Contraceptives Logistics Manual

Health and Population Welfare Departments
Government of Khyber Pakhtunkhwa

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Abstract
The *Contraceptives Logistics Manual*, made possible by the support of USAID, through the USAID | DELIVER PROJECT, is the first comprehensive manual of its kind in logistics monitoring and supply chain management for Khyber Pakhtunkhwa. The manual includes operational guidelines that will help readers working with all or part of a contraceptives logistics system—including those managing the information system and those responsible for managing and controlling the inventory systems.

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Acronyms

AMC	average monthly consumption
BBF	balance brought forward
BCF	balance carried forward
CDL	Central Drugs Laboratory
CLR	Contraceptives Logistics Record
CMIPHC	Chief Minister's Initiative for Primary Health Care
CPR	contraceptives prevalence rate
CW&S	Central Warehouse and Supplies
CYP	couple-years of protection
DGHS	Director General Health Services
DHO	District Health Officer
DHPMT	District Health Planning & Management Team
DMPA	Depo-Provera
DoH	Department of Health
DPWO	District Population Welfare Officer
EDO (H)	Executive District Officer (Health)
FEFO	first-to-expire, first-out
FIFO	first-in, first-out
FPAP	Family Planning Association of Pakistan
FWC	Family Welfare Center
IRV	issue and receipt voucher
LHW	Lady Health Worker
LMIS	logistics management information system
LPC	Logistics Procurement Cell
M&E	monitoring and evaluation
MNCH	maternal, neonatal, and child health
MoH	Ministry of Health
MoPW	Ministry of Population Welfare
MOS	months of stock
MSS	Marie Stopes Society
MSU	Mobile Service Unit
NGO	nongovernmental organization
PPHI	People's Primary Healthcare Initiatives
PWD	Population Welfare Department

QA	quality assurance
RHCS	Reproductive Health Commodity Security
RHS	Reproductive Health Center
ROL	request order level
SOH	stock on hand
SK	storekeeper
TCH	tertiary care hospital
USAID	U.S. Agency for International Development

Preface

The public sector in Pakistan procures, stores, and distributes contraceptive commodities to the end-user level. The following departments/programs at the federal- and provincial-levels are responsible for ensuring the availability of contraceptive commodities at the last mile:

- Federal Ministry of National Health Services, Regulations and Coordination
- Directorate of Central Warehouse & Supplies, Karachi
- Provincial Population Welfare Departments (PWD)
- Provincial Departments of Health
- Lady Health Worker (LHW) program
- People's Primary Healthcare Initiatives (PPHI)
- Maternal, Neonatal, and Child Health (MNCH) program
- tertiary care hospitals.

In addition, the private sector/nongovernmental organizations (NGOs) also contribute by providing contraceptive commodities and family planning services in the field, including Green Star Social Marketing, Marie Stopes Society (MSS), and Family Planning Association of Pakistan (FPAP). The NGOs obtain contraceptive commodities from different sources, including the Central Warehouse and Supplies (CW&S), Karachi, to meet field requirements.

This document, the *Contraceptives Logistics Manual,* should be particularly useful for the public-sector departments of health and population welfare; however, it will also be a source of information for private-sector organizations involved in managing contraceptives.

The manual includes operational guidelines that will help readers working with all or part of a logistics system—including those managing the information system and those responsible for managing and controlling the inventory systems. The manual also includes guidelines for monitoring and assessing the logistics system functioning. The relevant staff should find these guidelines helpful in regularly monitoring the system; subsequently, the information collected will help senior managers make decisions that will improve the system.

This manual provides basic information about techniques used to manage contraceptive commodities. Anyone working on advance studies in the field of supply chain management of contraceptives can use this manual as an introduction to contraceptive logistics management systems.

Foreword

We are pleased with the completion of the *Contraceptives Logistics Manual for the Health and Population Welfare Departments, Government of Khyber Pakhtunkhwa*. To provide family planning services, our priority has been to ensure the availability of contraceptive commodities at all health facilities/service delivery points. The manual provides guidelines on field logistics monitoring to improve logistics management information system reporting, data quality, and the availability of stock at the district- and sub-district levels. Therefore, to achieve these goals, the manual will be used widely at the policy, operational, and process levels of the health and population welfare departments.

We appreciate the effective involvement of both departments in developing this manual. The financial and technical assistance from USAID, through the USAID | DELIVER PROJECT, was vital in completing this manual. From the sustainability and local capacity development perspective, USAID's support for working in partnership with the Government of Khyber Pakhtunkhwa is greatly appreciated.

We are confident that the relevant officials of both departments will benefit from this manual as they work to streamline the logistics monitoring and supply chain activities. We will ensure the full cooperation by the health and population welfare departments in implementing this manual at the field level. It will help make significant improvements in the logistics management system and field monitoring, with the goal of reducing stockouts at the service delivery points; and it will, in turn, help increase the contraceptive prevalence rate, one of the Government of Khyber Pakhtunkhwa's major health indicators.

We expect that, with the introduction of this manual, the role of logistics functionaries will become much easier and more effective in delivering services to the clients of reproductive health services.

Finally, we wish to thank USAID | Pakistan for helping us in this important logistics monitoring and supply chain management project.

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Acknowledgments

We proudly put forward the completed version of this manual, which was prepared after months of effort; it will serve the family planning programs, which are committed to ensuring the continuous availability of contraceptive commodities for the end users.

