



## RSCS BASELINE STUDY RESULTS

### FOR HEALTH COMMODITY SUPPLY AT BASIC HEALTH FACILITIES

October 14, 2016

The Three Millennium Development Goal Fund





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## Acknowledgements

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We would like to thank the donors contributing to the Three Millennium Development Goal Fund (3MDG) for their kind contributions to improving the health of the poorest and most vulnerable people in Myanmar, particularly women and children. We also would like to thank the 3MDG fund team for their support, input and participation in the baseline study.

## About PFSCM

The Partnership for Supply Chain Management (PFSCM) is a nonprofit organization established in 2005 by two of the leading international health consultancy organizations in the U.S.—Management Sciences for Health (MSH) and JSI Research & Training Institute, Inc. (JSI), both also nonprofits. To deliver its services PFSCM draws on the capabilities and experience of 13 organizations that are among the most trusted names in international public health and development, with each offering unique capabilities, including procurement, freight forwarding and technical assistance. In Myanmar PFSCM implements two supply chain strengthening projects: SCMS project (Supply Chain Management Systems) funded by USAID and RSCS project (Regional Supply Chain Strengthening) funded by 3MDG.

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## About RSCS

The Regional Supply Chain Strengthening (RSCS) project assists the Myanmar Ministry of Health and Sports (MOHS) to improve supply chain management in public sector health systems at the regional and lower levels through system improvements and capacity building. The project design is based on the findings of the National Supply Chain Baseline (NSCB) Report; the recommendations of the SCMS Procurement Options Analysis Report; and the work of a team of experts who visited Myanmar in September 2014 and developed the initial RSCS Project Charter. RSCS project activities are implemented in Bago, Magway and Ayeyarwaddy regions.

## Recommended citation

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## Acronyms

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3MDG	Three Millennium Development Goal Fund
AN	Ante-natal
BHS	Basic Health Staff
CME	Continuous Medical Education
CMSD	Central Medical Stores Depot
EPI	Expanded Program on Immunization
FEFO	First Expiry First Out
HA	Health Assistant
LHV	Lady Health Visitor
LMIS	Logistic Management Information System
LMU	Logistic Management Unit
MCH	Maternal and Child Health Care Center
MO	Medical Officer
MOHS	Ministry of Health and Sports
MW	Midwife
OPD	Out Patients Department
PfSCM	Partnership for Supply Chain Management
PHS I	Public Health Supervisor I
PHS II	Public Health Supervisor II
PN	Post-natal
RHC	Rural Health Center
RSCS	Regional Supply Chain Strengthening project
School HC	School Health Center
SCM	Supply Chain Management
SCMS	Supply Chain Management System project
SHU	Station Health Unit
S-RHC	Sub-Rural Health Center
UHC	Urban Health Center
WCHD	Women & Children Health Development

## **Executive summary**

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In recent years the Ministry of Health and Sports (previously: Ministry of Health) has gone through many changes. MOHS budgets have quadrupled and are still increasing. Department of Health has been separated into two new departments: Department of Public Health and Department of Medical Services. Procurement budgets have been decentralized from central to regional level and separated for each department. Due to these changes it has become more important to implement and strengthen supply chain procedures and capacity at all levels of the supply chain.

As part of the RSCS work plan activities, a Baseline Study on Health Supply Commodities at basic health facility level was conducted in three regions; Bago, Magway and Ayeyarwaddy. The purpose of this Baseline Study is to get a more in depth understanding of the level and performance of supply chain management and availability of essential health commodities at basic health facilities.

The main finding of the baseline study is that there is no properly organized supply chain structure in place. Supply chain activities are carried out by health staff as an extra activity with very limited or proper training, instructions and guidelines. We have noticed a high level of commitment from the staff and they are giving their best effort with the limited available resources. More training and the set-up of Logistic Management Units with dedicated supply chain management staff would help improve creating the necessary capacity.

There is no structured information flow between different levels of the supply chain due to a lack of a properly functioning LMIS system. Forecasting and quantification is mainly done at regional level (with limited inputs from townships) usually based on previous year's quantification, morbidity and population numbers. Generally commodities are divided equally with fixed quantities for RHC's and Sub-RHC's, and supplies are 'pushed' down to the health facilities. A lack of consumption data and stock information from lower levels make it difficult to make a more accurate forecast.

In addition to their daily medical duties, the Basic Health Staff are also responsible for supply chain management activities and providing regular reports (HMIS & LMIS) to township level. All these additional activities are done with a manual paper based system which can be very time consuming. Changing the number of stock ledger books (from one per source separated by main and sub stock book to only one Stock Ledger Book) will reduce the workload of the staff and will make stock recording and management more efficient.

There are many incidents of stock out as well as excess/unused drugs. This is mainly a result of the above described forecasting and push system. Due to the lack of regular and updated LMIS data there is no early warning system that could help avoid stock outs



and excess drugs (including expired drugs). A functioning LMIS system would give higher level a better overview and a tool to re-allocate commodities where and when necessary.

Decentralizing procurement and separating the department of health to Department of Public Health and Department of Medical Services have resulted in a fragmented health sector supply chain. Good coordination, cooperation and communication between the two departments are essential.

# Background

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The RSCS project assists the MOHS by conducting supply chain strengthening activities in three regions: Bago, Magway and Ayeyarwaddy regions.

These activities mainly consist of:

- Implement an harmonized logistics management information system (LMIS) for all essential medicines
- Provide training to MOHS staff on various Supply Chain Management activities
- Assist MOHS with Introduction of Logistics Management Units (LMU) at the regional and Township level
- Strengthen Supply Chain Management which change from 'Push' to 'Pull' system

The activities initially focus on the implementation of a Logistic Management Information System at lower health facilities in order to provide higher level management (township and region) with more accurate consumption data and stock level from health facility level. This information will enable higher level to improve forecasting and quantification as well as provide an early warning system regarding stock outs and excess stocks at facilities. It will be easier to re-allocate stock from one facility to another (and from one Township/Region to another) and avoid possible stock outs and/or excess and expired drugs.

In order to get a better understanding about the status of supply chain management at lower health facility level a health commodity supply baseline study was conducted in the 3 regions.

The Objectives of the baseline study are the following:

- to provide baseline data to assess the health commodity logistics system performance and commodity availability at health facilities
- to measure the impact of the RSCS Supply Chain Strengthening activities in the 3 regions (Bago, Magway and Ayeyarwaddy).
- to provide relevant stakeholders (Central and Regional MOHS, 3MDG) with information regarding the current status of the Supply of Health Commodities at lower health facilities in the 3 regions
- to use the baseline study data in order to focus on improvements to be made to relevant issues such as LMIS implementation, Stock Management, Forecasting and management of shortages and excess stocks

# Methodology

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A baseline study tool was used to conduct a facility-based survey to collect quantitative data that will be used to calculate indicators for monitoring and evaluating logistics system performance. It was important to have stakeholder's buy-in for this type of study from the beginning to the end. The following steps outline the recommended methodology for completing the baseline study.

## Design of Baseline Study tool

The Health Commodity Supply Baseline Study Tool, a quantitative data collection instrument developed by RSCS project (based on the Logistics Indicators Assessment Tool (LIAT) by USAID | DELIVER PROJECT)<sup>1</sup>, hereafter referred to as 'The Tool', is used to collect baseline data regarding health commodity logistics system performance and commodity availability at lower health facilities.

The tool contains a series of questions and checks on supply chain issue such as Human Resources, LMIS, Supply, Stock Management & Cold Chain and Physical Stock Status. Some questions can have multiple responses but most can have only one response.

The Regional teams as well as the 3MDG monitoring & evaluation unit have been able to provide input and feedback before finalizing the study tool<sup>2</sup>.

## Determining the appropriate sample size

The main purpose of the sampling design is to avoid a convenience sample. Selection of facilities was done as randomly as possible. The total number of Health Facilities in the 3 regions is approx. 3500. For a statistically significant sample, a standard sampling formula was used (confidence level between 90 – 95% and margin of error of 5%), which resulted in approx. 300 facilities (100 per region)

There are 79 townships in the 3 regions. On average there are approx. 7 to 8 RHC's in each township and 5 to 6 Sub-RHC's linked to each RHC (approx. 35 Sub-RHC's per township). The sites have randomly been selected proportionally within each township, without breaking the supply chain between levels. In other words, select Rural Health Centers (RHC's) first, then randomly selected Sub-Rural Health Centers (Sub-RHC's) linked to the selected RHC's.

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<sup>1</sup> USAID | DELIVER PROJECT, Task Order 1. 2008. Logistics Indicators Assessment Tool (LIAT). Arlington, Va.: USAID | DELIVER PROJECT, Task Order 1.

<sup>2</sup> RSCS Health Commodity Baseline Study Tool V6 (160708)\_Final

Due to the fact that the baseline study has been done in the rainy season it has not always been possible to visit all selected sites (due to flooding) and some sites have been replaced by other sites in the same area.



Health facility visited in flooded area in Ayeyarwaddy Division

### Total number of Health Facilities in the Regions <sup>3</sup>

Region	RHC	S-RHC	MCH	UHC	School HC	Total
Bago	190	815	32	3	5	1045
Magway	188	854	28	3	5	1078
Ayeyarwaddy	225	1132	42	3	9	1411
Total	603	2801	102	9	19	3534

### Selected number of Health Facilities to be surveyed

Region	RHC	S-RHC	MCH	UHC	School HC	Total
Bago	35	55	6	2	2	100
Magway	35	55	6	2	2	100
Ayeyarwaddy	35	55	6	2	2	100
Total	105	165	18	6	6	300

For the complete list of name of selected health facilities see section “List of Facilities”.

### Tracer Commodity list

For the Stock Status check, a list of 10 tracer commodities was selected. A criteria for each item was that it was an essential basic health care item that should normally be available in every Basic Health Facility in the country.

<sup>3</sup> Source dated April 2016

S/N	Description	Strength	Unit	Product Type
1	Albendazole	400mg	tablet	Essential Medicine
2	Aluminium Hydroxide	500mg	tablet	Essential Medicine
3	Amoxicillin	250 mg	capsule	Essential Medicine
4	Ferrous Sulphate + Folic Acid	200mg+0.4mg	tablet	Essential Medicine
5	Metronidazole	200mg	tablet	Essential Medicine
6	Multivitamin/Compound Vitamin	-	tablet	Essential Medicine
7	Oral Rehydration Salt (ORS), low osmol	20.5g/1l	sachet	Essential Medicine
8	Paracetamol	500mg	tablet	Essential Medicine
9	Zinc Sulphate	20mg	tablet	Essential Medicine
10	Benzyl Benzoate, 25%, lotion	500ml	Bottle	Essential Medicine

### Obtain MOHS approval for the baseline study

Before the start of the baseline study, approvals for the whole study and training workshop were requested (and received) from both central as well as regional level Ministry of Health and Sports.

### Training of Teams on use of the study tool

Prior to the start of the baseline study a training workshop was conducted in order to train and collect feedback from the RSCS study teams. Included in the workshop were representatives of the regional departments of public health as well as the donor (3MDG) who planned to accompany the RSCS study teams during some of the study visits to the selected facilities.

### Determining scoring methodology for baseline study

Most questions have a 'yes' or 'no' answer and some can have multiple answers. Every question has been reviewed and rated a score based on importance in the overall supply chain activity. The scoring method has been discussed during a Peer Review Meeting attended by representatives from relevant stakeholders such as MOHS and 3MDG.

