, irrespective of gender, caste, ethnicity and economic status.

This policy attempts to ensure the rights of citizens to health in accordance with the spirit of the Interim Constitution. The policy of free health care tries to enhance access to primary health care services for every citizen on an equal footing with special consideration for the safety net to poor, vulnerable and marginalised people. This policy development is guided by the commitment of the GoN towards social inclusion in the health sector and towards ensuring easy access to basic health services for all the people.

The objectives of the FHCP are: to secure the right of the citizens to health services; to increase access to health services especially for the poor, ultra-poor, destitute, disabled, senior citizens and Female Community Health Volunteers (FCHV); to reduce morbidity and mortality especially of poor, marginalised and vulnerable people; to secure the responsibility of the state for ensuring availability of health services; to provide quality essential health care services (EHCS) effectively; and to provide equity in health services.

Government Target

The three year interim plan 2008-2011 of the government has a target of ensuring 95 percent availability of ED in the health facilities.

Drug Procurement and Distribution System

At the central level, the LMD of DoHS procures drugs through a tender process. In total, 4020 peripheral health facilities including 3134 SHP, 676 HP and 210 PHCC are supplied with the assigned ED as per the government policy[4].

The LMD is the body under the DoHS that is responsible for overall management of drug procurement and distribution. The contractor delivers the items of drug and medical consumables to five regional stores (Biratnagar, Hetauda, Butwal, Nepalgunj and Dhangadi) as per the specifications specified in the tender documents. The amounts and forms of drugs, the quantity in a supply unit, the primary container for the items, the container for the supply unit and allocated number of supply units per facility type are all specified in the tender document. The regional medical stores are responsible for the supply of the drugs to the districts under their jurisdiction.

In addition to the drugs supplied by the Centre, the MoHP allows districts to procure drugs as per their needs by allocating budget from the centre. The DHO is the responsible agency at

4 Annual Report 2007/2008. Department of Health Services, Teku, Kathmandu.

the district level to procure the required drugs through a tender process. The DHO procures the drugs as per the general needs of the health facilities under its jurisdiction. In general, the centre/region supplies the drugs to the districts usually on a blanket approach without much consideration to the specific local requirement of drugs (volume and types). However, in the districts where pull system has been implemented, they demand logistics including drugs quarterly as per their need. Further, peripheral health facilities like SHP, HP and PHCC with pull system should maintain the Emergency Order Point (EOP) and Authorized Stock Level (ASL) of the drugs to ensure round the year availability of ED. For the each of SHP, HP and PHCC, the ASL and EOP periods are respectively four months and one month.

3.4 Limitations of the Study

- The assessment of ED availability is made based solely on the quantitative data collected from the health facilities and thus qualitative aspects of the issues are not covered in this study.
- Moreover, collection of data and analysis of ED availability have been done irrespective of the patient flow, prescription pattern and rationality in drug use.
- The study covers only 14 health facilities (HP and SHP) so the findings should be taken just as indicative of the national scenario.

3.5 Operational Definitions

ED Availability

The availability of an essential drug is defined as the availability of at least one form of that particular ED item in store and/or dispensary during at least one out of three field visits.

ED Expiry

Expiry months for an ED is defined as the difference between observation date and expiry date (nearest expiry date among the different strips/bottles of that particular ED) of that ED either in store or in dispensary.

4. Findings

4.1 Drug Stock-in Situation

All of the health facilities surveyed had stocked-in majority of the ED during last two years. However, the stock-in situation of ED varied by types of drugs in the health facilities.

Table 2 shows that on an average, two ED items were not stocked-in in either of the health facilities over the last two years. The worst situation was observed in two of the HF, namely Krishnanagar HP of Kapilvastu district and Kafalkot HP of Surkhet district where six out of 32 ED items (19%) were not stocked-in during the same period.

The list of the ED that was not stocked-in in the health facilities is given in table 2.

Figure 2 shows that Ciprofloxacin Eye Ointment (0.3% W/W) was not stocked-in in either of the health facilities (HP and SHP), while Atenolol (50 mg) was not stocked-in in all of the HP over the last two years.

Table 3 shows that all the health facilities surveyed had history of stock-in of at least some of the ED during the study period. In the first visit, the shortest interval of two latest stock-in of the drugs was reported in Laharepauwa HP of Rasuwa district (days gap: 12) followed by Bhawani SHP of Dailekh district (days gap: 10) and the longest interval of stock-in was reported in Hattiraj SHP of Baitadi district (days gap: 172), followed by Triveni HP of Dailekh district (days gap: 110).

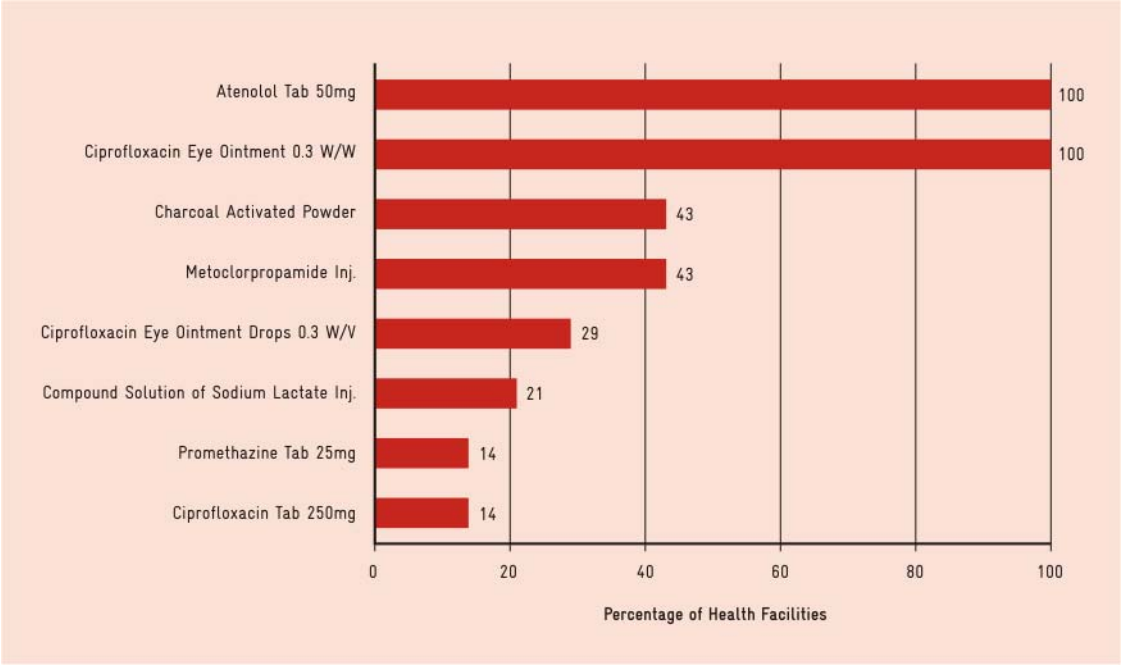
Table 2. ED not Stocked-in in the HF over the Last 2 Years

S.N.	Districts	Health Facilities	Items	Number	Percentage	N (ED Items)
1	Baitadi	Hattiraj SHP * ▼	17, 22	2	9	22
2	Baitadi	Shankarpur HP * ▼	17, 28	2	6	32
3	Dailekh	Bhawani SHP # ▼	16, 17, 21	3	14	22
4	Dailekh	Triveni HP # ▲	17, 21, 28, 31	4	11	35
5	Surkhet	Uttarganga SHP # ▲	17, 34	2	8	25
6	Surkhet	Kafalkot HP * ▼	16, 17, 21,24, 25, 28	6	19	32
7	Kapilvastu	Jawabhari SHP * ▼	16, 17, 21, 22	4	18	22
8	Kapilvastu	Krishnanagar HP # ▲	16, 17, 21, 24, 28, 30	6	19	32
9	Rasuwa	Bridim SHP * ▼	17, 21, 22	3	14	22
10	Rasuwa	Laharepauwa HP * ▲	17, 28, 34	3	9	35
11	Lalitpur	Chapagaun SHP # ▲	17, 21	2	9	22
12	Lalitpur	Ashrang HP * ▼	17, 26,28	3	9	32
13	Sunsari	Dharan SHP # ▲	17, 21, 22	3	14	22
14	Sunsari	Diwangunj HP * ▼	17, 24, 28, 34, 35	5	14	35
Total (14 HF) - Average			3 (ED items)			

Note: # Urban, * Rural, ▲ Highest Population Catchment, ▼ Lowest Population Catchment, HP: Health Post, SHP: Sub-Health Post, HF: Health Facilities

ED codes:
16 - Ciprofloxacin, Eye and Ear Drops 0.3% W/V
17 - Ciprofloxacin, Eye Ointment, 0.3% W/W
21 - Metoclorpropamide
22 - Compound Solution of Sodium Lactate
24 - Charcoal Activated
25 - Atropine
26 - Ciprofloxacin
28 - Atenolol
30 - Promethazine
34 - Magnesium Sulphate
35 - Gentamycin Inj

Figure 2. ED that were not Stocked-in in HF since Last 2 Years



Note: Atenolol was not originally in the ED list but included later when the list was revised.