The *Contraceptives Logistics Manual*, made possible by the support of USAID, through the USAID | DELIVER PROJECT, is the first comprehensive manual of its kind in logistics monitoring and supply chain management—and is, therefore, a milestone for the Government of Khyber Pakhtunkhwa. This manual is based on input and feedback from those involved in service delivery and the distribution of contraceptive commodities. A team of experts will periodically review the manual at the provincial level, and both departments will be notified. These reviews will accommodate various policy changes, interventions, changes in governance mechanism, and supply chain structure, and others. Feedback will be incorporated in the manual, as needed.

Concurrently, both the Health and Population Welfare Departments are using the web-based logistics management information system; with USAID's support, it was developed and implemented up to the district level. However, to ensure that timely and reliable logistics data are available for contraceptives, we plan to extend its scope to link the health facilities of all the districts of Khyber Pakhtunkhwa.

The Health and Population Welfare Departments appreciate the productive support of USAID | Pakistan in strengthening the logistics monitoring and supply chain management systems of Khyber Pakhtunkhwa province. We would like to thank Mr. Randolph Augustin, Director, Health Office, USAID | Pakistan, for his leadership and coordinated support, which enabled the USAID | DELIVER PROJECT to successfully develop the manual.

We also wish to express our appreciation to Dr. Muhammad Tariq, Country Director, USAID | DELIVER PROJECT in Pakistan for his leadership role, and his dedicated team for their effort and support in developing the *Contraceptives Logistics Manual.*

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Chapter 1: Introduction to Logistics

1.1 Introduction

The reproductive health program, including family planning, cannot succeed without a reliable and consistent supply of high-quality contraceptives products. Without a reliable logistics management system, end users cannot access the products they need. Like other systems, the logistics management system has certain parameters on which it works. The system has specific functions that need to be carried out by each of the responsible officials within the organization. These functions include selecting products, forecasting demand, procuring, ordering, storing, and delivering from one level to the next, until the products reach the end user.

This chapter describes the parameters and components of logistics management.

1.2 Logistics Management

Efficient logistics management has a pivotal role in the success of any program, project, or organization. All the activities of the logistics system are interlinked; therefore, any missing activity directly affects the other activities. If all activities are not well managed and coordinated, stockouts or overstocking results.

The logistics system encompasses all activities that take place between the manufacturer and the point at which products are delivered to the end user.

An organization estimates its supply needs for the target population; identifies source(s) of supply; and then plans how to manage warehousing, quality assurance (QA), transportation, and distribution to the end users.

1.3 Components of a Logistics Management System

- use (serving consumer)
- selection of products
- forecasting quantities to be procured
- procurement
- receiving items from suppliers, warehousing, and inventory management
- distributing and transporting to lower levels
- logistics management information system (LMIS)
- QA
- monitoring and evaluation (M&E)
- policy adaptation.

1.4 Objectives of Efficient Logistics System

The primary objective of a good logistics system is to store and supply the right quantity of goods to meet consumer demand at all levels of the program. The *Six Rights* is a commonly used term to describe the objectives of an efficient logistics system:

- Getting the Right Goods
- In the Right Quantities
- At the Right Places
- In the Right Conditions
- At the Right Time
- For the Right Cost.

These Six Rights should be considered from the clients' viewpoint. The logistics system helps ensure that the consumers receive the appropriate care and the contraceptives they need. The *Right* here refers to an efficient system where suitable supplies are procured, in the correct quantities, while minimizing the distribution cost.

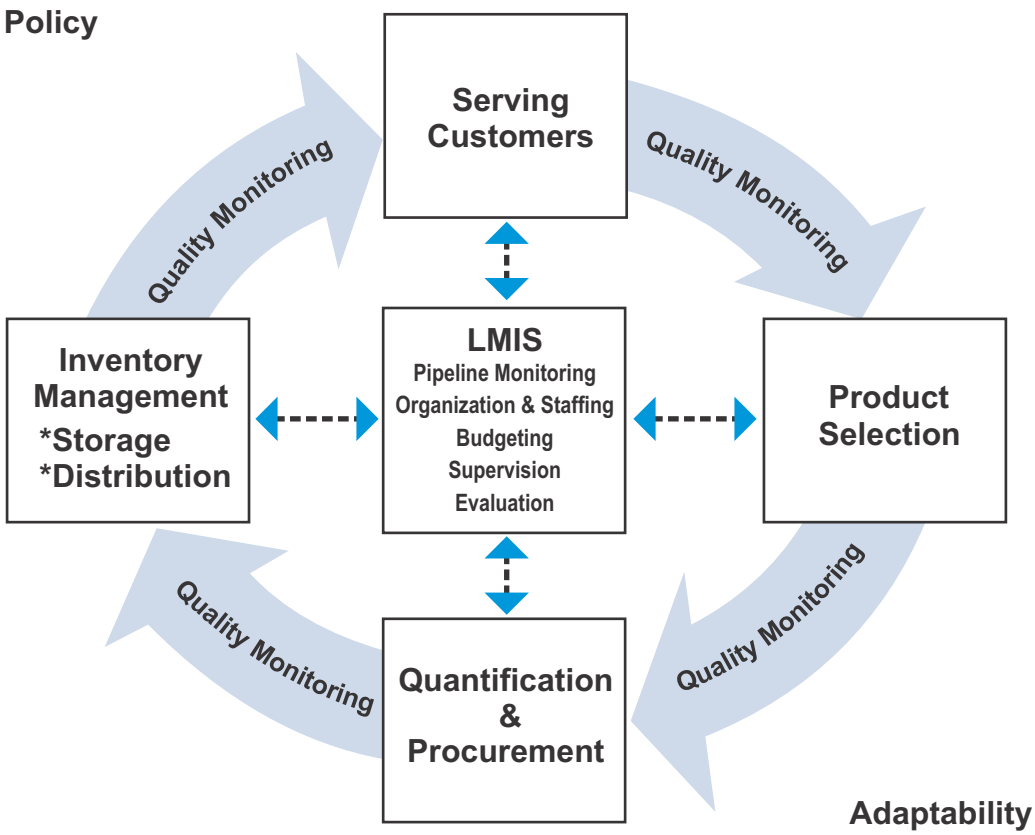
It is challenging for health program managers to maintain the balance between maximizing the quality of services and minimizing the costs of the system. The wise investment for effective and efficient supply chains can maximize the use of resources; reduce waste; improve the quality of services; and, ultimately, ensure product availability to meet the consumer's need. It can also be used to advocate for mobilizing more resources.