## Key findings

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### Human Resources

- The medical staff are very committed and try to manage commodity supply to the best of their ability
- Basic health care staff have received little or no training on LMIS reporting system or other Supply Chain Management activities
- There does not seem to be any designated staff for specific Supply Chain Management activities. It is done by medical staff who are also busy with their daily medical duties

### LMIS

- All facilities maintain basic stock recording system (stock ledger book(s))
- Stock records are kept per item per source, resulting in multiple (too many) stock record books.
- No standard LMIS reporting system exists at basic facility level, no info re. stock levels and consumption data is reporting to higher level
- No facility LMIS data available at higher level for forecasting and supply planning purposes

### Supply

- Little or no involvement from health facilities regarding supply forecasting
- No proper system to re-allocate excess commodities to facilities with shortages
- Little or no stock kept as buffer in township in order to facilitate urgent orders to prevent stock out
- No procedures / instructions how to deal with damaged or expired commodities
- Transportation of commodities from township to facilities often paid with personal money of health staff

### Stock management

- Health commodities are kept as cool and dry as possible
- Storing pharmaceuticals at appropriate temperature is a big challenge (impossible and not feasible) due to lack of electricity at health facilities
- Limited storage space at many facilities
- Lack of good quality, lockable storage space (cupboards)

- Lack of (adherence to) regular physical stock check procedures

### **Stock availability**

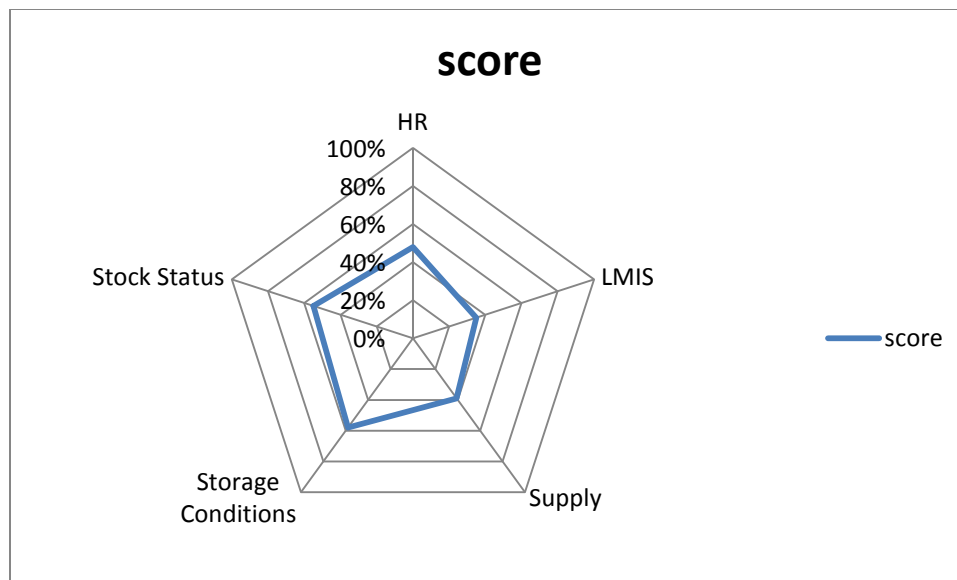
- High incidence of commodity stock out of more than 30 days
- High incidence of expired drugs
- High incidence of unused and/or excess commodities

### **Performance appraisal supply chain management system**

Performance	Score
<b>Bad</b>	0 – 20%
<b>Poor</b>	20 – 40%
<b>Moderate</b>	40 – 60%
<b>Adequate</b>	60 – 80%
<b>Good</b>	80 – 100%

Each of the categories included in the baseline study has been given a score between 0 and 100%.

Category	Score
<b>Human Resources</b>	48%
<b>LMIS</b>	35%
<b>Supply</b>	39%
<b>Storage Conditions</b>	58%
<b>Stock Status Check</b>	55%
<b>Total Average Score</b>	<b>47%</b>



The above charts show that all Supply Chain category score below 60% and that LMIS, Supply & HR are the weakest categories in the supply chain. RSCS activities mainly focus on implementation of an LMIS system in order to improve forecasting and supply planning as well as training of health staff in order to increase and improve supply chain capacity and skills.



## Data Analysis & Results

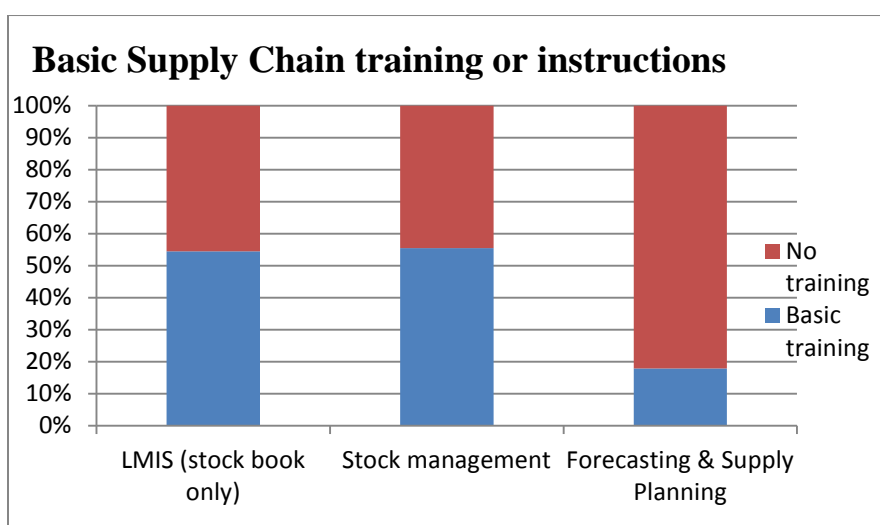
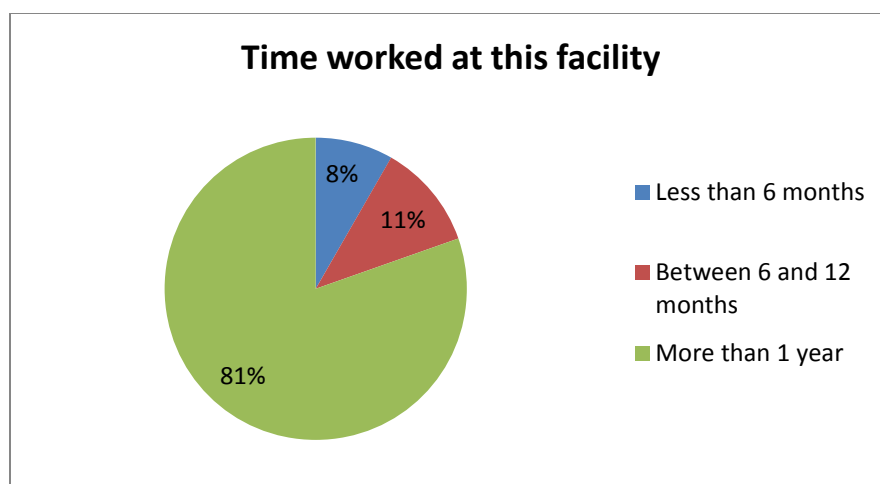
The Health Commodity Supply Baseline Study document includes 58 questions and checks. 11 are informative (I) and are not used for rating purposes. The other 47 questions and check are related to performance (P) and are used for rating purposes. All 'Yes' or 'No' questions have a 100% (for Yes) or 0% (for No) score. Other questions with multiple choice answers have a rating between 0 – 100% percent depending on best supply chain management practise. This rating has been determined by the designers of the baseline study and review and discussed during a Peer Review Meeting with relevant stakeholders.

Category	Informative (I)	Performance	Total
Human	3	2	5
LMIS	3	14	17
Supply	3	12	15
Cold Chain	1	4	5
Storage	1	9	10
Stock Status	0	6	6
<b>Total</b>	<b>11</b>	<b>47</b>	<b>58</b>

### Human Resources

This section consists of 5 questions addressing the experience and level of training of staff in the health facilities.

The majority of staff has worked for more than 1 year at his/her health facility but only approx. 44% has received any kind of training or basic instruction on supply chain activities such as use of LMIS forms, Stock Management (FEFO) systems, Forecasting & quantifications or other related topics. This usually consisted of basic instructions on how to use a stock ledger book.



During the visits, some of the health facility staff raised the issue that they should have a dedicated person (for example, PHS II) for the recording of stock transaction in stock ledger books and preparation for the health facility stock report if they need to report monthly in near future. Otherwise, there will be difficulties for the data accuracy, data update and in time reporting as HA or LHV or MW has other priorities like the activities on mobile, school health, immunization, AN care/ PN care and daily treatment in clinic etc. and they do not have enough time to emphasize on the LMIS data recording.

## LMIS

This section consists of 17 questions addressing the presence and use of any form of LMIS system in the health facilities.

## Stock ledger books

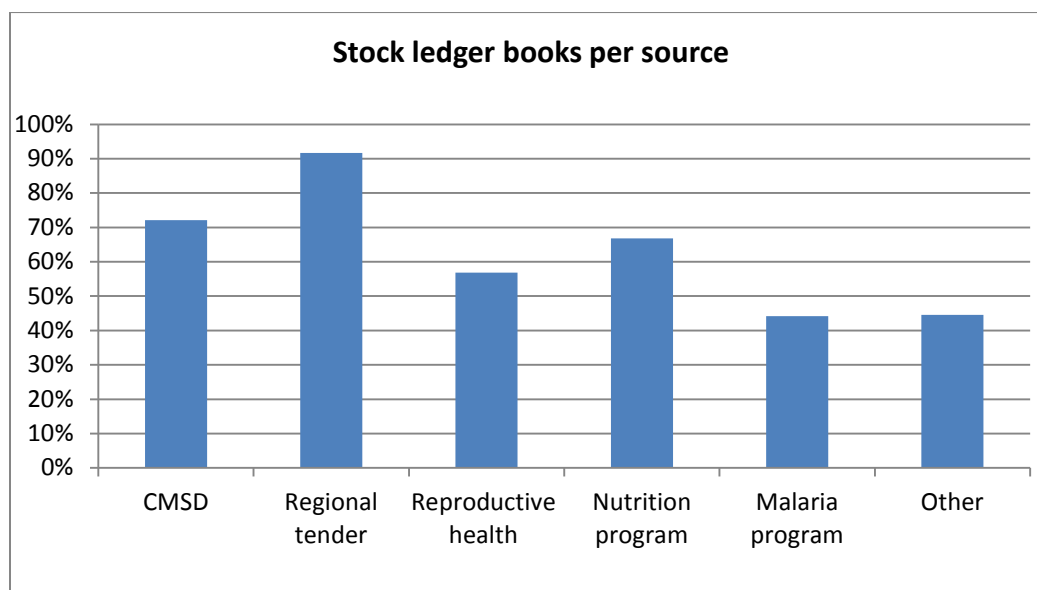
Almost all health facilities use some kind of stock keeping records such as a stock ledger book. The problem is that separate stock books are kept depending on the source of the commodities. It could be that one commodity (for example Paracetamol) is registered in multiple stock books because it is supplied via different sources such as: CMSD, Regional Tender, or various Vertical Programs. This makes it difficult to get a clear overview of how much of one particular commodity is present in the facility as one must check various stock books and storage locations (or shelves). It is even more complicated to get a complete overview as most health facilities use Main Stock books and Sub-Stock books for each source.



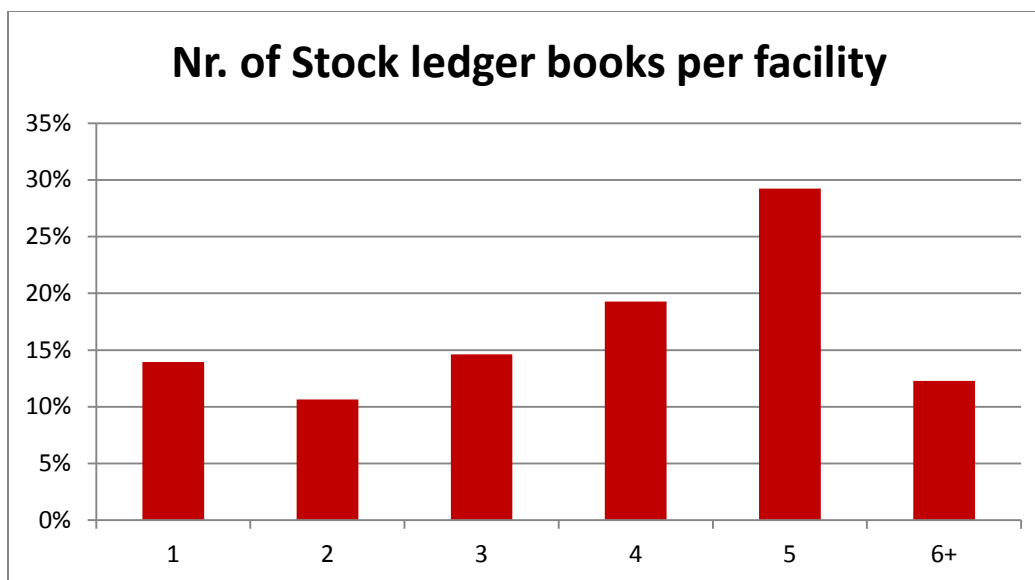
Number of main stock books in one Sub-RHC



Main & Sub stock books in one RHC



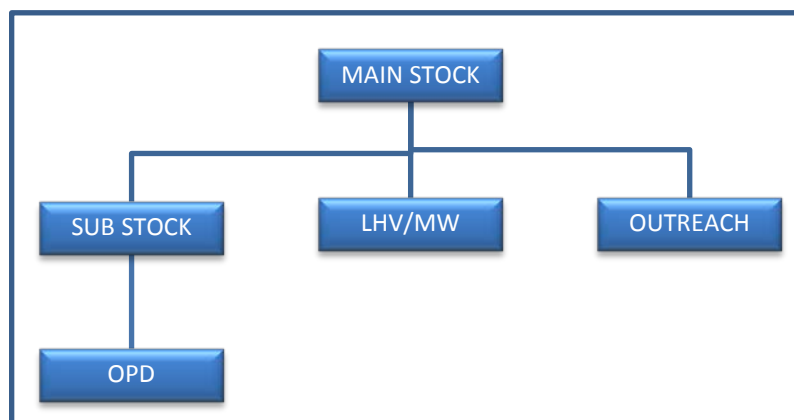
**Note:** under 'Other' source we have recorded the following: Unicef, UNFPA, GAVI, EPI, PMCT, TB, Leprosy, TB, TMO and WCHD. Each of these sources has their own separate book as well