During the period of first and second field visits, ED were not stocked-in in three of the HF namely: Dharan SHP of Sunsari district, Jawabhari SHP and Krishnanagar HP of Kapilvastu district. Among the HF where ED were stocked-in during this period, the stock-in interval was highest for Bridim SHP of Rasuwa district. For the rest of the HF, the gap has been narrowed down as compared to the first visit. In case of the third visit, the gap is below 10 days for 9 of the 14 HF and it was highest for Shankarpur HP (days gap: 52) of Baitadi district.

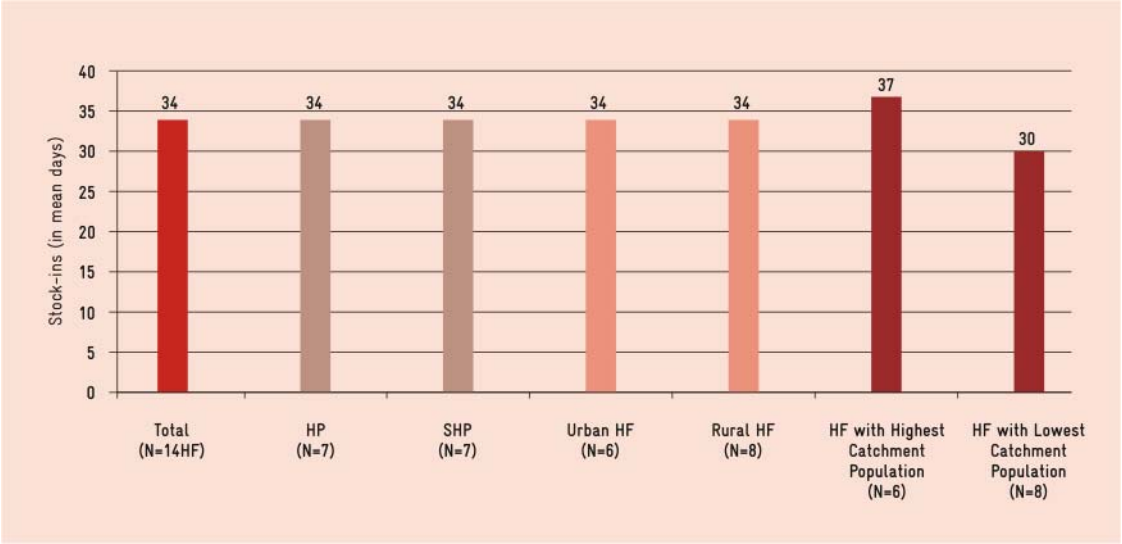
On an average, there was a stock-in gap of 34 days in the health facilities. There are no major differences in the stock-in intervals of ED in health facilities by their type except for the health facilities having the highest catchment population (Figure 3).

Table 3. Drug Stock-in Status of the HF by Stock-in Duration

S.N.	Districts	Names of the HF	Duration Between Two Stock-ins (Days)			
			1st Visit	2nd Visit	3rd Visit	Average
1	Baitadi	Hattiraj SHP	172	7	47	75
2		Shankarpur HP	88	32	52	57
3	Dailekh	Bhawani SHP	10	1	2	4
4		Triveni HP	110	5	3	39
5	Surkhet	Uttarganga SHP	18	2	1	7
6		Kafalkot HP	25	11	1	12
7	Kapilvastu	Jawabhari SHP	13	45	7	22
8		Krishnanagar HP	96	129	32	86
9	Rasuwa	Bridim SHP	103	36	48	62
10		Laharepauwa HP	12	5	45	21
11	Lalitpur	Chapagaun SHP	47	1	6	18
12		Ashrang HP	27	2	7	12
13	Sunsari	Dharan SHP	58	93	4	52
14		Diwangunj HP	27	7	2	12
HF Average (Total 14)			58	27	18	34
HP Average (Total 7)			55	27	20	34
SHP Average (Total 7)			60	26	16	34
Urban HF Average (Total 6)			57	39	8	34
Rural HF Average (Total 8)			58	18	26	34
Highest Catchment Population Average (Total 7)			57	39	15	37
Lowest Catchment Population Average (Total 7)			58	12	21	30

HP: Health Post, SHP: Sub-Health Post, HF: Health Facilities

Figure 3. Duration between Two Stock-ins of the ED (In Days)



HP: Health Post, SHP: Sub-Health Post, HF: Health Facilities

4.2 Drug Availability Situation

4.2.1 Overall ED Availability by HF

In addition to 22 and 32 ED provided for SHP and HP under the FHCP, three more ED items namely Oxytocin, Magnesium Sulfate and Gentamycin are allocated to the HF that have a birthing center. However, in this study, on an average, 76 percent of the ED items were available in the health facilities surveyed.

The lowest percentage of the EDs availability was reported in Kafalkot HP (54%) of Surkhet district followed by Hattiraj SHP (70%) of Baitadi district, while the highest ED availability was reported in Chapagaun SHP (91%) of Lalitpur district followed by Laharepauwa HP (81%) of Rasuwa district. It is important to note that Kafalkot HP of Surkhet district remained in the lowest position at all times although the overal ED availability (in %) in HF fluctuated over the study period (Table 4).

Table 4. Availability of ED by Facility in Different Field Visits

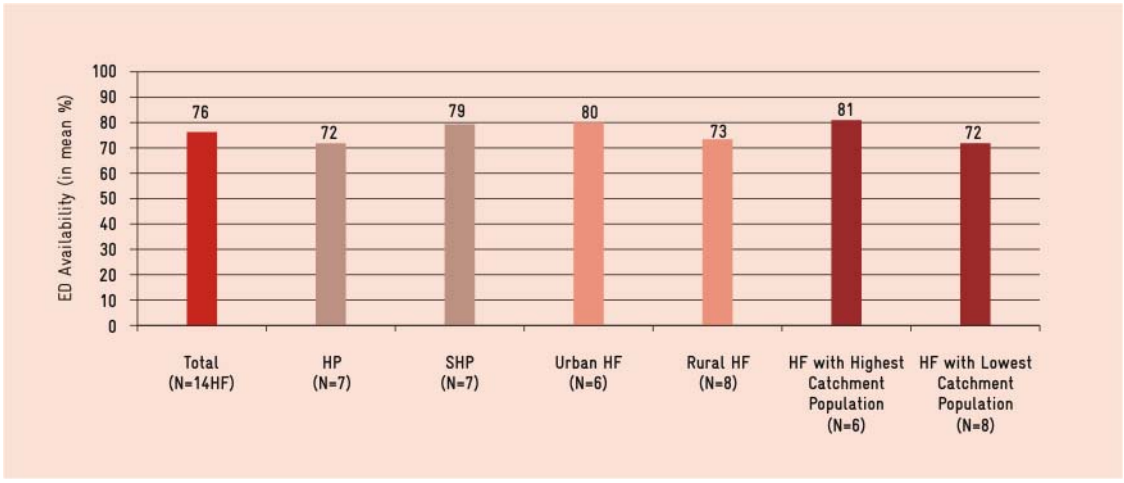
S.N.	Districts	Health Facilities	EDs availability status				N
			1st Visit	2nd Visit	3rd Visit	Average	(ED Items)
1	Baitadi	Hattiraj SHP	73	82	55	70	22
2		Shankarpur HP	88	78	66	77	32
3	Dailekh	Bhawani SHP	86	68	59	71	22
4		Triveni HP	74	63	77	71	35
5	Surkhet	Uttarganga SHP	84	80	76	80	25
6		Kafalkot HP	69	44	50	54	32

S.N.	Districts	Health Facilities	EDs availability status				N
			1st Visit	2nd Visit	3rd Visit	Average	(ED Items)
7	Kapilvastu	Jawabhari SHP	82	68	77	76	22
8		Krishnanagar HP	75	78	75	76	32
9	Rasuwa	Bridim SHP	68	82	86	79	22
10		Laharepauwa HP	83	83	77	81	35
11	Lalitpur	Chapagaun SHP	86	91	95	91	22
12		Ashrang HP	75	88	81	81	32
13	Sunsari	Dharan SHP	86	86	91	88	22
14		Diwangunj HP	71	66	54	64	35
HF Average (Total 14)			79	75	73	76	
HP Average (Total 7)			76	71	69	72	
SHP Average (Total 7)			81	80	77	79	
Urban HF Average (Total 6)			82	78	79	80	
Rural HF Average (Total 8)			76	74	68	73	
Highest Catchment Population Average (Total 7)			82	81	81	81	
Lowest Catchment Population Average (Total 7)			75	72	67	72	

Comparison of the ED availability by type of HF revealed that the overall ED availability in SHP was higher (79%) than that of the HP (72%) (Figure 4). The overall ED availability in consecutive field visits has shown decreasing trend in both HP and SHP (Table 4).

In the health facilities situated in urban areas, the average ED availability was 80 percent and it was 73 percent for those situated in rural areas. It was consistently low in the HF situated in rural areas over the three consecutive visits.

Figure 4. Availability of ED in HF



HP: Health Post, SHP: Sub-Health Post, HF: Health Facilities

Similarly, the overall availability of ED was higher (81%) in the HF that have the highest population catchment in comparison to that having the lowest population catchment (72%). This pattern was consistent in each of the three study visits.