Chapter 2: Product Selection

2.1 Introduction

Product selection directly follows *serving customers* in the logistics cycle (see figure 1). Two examples—customers' needs, based on morbidity; and demand, based on contraceptive method mix and prevalence—show how informed decisions directly affect product selection. Therefore, the success of any project depends on the accurate selection process of the required items and services. Most countries include contraceptives in their essential medicines list. In a contraceptives logistics system, product selection may be the responsibility of a committee or any other government-appointed group.

Figure 1: Logistics Cycle



2.2 Purpose of Product Selection

Selection means *choosing item(s) or services* from the market (local or international), depending on the available choices; and obtaining the best possible quality and cost-effective items and/or services.

Objectives of the product selection are to—

- achieve the desired targets or goals defined by the organization
- stay focused so the logistics system can be managed effectively
- utilize the resources efficiently
- empower the management of an organization to make decisions for timely procurement
- meet client's preferences.

2.3 Process of Product Selection

Before selecting the required items, the selection committee should use all the available information to inform a final decision. The following must be key considerations—

- Obtain detailed specifications for the selected items/services.
- Conduct preliminary market survey (national/international).
- Track the record or performance history of the producer or supplier for the items or services to be obtained:
  - efficacy and effectiveness of the product
  - quality
  - feedback on acceptance by the end users.

An organization's policy usually determine the quantities and types of commodities to be procured. Product selection decisions frequently require policymaker's input, which lessens the burden of responsibility shared by the managers' and staff for the actual product selection. However, managers and staff should share information with the policymakers about local and regional preferences to ensure that consumer demands can be considered when the final product selection is made.

Chapter 3: Forecasting

3.1 Introduction

Forecasting is vital to the efficient and effective functioning of logistics management. It is defined as the process of estimating the quantity of commodities needed to serve a given population for a specified duration of time. Forecasting is carried out to determine the quantities to be consumed over the specified period of time to meet the needs of the intended beneficiaries. This estimation helps avoid shortages (stockouts), ensures credible service delivery, and prevents excess stock; thereby, helping to avoid waste—losses due to expiry or mismanagement of financial resources. Furthermore, efficient procurement, inventory management, and distribution largely depend on realistic forecasting.

3.2 Process of Forecasting

Relatively precise and realistic forecasting can be achieved by collecting, processing, and analyzing data to anticipate future needs. Persons responsible for forecasting must have information about the future plans of a program, such as new and revised health policies, opening of new health facilities, and expected increase in clients as a result of an awareness campaign, etc. Three main sources of data are commonly used to estimate contraceptives needs:

- consumption (logistics) data
- service data
- population to be covered (target) data.

To increase the likelihood of accurate estimates, supply managers are encouraged to use all three estimating methods, wherever possible, and to validate them by comparing the results obtained using different methods. If any significant inconsistency is found in the results, further reviews would be required to address the gaps.

3.3 Consumption-Based Estimates

These estimates are feasible when sufficient good data are available for quantities dispatched to users at the facility level. This method is the most appropriate, but it requires a reasonably accurate information system that tracks logistics data for at least one year. The source of logistics-based estimates can include data obtained from dispensing (from facility to end user) or distribution (issues from district stores to facility).

A number of factors affect consumption-based estimates:

- Good results can only be achieved when reports of quantities dispensed to users at the lowest level in the distribution system are used to estimate requirements. If data at the lowest level are incomplete or inaccurate, the forecaster should use reliable data from the next level up in the distribution system.
- Consumption-based estimates have another advantage of measuring both levels and trends in quantities distributed; thereby, eliminating the additional assumptions and calculations required by other forecasting methods.
- Consumption-based estimates cannot predict the impact of programmatic changes, such as new clinic/service openings, or the introduction of a new program; however, it can predict trends in the preferred contraceptive method.
- Consumption-based estimates will not reflect true demand or distribution system capacity if stockouts occur during the forecast periods.

- When using consumption-based data to forecast needs, a good general tip is to use past data from three years, at a minimum, for annual forecasts; or at least four quarters of data for quarterly forecasts. It is also important for forecasters to determine whether past usage patterns are stable or rapidly changing by analyzing consumption trends, over time. If the quantities dispensed are relatively stable over a period of time, then a simple average formula can be used to forecast future needs.

3.3.1 Formula for Contraceptive Requirements

Stable consumption	=	No. of units dispensed in past **n** quarters or months ÷ **n**
Changing consumption	=	No. of units dispensed in quarter + Average change in use over past **n** quarters or months

3.4 Service Data Estimates

Service data recorded at facilities can be used to forecast contraceptives needed for a specific time period. Commonly reported service data include—

New clients: The number of clients using the facility for the first time and the quantities of contraceptives dispensed to them.

Revisits: The number of repeat visits made by all clients and the quantities of contraceptives dispensed to them during a particular period.