## Goods flow and record keeping

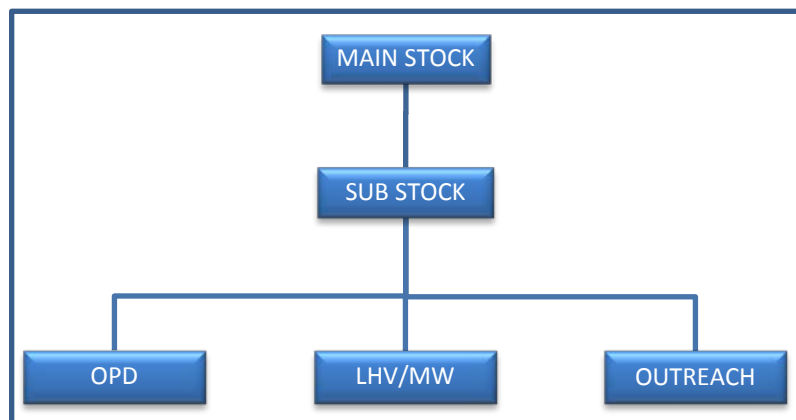
There is no standard practice regarding how to keep stock records and how to manage the goods flow. There seems to be many different practices between facilities and regions on how they record their stocks and how the commodity flow is managed. A standard practice in Health facilities is the use of a Main Stock book and a Sub Stock book in one facility. The Main stock is to be used for reception of goods from higher level and then a weekly or monthly re-supply to the SUB stock book and Lady Health Visitor, Midwife for daily use as well as to Mobile teams in case of outreach activities. In many cases the Sub Rural Health Centres receive their supplies directly from higher level (township) but in some cases the supplies go via the Rural Health Centres to the Sub Centres in which case sometimes these transaction are recorded in the RHC stock books and sometime they're not. In reality the use of these stock books and goods flow can vary a lot.

A variety of scenarios is shown in below diagrams (please note that these are the main varieties we have noted):



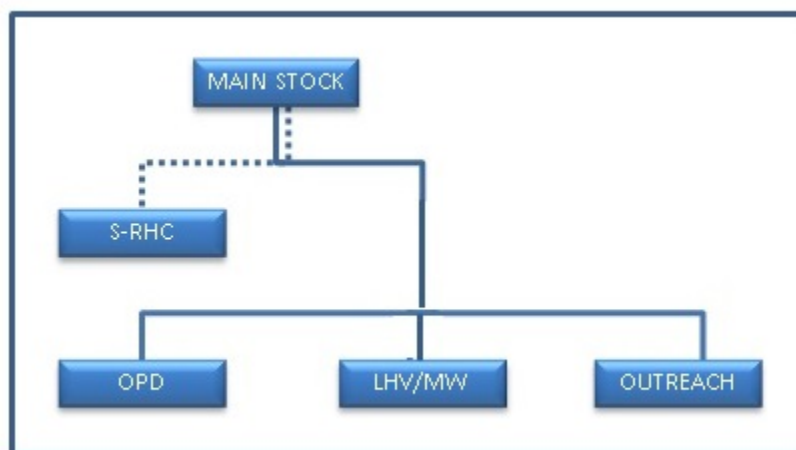
### 1. Standard practise

- Supplies received in Main Stock and distributed periodically to Sub-stock, LHV/MW and Outreach activities
- Main Stock is primary stock management record
- Clinic daily use in OPD issued from Sub-stock
- Sub-RHCs get supply directly from Townships



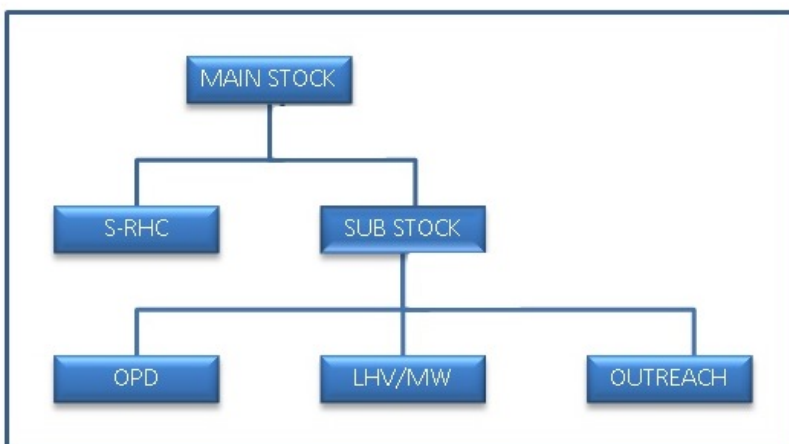
## 2. Main Stock as transfer stock

- Supplies received in Main Stock and directly transferred to Sub-Stock Book (In = Out; balance = Zero)
- Sub-stock book is primary stock management record
- Purpose of Main stock book redundant
- Sub-RHCs get supply directly from Township.



## 3. Ad-hoc supply from RHC to Sub-RHC

- Supplies only received and recorded in Main Stock Book
- All daily use get direct supply from Main Stock Book
- The RHC sometimes issues supplies to Sub-RHC's (upon special request)



## 4. RHC Supplies Sub-RHC's

- Supply for RHC and Sub-RHC flow through RHC
- RHC re-supplies Sub-RHC in it area

**1. Standard practice**

Goods are supply on a regular basis from RHC Main Stock to Sub-Stock, Lady Health Visitor, Midwife on a regular basis (daily, weekly or monthly). The Main stock book serves as the primary stock keeping record where all issues to other users are recorded. Out transactions from Main stock book can be used as proxy consumption data.

A similar procedure is used in the Sub-RHC's. The Sub-RHC's get their supply also directly from higher (township) level, received in main stock book and then distributed from main stock book to sub-stock.

**2. Main Stock as transfer stock**

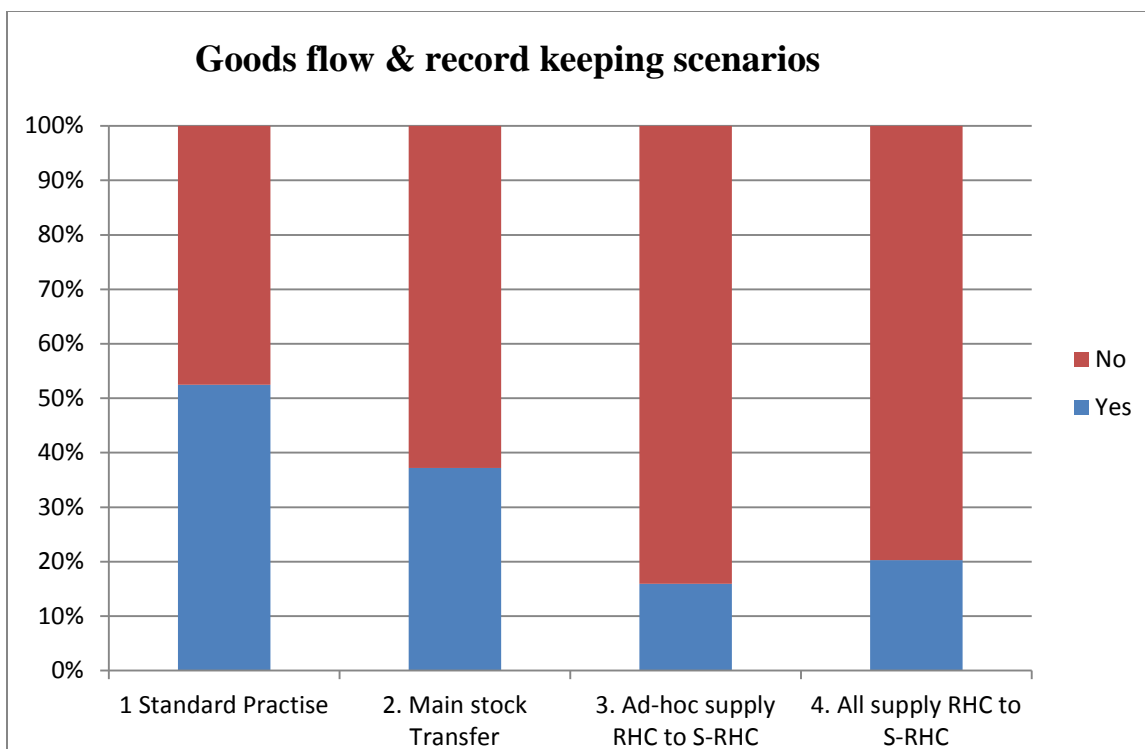
As soon as goods are supplied to the RHC they are recorded in the Main stock book and then directly transferred out to Sub-stock book, so basically using the main stock book only as a transfer stock ledger. Issues to daily users (LHV, Midwife and OPD) are recorded out of the Sub-stock book on a regular basis. The 'Out' transactions from the Sub-stock book (instead of Main stock) can be used as proxy consumption data. The purpose of the Main Stock book becomes redundant.

**3. Ad-hoc supply from RHC to Sub-RHC**

Normally the Sub-RHC's get their 6 monthly suppliers directly from the Townships but sometimes (upon special request) they also receive supplies from the RHC in their area.

**4. RHC Supplies Sub-RHC's**

Instead of direct supply to Sub-RHC's from the townships, in several township, the 6 monthly supplies to the Sub-RHC's are distributed via the RHC in their area.



The above graph gives an indication about the different practices used in the facilities regarding goods flow and stock keeping. Clearer guidelines and instructions from central level would improve standardization and more efficient practices.

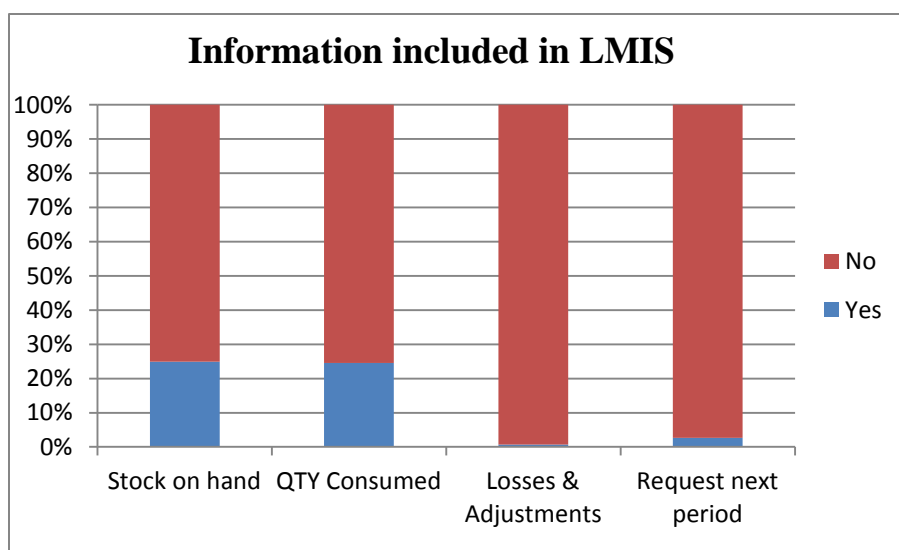
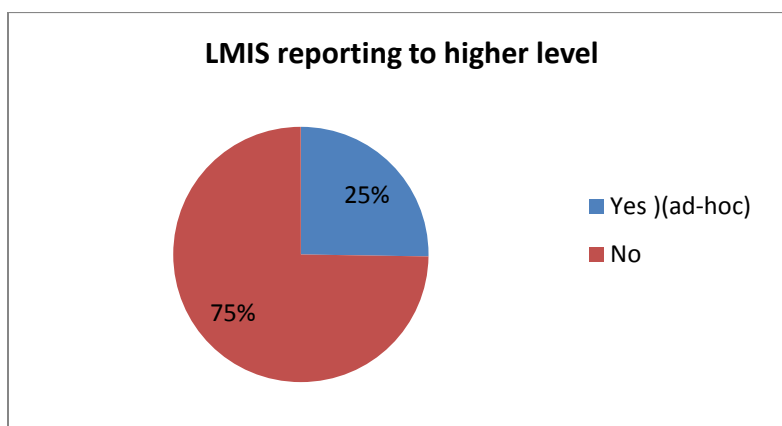
In general, the shorter the supply chain the more efficient it performs. We would suggest the following recommendations:

- Use only one Main Stock Ledger Book (for all sources)
- Cancel use of Sub-stock books in lower health facilities (ie. Only one Stock Ledger Book)
- Direct supplies to Sub-RHC from township (not transferred via stock book of RHC's)
- Supply from RHC to S-RHC only upon special request from S-RHC (in case of emergency /low stock)
- Weekly supply (two weekly in max.) from Main stock to daily users (OPD, LHV, Midwife)
- Supply to outreach /mobile activities when required

### **LMIS reporting**

Only a small number of health facilities report consumption data, stock levels or submit requisition forms to higher level. This is usually done ad-hoc and not at a regular periodic time schedule. As a result the townships do not received complete and updated

data regarding stock levels and consumption data of all health facilities, which makes forecasting exercises more difficult as well as re-allocation of excess stock from one facility to another more difficult.