4.2.2 Drug Availability by ED Items

A total of 11 ED including specific forms (Lignocaine Inj. 2% ml in vial, Paracetamol 500 mg, Pheniramine Inj. 22.75 mg (maleate)/ml, Metronidazole tab 200 mg, Amoxycillin cap 250 mg, Sulfamethoxazole + Trimethoprim tab 100 mg + 20 mg (p), Folic Acid + Elemental Iron Tab 0.4 mg + Tab 60 mg, Povidine Iodine, Oral Rehydration Solution (ORS), Frusemide tab 40 mg and Dexamethasone Inj. 4 mg/1 ml Ampoule) were available in at least one out of the three study visits in each of the health facilities surveyed. Similarly, out of the three ED provided for the birthing center, two items were available in each of the concerned health facilities (n=4) during the study period.

The following scatter diagram reveals that, out of the 52 categories (items including different forms) of ED, 13 categories were available in 100 percent of the health facilities surveyed and 17 additional categories of ED were available in above 80 percent of the HF (Figure 5). Detail of the ED availability by ED items is given in Annex – I.

4.3 Quality of Drugs

Drug qualities are assessed through three parameters namely: Good Manufacturing Practice (GMP) certification status of the manufacturing companies, drug expiry situation and drug storage situation.

4.3.1 ED by the Manufacturing Companies

The WHO-GMP companies referred here are the companies certified by WHO as Good Manufacturing Companies and their products are considered as quality drugs. Out of 44 pharmaceutical companies of which drugs were available in the health facilities, 77 percent were not GMP certified while only 18 percent were GMP certified and rest were unidentified (Figure 6).

Details of the manufacturing companies and their GMP status is given in Annex – II.

Figure 5. Availability of ED (52 Categories) in 14 HF

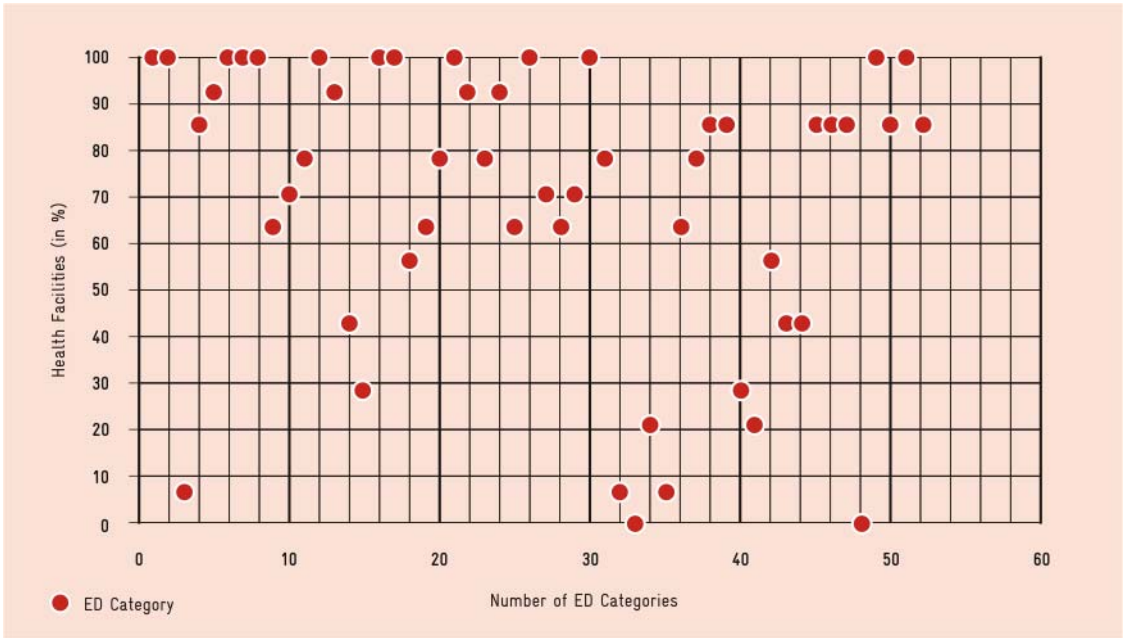
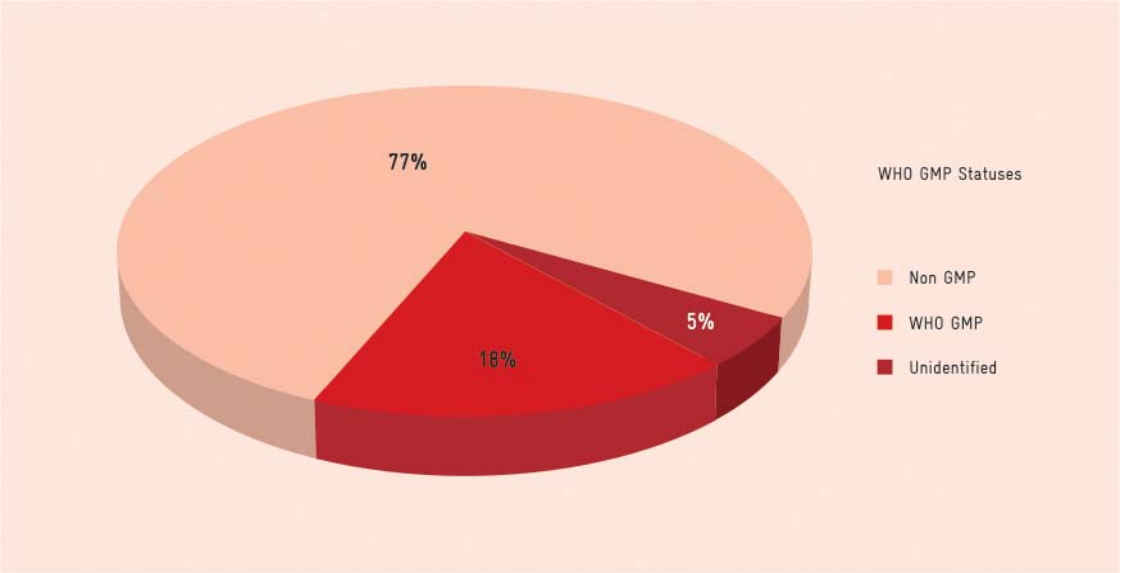


Figure 6. Quality of ED by GMP Status of the Pharmaceutical Companies



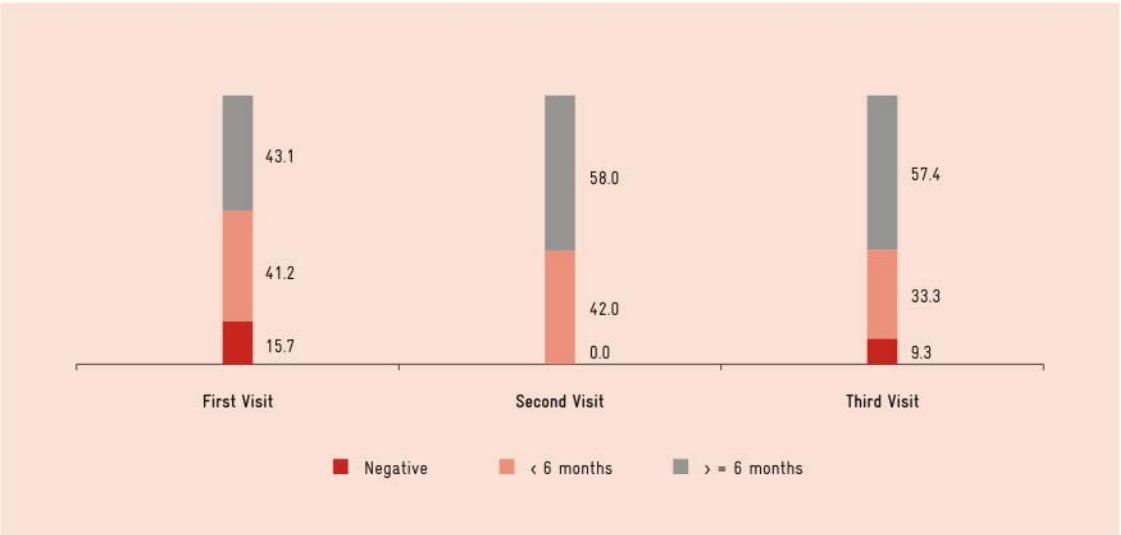
4.3.2 ED by Expiry Situation

Out of total 52 categories of ED, few (9 to 16 %) ED categories were expired, while more than one third (33 to 41 percent) of the ED categories had the nearest expiry date of less than 6 months (Figure 7). The ED items for which at least some quintiles were already expired, as observed during the visits were Chlorpheniramine Tab 4 mg (Maleate), Ferrous Salt + Folic Acid Tab 60 mg + 250 mg, Folic Acid + Elemental Iron Tab 0.4 mg + Tab 60 mg, Chloramphenicol Eye Applicaps, 1%, and Oxytocin Inj. 10 IU in 1 ml Ampoule. The details of expiry situation of the ED items is provided in Annex – III.

4.4 Drug Storage Situation

The average percentage of ED stored on the raised platform, arranged in order and stored in cool and dry place was respectively 98, 90 and 86 (Table 5).