Side effects: The number of cases of side effects associated with the use of any contraceptive method or continuation/discontinuation, during a particular period, which can be determined by registering new clients and dropouts.

When targets are expressed in term of users or visits, estimates based on service data must take into account any planned growth or other management-directed changes. It is important to note that if there are interruptions in supplies during the reporting period, it will result in inaccurate forecasting due to the inability to serve clients. The forecaster(s) also need to be cautioned if there is deliberate false reporting on increasing clientele because the senior management to the health facility staff have assigned targets.

Following is the formula for forecasting contraceptive requirements using service data:

Estimates based on visits	Estimated total visits for this method × No. of units dispensed at each visit
Estimates based on current users	Estimated current users for this method × No. of units required to serve a current user for a year (known as couple-years of protection)

3.5 Couple-Years of Protection Conversion Factors

Following are the couple-years of protection (CYP) conversion factors or the number of units required to serve a current user for one year (see table 1):

Table 1: Couple-Years of Protection Conversion Factors

#	Method	CYP	#	Method	CYP
1	IUD (Copper-T 380-A)	4.6 CYP	10	Monthly vaginal ring/patch	15 units
2	3-year implant	2.5 CYP	11	Multiload	3.5 CYP
3	4-year implant	3.2 CYP	12	Noristerat (NET-En) injectable	6 doses
4	5-year implant	3.8 CYP	13	Oral contraceptives	15 cycles
5	5-year IUD (e.g., LNG-IUS)	3.3 CYP	14	Vaginal foaming tablets	120 units
6	Condoms (male and female)	120 units	15	Fertility awareness methods	1.5 CYP/trained adopter
7	Cyclofem monthly injectable	13 doses	16	Lactational amenorrhea method	.25 CYP/user
8	DMPA injectable (3 months)	4 doses	17	Standard days method	1.5 CYP/trained adopter
9	Emergency contraception	20 doses	18	Sterilization	10 for Pakistan

3.6 Population-Based Estimates

This method is often used with new programs or those planning to expand to new areas where there is little or no prior experience of consumption-based or service-based estimates. Contraceptive requirements are based on census results, demographic surveys, studies of a geographical area, or a specific population group.

Factors affecting population-based forecasts:

- Estimates are independent of the service delivery system; therefore, they can be used when historical program data are unavailable or inaccurate.
- Estimates are the maximum needed for services and supplies—for people at risk—versus the current data.
- Requirements are often overestimated, because planners tend to be optimistic in setting their targets. This leads to oversupply in the program, particularly if the commodities are *pushed* to the field without adequate data.
- Planners tend to use the same proportional targets for all areas of the country, which may result in supply imbalances.

- The method tends to assume that services will be provided primarily through the facilities; but, in some areas of the country, contraceptives are available through a variety of other channels—private and commercial.
- The number of contraceptive units needed per user period is different than the actual consumption (demand).

Following is the formula for population-based forecasting of contraceptive requirements:

Estimate the number of contraceptive users	All married women 15–49 × Target percentage for usage (contraceptives prevalence rate [CPR])
Estimate the number of users of a given method	No. of users × Estimated percentage of users of a given method (method mix or CPR/method)
Estimate the requirements of given method	No. of users of given method × No. of units used per year

Following are other factors that should be considered when forecasting the requirements.

3.6.1 Delivery Lead Time

The time between the order and receipt of supply is called the *lead time*. It is important to establish a time that it takes for a supply received in the warehouse or store against a particular order or demand.

3.6.2 Request Order Level (Reorder Level)

The request order level (ROL) is the level of stock when new orders should be made. It is the quantity for use that is calculated between the placing the order and the delivery of the new consignment. It should be updated at least twice a year because consumption may vary when there are seasonal changes.

3.6.3 Size of Store

The warehouse capacity must be considered when forecasting. It could cause significant problems if the volume of supplies ordered is too large compared to the volume that can be accommodated—this can lead to wastage of materials or may add costs for additional warehouse space. Shipments could be staggered and/or the frequency of shipments could be scheduled if larger quantities are on order.

3.7 Responsibilities of Forecaster

The forecaster has the following responsibilities:

3.7.1 Forecast

The forecaster has to predict the amount of product to be dispensed to clients, while considering the expected losses or damages during the logistics process.

3.7.2 Validate

Because there are many data sources and different forecasting methodologies, to analyze inconsistencies, it is necessary to compare the results. Substantial differences could have many causes. These reasons must be analyzed and validated with input from many stakeholders to ensure an accurate forecast.

3.7.3 Estimate Scarce Commodities

Some products may not be available in sufficient quantities in the market; the forecaster must also look for multiple sources of supply, as well as alternate products, if possible, to meet anticipated needs.

3.7.4 Monitor

The forecaster must check the validity of assumptions used for forecasting by comparing the forecast with the actual consumption for adjustment and correction. This will be a basis for future forecasts.

Chapter 4: Procurement

4.1 Introduction

Procurement is a process that includes activities—for example, purchasing from a third party, as well as transporting and delivering at the given destination—to meet the requirements of an organization (see figure 2). The general area of procurement provides opportunities to make practical improvements that will ensure cost effectiveness and promote product availability.