Currently no standard procedure exists for Health Facilities to report on a regular basis according a standard format to higher level that includes stock level and consumption data. Only in some townships the Township Medical Officer has implemented some sort of self-designed basic reporting system.

In case the health facility does report on stock level and/or consumption data, this is done upon request from the central Audit department and usually only done for a particular category of items (coming from a specific source) and not for all items in the health facility.



## **Losses & adjustments**

In general no health facility records (nor reports) any losses & adjustment. Expired drugs or damaged items are currently not reported as there is not proper procedure from central level on how to deal with this category of items.

## **Request for next period**

In principle no stocks are kept at township level for basic health care drugs. Health facilities are supplied approx. each 6 months following the 6-monthly regional tender cycle. This explains why almost no facility sends a (monthly or quarterly) request form to higher level.

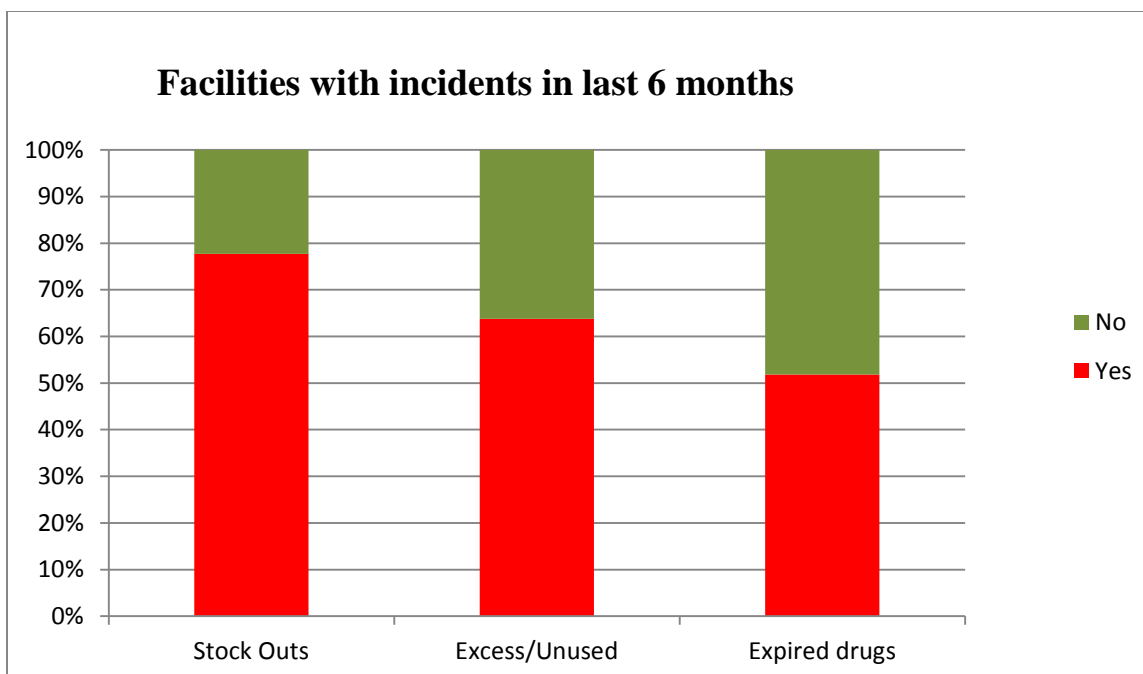
## **Supply**

This section consists of 15 questions related to availability of health commodities in the health facilities including delivery & transportation issues.

In order to ensure availability of essential health commodities, it is important that the facilities do not encounter stock outs and/or expired drugs. Furthermore it is important the facilities are not supplied with too much stock that they won't be able to use or can be better used at other facilities.

In case of potential stock out incidents, it is important the facilities are able to submit emergency orders to higher level in order to avoid actual stock outs.

The graph below shows the incidents of stock outs, excess drugs and expired drugs during the last 6 months as reported during the visit by the health facility staff.



### Stock Outs

78% of the facilities visited have experienced Stock Outs of 1 or more commodities in the last 6 months, but only 6% of the facilities have submitted an emergency order to higher level. It appears that there is no procedure in place to submit urgent/emergency orders to higher level in order to avoid stock outs. This is most likely due to fact that higher level does not keep (sufficient) emergency or buffer stocks for health facilities.

Sometimes RHC and S-RHC do re-allocate and share commodities between the facilities but this is done on an ad-hoc basis. There is no mechanism or standard procedure to re-allocate potential excess or unused stocks from one facility to another.

A better LMIS system that reports health facility stock levels and consumption data will provide higher level with an early warning system and a tool to re-distribute stocks between facilities.

### Excess / Unused commodities

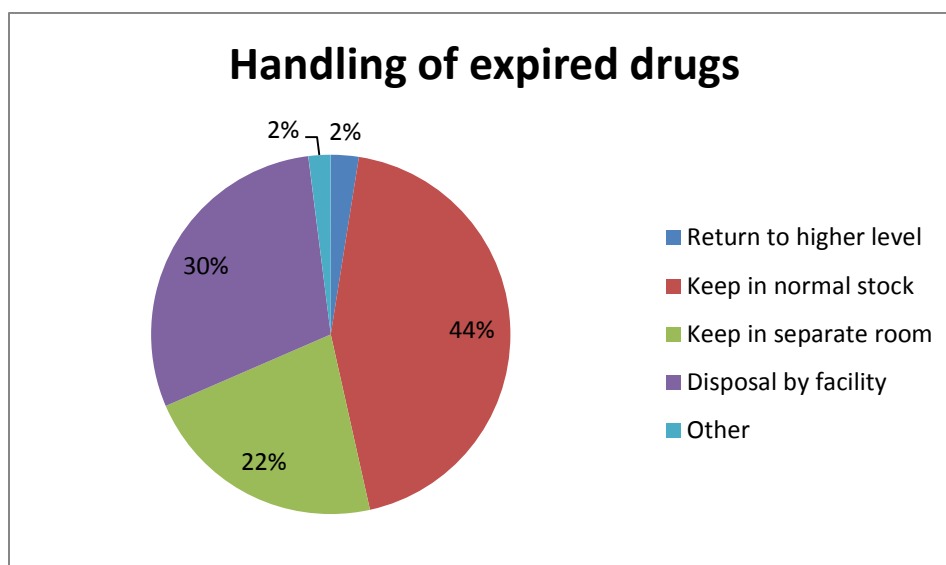
64% of the facilities visited reported excess or unused health care commodities. One of the reasons for this is that the facilities received quantities of commodities that they do not need but are 'pushed' through the supply system by higher level. A better overview of consumption data at health facility level may improve this and reduce the amount of excess or unused commodities. Monitoring facility stock levels will also enable higher level to re-allocate excess stock to other locations.

## Expired drugs

52% of the facilities visited have experienced expired drugs within the last 6 month. This is a result of high quantity of excess / unused stock (see above). All these indicators are linked and can be improved by a proper functioning LMIS system that will help improve forecasting and procurement based on real needs in the facilities. Another reason for the high incidence rate of expired drugs is that when commodities arrive at the health facilities the remaining shelf life of some products is already quite short and not all quantities can be used before the expiry date. It is important that when suppliers/vendors deliver the ordered goods, the remaining shelf life should be at least 75% of the total shelf life.

One important challenge is that currently the health facilities do not officially register expired drugs (or damages and losses) in their stock books. The reason for this is that there is no standard protocol or instructions within MOHS to the health facilities on how to deal with expired drugs, losses or damaged items.

At the moment most expired drugs are kept in the normal stock at the health facility or put in a separate room. Some commodities are disposed off at the facility and only a few facilities report that they sent the expired drugs back to higher level (township). There is a risk that expired drugs are used at the health facilities, either due to risk of stock out because there is no protocol and instruction how to handle expired drugs.



## **Ordering Health Commodities**

The order or re-supply quantities for most health facilities are determined by higher level (township or regional level). The health facilities do not have much involvement in determining the quantity of health commodities for the next period. The forecasting and procurement cycle of most basic health care commodities is 6 months. 98% of the health facilities reported that resupply quantities are determined by higher level.

The forecasting methodologies vary as well. Sometimes the quantities are calculated based on population numbers or morbidity statistic (HMIS data) from the townships. Sometimes the quantities fixed per RHC and Sub-RHC and then equally divided based on the number of RHC and Sub-RHC in the township.

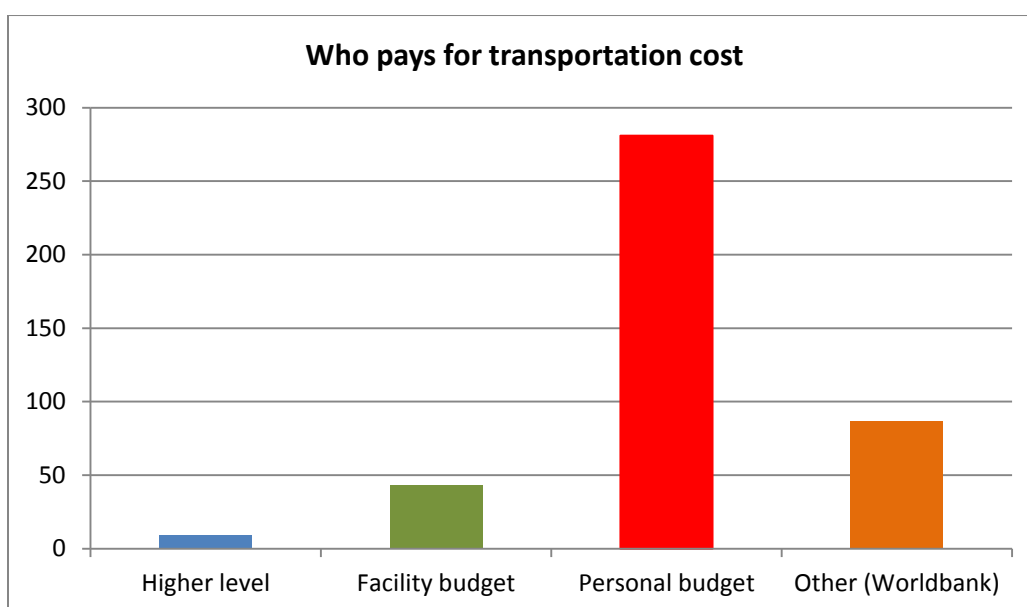
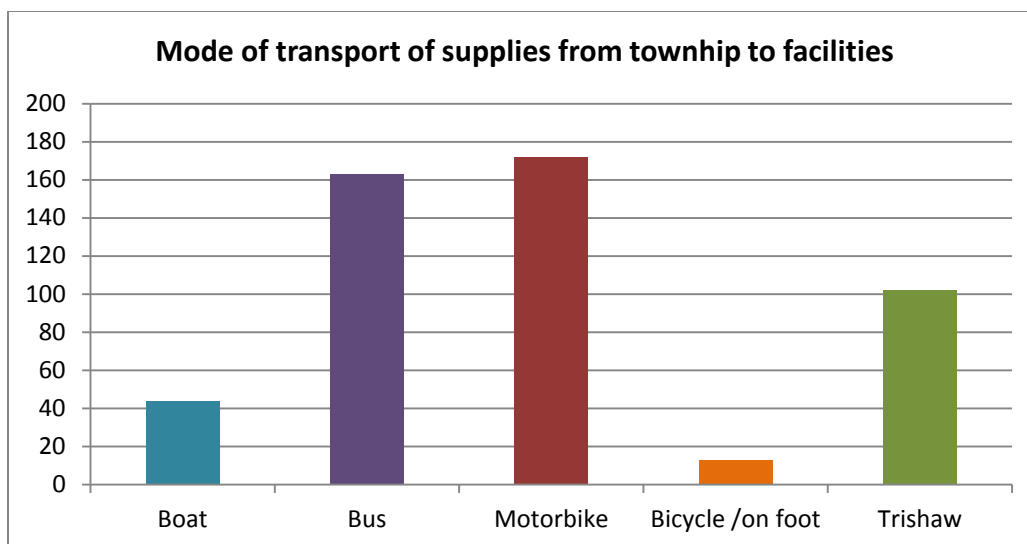
The facilities are not involved in making the 6 monthly forecast / orders and usually find out how much they receive based on information from the Township Medical Office.