Figure 7. Drug Expiry Situation (In %)



When it is disaggregated by the field visit events, it reveals that all ED were stored on the raised platform in most (>95%) of the HF except Krishnanagar HP (93% in the first and third visit) of Kapilvastu district, Shankarpur HP (48% in second visit) of Baitadi district, Laharepauwa HP (92% in the third visit) of Rasuwa district and Jawabhari SHP (90% in the third visit) of Kapilvastu district. Similarly, the number of health facilities where 100 percent of ED items were arranged in order in first, second and third visits were six, ten and eleven respectively. In all of the HF, cent percent of the ED items were stored in cool and dry place in the third visit which was seven in the second visit and thirteen in the first visit (Annex – IV).

The table 5 shows that the overall storage situation of the ED was better in SHP than HP. In SHP, 99 percent of the ED were stored on the raised platform, 92 percent were arranged in order and 90 percent were stored in cool and dry place, which were 96, 88 and 82 percent respectively for HP.

There are not many differences in the storage of ED by the locality of the HF except for the arrangement condition. Among the HF situated in the urban areas, 99 percent of the ED were stored on the raised platform, 98 percent were arranged in order and 87 percent were stored in cool and dry place, whereas these were 97, 83 and 85 percent respectively for the HF situated in the rural areas.

Table 5. Percentage of ED Items Stored in Appropriate Condition by HF

S.N.	District	Health Facility	EDs Storage Situation (in percent)		
			On raised platform	In order	Cool and dry place
1	Baitadi	Hattiraj SHP	100	87	100
2		Shankarpur HP	83	79	83
3	Dailekh	Bhawani SHP	100	100	100
4		Triveni HP	99	100	98
5	Surkhet	Uttarganga SHP	99	95	100
6		Kafalkot HP	100	100	100
7	Kapilvastu	Jawabhari SHP	97	66	100
8		Krishnanagar HP	96	95	94
9	Rasuwa	Bridim SHP	100	97	100
10		Laharepauwa HP	97	96	100
11	Lalitpur	Chapagaun SHP	100	99	67
12		Ashrang HP	100	48	67
13	Sunsari	Dharan SHP	100	100	67
14		Diwangunj HP	100	95	33
HF Average (Total 14)			98	90	86
HP Average (Total 7)			96	88	82
SHP Average (Total 7)			99	92	90
Urban HF Average (Total 6)			99	98	87
Rural HF Average (Total 8)			97	83	85
Highest catchment population (Total 7)			98	98	87
Lowest catchment population (Total 7)			97	84	85

A similar situation to the above was found regarding the storage of ED items in the health facilities with the highest and lowest catchment population. Ninety eight percent of the ED were stored on a raised platform, 98 percent were arranged in order, and 87 percent were stored in the cool and dry place in the HF with the highest catchment population, and 97, 84, and 85 percent respectively for the HF that have the lowest population catchment area.

5. Discussion

Over the study period of four months, at least some of the ED items have been reported to be stocked-in in each of the health facilities studied. Despite the provision of 22 and 32 ED items respectively for SHP and HP, two specific items in particular were not stocked-in in either of the health facilities studied over the last two years. The underlying cause behind this fact remains unexplored in this study but a separate investigation could be considered to identify whether the problem is associated with supply and management of drugs or with the relevance of those items in the ED list. Further action can be taken accordingly.

The average stock-in gap in the health facilities is 34 days. Although there are not any noteworthy differences in stock-in frequency of the ED on an average, there is considerable variation in the gaps across individual health facilities while comparing their absolute values. The gap was higher for the HF situated in relatively remote areas like Bridim SHP of Rasuwa district (days gap: 62) and Hattiraj SHP of Baitadi district (days gap: 75) in comparison to the HF situated in urban areas; Bhawani SHP of Dailekh district (days gap: 4) and Uttarganga SHP of Surkhet district (days gap: 7). Further, the stock-in interval has narrowed down significantly in most of the health facilities towards the end of the fiscal years i.e. in the second and third visits. Exceptionally, in the Krishnanagar HP of Kapilvastu district though situated in the urban area, the stock-in gap was relatively higher i.e. 86 days. Thus, it seems that there is problem in the management of drugs at the level of HF and district rather than in the whole system itself.

In overall, there is 76 percent availability of the ED in HF i.e. only 76 percent (range: 54 to 91%) of the ED that have been allocated by the FHCP are available in the peripheral health facilities (SHP/HP). None of the health facilities surveyed had history of 95 percent ED availability over the study period. Although, some of the commonly used ED items (13 out of 52) like Paracetamol, Metronidazole, ORS, Amoxycillin etc. were available in 100 percent of the HF, there are still many items for which consideration could be given in supply management so that they could be made universally available. This situation depicts that there is still a substantial gap to meet the national target of 95 percent of drug availability in health facilities as set by the government in the Three Year Interim Plan 2008-2011.

Further to the physical availability of ED in the health facilities, the issue of drug quality is another concern for the government. Only 18 percent of the pharmaceutical companies whose products were available in the HF at the time of the study were the WHO-GMP certified companies. It clearly reflects that more attention might be needed from the concerned agencies to enhance the quality of the ED supplied to the HF. Similarly, several of the ED items; more than one third, observed in the study period had an expiry date of less than 6 months. Nevertheless, the majority of the ED items were stored in cool and dry places and 11 out of 14 HF have arranged ED items in order. Some scope still remains to make the situation better.

6. Conclusion and Recommendation

In the context of the FHCS program, it can be expected that the supply of ED has been increased nationally. However, no stock-in record of two ED items namely; Ciprofloxacin eye ointnment and Atenolol tab. were traced in the HF over the last two years. Therefore, further exploration is needed to identify the underlying factor for not stocking-in those items and accordingly solve the problem. Consideration should also be given to reviewing the ED list as per the morbidity pattern and types of the drugs needed in the changing context.

The average stock-in gap in the health facilities is 34 days. On an average, there are no major differences in the stock-in frequency of ED in health facilities by their type and urban-rural variation. However, there is a large gap in the stock-in frequency of health facilities located in the remote districts and particularly in the remote areas in comparison to those situated in the urban areas. An issue for consideration is whether this gap is within an acceptable range, whether it is due to the nature of consumption pattern (patient flow) of the ED in the HF or it is a problem in supply management of the ED.

Regarding availability of ED in the HF, it is below 95 percent in the HF surveyed. There is still a large gap to meet the target of 95 percent since only an average of 76 percent (range: 54 to 91%) are available in the HF. Some of the items are virtually absent in all of the HF and the variation is also very high across the HF. Moreover, besides meeting the target of physical availability, ensuring the minimum quality of the ED appears to be yet another challenge for the MoHP. Indeed, about 10 percent of the ED items available in the store / dispensary room at the time of study were expired, and around 40 percent of them had an expiry date of less than 6 months.

Similarly, only 18 percent of the pharmaceutical companies whose products were available at the time of study were WHO-GMP certified. Thus, government could consider strengthening the monitoring and supervision system to determine those HF where the ED availability is low so that timely supply of the ED can be made. Similarly, monitoring mechanisms could also be strengthened to check the drug quality in terms of drug manufacturing companies, and the expiry situation. This study recommends an investigation of whether the problem is associated with the system or the implementing agency. Accordingly, government can develop and distribute a clear guideline on the drug procurement systems focusing on the quality assurance and orient all the stakeholders responsible to procure the ED. If the problem is associated with the implementing agency, reorientation training to the staffs responsible to procure, distribute and handle the drugs can be carried out. In addition, awarding provisions can be practiced to encourage HF managing round the year availability of quality drugs. In an alternative case, the drug procurement and supply management system can be revised.

Despite all the above-mentioned pitfalls in availability of ED in the HF, the storage condition, drug placement and drug arrangement condition is very gratifying. Although the increase in the supply of ED can be expected along with the implementation of FHCP, the drugs, in general, were stored on raised platforms, placed in a cool & dry place and arranged in proper order in the HF.

Annexes

Annex I

Details of ED Availability by ED Items Found in the 1st, 2nd and 3rd Visits

S.N.	Items	Unit	ED Availability (%)			N (HF)
			1st Visit	2nd Visit	3rd Visit	
1	Lignocaine	Inj 2% ml (HCl) in vial	100	100	100	14
		Inj 1% ml (HCl) in vial	7.1	7.1	7.1	14
2	Paracetamol	Tab 500mg	100	92.9	100	14
		Inj 150mg/ml	0	0	7.1	14
		Syrup 125mg/5ml	85.7	57.1	71.4	14
3	Chlorpheniramine	Tab 4mg (Maleate)	85.7	92.9	78.6	14
4	Pheniramine	Inj 22.75mg (Maleate)/ml	100	92.9	92.9	14
5	Albendazole	Chewable Tab 400mg	92.9	92.9	100	14
6	Metronidazole	Tab 200mg	100	100	85.7	14
		Tab 400mg	71.4	71.4	64.3	14
		Oral Suspension 100mg/5ml (as Benzoate)	64.3	71.4	64.3	14
		Oral Suspension 200mg/5ml (as Benzoate)	50	78.6	85.7	14
7	Amoxycillin	Cap 250mg	92.9	100	85.7	14
		Cap 500mg	50	42.9	92.9	14
		Dispersible Tab 125mg	28.6	42.9	42.9	14
		Dispersible Tab 250mg	7.1	28.6	14.3	14
8	Sulfamethoxazole + Trimethoprim (Cotrim)	Tab 100mg + 20mg (P)	92.9	100	100	14
		Tab 400mg + 80mg (S.S.)	92.9	100	85.7	14
		Tab 800mg + 160mg (D.S.)	42.9	57.1	57.1	14
		Oral Suspension 200mg + 40mg/5ml	64.3	57.1	57.1	14
9.1	Ferrous Salt + Folic Acid	Tab 60mg + 250mg	42.9	71.4	78.6	14
9.2	Folic Acid + Elemental Iron	Tab 0.4mg + 60mg	50	57.1	100	14
10.1	Calamine Lotion	Lotion 1% (30ml Bottle)	78.6	92.9	92.9	14
		Lotion 1% (540ml Bottle)	28.6	78.6	35.7	14
11	Gamma Benzene Hexachloride	Cream or Lotion, 1%	71.4	64.3	92.9	14
	Benzyal Benzoate	Cream or Lotion 1%	42.9	64.3	50	14
12	Povidine Iodine (Betadine)	Solution 5% 450ml	86	100	92.9	14