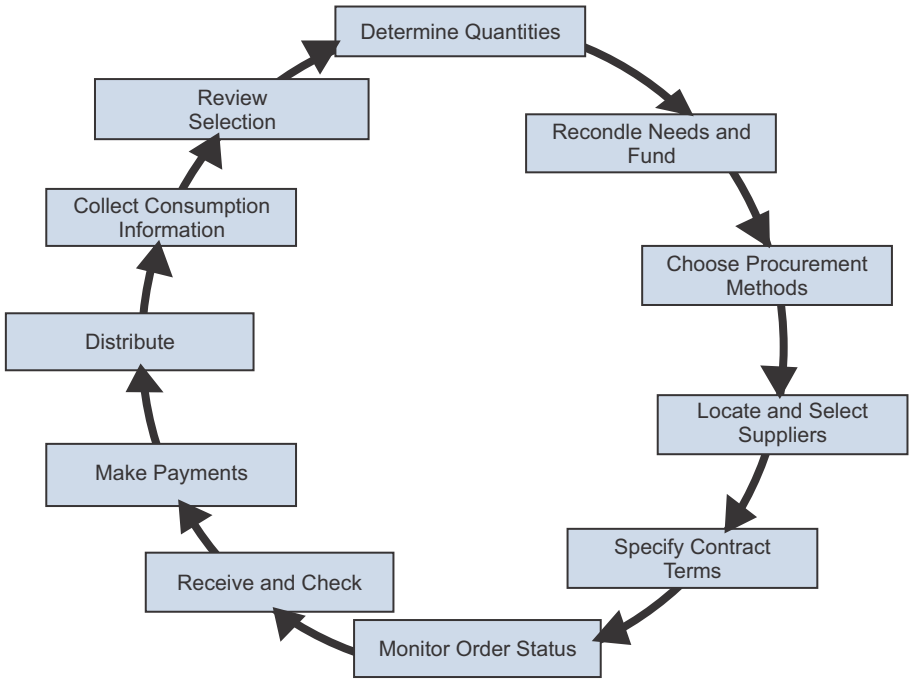
4.2 Principles of Procurement

- The procurement will be conducted in a fair and transparent manner.
- The objective of procurement brings value for money.
- The procurement process shall be efficient and economical.

4.3 Objectives of Procurement

Quality:	Recognized/approved standards from a reliable source.
Quantity:	Will be based on forecasting and needs assessment of the organization.
Time:	Will be procured and delivered according to schedule established.
Place:	Will be delivered at a specified location.
Price:	Best returns for each rupee spent in terms of quality, timeliness, reliability, after sales service, upgradeability, price, source, and the combination of whole–life cost and quality to meet the procuring agency's requirement.

Figure 2: Procurement Cycle



4.4 General Procurement Process

A pre-requisite for procurement is to have a clear idea of what needs to be procured. The selection and quantification of the commodities to be procured should be based on the needs and demands of the population. Following are some essential activities of the procurement process.

4.4.1 Forecasting

This is estimating the quantity of commodities needed to serve a given population for the specified duration. See chapter 3 for more information about this process.

4.4.2 Preparing Specifications

A complete description of the characteristics—technical and physical—of the commodity to be procured is required. Specifications should be generic and not include references to a brand name, catalog numbers, or similar classifications. Specifications can include logistics parameters, such as delivery terms and payment terms.

4.4.3 Preparation of Bidding Documents

Bidding documents will be prepared for the bidders and made available to them immediately after the publication of the invitation to bid. The essential components of the bidding documents or invitation to bid are—

- instructions to bidders
- form of bid
- form of contract

- general or special conditions
- performance criteria
- list of contraceptives commodities and quantities (including specifications related to packaging or labeling, etc.)
- delivery time or completion schedule
- qualification criteria
- bid evaluation criteria
- format for all required securities
- details of standards
- mode of payment
- tendering
- any other details consistent with the rules.

4.4.4 Public Announcement

A public announcement, using print and electronic media, is required to invite bids for purchasing contraceptives and associated services.

4.4.5 Bidding and Quotation

Bidding and quotations have separate financial limits, as specified in the procurement rules.

4.4.6 Opening Bids

A designated committee shall publically open the bids in the presence of bidders, or their authorized representatives, at a time and place announced, prior to bidding.

4.4.7 Technical and Financial Evaluation

The evaluation of bids—both technically and financially—must be made in accordance with the criteria specified in the bidding document.

4.4.8 Purchase/Supply Orders

Purchase/supply orders containing item name, quantity, approved rates, schedule of delivery, place of delivery, related terms and conditions, and mode of payment must be clearly defined. Moreover, if necessary, the purchaser will enter into a procurement contract with the supplier.

4.4.9 Quality and Quantity Assurance

After receiving the consignment, each item will be physically counted and verified that its quality meets the specified criteria.

4.4.10 Payments

Payments will be made only to the suppliers, after meeting the contract/purchase order terms mutually agreed-to and after all formalities are complete.

Note: For detailed information about each step of the procurement process, see the national or provincial *Contraceptives Procurement Manual,* developed in collaboration with the USAID | DELVIER PROJECT.

Chapter 5: Logistics Management Responsibilities

5.1 Introduction

In a logistics management system, the relevant staff plays a vital role in making the system successful. In Pakistan, a number of operational tiers manage the contraceptive logistic system at the Central Warehouse and the provincial warehouses, district facility levels, and health facility levels. Table 2 shows the various tiers and staffing in the logistics management system.

Table 2: Key Logistics Staff at Various Levels

Levels/Tiers	Officials
At the Central Warehouse, Karachi level	Director Central Warehouse Store supervisor Storekeeper
At the provincial level	Provincial logistics officer/store in-charge Storekeeper
At the district level	DPWO EDO/DHO (Health) Supervisor Lady Health Workers' program Storekeeper
At the facility level	Family welfare workers Lady Health Workers' visitor/Lady Health Workers' supervisor

5.2 Logistics Management Staff, Roles, and Responsibilities

Tables 3 and 4 show the roles and responsibilities in managing the logistics system at various levels.