Some practices on allocation of commodities to facilities are the following:

- Main RHC takes the supplies in 10% of total amount and distributes the remaining 90% to sub-centers based on the population ratio (as per instruction from Regional Public Health Department)
- Main RHC takes the supplies based on its population plus 10% buffer and the rest ratio are breakdown for sub-centers based on the individual population.
- Main RHC distributes to sub-centers according to their estimated needs (not based on sub-centers population) and keeps the rest quantities only in main RHC. In case of needed in sub-centers, resupplies to the needed sites from RHC's buffer stock.

## **Transportation of supplies**

In general all commodities from the 6 monthly procurement orders are transported by the suppliers (vendor) to township level. From there, all health facilities collect their allocated supplies from the township during the monthly CME meeting at the township. The mode of transport used is a mix of public transport (bus, boat) or private vehicle (motorbike).



## Transportation cost

Most facilities do not have a budget for transportation charges for health commodities. Most health staff uses their personal budget to pay for the transportation, which is usually done in combination with their regular monthly visit to the township. Some facilities report that the World Bank is supplying funds for transportation cost. However some facilities in Ayeyarwaddy mentioned that these funds is only for four month and is now being reduced. The World Bank fund is part of a loan project. The MOHS has received a loan from the World Bank that they eventually have to pay back.

## **Supply Supervision visits**

80% of the health facilities received a supervision visit from township level or higher level within the last 6 month of which approx. 65% included supervision regarding health commodity management such as checking stock ledger books and storage conditions. Before the baseline study we have received copies of supervision checklist that included checks regarding storage conditions, daily register books, patient register books, stock ledger books etc. but we have not seen any copies of these checklists in the health facilities during the study.

## **Stock Management & Cold chain storage**

This section consists of 5 questions regarding cold chain storage and another 10 questions regarding general storage conditions.

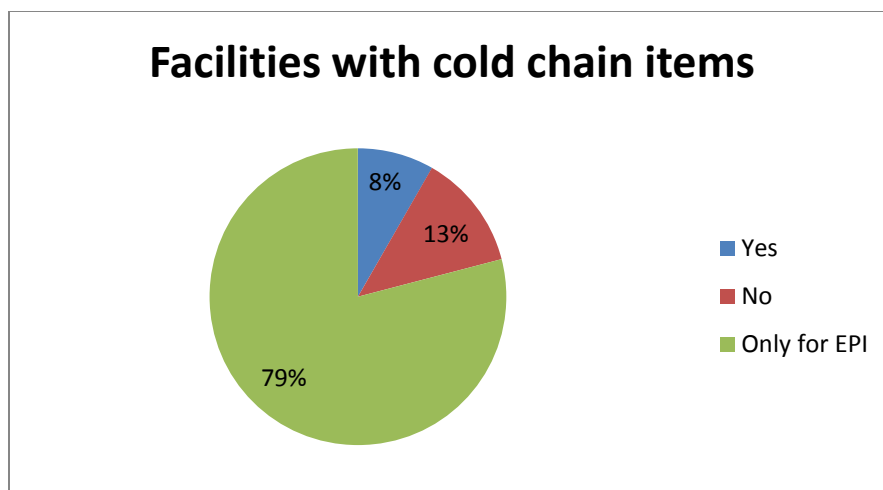
### **Cold chain storage**

Most of the health facilities only need cold chain storage during EPI activities and do not keep regular cold chain items. Only a few facilities keep Anti-snake venom.

In general, EPI vaccines are kept only 2-3 days in vaccine carrier with ice packs. It is difficult to freeze ice packs in 2nd and 3rd day due to lack of electricity and no freezer in clinics. They therefore, can manage cold chain only with ice instead of ice packs after first day. For the monitoring of vaccine temperature, they use the indicators such as thermometer and freeze tag.

Some health facilities don't need to store EPI vaccines in clinic sites since they complete the immunization activity in only one day.

The EPI vaccines are usually kept at township level and then prepared for transportation to the health facilities in a vaccine carrier with ice-packs. Most facilities (90%) confirmed that the temperature is monitored daily. We have not been able to verify this as there was not EPI activities taking place during the study.



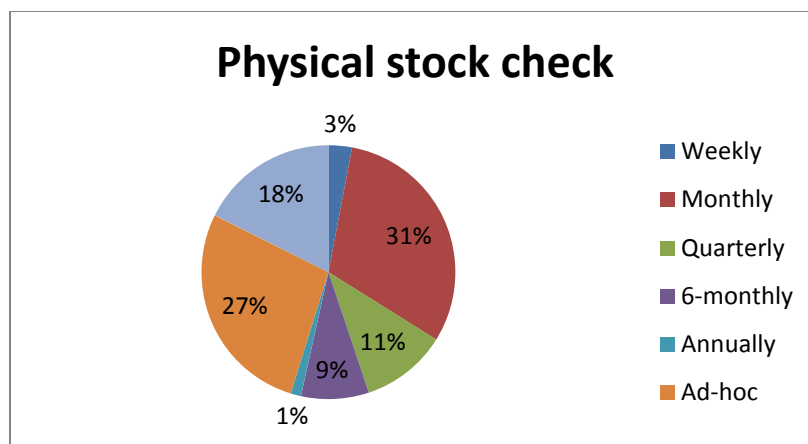
## Stock management

This section addresses the physical storage condition and management.

Depending on the facility and volume of supplies, the storage spaces vary from separate store room to cupboards, shelves or storage boxes. Most of the stores were properly organized with labels and expiry dates clearly visible.



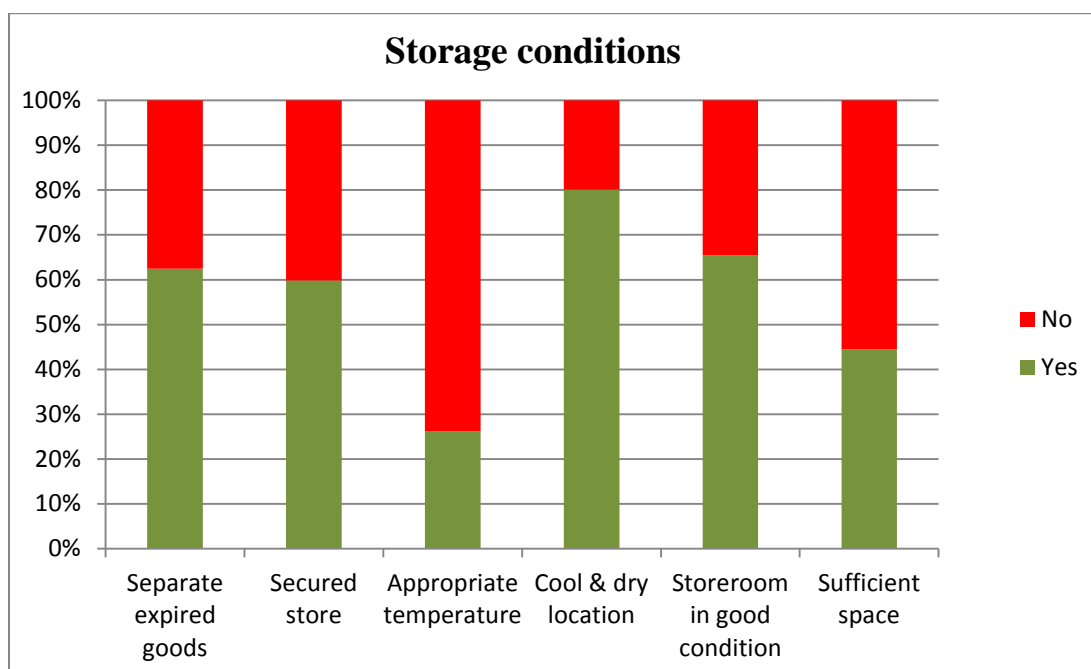
93% of the facilities confirmed that they use the FEFO (First Expiry First Out) system and 83% confirmed that they do physical stock checks albeit that the frequency differs between facilities. Some do regular (weekly, monthly etc.) stock checks and other do ad-hoc stock checks. There does not seem to be a clear instruction or procedure on how frequent physical stock checks need to be done.



## Storage conditions

It is challenging to keep all pharmaceuticals stored in perfect storage conditions. Most pharmaceuticals need to be stored in a dry location, not exposed to sunlight and at the temperature of not more than 25°C. As the ambient temperature in Myanmar is often more than 35°C with a very high humidity rate it will be difficult to meet appropriate storage conditions without climate control (air conditioning and reliable power supply). In rural areas this is not feasible.

The best that can be achieved is to store pharmaceuticals in the 'coolest and dry' place in the health facility away from direct sunlight.

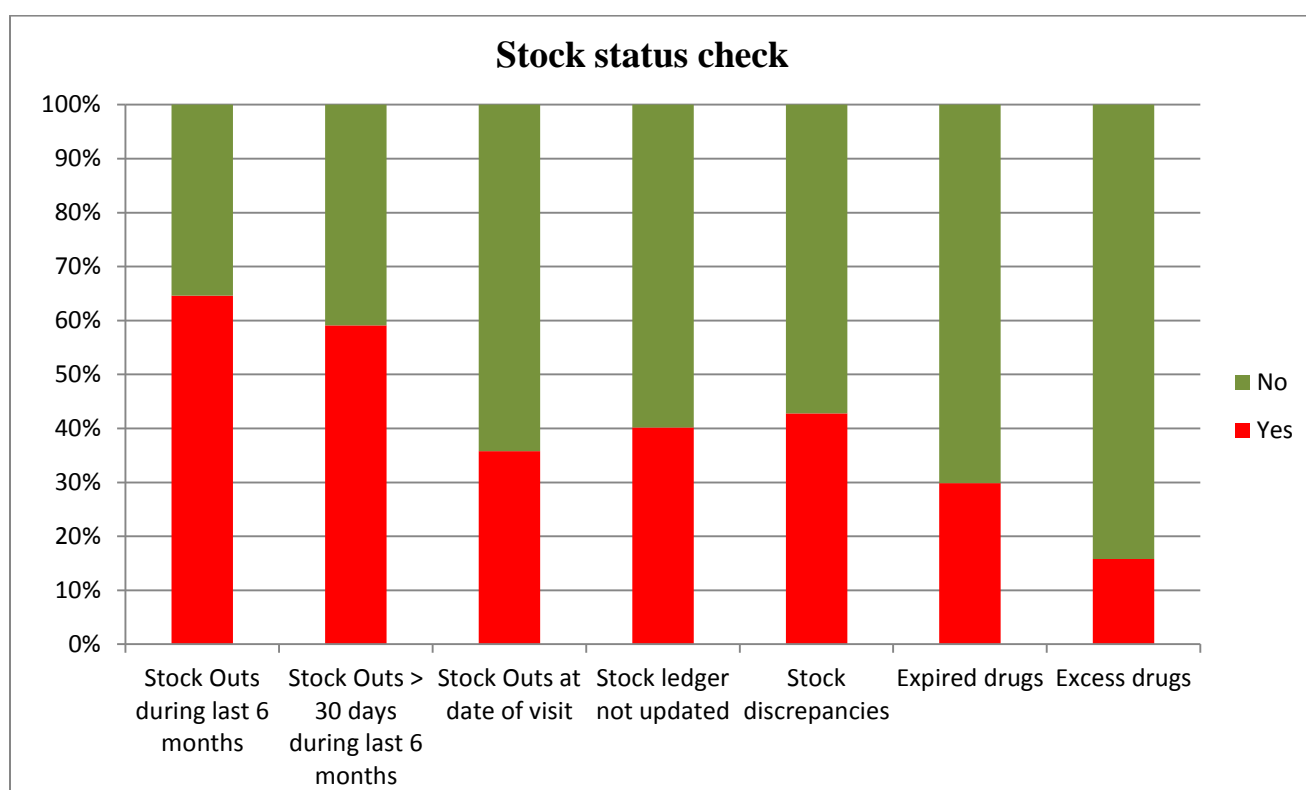




**Note:** 25% of the facilities (mostly RHC's and S-RHC's) reported that the products are stored at the appropriate temperature (according to product specification). This seems highly unlikely and we may have to assume that the staff is not aware about the recommended storage temperature according to the product specifications.

## Stock Status

In each facility the study team did a verification check of 10 tracer commodities (see paragraph 3.3). This included verification of stock transactions in the stock ledger books as well as a physical stock check of each item. The main purpose of this stock check is to determine a baseline for the stock out, expired drugs and excess stock incidence rates.



## Stock Outs

The verification of stock out incidences during the last 6 months was done by checking the stock ledger books. One or more zero stock balances of an item is considered as a stock out. It should be noted that 40% facilities had not updated their stock ledger books with the latest transactions so a margin of error with information based on stock ledger books should be taken into account. However, in our opinion, the information on stock out data and nr. of days of stock out is representative for all items.

65% of the items checked experienced a stock out during the last 6 months, and 59% had stock outs of more than 30 days. The team also did a physical check of the tracer commodities in stock. Approx. 36% of items were out of stock during the time of visit.