S.N.	Items	Unit	ED Availability (%)			N (HF)
			1st Visit	2nd Visit	3rd Visit	
13.1	Aluminum Hydroxide + Magnesium Hydroxide	Tab 250mg + 250mg	14	71.4	21.4	14
13.2	Aluminum Hydroxide + Magnesium Trisilicate	Tab 250mg + 250mg	64	57.1	50	14
14	Hyoscine Butylbromide (Buscopan)	Tab 10mg	57	50	71.4	14
		Tab 20mg	0	0	7.1	14
15	Oral Rehydration Solution (ORS)	Powder 27.5gm/liter	93	85.7	100	14
16.1	Ciprofloxacin	Eye & Ear Drops 0.3% W/V	29	78.6	14.3	14
		Eye & Ear Drops 10% W/V	0	0	7.1	14
16.2	Sulfacetamide	Eye & Ear Drops 0.3% W/V	0	0	0	14
		Eye & Ear Drops 10% W/V	7	21.4	14.3	14
17	Ciprofloxacin	Eye Ointment 0.3% W/W	0	0	7.1	14
18	Chloramphenicol	Eye Applicaps 1%	64	57.1	71.4	14
19	Clove Oil	Oil	79	78.6	71.4	14
20	Vitamin B Complex	Tab	86	85.7	78.6	14
21	Metoclorpropamide	Inj 5mg/ml in 2ml Ampoule	29	14.3	85.7	14
22	Compound Solution of Sodium Lactate	Inj Solution	21	14.3	28.6	14
	Sodium Lactate Compound	Inj Solution	7	7.1	21.4	14
	Ringers' Lactate	Inj Solution	57	35.7	57.1	14
23	Sodium Chloride (Normal Saline)	Inj solution, 0.9% Isotonic (154mmol/l of Sodium & Chloride Ions each)	43	42.9	42.9	7
24	Charcoal Activated	Powder 10gm in Sachet	29	42.9	42.9	7
25	Atropine	Inj 1mg (Sulphate) of 60.5mg in 1ml Ampoule	86	71.4	85.7	7
26	Ciprofloxacin	Tab 250mg	86	42.9	57.1	7
27	Benzoic Acid + Salicylic Acid (Whitefield Ointment)	Ointment of Cream	86	42.9	14.3	7
28	Atenolol	Tab 50mg	0	0	0	7
29	Frusemide	Tab 40mg	57	71.4	100	7
30	Promethazine (Avomine)	Tab 25mg (Hydrochloride)	86	42.9	28.6	7
31	Dexamethasone	Inj 4mg/1ml Ampoule	100	57.1	42.9	7
32	Salbutamol	Tab 4mg	86	57.1	71.4	7
33	Oxytocin*	Inj 10 IU in 1ml Ampoule	100	100	62.5	4
34	Magnesium Sulphate*	Inj 1gm/2ml (50% W/V)	0	100	25	4
35	Gentamycin*	Inj 80mg/2ml Vial	75	75	75	4

Note: * Available only in those HP/SHP which serves as birthing center.

Annex II

Description of the ED Manufacturing Companies by their GMP Statuses

S.N.	Manufacturing Companies	Description
1	Aglomed Pharmaceuticals	Non-GMP
2	Amtech	Non-GMP
3	Anod Pharmaceuticals	Non-GMP
4	Apex Pharmaceuticals	Non-GMP
5	Aristo Pharmaceuticals	Non-GMP
6	Arya Pharmaceuticals Pvt. Ltd.	Non-GMP
7	Asian Pharmaceuticals	Non-GMP
8	Astra Zeneca	Non-GMP
9	CAL laboratories	Non-GMP
10	Chemidrug Pharmaceuticals Pvt. Ltd.	Non-GMP
11	Concept Pharmaceuticals Pvt. Ltd.	Non-GMP
12	CTL Pharmaceuticals Pvt. Ltd.	WHO GMP
13	Curex Pharmaceuticals Pvt. Ltd.	Non-GMP
14	Elder Universal Pharmaceuticals	WHO-GMP
15	FDC Ltd.	Non-GMP
16	G.D. Pharmaceuticals	Non-GMP
17	Hindustan Pharmacy Company, India	Non-GMP
18	Hukam Pharmaceuticals	Non-GMP
19	Jayson Pharmaceuticals Pvt. Ltd.	Non-GMP
20	Leben	Non-GMP
21	Lomus Pharmaceuticals Pvt. Ltd.	WHO-GMP
22	M tech Pharmaceuticals Pvt. Ltd	Non-GMP
23	Manoj Pharmaceuticals Pvt. Ltd.	Non-GMP
24	Max Pharmaceuticals Pvt. Ltd.	Non-GMP
25	Microlab	Non-GMP
26	Mount Mettur Pharmaceuticals	Non-GMP
27	National Health Care Pvt. Ltd.	WHO-GMP
28	Nepal Pharmaceutical Laboratory Pvt. Ltd.	WHO-GMP
29	Nicholas Pharmaceuticals	Non-GMP
30	Pharmaco Industries Pvt. Ltd.	WHO-GMP
31	Remedica Ltd.	Non-GMP
32	Royal drug	Non-GMP
33	S R Drug Laboratories Pvt. Ltd.	WHO-GMP
34	Shiva Pharmaceuticals Pvt. Ltd.	Non-GMP
35	Shree Ram Pharmaceuticals	Non-GMP
36	Stallion laboratories	Non-GMP
37	Status Pharmaceuticals	Non-GMP
38	Sumy Pharmaceuticals Pvt. Ltd.	Non-GMP
39	Syncom formulation	Non-GMP
40	Time Pharmaceuticals	Non-GMP
41	Umedica Laboratories	Non-GMP
42	Unicure Pharmaceuticals Pvt. Ltd.	Non-GMP
43	Unimark Remedies	Non-GMP
44	Vijaydeep Laboratories Pvt. Ltd.	WHO-GMP

Source of Pharmaceutical Description: Drug Bulletin of Nepal. Government of Nepal; Ministry of Health and Population, Department of Drug Administration: Vol. 19, No.1, Aug-Nov 2007

Annex III

Details of the ED Expiry Situation

S.N.	ED Items	Unit	Drug Expiry in Months (In Reference to the Date of Observation)					
			1st Visit		2nd Visit		3rd Visit	
			Max	Min	Max	Min	Max	Min
1	Lignocaine	Inj 2% ml (HCl) in Vial	11	-2	28	3	9	1
		Inj 1% ml (HCl) in Vial	-2	-2	NA	NA	NA	NA
2	Paracetamol	Tab 500mg	32	10	33	5	29	8
		Inj 150mg/ml	NA	NA	NA	NA	24	24
		Syrup 125mg/5ml	8	1	31	10	32	8
3	Chlorpheniramine	Tab 4mg (Maleate)	32	8	31	7	32	-7
4	Pheniramine	Inj 22.75mg (Maleate)/ml	30	2	23	1	21	0
5	Albendazole	Chewable Tab 400mg	31	5	29	4	30	1
6	Metronidazole	Tab 200mg	27	1	37	8	35	0
		Tab 400mg	25	9	34	8	33	10
		Oral Suspension 100mg/5ml (as Benzoate)	19	6	30	11	20	4
		Oral Suspension 200mg/5ml (as Benzoate)	27	1	19	9	29	12
7	Amoxycillin	Cap 250mg	21	3	21	9	18	7
		Cap 500mg	24	7	18	10	21	16
		Dispersible Tab 125mg	17	13	20	6	22	4
		Dispersible Tab 250mg	12	12	18	11	11	4
8	Sulfamethoxazole + Trimethoprim (Cotrim)	Tab 100mg + 20mg (P)	28	1	33	0	29	1
		Tab 400mg + 80mg (S.S.)	33	1	26	9	30	7
		Tab 800mg + 160mg (D.S.)	28	16	24	23	33	11
		Oral Suspension 200mg + 40mg/5ml	23	-1	18	0	33	8
9.1	Ferrous Salt + Folic Acid	Tab 60mg + 250mg	8	-7	7	1	17	-1
9.2	Folic Acid + Elemental Iron	Tab 0.4mg + Tab 60mg	5	2	7	1	3	-1
10.1	Calamine Lotion	Lotion 1% (30ml Bottle)	17	2	22	3	19	0
		Lotion 1% (540ml Bottle)	9	-17	19	9	7	5
11	Gamma Benzene Hexachloride	Cream or Lotion 1%	32	2	31	1	31	7
	Benzyal Benzoate	Cream or Lotion 1%	32	2	25	4	23	5