Table 3: Responsibilities of Director (CW&S)/DPWO/DHO/Provincial/Regional Logistics Officer/Store In-Charge and Designated District Logistics Officers

Responsibility	Task
1. Receiving	Ensure that— • the storekeeper(s) (SK) receive all commodities, based on the quantity in the invoice/IRV/CLR-7 • all commodities received are in good condition • the commodities received from the suppliers have adequate shelf life • the invoice/CLR-7/IRV is properly signed by the SK and countersigned by the designated authority.
2. Storing	Ensure that— • storage space is allocated according to efficient store layout principles • the storage racks/cabinets/shelves and equipment are placed according to the layout plan • all commodities are stored on/in the proper specified racks/cabinet/shelf • the SKs strictly follow the storage guidelines in running the warehouse • commodities are arranged following the FEFO principle.
3. Issuing	Ensure that— • the SK uses the stock register properly • the SK determines issue quantity so the recipients can maintain inventory at the max-min months-of-stock level • the SK prepares the CLR-7/IRV • the SK issues commodities follow the FEFO principle • the SK follows the supply scheduling in supplying commodities • the SK correctly maintains the copies of CLR-7/IRV.
4. Recording	Ensure that— • the SK maintains the stock register for recording transactions • the SK records commodities in bin cards and stock register • bin cards and stock register are up-to-date • from time to time, the bin cards and stock register are checked to make sure they are maintained correctly.
5. Disposing of unusable	• Ensure that the SK prepares a list of unusable commodities at the warehouse and informs the supervisor in time. • As member-secretary of the condemnation committee, send the file to the authorities for their consent to convene a meeting of the condemnation committee. • Issue notice of meeting to the condemnation committee members at least one week before the meeting. • Prepare the proceedings of the meeting, obtain signatures of the members present and send the proposal, in the prescribed form, to the competent authority for approval for condemnation. • Condemn all the approved unusable commodities of the warehouse in the presence of the condemnation committee members. • Ensure that the SK has recorded all the condemned commodities properly in the stock register and bin cards and reported them correctly in the monthly report.

6. Monitoring and supervision	As head of the warehouse, the Director CW&S/DPWO/ EDO(H)/DHO/District Coordinator, the LHW will— • Routinely monitor the activities of the warehouse staff to ensure that each individual staff completes his assignment, as per schedule. • Supervise the employees to ensure they have the correct knowledge and skills required to perform their assignments. • Provide on-the-job training if any knowledge and skill deficiency is identified. • Provide supportive supervision to the staff.
7. Reporting	• Regularly review reports received from the lower level and send feedback if there are any mistakes, or give suggestions for improvement. • Ensure that the SK prepares all reports on time and submits them for review and approval. • Review and approve reports prepared by the SK and ensure that reports are mailed to the appropriate authorities on time.
8. Conducting physical verification	As member–secretary of annual physical verification committee— • Convene meeting of the committee to conduct the annual physical verification of the warehouse. • Ensure that the members receive notice at least one week prior to conducting the physical verification. • Notify the facilities that receive commodities from the warehouse that during physical verification, there will be no transaction of commodities. • If a discrepancy is identified during the physical verification, make the necessary adjustment, following the prescribed procedures. • If any new unusable commodity is identified during the physical verification, segregate the unusable from the usable and store them at a place marked as unusable. Properly record the unusable in the stock register and other relevant forms. • Use physical verification instrument to record finding from the physical inventory and obtain signatures of committee members. • Report findings of physical verification to the appropriate authorities. • Preserve a signed copy of physical verification instrument in the file for the record. • Ensure that the SK regularly conducts sample physical verification and keeps the authorities informed on the findings.

Table 4: Responsibilities of SK/FWW/LHW/LHV

Responsibility	Task
1. Receiving	• Receive all commodities and ensure that the quantity mentioned in the invoice/IRV is delivered. • Ensure that all commodities received are in good condition. • Bring to the notice of the designated officer in-charge if any commodity is found broken or damaged, or if there is any shortage or excess. • Ensure that the commodities received have adequate shelf life. • Sign copies of invoice/IRV that are sent with commodities and bring them to the designated officer in-charge for counter signatures. • Return the countersigned copies of invoice/IRV to the supply source. • Preserve the first copy of invoice/IRV in the warehouse.
2. Storing	• Allocate and mark the storage space according to efficient store layout principles. • Place storage cabinet/shelves and equipment at the marked places for different commodities. • Arrange commodities following FEFO principle. • Mark boxes and cartons with manufacturing and expiry dates. • Operate the warehouse following the storage guidelines. • From time-to-time, conduct sample physical verification and complete physical verification once a year to ensure that the book balance and physical balance match. • Adjust discrepancies, if any, with the approval of the designated officer following procedures; update records.
3. Issuing	• Review contraceptive requisition forms received from the district-/ health-facility to examine and determine the issue quantity to the district store/facility store. • Take the distribution plan to the designated officer for review and approval. • Prepare invoice/IRV according to the approved quantity. • Present the invoice/IRV to the designated officer in-charge for review and approval. • Supply commodities through private carrier or departmental vehicle, or other means, as per the established schedule. • Supply commodities following the FEFO principle. • Preserve the acknowledged copies of invoice/IRV in the warehouse.
4. Recording	• Maintain stock registers to record all transactions for all commodities. • Use computer codes given for each items, if any. • Maintain separate bin cards for each item. • Update stock register and bin cards after every transaction. • Record transfer or disposal of unusable commodities in the remarks column of the contraceptive stock register. • In the relevant columns of the stock register, use different color inks while recording transfer or destroying of unusable commodities. • Use separate bin cards for recording transactions of unusable commodities. • Periodically, take the stock register to the designated officer in-charge for review and for making necessary comments.
5. Handling of unusable	• Report immediately to the designated officer in-charge if any commodity in the warehouse is identified as unusable. • Using an issue voucher, separate unusable from the usable stock, with the approval of the designated officer in-charge.