### **Expired & Excess drugs**

30% of the tracer commodities had one or more expired batches in stock. Approx. 16% of items had excess quantities in stock. Excess is defined as more the 12 months of stock based on average consumption. This two indicator are linked as excess or unused commodities will eventually expire. This further indicates that distributed quantities are not necessarily based on real needs of facilities and that an early warning system to avoid expiry drugs either does not function properly or does not exist

### **Data summary and rating**

This section presents a detailed overview of all answers and score per category and question. The Baseline Study questionnaire contains 58 questions for 5 different categories:

- Human Resources
- LMIS
- Supply
- Stock Management (incl. Cold Chain storage)
- Stock Status check

In general all categories and questions have equal weight in the overall score with a few exceptions. For example, Cold Chain only has a small part in the performance of supply chain as it is related to a few items and only relevant during EPI activities (1 or 2 days per month). We have incorporated the score of the Cold Chain Category in the stock management score and allocated 20% of the score to the overall stock management score.

Some of the questions we deemed 'not as important as the other questions to the overall supply chain performance and therefore lower their weight to 50% (instead of 100%) to the overall average score. These questions are: 204, 205, 209, 310 & 315.

Category	Score
Human Resources	48%
LMIS	35%
Supply	39%
Storage Conditions	58%
Stock Status Check	55%
Total Average Score	47%

# Recommendations

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## Human Resources

- Provide Basic Health Care staff with clear instruction and tools regarding Supply Chain Management (including, but not limited to)
  - Procedure on dealing with losses & adjustments (expired drugs, damaged goods)
  - Procedure on dealing with Excess drugs & supplies (re-allocation to other facilities)
  - Procedure for Emergency/Urgent order to avoid Stock outs
- Provide Basic Health Care staff with proper training on:
  - LMIS system
  - Stock Management
  - Forecasting & Planning
- Create Logistic Management Units (LMU) at township level and above with dedicated and trained staff for Supply Chain Management

## LMIS

- Reduce the number of Stock Ledger Book in facilities.
  - One stock ledger book for all commodities (not separate per source)
  - From Main & Sub stock book to One Stock Ledger Book only
- Implement basic LMIS reporting system for health facilities including data such as :
  - Monthly / Quarterly consumption data, stock balance, nr. of stock out days and losses & adjustments)
  - Provide sufficient reporting forms to avoid staff using their own budget
- Use LMIS data for more accurate Forecasting and Quantification:
  - Based on real needs
  - Not based on fixed quantities per facility
- In coordination with Auditing department, re-organize and standardize recording and reporting procedures
  - Standard stock ledger book (including Losses & Adjustments)

- Standard reporting procedure and tool (including consumption data, stock level, nr of stock out days, losses & adjustments)

## **Supply**

- Supply of commodities to health facilities should be based on real needs / requisition forms coming from health facility (not based on quantities pre-fixed by higher level)
- Implement LMIS reporting system for stock level to re-allocate excess commodities to other facilities in order to:
  - Reduce number of Stock Outs
  - Reduce Excess drugs / Wastage / Expired drugs
  - Improve rational use of drug supplies
- Consider keeping buffer stock at Township level on behalf of health facilities (storage space permitting) in order to use township as transfer stock/hub for supplies to health facilities
  - Use township to store excess commodities and to re-allocate to other facilities (with low stocks)
  - Supply health facilities based on real needs and keep remaining stock at township as buffer stock
- Create budget for commodity transportation from township to health facilities in order to avoid basic health staff using their personal budget.

## **Stock Management**

- Provide budget in order to improve / standardize storage conditions:
  - Lockable cupboard as minimum requirement
- Implement standard procedure for regular (monthly or quarterly) physical stock check (ground check) including reporting of expiry date

# Data Summary Overview

No.	Questions		Code	Answers	Rating	Weight per question		Weight per category	47%
Human Resources									48%
101	I Can we continue?	Yes	1	301			Data Valid		
		No	0	0					
102	I Job Title of interviewee		TEXT	301			Data Valid		
103	P How long you have worked at this facility?	Less than 6 months	1	25	25%	2%	Data Valid	88%	100%
		Between 6 and 12 months	2	34	50%	6%			
		More than 1 year	3	242	100%	80%			88%
104	I Who is the principal person responsible for managing medical supplies at this facility?	Medical Officer 1	1	5			Data Valid		
		Health Assistant 2	2	79					
		Nurse 3	3	3					
		Lady Health Visitor 4	4	22					
		Midwife 5	5	174					
		Compounder 6	6	0					
		Public Health Supervisor I 7	7	10					
		Public Health Supervisor II 8	8	1					
		Other (Specify) 9	9	7					

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105	P	Did you or any of the Health Facility Staff receive any training, instructions or Guidelines on?										
		A. Use of LMIS forms (Stock Ledger Book, Stock Reporting forms, Request Forms, Issue & Receipt Voucher	Yes	1	1	164	100%	54%	Data Valid	54%	100%	54%
			No	0	0	137	0%	0%				
		B. Stock Management (FEFO system, How to Store Pharmaceuticals, How to manage your store	Yes	1	1	167	100%	55%	Data Valid	55%	100%	55%
			No	0	0	134	0%	0%				
		C. Forecasting & Quantification (how to calculated the quantities of commodities needed for the future)	Yes	1	1	54	100%	18%	Data Valid	18%	100%	18%
			No	0	0	247	0%	0%				
		D. other training/instructions on Health Commodity Supply Management	Yes	1 (specify: Waste disposal)		1	5	75%	1%	Data Valid		
			No	0	0	296	25%	25%		26%	100%	26%

LMIS												35%
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201	P	Do you use the following stock keeping logistics forms to manage health products in this facility?											
		A. stock cards/bin card/ inventory control card	Yes	1	44	100%	15%	Data Valid					
			No	0	257	0%	0%						
		B. stock book ledger	Yes	1	299	100%	99%	Data Valid					
			No	0	2	0%	0%						
		C. other	Yes	1	31	100%	10%	Data Valid					
			No	0	270	0%	0%						
								124%	100%	100%	100%		
202	I	How many different MAIN stock	CMSD	A	217			Multi					

/a		books do you have in the facility? Specify each source	TENDER (region)	B	276			ple answ ers			
			RH	C	171						
			Nutrition	D	201						
			Malaria	E	133						
			Other (Specify)	W	134						
202 /b	P	How many different MAIN stock books do you have in the facility? Specify each source		1	42	100%	14%	Data Valid	38%	100%	38%
				2	32	75%	8%				
				3	44	50%	7%				
				4	58	25%	5%				
				5	88	10%	3%				
				6	37	5%	1%				
203	P	How frequently does the facility transfer commodities from MAIN Stock book to SUB stock book (or Lady Health Visitor / Midwife / Outreach activities)?	SUB stock book not used	0	31	100%	10%	Data Valid	49%	100%	49%
			All QTY after reception	1	112	0%	0%				
			Daily	2	0	0%	0%				
			Weekly	3	1	50%	0%				
			Monthly	4	25	75%	6%				
			Only when SUB stock QTY is low	5	130	75%	32%				
			Other (Specify)	9	2	0%	0%				
204	P	From which stock do the Lady Health Visitor, Midwife of other outreach activities get there Health Commodities from?	From MAIN stock book	1	70	100%	23%	Data Valid	77%	50%	38%
			From SUB stock book	2	208	75%	52%				
			From both main & sub stock	3	14	25%	1%				
			Other (specify)	9	9	25%	1%				
205	P	How frequently does the facility transfer commodities from stock to Lady Health Visitor, Midwife of other outreach activities?	All QTY after reception	1	27	0%	0%	Data Valid	69%	50%	35%
			Daily	2	7	25%	1%				
			Weekly	3	8	100%	3%				
			Monthly	4	32	25%	3%				
			Only when stock QTY is low	5	178	100%	59%				
			Other (Specify)	9	49	25%	4%				
206	P	Is the above transfer a physical	Paper transaction only	0	132	0%	0%	Data			

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		transfer (with update of stock books) of commodities from one location to another or is it just a transaction recorded on paper (and commodities stay in one location)?	Physical transfer & stock update	1	166	100%	55%	Valid	55%	100%	55%
			Other (Specify)	9	3	0%	0%				
207	I	Does this facility transfer commodities to other facility (for example from RHC to S-RHC)?	Yes	1	109			Data Valid			
			No	0	192						
208	I	If yes, how frequent do they transfer to other/lower facilities (for example from RHC to Sub RHC)?	Only upon special request	1	48			Data Valid			
			All supplies to S-RHC come via RHC	2	61						
209	P	Does this facility record this transfer to other / lower facility in their stock books (for example from RHC to S-RHC)?	No	0	4	0%	0%	Data Valid	77%	50%	39%
			Yes in Main Stock book	1	63	100%	58%				
			Yes in Sub Stock book	2	42	50%	19%				
210	P	Does this facility use any LMIS form for Basic Health Care drugs to report or order Stock levels, Consumption data or Requested Quantities to higher (township) level?	Yes	1	76	100%	25%	Data Valid	25%	100%	25%
			No	0	225	0%	0%				
211	P	What LMIS forms do you use for reporting/ordering?									
		A. Health Facility Stock Report (Recording opening and closing balances and Ins & Outs)	Yes	1	65	100%	22%	Data Valid			
			No	0	236	0%	0%				
		B. Indent/Requisition form	Yes	1	7	50%	1%	Data Valid			
			No	0	294	0%	0%				
		C. other	Yes	1	12	50%	2%	Data Valid			
			No	0	289	0%	0%				
							25%		25%	100%	25%



212	P	Does the LMIS report forms include the following columns?											
		A. stock on hand (Closing Balance)	Yes	1	75	30%	7.5%	Data Valid					
			No	0	226	0%	0.0%	Data Valid					
		B. quantities used (QTY Consumed)	Yes	1	74	30%	7.4%	Data Valid					
			No	0	227	0%	0.0%	Data Valid					
		C. losses and adjustments	Yes	1	2	30%	0.2%	Data Valid					
			No	0	299	0%	0.0%	Data Valid					
		D. Request / Indent for next period	Yes	1	8	10%	0.3%	Data Valid					
			No	0	293	0%	0.0%	Data Valid					
							15%		15%	100%	15%		
213	P	Does a completed LMIS report include the following data? (must be verified with completed report)											
		A. stock on hand (Closing Balance)	Yes	1	62	30%	6%	Data Valid					
			No	0	226	0%	0%	Data Valid					
			Completed report not available	9	13	0%	0%	Data Valid					
		B. quantities used (QTY Consumed)	Yes	1	61	30%	6%	Data Valid					
			No	0	227	0%	0%	Data Valid					
			Completed report not available	9	13	0%	0%	Data Valid					
		C. losses and adjustments	Yes	1	1	30%	0%	Data Valid					
			No	0	299	0%	0%	Data Valid					
			Completed report not available	9	1	0%	0%	Data Valid					
		D. Request / Indent for next period	Yes	1	7	10%	0%	Data Valid					
			No	0	293	0%	0%	Data Valid					
			Completed report not available	9	1	0%	0%	Data Valid					
							13%		13%	100%	13%		
214	P	How often are these LMIS reports sent to the higher level? (Circle all	Monthly	A	47	100%	16%	Multi					
		Quarterly		B	7	75%	2%	ple					

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		that apply)	Semi-annually	C	9	50%	1%	answ ers	19%	100%	19%
			Annually	D	0	25%	0%				
			Other	W	13	5%	0%				
215	P	When was the last time you sent an order/report for Basic Health Commodities at this facility?	Never	1	225	0%	0%	Data Valid	21%	100%	21%
			According to above schedule	2	60	100%	20%				
			Irregular	3	16	20%	1%				
							21%				
216	P	How did you learn to complete the forms/records used at this facility? (Circle all that apply)	During a logistics workshop	A	44	100%	15%	Multi ple answ ers	22%	100%	22%
			On-the-job training	B	21	100%	7%				
			Never been trained	C	10	0%	0%				
			Other (specify)	W	1	50%	0%				
							22%				

<b>Supply</b>											<b>39%</b>
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301	P	Were there any Stock Outs of Basic Health Care Commodities in the last 6 months?	Yes	1	234	0%	0%	Data Valid	22%	100%	22%
			No	0	67	100%	22%				
302	P	Are there any Excess or Unused Basic Health Care Commodities in Stock?	Yes	1	192	0%	0%	Data Valid	36%	100%	36%
			No	0	109	100%	36%				
303	P	Were there any Expired Drugs in the last 6 months?	Yes	1	156	0%	0%	Data Valid	48%	100%	48%
			No	0	145	100%	48%				
304	P	If 303 = Yes, what did they do with these expired drugs?	Return to higher level	A	5	100%	3%	Multi ple answ ers	28%	100%	28%
			Keep in normal stock	B	88	0%	0%				
			Stored in separate location in facility	C	44	50%	11%				
			Disposal at Facility	D	59	50%	15%				
			Other (specify)	W	4	0%	0%				
305	P	How many Urgent / Emergency orders for Basic Health Care	None	0	203	0%	0%	Data Valid			
			Only 1	1	14	75%	4%				