S.N.	ED Items	Unit	Drug Expiry in Months (In Reference to the Date of Observation)					
			1st Visit		2nd Visit		3rd Visit	
			Max	Min	Max	Min	Max	Min
12	Povidine Iodine (Betadine)	Solution 5% 450ml	19	2	23	1	17	3
13.1	Aluminum Hydroxide + Magnesium Hydroxide	Tab 250mg + 250mg	31	31	30	29	28	9
13.2	Aluminum Hydroxide + Magnesium Trisilicate	Tab 250mg + 250mg	32	3	29	2	27	4
14	Hyoscine Butylbromide (Buscopan)	Tab 10mg	20	3	28	3	26	4
		Tab 20mg	NA	NA	NA	NA	26	26
15	Oral Rehydration Solution (ORS)	Powder 27.5gm/liter	27	7	25	6	27	10
16.1	Ciprofloxacin	Eye & Ear Drops 0.3% W/V	18	16	16	14	15	14
		Eye & Ear Drops 10% W/V	NA	NA	NA	NA	17	17
16.2	Sulfacetamide	Eye & Ear Drops 0.3% W/V	9	9	8	8	NA	NA
		Eye & Ear Drops 10% W/V	NA	NA	13	8	17	6
17	Ciprofloxacin	Eye Ointment 0.3% W/W	NA	NA	NA	NA	20	20
18	Chloramphenicol	Eye Applicaps 1%	15	9	15	12	12	-2
19	Clove Oil	Oil	33	11	29	4	31	14
20	Vitamin B Complex	Tab	23	-2	22	16	31	10
21	Metoclorpropamide	Inj 5mg/ml in 2ml Ampoule	15	3	10	10	8	8
22	Compound Solution of Sodium Lactate	Inj Solution	27	1	29	14	24	3
	Sodium Lactate Compound	Inj Solution	24	24	12	3	27	8
	Ringers' Lactate	Inj Solution	32	-6	28	14	30	10
23	Sodium Chloride	Inj Solution 0.9% Isotonic (154 mmol/l of Sodium & Chloride Ions Each)	24	17	23	20	25	17
24	Charcoal activated	Powder 10gm in Sachet	35	4	46	2	44	1
25	Atropine	Inj 1mg (Sulphate) of 60.5mg in 1ml Ampoule	11	5	13	2	11	2
26	Ciprofloxacin	Tab 250mg	32	3	23	18	28	7
27	Benzoic Acid + Salicylic Acid	Ointment of Cream	26	10	55	13	53	11

S.N.	ED Items	Unit	Drug Expiry in Months (In Reference to the Date of Observation)					
			1st Visit		2nd Visit		3rd Visit	
			Max	Min	Max	Min	Max	Min
28	Atenolol	Tab 50mg	NA	NA	NA	NA	NA	NA
29	Frusemide	Tab 40mg	23	8	25	0	26	7
30	Promethazine	Tab 25mg (Hydrochloride)	31	8	30	18	28	18
31	Dexamethasone	Inj 4mg/1ml Ampoule	34	5	9	4	7	4
32	Salbutamol	Tab 4mg	30	13	24	12	22	10
33	Oxytocin*	Inj 10 IU in 1ml Ampoule	14	12	19	6	11	-1
34	Magnesium Sulphate*	Inj 1gm/2ml (50% W/V)	NA	NA	NA	NA	14	14
35	Gentamycin*	Inj 80mg/2ml Vial	11	-3	21	0	16	6

Note: *Available only in those HP/SHP which serves as birthing center.

Annex IV

Drug Storage Situation

Name of the HF	1st Visit (%)				2nd Visit (%)				3rd Visit (%)			
	On raised platform	In order	Cool and dry place	N	On raised platform	In order	Cool and dry place	N	On raised platform	In order	Cool and dry place	N
Chapagaun SHP	100	96	100	25	100	100	0	29	100	100	100	33
Ashrang HP	100	44	100	34	100	0	0	37	100	100	100	38
Bridim SHP	100	91	100	23	100	100	100	22	100	100	100	27
Laharepauwa HP	100	100	100	30	100	100	100	25	91.9	89.2	100	37
Dharan SHP	100	100	100	21	100	100	0	26	100	100	100	32
Dewangunj HP	100	84	0	31	100	100	0	27	100	100	100	35
Jawabhari SHP	100	18	100	13	100	100	100	20	90	80	100	20
Krishna Nagar HP	93.1	95	100	29	100	92.6	81.5	27	93.5	96.8	100	31
Hattiraj SHP	100	100	100	16	100	60	100	15	100	100	100	20
Shankarpur HP	100	91	100	34	48	45.4	48.5	21	100	100	100	36
Bhawani SHP	100	100	100	23	100	100	100	17	100	100	100	20
Triveni HP	100	100	100	32	96.3	100	92.6	27	100	100	100	27
Uttarganga SHP	100	85	100	26	100	100	100	19	96.3	100	100	27
Kafalkot HP	100	100	100	30	100	100	100	7	100	100	100	25

Appendices

Appendix A Tools Used in the Study

Assessment on Availability of ED in Health Facilities in Nepal

Observation Sheet – STORE ROOM

Name of the Observer:
Date of the Observation:
Time of Observation:
(start without disturbance in regular service hours)

Name of the Health Post (HP) / Sub-Health Post (SHP):
Name of District:
A. Stock in Description of the Drugs (22+3* Items) for SHP and (32+3* Items) for HP
Please refer the log book - Jinshi Khata

S.N.	ED List	Dosage Form	Latest Received (Stock In) Date (yy/mm/dd)	Latest Quantity Received	Latest Received from RMS/DHO/DDC/VDC/Others	Latest Previous Received (Stock In) Date (yy/mm/dd)	Latest Previous Quantity Received	Latest Previous Received from RMS/DHO/DDC/VDC/Others	Remarks
1	Lignocaine	Inj 2% ml (HCl) in Vial							
		Inj 1% ml (HCl) in Vial							
2	Paracetamol	Tab 500mg							
		Inj 150mg/ml							
		Syrup 125mg/5ml							
3	Chlorpheniramine	Tab 4mg (Maleate)							
4	Pheniramine	Inj 22.75mg (Maleate)/ml							
5	Albendazole	Chewable Tab 400mg							
6	Metronidazole	Tab 200mg							

S.N.	ED List	Dosage Form	Latest Received (Stock In) Date (yy/mm/dd)	Latest Quantity Received	Latest Received from RMS/DHO/DDC/VDC/Others	Latest Previous Received (Stock In) Date (yy/mm/dd)	Latest Previous Quantity Received	Latest Previous Received from RMS/DHO/DDC/VDC/Others	Remarks
	Metronidazole	Tab 400mg							
		Oral Suspension 100mg/5ml (as Benzoate)							
		Oral Suspension 200mg/5ml (as Benzoate)							
7	Amoxycillin	Cap 250mg							
		Cap 500mg							
		Dispersible Tab 125mg							
		Dispersible Tab 250mg							
8	Sulfamethoxazole + Trimethoprim (Cotrim)	Tab 100mg + 20mg (P)							
		Tab 400mg + 80mg (S.S.)							
		Tab 800mg + 160mg (D.S.)							
		Oral Suspension 200mg + 40mg/5ml							
9.1	Ferrous Salt + Folic Acid	Tab 60mg + 250mg							
9.2	Folic Acid + Elemental Iron	Tab 0.4mg + Tab 60mg							
10.1	Calamine Lotion	Lotion 1% (30ml Bottle)							
		Lotion 1% (540ml Bottle)							
11	Gamma Benzene Hexachloride	Cream or Lotion 1%							
	Benzyal Benzoate	Cream or Lotion 1%							
12	Povidine Iodine	Solution 5% 450ml							

S.N.	ED List	Dosage Form	Latest Received (Stock In) Date (yy/mm/dd)	Latest Quantity Received	Latest Received from RMS/DHO/DDC/VDC/Others	Latest Previous Received (Stock In) Date (yy/mm/dd)	Latest Previous Quantity Received	Latest Previous Received from RMS/DHO/DDC/VDC/Others	Remarks
13.1	Aluminum Hydroxide + Magnesium Hydroxide	Tab 250mg + 250mg							
13.2	Aluminum Hydroxide + Magnesium Trisilicate	Tab 250mg + 250mg							
14	Hyoscine Butylbromide (Buscopan)	Tab 10mg							
		Tab 20mg							
15	Oral Rehydration Solution (ORS)	Powder 27.5gm/liter							
16.1	Ciprofloxacin	Eye & Ear Drops 0.3% W/V							
		Eye & Ear Drops 10% W/V							
16.2	Sulfacetamide	Eye & Ear Drops 0.3% W/V							
		Eye & Ear Drops 10% W/V							
17	Ciprofloxacin	Eye Ointment 0.3% W/W							
18	Chloramphenicol	Eye Applicaps 1%							
19	Clove Oil	Oil							
20	Vitamin B Complex	Tab							
21	Metoclorpropa-mide	Inj 5mg/ml in 2ml Ampoule							
22	Compound Solution of Sodium Lactate	Inj Solution							
	Sodium Lactate Compound	Inj Solution							
	Ringers' Lactate	Inj Solution							