	• Store the unusable stock at a place marked for unusable, according to the store layout plan. • Use different colored inks to record transactions of unusable commodities in relevant columns of stock register. • Use separate bin cards for unusable. • Assist the designated officer to condemn unusable. • Use monthly report forms to report condemnation of unusables.
6. Reporting	• Collect contraceptive consumption data from the concerned health facilities/SDPs once a month (in case of district SK). • Review the monthly report, submitted by the facilities/districts and provide feedback through the designated officer in-charge, if they need to make any corrective action. • At the beginning of the month, prepare the monthly report on the prescribed form. • Submit the completed report to the designated officer in-charge for review and approval. • Send the approved report to the appropriate authority by the 5th working day of each month to the district, by the 10th to the provincial headquarter, and by the 15th to the CW&S. • Upload the contraceptive consumption data into the web-based LMIS by 10th of each month.
7. Requisitioning	• Prepare quarterly requisition, using integrated CLR-6 format, at end of each quarter. • Obtain the approval of DPWO/DHO on integrated CLR-6 for quarterly contraceptive requisitioning for the district. • Coordinate with offices of DPWO/DHO for timely submission of integrated CLR-6 to the CW&S. • In the case of the health facility/SDP, prepare monthly requisition on the prescribed format for submission to the concerned district office.
8. Conducting Physical Verification	• Regularly conduct sample physical inventory so that all the items are covered within the year. • Reorganize store, if needed, to ensure FEFO. • If a discrepancy is identified, adjust records with prior approval of the designated officer in-charge. • If any new unusable item is identified during physical verifications, immediately segregate it from usable items and store it at the place marked for unusable. • Update stock registers and bin cards.
9. Maintaining quality assurance	• Follow the storage guidelines when operating the store. • Stack commodities following FEFO. • Record manufacturing and expiry date in stock register. • Issue commodities following FEFO principle. • Prepare list of short-date commodities and with approval of the designated officer in-charge and supply source, supply the commodities to departmental and governmental facilities before the expiry date. • Return to supply source commodities that cannot be used locally within the shelf life period. • Keep the store clean to keep it free from insects, bugs, etc. • Regularly disinfect the store as often as the experts recommend.

Chapter 6: Logistics Management Information System

6.1 Introduction

Information is at the center of the logistics cycle. Without information, the logistics system could not be managed effectively. Managers gather information about each activity in the system and analyze the collected information to coordinate future actions. For example, information about inventory levels and consumption must be gathered to estimate the quantity of a certain product for procurement.

The web-based logistics management information system (LMIS) is designed in the context of health and population sector's logistics information requirements of Pakistan, particularly in the post-devolution scenario of provincial health and population programs. The system brings in district-level reporting by using paper-based reports to aggregate facility-level data. With a unified system for reporting and requisitioning, the web-based LMIS system can integrate information from all levels and sectors.

6.2 Essential Data for Decision making

The following questions must be considered when deciding which data to collect.

- How long will the current supplies last—sufficiency of stock in terms of months of stock (MOS)?
- What are the consumption patterns?
- Are we having losses from the system that require us to take action?
- Do we need to order more supplies now?
- Where are the supplies in the pipeline?
- Do we need to move supplies from higher to lower levels?
- Do lower-level storage facilities need more resources?
- Are products about to expire? Can these products be distributed before expiry, or do we need to discard these products and remove from the pipeline?
- Do supplies flow regularly through the pipeline? Do we need to adjust our pipeline to account for bottlenecks in the system?
- How many service delivery points are out of stock, understocked, or overstocked?

Decisions for improving the logistics system can only be made if they are based on the appropriate data. In a logistics system, decisions are usually based on three essential data items: (1) stock on hand (SOH), (2) rate of consumption, and (3) losses and adjustments.

6.2.1 Stock on Hand

SOH is the quantity of usable stock available at all levels of the logistics system. (Items which are unusable are not considered part of SOH; these are losses to the system.)

6.2.2 Rate of Consumption

The average quantity of stock dispensed to users during a particular time period.

6.2.3 Losses and Adjustments

Losses are the quantity of stock removed from the system for any reason other than consumption by clients—expiration, theft, damage, and so on. Adjustments are made when differences are found between the quantities in the record and the inventory which is physically available.

6.3 Information and Recording System

Commodities move in the logistics system in five ways:

- the service delivery system
- transfers or loans to other sister programs
- loss or theft
- disposal of damaged, expired, and/or deteriorated commodities
- procurements.

6.3.1 Three Types of Records

From a logistics point of view, only four activities are usually carried out—commodities are purchased, stored, moved (in transit), or consumed (used). The following types of records are needed to track the supplies.

1. **Stock keeping records:** To keep information about products in storage.
2. **Transaction records:** To keep information about products being moved.
3. **Consumption records:** To keep information about products being consumed.

Each record type has a specific recording form and use.