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		Commodities have you placed in the last 6 months? ( this question shows the responds to the hight stock out incidents shows in question 301)	2 More than 2 Don't know	2 3 9	2 2 14	100% 100% 0%	1% 1% 0%				
306	P	Who determines this facility's resupply quantities? (Circle all that apply)	The facility itself Higher-level facility	A B	8 297	100% 50%	3% 49%	Multi ple answ ers	6% 52%	100% 100%	6% 52%
307	P	How are the facility's resupply quantities determined?	Formula (based on facility needs) Formula (not based on facility needs) Don't Know Other means (Specify)	1 2 3 9	86 142 72 1	100% 25% 0% 10%	29% 12% 0% 0%	Data Valid	40%	100%	40%
308	P	On average, approximately how long does it take between ordering and receiving products?	This facility does not make orders Less than 1 month Between 1 and 3 months More than 3 months Don't Know	0 1 2 3 9	288 11 1 0 1	25% 100% 50% 25% 0%	24% 4% 0% 0% 0%	Data Valid	28%	100%	28%
309	P	Who is responsible for transporting of Basic Health Care Commodities to your facility? (Circle all that apply)	Supplier delivers Higher level delivers This facility collects Other (specify)	A B C W	4 5 297 0	100% 100% 25% 10%	1% 2% 25% 0%	Multi ple answ ers	28%	100%	28%
310	I	Which mode of transportation are often used for these commodities?	Facility vehicle Public transportation Private vehicle	A B C	2 288 123			Multi ple answ ers			
311	I	Which types of vehicles are often used for these commodities?	Boat Car Motorcycle Bicycle	A B C D	44 163 172 9			Multi ple answ ers			

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			On foot	E	4						
			Other	W	102						
312	P	Who pays for the transportation of commodity charges?	Higher level	A	9	100%	3%	Multiple answers	39%	100%	39%
			Facility Budget	B	43	100%	14%				
			Personal Budget	C	281	0%	0%				
			Other (specify)	W	87	75%	22%				
313	P	When was the last time you received a supervision visit from Township or higher level?	Never received	1	15	0%	0%	Data Valid	79%	100%	79%
			Within the last month	2	132	100%	44%				
			1 - 6 months ago	3	120	75%	30%				
			More than 6 months ago	4	31	50%	5%				
			Don't remember	9	3	0%	0%				
314	P	Did this last supervision visit include drug management (e.g., stock cards checked, reports checked, expired stock removed, storage conditions checked)?	Yes	1	194	100%	64%	Data Valid	64%	100%	64%
			No	0	86	0%	0%				
			Don't Know	9	21	0%	0%				
315	I	Do you have a copy of the last Supervision Check List?	Yes	1	6			Data Valid			
			No	0	258						
			N/A	9	37						

Cold Chain Storage										49%	
401	I	Do you keep items that need Cold Chain (Cool Storage)?	Yes	1	25			Data Valid			
			No	0	38						
			Only for EPI (vaccination)	2	238						
402	P	How do you store Cold Chain items?	Vaccine Carrier (+ Icepacks)	A	245	100%	93%	Multiple answers	100%	50%	50%
			Cold Storage Box (+ Ice packs)	B	31	100%	12%				
			Refrigerator (electrical/solar)	C	23	100%	9%				
			Other (Specify)	W	3	25%	0%				
403	P	Do you monitor the temperature daily?	Yes	1	252	100%	96%	Data Valid	96%	50%	48%
			No	0	11	0%	0%				
404	P	Check the actual temperature. Is the	Lower than required (2 °C)	0	1	0%	0%	Data			

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		temperature between 2 and 8 °C ?	Correct (between 2 and 8 °C)	1	63	100%	24%	<b>Valid</b>	97%	50%	49%
			Higher than required (8 °C)	2	4	0%	0%				
			Don't Know, no indicator present	3	2	0%	0%				
			Currently no EPI activity	9	193	100%	73%				
405	P	Is the temperature chart up-to-date? (to be up-to-date, there must be an entry for the day before the visit).	Yes	1	4	100%	2%	<b>Data Valid</b>	95%	50%	48%
			No	0	13	0%	0%				
			Currently no EPI activity	9	246	100%	94%				

<b>Stock Management</b>									<b>60%</b>	<b>58%</b>
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501	I	What type of storage does this facility have?	Separate Store Room	A	150			<b>Multi ple answ ers</b>			
			Lockable Cupboard in Common Space	B	127						
			Open shelves in Common space	C	64						
			Storage box	D	77						
			Other (specify)	W	31						
502	P	Products are stored in an organized manner. Labels and expiry dates are clearly visible. (for example: alphabetically or by category)	Yes	1	202	100%	67%	<b>Data Valid</b>	67%	100%	67%
			No	0	99	0%	0%				
503	P	The Facility uses the FEFO (First Expiry, First Out) method with issuing or dispensing drugs to patients or sub-stocks.	Yes	1	270	100%	90%	<b>Data Valid</b>	90%	100%	90%
			No	0	31	0%	0%				
504	P	Does the facility do a regular physical stock count (of the MAIN stock)? If yes, specify the interval	Yes	1	248			<b>Data Valid</b>			
			No	0	53	0%	0%				
			Ad-hoc	A	83	5%	1%	<b>Data Valid</b>			
			Weekly	B	9	25%	1%				
			Monthly	C	93	100%	31%				
			Quarterly	D	33	75%	8%				

*RSCS Baseline Study Results*

			6-monthly Annually	E F	26 4	50% 25%	4% 0%		46%	100%	46%
505	P	The facility separates damaged and/or expired products from usable products and removes them from inventory.	Yes	1	188	100%	62%	Data Valid	62%	100%	62%
			No	0	113	0%	0%				
506	P	Storage area is secured with a lock and key, but is accessible during normal working hours; access is limited to authorized personnel only.	Yes	1	180	100%	60%	Data Valid	60%	100%	60%
			No	0	121	0%	0%				
507	P	Products are stored at the appropriate temperature according to product temperature specifications.	Yes	1	79	100%	26%	Data Valid	26%	100%	26%
			No	0	222	0%	0%				
508	P	Products are stored in the cool and dry location of the building away from direct sunlight.	Yes	1	241	100%	80%	Data Valid	80%	100%	80%
			No	0	60	0%	0%				
509	P	Storage space is maintained in good condition (clean, all trash removed, sturdy shelves, organized boxes) and protected from pest, water and direct sunlight.	Yes	1	197	100%	65%	Data Valid	65%	100%	65%
			No	0	104	0%	0%				
510	P	The current space and organization is sufficient for existing products and reasonable expansion	Yes	1	134	100%	45%	Data Valid	45%	100%	45%
			No	0	167	0%	0%				

Stock Status								55%	
Physical stock status check of 10 tracer commodities				nr. of checks	yes	No	% No	Weight	Score
601	P	Nr of items with Stock Outs	between 0 - 10	3010	1945	1065	35%	30%	11%
602	P	Nr of items with stock out of more than 30 days	between 0 - 10	3010	1779	1231	41%	20%	8%
603	P	Nr of items not updated in Stock	between 0 - 10	3010	1210	1800	60%	5%	3%

*RSCS Baseline Study Results*

Ledger Book									
604	P	Nr of items with Stock Discrepancies	between 0 - 10	3010	1288	1722	57%	5%	3%
605	P	Nr of expired items in stock	between 0 - 10	3010	899	2111	70%	25%	18%
606	P	Nr of unused or Excess stock (>12 months) in stock	between 0 - 10	3010	476	2534	84%	15%	13%
								100%	55%

# List of Facilities

		Total	35	55	7	2	2
#	Region	Township	RHCs	Sub RHCs	MCH T/S	UHC T/S	School HC T/S
1	Bago	Bago	Phayar Gyi SH	Shwe Tan	Bago	Bago	Bago
1	Bago	Bago		Ah Wine			
1	Bago	Bago	Inn Ta Kaw	Se Maing Kone			
1	Bago	Bago		Kha Meik			
1	Bago	Bago	Zee Taw	Ah Seik Taung			
1	Bago	Bago	Htone Gyi	Chan Thar Kone			
1	Bago	Bago		Shan Kone			
1	Bago	Kawa	Tha Yet Kone RHC	Htee Tan			
1	Bago	Kawa		Kan Htoo			
1	Bago	Kawa	Ohn Ne	Pha Lay SC			
1	Bago	Kawa		Kyar Tet SC			
1	Bago	Kawa	Neik' Van	Kha Mel Pyin			
1	Bago	Kyauktaga	Taw Kywe Inn	Kyar Inn Kone			
1	Bago	Kyauktaga		Kan Pun Kin			
1	Bago	Kyauktaga	Tha Min Inn Kone	Nan Za			
1	Bago	Kyauktaga		Ga Net			
1	Bago	Kyauktaga	Myo Chaung	Gway Kone			
1	Bago	Daik-U	Ka Toke	Kyaik Sa Kaw (West)	Daik-U		
1	Bago	Daik-U	Sit Bo Gyi	Tar Gwa			
1	Bago	Daik-U	Doe Tan RHC	Let Pan Thone Wa SC			
1	Bago	Daik-U		Ta Kaung SC			
1	Bago	Shwegyin	Than Seik	Ma Bee	Shwegyin		
1	Bago	Shwegyin		Anout Phet			
1	Bago	Taungoo	Doe Thaung RHC	Myo Gyi SC	Taungoo		
1	Bago	Taungoo		Put Su SC			
1	Bago	Taungoo	Sin Ywar	Ma Hin			
1	Bago	Taungoo	Su Tat	Kan Yoe			
1	Bago	Taungoo	LeI Bu	Bo Ka Taw			
1	Bago	Phyu	LeI Pyin Gyi RHC	Oak Phyat SC	Phyu		Phyu
1	Bago	Phyu		Site Tan Khin			
1	Bago	Phyu	WeI Gyi	Kyu Inn SC			
1	Bago	Phyu		Zee Khone			
1	Bago	Phyu	Hpa Yar La Har	In Pin Thar SC			
1	Bago	Pyay	Paung Ta Lei (SH)	Let Pan Taw	Pyay	Pyay	
1	Bago	Pyay	Kone Thar Lin	Thit Chi Tin			
1	Bago	Pyay	Ti Tut	Mein Ma Ye			
1	Bago	Pyay		Kya Khat			
1	Bago	Pyay	Pein Taw	Hnyaw Kone			
1	Bago	Pyay		Ywar Thit Gyi			
1	Bago	Shwedaung	Kyee Thea	Taung Kone SC			
1	Bago	Shwedaung		Kyaung Su			
1	Bago	Shwedaung	Nyaung Sar Yay	Shar Taing			
1	Bago	Shwedaung		Kyauk Hta Yan			
1	Bago	Shwedaung	Htan Kone	Inn Gu			
1	Bago	Okpho	Oe Thei Kone (SH)	Ka Mun Chon	Okpho		
1	Bago	Okpho	Tha Hpan Pin Seik	Kyun Kone			
1	Bago	Okpho	Kan Thar Yar	Tha Yet Pin Seik			
1	Bago	Okpho		Pyi Taw Tha			
1	Bago	Nattalin	Kwin Kyei (SH)	Kyauk Saung			
1	Bago	Nattalin		Nyaung Hla SC			
1	Bago	Nattalin	Pauk Tone	But Taw			
1	Bago	Nattalin	Chin Yoke Kwin	Shwe Kyar Pin SC			
1	Bago	Nattalin		Nyaung Ngoke To			
1	Bago	Nattalin	Kyoet Kyar Kan	Oke Hpo Su			
1	Bago	Nattalin		Hlar Phyu Kone			