S.N.	ED List	Dosage Form	Latest Received (Stock In) Date (yy/mm/dd)	Latest Quantity Received	Latest Received from RMS/DHO/DDC/VDC/Others	Latest Previous Received (Stock In) Date (yy/mm/dd)	Latest Previous Quantity Received	Latest Previous Received from RMS/DHO/DDC/VDC/Others	Remarks
23	Sodium Chloride (Normal Saline)	Inj Solution 0.9% Isotonic (154mmol/l of Sodium & Chloride Ions Each)							
24	Charcoal activated	Powder 10gm in Sachet							
25	Atropine	Inj 1mg (Sulphate) of 60.5mg in 1ml Ampoule							
26	Ciprofloxacin	Tab 250mg							
27	Benzoic Acid + Salicylic Acid (Whitefield Ointment)	Ointment of Cream 6% + 3%							
28	Atenolol	Tab 50mg							
29	Frusemide	Tab 40mg							
30	Promethazine (Avomine)	Tab 25mg (Hydrochloride)							
31	Dexamethasone	Inj 4mg/1ml Ampoule							
32	Salbutamol	Tab 4mg							
33*	Oxytocin	Inj 10 IU in 1ml Ampoule							
34*	Magnesium Sulphate	Inj 1gm/2ml (50% W/V)							
35*	Gentamycin	Inj 80mg/2ml Vial							

yy/mm/dd: Year/Month/Days

Note: SN 1 to 22 for SHP while SN 1 to 32 for HP and SN marked as * will be applicable to those HP/SHP which serves as birthing center.

Overall Impression:

Assessment on Availability of ED in Health Facilities in Nepal

Observation Sheet – STORE ROOM / DISPENSARY

Name of the Observer:
Date of the Observation:
Time of Observation:
(start without disturbance in regular service hours)

Name of the Health Post (HP) / Sub-Health Post (SHP):
Name of District:
A. 1 Drug (22+3* Items for SHP) and (32+3* items for HP) availability by their description in STORE / DISPENSARY. *List all the dates (manufacturing and expiry) for each category of the respective drug items.*

S.N.	ED List	Dosage Form	Availability in Store			Names of Manufacturing Companies	Manufacturing Date (yy/mm/dd)	Expiry Date (yy/mm/dd)	Remarks
			Yes		No				
			Qty.	Unit					
1	Lignocaine	Inj 2% ml (HCl) in Vial		Vial					
		Inj 1% ml (HCl) in Vial		Vial					
2	Paracetamol	Tab 500mg		Tab					
		Inj 150mg/ml		Vial					
		Syrup 125mg/5ml		Phl					
3	Chlorpheniramine	Tab 4mg (Maleate)		Tab					
4	Pheniramine	Inj 22.75mg (Maleate)/ml		Ph					
5	Albendazole	Chewable Tab 400mg		Tab					
6	Metronidazole	Tab 200mg		Tab					
		Tab 400mg		Tab					
		Oral Suspension 100mg/5ml (as Benzoate)		Ph					
		Oral Suspension 200mg/5ml (as Benzoate)		Ph					
7	Amoxycillin	Cap 250mg		Cap					

S.N.	ED List	Dosage Form	Availability in Store			Names of Manufacturing Companies	Manufacturing Date (yy/mm/dd)	Expiry Date (yy/mm/dd)	Remarks
			Yes		No				
			Qty.	Unit					
	Amoxycillin	Cap 500mg		Cap					
		Dispersible Tab 125mg		Tab					
		Dispersible Tab 250mg		Tab					
8	Sulfamethoxazole + Trimethoprim (Cotrim)	Tab 100mg + 20mg (P)		Tab					
		Tab 400mg + 80mg (S.S.)		Tab					
		Tab 800mg + 160mg (D.S.)		Tab					
		Oral Suspension 200mg + 40mg/5ml		Ph					
9.1	Ferrous Salt + Folic Acid	Tab 60mg + 250mg		Tab					
9.2	Folic Acid + Elemental Iron	Tab 0.4mg + Tab 60mg		Tab					
10.1	Calamine Lotion	Lotion 1% (30ml Bottle)		Ph					
		Lotion 1% (540ml Bottle)		Ph					
11	Gamma Benzene Hexachloride	Cream or Lotion 1%		Ph					
	Benzyal Benzoate	Cream or Lotion 1%		Ph					
12	Povidine Iodine	Solution 5% 450ml		Bottle					
13.1	Aluminum Hydroxide + Magnesium Hydroxide	Tab 250mg + 250mg		Tab					
13.2	Aluminum Hydroxide + Magnesium Trisilicate	Tab 250mg + 250mg		Tab					
14	Hyoscine Butylbromide (Buscopan)	Tab 10mg		Tab					
		Tab 20mg		Tab					

S.N.	ED List	Dosage Form	Availability in Store			Names of Manufacturing Companies	Manufacturing Date (yy/mm/dd)	Expiry Date (yy/mm/dd)	Remarks
			Yes		No				
			Qty.	Unit					
15	Oral Rehydration Solution (ORS)	Powder 27.5gm/liter		Pkt					
16.1	Ciprofloxacin	Eye & Ear Drops 0.3% W/V		Phl					
		Eye & Ear Drops 10% W/V		Phl					
16.2	Sulfacetamide	Eye & Ear Drops 0.3% W/V		Phl					
		Eye & Ear Drops 10% W/V		Phl					
17	Ciprofloxacin	Eye Ointment 0.3% W/W		Phl					
18	Chloramphenicol	Eye Applicaps 1%		Pcs					
19	Clove Oil	Oil		Pcs					
20	Vitamin B Complex	Tab		Tab					
21	Metoclorpropa-mide	Inj 5mg/ml in 2ml Ampoule		Amp					
22	Compound Solution of Sodium Lactate	Inj Solution		Vial					
	Sodium Lactate Compound	Inj Solution		Vial					
	Ringers' Lactate	Inj Solution		Vial					
23	Sodium Chloride (Normal Saline)	Inj Solution 0.9% Isotonic (154mmol/l of Sodium & Chloride Ions Each)		Vial					
24	Charcoal activated	Powder 10gm in Sachet		Pkt					
25	Atropine	Inj 1mg (Sulphate) of 60.5mg in 1ml Ampoule		Vial					
26	Ciprofloxacin	Tab 250mg		Tab					
27	Benzoic Acid + Salicylic Acid	Ointment of Cream 6% + 3%		Phl					

S.N.	ED List	Dosage Form	Availability in Store			Names of Manufacturing Companies	Manufacturing Date (yy/mm/dd)	Expiry Date (yy/mm/dd)	Remarks
			Yes		No				
			Qty.	Unit					
28	Atenolol	Tab 50mg		Tab					
29	Frusemide	Tab 40mg		Tab					
30	Promethazine (Avomine)	Tab 25mg (Hydrochloride)		Tab					
31	Dexamethasone	Inj 4mg/1ml Ampoule		Amp					
32	Salbutamol	Tab 4mg		Tab					
33*	Oxytocin	Inj 10 IU in 1ml Ampoule		Amp					
34*	Magnesium Sulphate	Inj 1gm/2ml (50% W/V)		Vial					
35*	Gentamycin	Inj 80mg/2ml Vial		Vial					

Qty: Quantity; yy/mm/dd: Year/Month/Days

Note: SN 1 to 22 for SHP while SN 1 to 32 for HP and SN marked as * will be applicable to those HP/SHP which serves as birthing center.

Overall Impression:

Observation Sheet – STORAGE CONDITION

Name of the Observer:
Date of the Observation:
Time of Observation:
(start without disturbance in regular service hours)

Name of the Health Post (HP) / Sub-Health Post (SHP):
Name of District:
C. Assessment of Drug Storage system *(to be observed only in the store):*

S.N.	ED List	Dosage Form	Drug Placement Condition		Drug Arrangement Condition		Drug Environmental Condition			Remarks
			Directly on the Floor	On Raised Platform	In Order	Not in Order	Exposed to Direct Sunlight	Wet and Damp	Cool & Dry	
1	Lignocaine	Inj 2% ml (HCl) in Vial								
		Inj 1% ml (HCl) in Vial								
2	Paracetamol	Tab 500mg								
		Inj 150mg/ml								
		Syrup 125mg/5ml								
3	Chlorpheniramine	Tab 4mg (Maleate)								
4	Pheniramine	Inj 22.75mg (Maleate)/ml								
5	Albendazole	Chewable Tab 400mg								
6	Metronidazole	Tab 200mg								
		Tab 400mg								
		Oral Suspension 100mg/5ml (as Benzoate)								
		Oral Suspension 200mg/5ml (as Benzoate)								
7	Amoxycillin	Cap 250mg								

S.N.	ED List	Dosage Form	Drug Placement Condition		Drug Arrangement Condition		Drug Environmental Condition			Remarks
			Directly on the Floor	On Raised Platform	In Order	Not in Order	Exposed to Direct Sunlight	Wet and Damp	Cool & Dry	
	Amoxycillin	Cap 500mg								
		Dispersible Tab 125mg								
		Dispersible Tab 250mg								
8	Sulfamethoxazole + Trimethoprim (Cotrim)	Tab 100mg + 20mg (P)								
		Tab 400mg + 80mg (S.S.)								
		Tab 800mg + 160mg (D.S.)								
		Oral Suspension 200mg + 40mg/5ml								
9.1	Ferrous Salt + Folic Acid	Tab 60mg + 250mg								
9.2	Folic Acid + Elemental Iron	Tab 0.4mg + Tab 60mg								
10.1	Calamine Lotion	Lotion 1% (30ml Bottle)								
		Lotion 1% (540ml Bottle)								
11	Gamma Benzene Hexachloride	Cream or Lotion 1%								
	Benzyal Benzoate	Cream or Lotion 1%								
12	Povidine Iodine	Solution 5% 450ml								
13.1	Aluminum Hydroxide + Magnesium Hydroxide	Tab 250mg + 250mg								
13.2	Aluminum Hydroxide + Magnesium Trisilicate	Tab 250mg + 250mg								
14	Hyoscine Butylbromide (Buscopan)	Tab 10mg								
		Tab 20mg								

S.N.	ED List	Dosage Form	Drug Placement Condition		Drug Arrangement Condition		Drug Environmental Condition			Remarks
			Directly on the Floor	On Raised Platform	In Order	Not in Order	Exposed to Direct Sunlight	Wet and Damp	Cool & Dry	
15	Oral Rehydration Solution (ORS)	Powder 27.5gm/liter								
16.1	Ciprofloxacin	Eye & Ear Drops 0.3% W/V								
		Eye & Ear Drops 10% W/V								
16.2	Sulfacetamide	Eye & Ear Drops 0.3% W/V								
		Eye & Ear Drops 10% W/V								
17	Ciprofloxacin	Eye Ointment 0.3% W/W								
18	Chloramphenicol	Eye Applicaps 1%								
19	Clove Oil	Oil								
20	Vitamin B Complex	Tab								
21	Metoclorpropa-mide	Inj 5mg/ml in 2ml Ampoule								
22	Compound Solution of Sodium Lactate	Inj Solution								
	Sodium Lactate Compound	Inj Solution								
	Ringers' Lactate	Inj Solution								
23	Sodium Chloride (Normal Saline)	Inj Solution 0.9% Isotonic (154mmol /l of Sodium & Chloride Ions Each)								
24	Charcoal activated	Powder 10gm in Sachet								
25	Atropine	Inj 1mg (Sulphate) of 60.5mg in 1ml Ampoule								
26	Ciprofloxacin	Tab 250mg								
27	Benzoic Acid + Salicylic Acid	Ointment of Cream 6% + 3%								

S.N.	ED List	Dosage Form	Drug Placement Condition		Drug Arrangement Condition		Drug Environmental Condition			Remarks
			Directly on the Floor	On Raised Platform	In Order	Not in Order	Exposed to Direct Sunlight	Wet and Damp	Cool & Dry	
28	Atenolol	Tab 50mg								
29	Frusemide	Tab 40mg								
30	Promethazine (Avomine)	Tab 25mg (Hydrochloride)								
31	Dexamethasone	Inj 4mg/1ml Ampoule								
32	Salbutamol	Tab 4mg								
33*	Oxytocin	Inj 10 IU in 1ml Ampoule								
34*	Magnesium Sulphate	Inj 1gm/2ml (50% W/V)								
35*	Gentamycin	Inj 80mg/2ml Vial								

Note 1: SN 1 to 22 for SHP while SN 1 to 32 for HP and SN marked as * will be applicable to those HP/SHP which serves as birthing center.
Note 2: Indicate "Order" when medicines of the respective category are placed either in alphabetical order or grouping as per nature of medicine itself as otherwise indicate "Not in Order".

C. Overall Impression regarding Drug Storage System:

Appendix B

List of the ED for HP and SHP

Health Posts (HP)		
S.N.	ED List	Dosage Form
1	Lignocaine	Inj 2% ml (HCl) in Vial, Inj 1% ml (HCl) in Vial
2	Paracetamol	Tab 500mg, Inj 150mg/ml, Syrup 125mg/5ml
3	Chlorpheniramine	Tab 4mg (Maleate)
4	Pheniramine	Inj. 22.75mg (Maleate)/ml
5	Albendazole	Chewable Tab 400mg
6	Metronidazole	Tab 200mg, Tab 400mg, Oral Suspension 100mg/5ml (as Benzoate), Oral Suspension 200mg/5ml (as Benzoate)
7	Amoxycillin	Cap 250mg, Cap 500mg, Dispersible Tab 125mg, Dispersible Tab 250mg
8	Sulfamethoxazole + Trimethoprim (Cotrim)	Tab 100mg + 20mg (P) Tab 400mg + 80mg (S.S.) Tab 800mg + 160mg (D.S.) Oral Suspension 200mg + 40mg/5ml
9	Ferrous Salt + Folic acid	Tab 60mg + 250mg
10	Calamine Lotion	Lotion 1% (30ml Bottle), Lotion 1% (540ml Bottle)
11	Gamma Benzene Hexachloride	Cream or Lotion 1%
12	Povidine Iodine (Betadine)	Solution 5%, 450ml
13	Aluminum Hydroxide + Magnesium Hydroxide	Tab 250mg + 250mg
14	Hyoscine Butylbromide (Buscopan)	Tab 10mg, Tab 20mg
15	Oral Rehydration Solution (ORS)	Powder 27.5gm/liter
16	Ciprofloxacin	Eye & Ear Drops 0.3% W/V, Eye & Ear Drops 10% W/V
17	Ciprofloxacin	Eye Ointment 0.3% W/W
18	Chloramphenicol	Eye Applicaps 1%
19	Clove Oil	Oil
20	Vitamin B Complex	Tab
21	Metoclorpropamide	Inj 5mg/ml in 2ml Ampoule
22	Compound Solution of Sodium Lactate	Inj Solution
	Sodium Lactate Compound	Inj Solution
	Ringers' Lactate	Inj Solution
23	Sodium Chloride (Normal Saline)	Inj Solution, 0.9% Isotonic (154mmol/l of Sodium & Chloride Ions Each)
24	Charcoal Activated	Powder 10gm in Sachet
25	Atropine	Inj 1mg (Sulphate) of 60.5mg in 1ml Ampoule
26	Ciprofloxacin	Tab 250mg

Health Posts (HP)		
S.N.	**ED List**	**Dosage Form**
27	Benzoic Acid + Salicylic Acid (Whitefield Ointment)	Ointment of Cream 6% + 3%
28	Atenolol	Tab 50mg
29	Frusemide	Tab 40mg
30	Promethazine (Avomine)	Tab 25mg (Hydrochloride)
31	Dexamethasone	Inj 4mg/1ml Ampoule
32	Salbutamol	Tab 4mg
33	Oxytocin*	Inj 10 IU in 1ml Ampoule
34	Magnesium Sulphate*	Inj 1gm/2ml (50% W/V)
35	Gentamycin*	Inj 80mg/2ml Vial
Sub Health Posts (SHP)		
S.N.	**ED List**	**Dosage Form**
1	Lignocaine	Inj 2% ml (HCl) in Vial, Inj 1% ml (HCl) in Vial
2	Paracetamol	Tab 500mg, Inj 150mg/ml, Syrup 125mg/5ml
3	Chlorpheniramine	Tab 4mg (Maleate)
4	Pheniramine	Inj 22.75mg (Maleate)/ml
5	Albendazole	Chewable Tab 400mg
6	Metronidazole	Tab 200mg, Tab 400mg, Oral Suspension 100mg/5ml (as Benzoate), Oral Suspension 200mg/5ml (as Benzoate)
7	Amoxycillin	Cap 250mg, Cap 500mg, Dispersible Tab 125mg, Dispersible Tab 250mg
8	Sulfamethoxazole + Trimethoprim (Cotrim)	Tab 100mg + 20mg (P) Tab 400mg + 80mg (S.S.) Tab 800mg + 160mg (D.S.) Oral Suspension 200mg + 40mg/5ml
9	Ferrous Salt + Folic Acid	Tab 60mg + 250mg
10	Calamine Lotion	Lotion 1% (30ml Bottle), Lotion 1% (540ml Bottle)
11	Gamma Benzene Hexachloride	Cream or Lotion 1%
12	Povidine Iodine (Betadine)	Solution 5%, 450ml
13	Aluminum Hydroxide + Magnesium Hydroxide	Tab 250mg + 250mg
14	Hyoscine Butylbromide (Buscopan)	Tab 10mg, Tab 20mg
15	Oral Rehydration Solution (ORS)	Powder 27.5gm/liter
16	Ciprofloxacin	Eye & Ear Drops 0.3% W/V, Eye & Ear Drops 10% W/V
17	Ciprofloxacin	Eye Ointment 0.3% W/W
18	Chloramphenicol	Eye Applicaps 1%

Sub Health Posts (SHP)		
S.N.	ED List	Dosage Form
19	Clove Oil	Oil
20	Vitamin B Complex	Tab
21	Metoclorpropamide	Inj 5mg/ml in 2ml Ampoule
22	Compound Solution of Sodium Lactate	Inj Solution
	Sodium Lactate Compound	Inj Solution
	Ringers' Lactate	Inj Solution
23	Oxytocin*	Inj 10 IU in 1ml Ampoule
24	Magnesium Sulphate*	Inj 1gm/2ml (50% W/V)
25	Gentamycin*	Inj 80mg/2ml Vial

Note: *Available only in those HP/SHP which serves as birthing center.