		Total	35	55	6	2	2
#	Region	Township			MCH T/S	UHC T/S	School HC T/S
2	Magway	Magway	Nyaung Kan RHC	Than Bo Lay	Magway	Magway	Magway
2	Magway	Magway		Tha PyayYin S-RHC			
2	Magway	Magway	Myin Kun RHC	Myin Kin			
2	Magway	Magway		Shar Saung Kan S-RHC			
2	Magway	Magway	Tha Yet Lay Pin RHC	Ma Gyi Kan			
2	Magway	Magway		Tha Pyay San(South)			
2	Magway	Yenangyaung	Hpa Yar Kone RHC	Mye Ni Khin	Yenangyaung		
2	Magway	Yenangyaung		Sein Pan Pin (SC)			
2	Magway	Yenangyaung	Kamma (RHC)	Bae Mae (SC)			
2	Magway	Yenangyaung	Kangyi (RHC)	Sel (SC)			
2	Magway	Yenangyaung		Chaing (SC)			
2	Magway	Taungdwingyi	Kan Bay Gyi RHC	Thea Hpyu S-RHC	Taungdwingyi		
2	Magway	Taungdwingyi	Sat Thwar RHC	Wet Ka Thay			
2	Magway	Taungdwingyi		Kan Thar			
2	Magway	Taungdwingyi	Nga Min RHC	Pan Thwin Lay			
2	Magway	Minbu	Kyauk San RHC	Mei Bayt Kone			
2	Magway	Minbu	Khan Kone RHC	U Yin Zin S-RHC			
2	Magway	Minbu		Kyauk Sit Pon S-RHC			
2	Magway	Minbu	U Yin RHC	Pan Taung			
2	Magway	Pwintbyu	Kone Zaung RHC	Ywar Khaing (SC)			
2	Magway	Pwintbyu	Kyaung Taw Yar RHC	Min Myay			
2	Magway	Pwintbyu		Hpa Lan Taw			
2	Magway	Salin	Sin Phyu Kyun SHU	Nwe Ta Min S-RHC	Salin		
2	Magway	Salin		Moe Wun S-RHC			
2	Magway	Salin	Ta Nyaung SHU	Zee Phyu Bin S-RHC			
2	Magway	Salin	Ohn Shit Kone RHC	Yae Paw Kyun S-RHC			
2	Magway	Salin		Chaung Phyu S-RHC			
2	Magway	Thayet	Ta La Par RHC	Thatyet Myin			
2	Magway	Thayet	Ma Din RHC	Sin Te			
2	Magway	Thayet		Htone Taung			
2	Magway	Thayet	Baw RHC	Taung Poe Gyi			
2	Magway	Kamma	Yae Nant Thar RHC	Myauk Pin			
2	Magway	Kamma	Kyoe Pin RHC	Pyin Htaung			
2	Magway	Kamma		Kyauk Mae			
2	Magway	Kamma	Kyauk Saung RHC	Taung Myint S-RHC			
2	Magway	Aunglan	Shwe Pan Taw RHC	Haing Gyi Doe S-RHC			
2	Magway	Aunglan		Ba Ye (SC)			
2	Magway	Aunglan	Kyauk Pa Taung RHC	Myo Hla			
2	Magway	Aunglan		Ywar Ma Htone			
2	Magway	Aunglan	Tharbala RHC	Ye Baw			
2	Magway	Aunglan		Thit Khaung Tee			
2	Magway	Pakokku	Kan Ma RHC	Nyaung Kyit Pin S-RHC		Pakokku	Pakokku
2	Magway	Pakokku	Kun Ywar RHC	Kyee S-RHC			
2	Magway	Pakokku	Hpa Lan Oh RHC	Kan Taw			
2	Magway	Pakokku		Kyauk Sa Yit Kan			
2	Magway	Yesagyo	Ma Au RHC	Zee Taw S-RHC	Yesagyo		
2	Magway	Yesagyo		Thar Si S-RHC			
2	Magway	Yesagyo	Khway Hmyoke RHC	Kan Pauk			
2	Magway	Yesagyo	Kyu (RHC)	Si Thar (SC)			
2	Magway	Yesagyo		Myay Phyu (SC)			
2	Magway	Saw	Kyauk Htu RHC	Kan Gyi	Saw		
2	Magway	Saw		Lay Ywar			
2	Magway	Saw	Long Shay RHC	Taung Bo Gyi S-RHC			
2	Magway	Saw	Mi Ae RHC	A Kyi Pan Pa Lun			
2	Magway	Saw		Nwar Thoe			

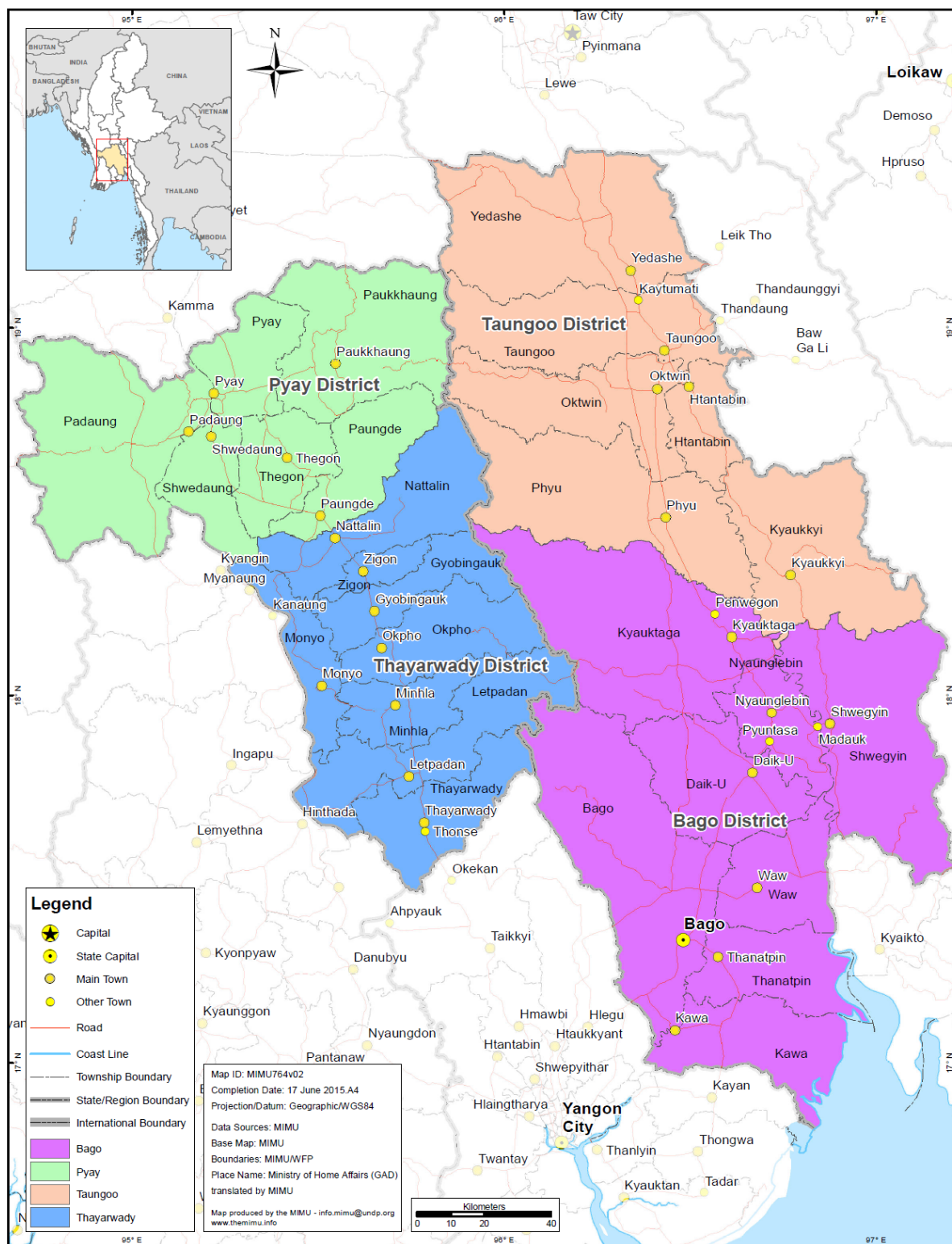
		Total	35	55	6	2	2
#	Region	Township			MCH T/S	UHCT/S	School HC T/S
3	Ayeyarwady	Patheingyi	Chaung Thar-RHC	Thea Kone	Patheingyi	Patheingyi	Patheingyi
3	Ayeyarwady	Patheingyi	Kyet Paung-RHC	Let Pan			
3	Ayeyarwady	Patheingyi		Kwet Pyin Gyi			
3	Ayeyarwady	Patheingyi	Myin Ka Kwin-RHC	Ywar Haung Gyi			
3	Ayeyarwady	Kyaunggon	Wet Chaung-RHC	Ah Su Gyi			
3	Ayeyarwady	Kyaunggon	Chaung Gyi-RHC	Min Ma Naing			
3	Ayeyarwady	Kyaunggon	Wet Chan Ga Yet-RHC	Yaung Pyit Kwin			
3	Ayeyarwady	Yegyi	Ah Thoke-RHC	Kwin Thone Sint	Yegyi		
3	Ayeyarwady	Yegyi	Chaung Phyar-RHC	Kan Chaung			
3	Ayeyarwady	Yegyi	Kone Pyin-RHC	Gway Tauk			
3	Ayeyarwady	Ngapudaw	Ngayokekaung-RHC	Thayar Chaung	Ngapudaw		
3	Ayeyarwady	Ngapudaw		Yay Kyaw			
3	Ayeyarwady	Ngapudaw	Kyauk Chaung-RHC	Zee Chaing			
3	Ayeyarwady	Ngapudaw		Kan Chaing			
3	Ayeyarwady	Ngapudaw	Thet Kei Thauung_RHC	Ohn Chaung			
3	Ayeyarwady	Ngapudaw		Gway Chaung			
3	Ayeyarwady	Hinthada	Ta Loke Htaw-RHC	In Ga Po		Hinthada	
3	Ayeyarwady	Hinthada	Dammi-RHC	Oke Shit Kone-SC			
3	Ayeyarwady	Hinthada		Kyee Taw Kwet			
3	Ayeyarwady	Hinthada	Yon Tha Lin-RHC	Inn Gyi-SC			
3	Ayeyarwady	Ingapu	Me Za Li Kone-RHC	Oke Twin			
3	Ayeyarwady	Ingapu		Zaung Tan			
3	Ayeyarwady	Ingapu	Htu Gyi-RHC	Hpa Yar Ngoke To			
3	Ayeyarwady	Ingapu		Htu Wa			
3	Ayeyarwady	Ingapu	Leik Paung Swea-RHC	Tha Bawt			
3	Ayeyarwady	Ingapu		Kyat Gyi			
3	Ayeyarwady	Zalun	Yae Le-RHC	Kyun Gyi	Zalun		
3	Ayeyarwady	Ingapu		Yae Le (Ingapu)			
3	Ayeyarwady	Zalun	Pyin Ma Kone-RHC	Gway Kone			
3	Ayeyarwady	Labutta	Kan Bet-RHC	Kyu Taw	Labutta		
3	Ayeyarwady	Labutta		Shan Chaung			
3	Ayeyarwady	Labutta	Shwe Pyay Thar-RHC	Htan Pin Kwin			
3	Ayeyarwady	Labutta		Sar Ma Lauk			
3	Ayeyarwady	Labutta	Kyar Kan	Kyauk Hpyu			
3	Ayeyarwady	Labutta		Kyauk Hmaw			
3	Ayeyarwady	Mawlamyinegyun	Kyaik Pi-RHC	Pan Tee Yoe			
3	Ayeyarwady	Mawlamyinegyun		See Pwar Chaung			
3	Ayeyarwady	Mawlamyinegyun	Kyon La Mu-RHC	Thone Gwa Chun			
3	Ayeyarwady	Mawlamyinegyun		Myin Ka Kone-SC			
3	Ayeyarwady	Mawlamyinegyun	Ah Lel Yae Kyaw-RHC	Si Thar Kan U			
3	Ayeyarwady	Mawlamyinegyun		Shauk Chaung			
3	Ayeyarwady	Maubin	Kywe Done-RHC	Byaing Se			
3	Ayeyarwady	Maubin		Sit Kone			
3	Ayeyarwady	Maubin	Let Pan Kone-RHC	Aung Heik-SC			
3	Ayeyarwady	Maubin		Pauk Kone			
3	Ayeyarwady	Maubin	Hta Yaw Pay Kone-RHC	Nyaung Waing Gyi			
3	Ayeyarwady	Maubin		Hta Yaw Wa			
3	Ayeyarwady	Pantanaw	Min Ta Su-RHC	Daw War			
3	Ayeyarwady	Pantanaw	Ma Yan	Za Yat Hla			
3	Ayeyarwady	Pantanaw		Ah Su Gyi			
3	Ayeyarwady	Pantanaw	Yae Paw Daunt Gyi-RHC	Ba Waing			
3	Ayeyarwady	Bogale	Myin Ka Kone-RHC	Boe Yaung	Bogale		Bogale
3	Ayeyarwady	Bogale	Ma Gu-RHC	Ka Nyin Chaung			
3	Ayeyarwady	Bogale		Bin Ga Lar			
3	Ayeyarwady	Bogale	Kyein Chaung Gyi-RHC	Ma Lawt			

# Regional Maps



Myanmar Information Management Unit

## District Map - Bago Region



Disclaimer: The names shown and the boundaries used on this map do not imply official endorsement or acceptance by the United Nations.

# District Map - Magway Region



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Myanmar Information Management Unit

# District Map - Ayeyarwady Region



Government of Canada  
Gouvernement du Canada  
Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Embassy of Switzerland in Myanmar



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