6.4 Stock keeping Records

- Stock keeping records are used to record information about items physically present in the store. It must contain the record on quantity of SOH and the quantity of losses and adjustments.
- The warehouse manager and other warehouse staff complete the record, as well as service delivery point staff who receive or issue stock from storage, and staff who receive the physical inventory of the stock.
- Entries are recorded on the stock keeping record whenever products are received or issued. Entries are also recorded when stock is counted during a physical inventory. When the stock keeping record does not have space for further entries, a new record is started using the ending balance from the previous record.
- Stock keeping records are organized by date. They record receipts, issues, losses, and adjustments, and the balance on hand. They also record the results of physical inventories—when items are counted to verify the quantity in storage.
- The most common format for stock keeping records is individual stock registers and/or ledgers.

- A stock card is a generic name for either an inventory control card or bin card. A bin card is an individual stock keeping card that contains information about a single lot of a product, by brand (see sample at 6.4.8). For example, one bin card can contain information about a single lot of combined oral contraceptive (COC) pills at a storage facility. It should note the SOH of COC pills for that lot only, as well as any losses and adjustments for that lot. Bin cards are usually displayed at the bins (or shelf) where the lot is located.

6.4.1 Stock Register

The basic stock keeping record is the stock register. It provides an up-to-date record of all transactions of the warehouse/storerooms of the commodities received, issued, and discarded. The storekeeper maintains the stock register; the in-charge/logistics manager, at each level, verifies the entries.

The name of the warehouse/store is only written on the cover page of the register.

The stock register must be certified by the officer in-charge, as mentioned above; an example of the certificate is as follows:

"It is certified that this register is maintained for commodities of the _____ facility, contains_____ pages (from Page No. _____ to Page No._____)". All the pages have been checked and found intact, accurate, duly stamped and initialed by the undersigned.

Seal & Signatures _____

Date:_____ Officer In charge_____

6.4.2 Index of Contents

An index of content, a quick reference guide, is prepared in the front of the stock register. In the index, the page numbers of the stock register, which are allotted to the specific items, are listed against each item's name. Each commodity has a separate page. A sufficient number of pages in the stock register must be reserved for each commodity.

6.4.2.1 Example No. 1 of Stock Register

The transaction of COC pills is recorded at page No. 5 of the stock register. In the index, ***5*** is written in the column as the page number where COC pills will be recorded.

6.4.2.2 Example No. 2 of Stock Register

The transaction of intrauterine devices (IUDs) Cu-T 380-A is recorded at page ***12*** of the stock register. In the index, ***12*** is written in the column as the page number where IUDs Cu-T 380-A entries are recorded.

Example of Stock Register Entries

Index

6.4.3 Recording Information in the Stock Register

Name of Item/Article (top of the page)

The name of the item, with specifications, is written as shown in the following example. All the items must be written using their generic names instead of brand names; however, the brand names can be mentioned in the description column (column no. 2 of the stock register).

Unit

This is the basic accounting unit. It is the number of individual pieces contained in the standard packing for a product. It is very important to note that supplies must always be requested, issued, and reported by the number of individual pieces and not the large units, such as packing/cartons.

Date (Column 1)

Record the date on which the transaction (issue/receipt) took place.

Received From/Issued To and Reference (Column 2)

Record the source from which any quantity was received and the consignee to whom any quantity was issued from the warehouse/store. Use different colored ink for quantities received and issued (preferably red for receipt and blue for issues).

Received (Column 3)

Record the quantity of the item received.

Issued (Columns 4 and 5)

For care:
Record the quantity of the item issued for use or onward distribution to the lower levels.

Discarded:
Record the quantity of the expired/damaged/broken/unusable item. The storekeeper must certify the entries and the officer in-charge must countersign.

Balance (Column 6)

Record the balance of the quantity of items available in the warehouse/store, after receipt or issuance.

Name and Signature (Column 7)

The storekeeper must sign and the officer in-charge must initial against each transaction.

Remarks (Column 8)

Record any remarks; for example expiry date/expired quantities of the item, physical conditions, or any notation about unusual conditions or specific situations.

Note: When the page does not have room for further entries, on the bottom of the same page, write the next allotted page number of the stock register using red ink; e.g., balance carried forward (BCF) to page number … The next page of the stock register for the item carried forward will start by referencing the previous page number; e.g., balance brought forward (BBF) from page number … If the stock register is complete, write the following statement:

* Balance Carried forward to Stock Register Volume no … page no …

* The new stock register must contain the following statement at the start of every page: "Balance Brought Forward from Stock Register Volume no … page no …"

6.4.3.1 Sample Entries in the Stock Register

Page No. 5
Contraceptives

Name of Item/ Article: COC Pills **Unit: Tablet**

1	2	3	4	5	6	7	8
Date	Received from/ Issued to and Reference	QUANTITY IN UNITS				Name and Signature	Remarks
		Received	Issued		Balance		
			For Care	Discarded			
15/02/13	O/B				1,000		
16/02/13	Issued to BHU ABC vide voucher no. XYZ		500		500		
17/03/13	Received from CW&S through voucher no. 123 dated 15/03/2013	4,500			5,000		
18/03/13	Issued		50		4,950		
19/03/13	Issued		50		4,900		

6.4.3.2 Example: How to Make Adjustments/Corrections

Page No. 5

Name of Item/ Article: COC Pills **Unit: Tablet**

1	2	3	4	5	6	7	8
Date	Received from/ Issued to and Reference	Quantity in Units				Name and Signature	Remarks
		Received	Issued		Balance		
			For Care	Discarded			
15/3/13	O/B				1,000		
16/3/13	Issue to BHU ABC vide voucher no. XYZ		500		550		
17/3/13	Issued		50		500		
18/3/13	Issued		50		450		
19/3/13	Correction made against entry dated 16/8, voucher no. XYZ, thus removed from the stock		50		400		

6.4.4 Bin Card

This is the updated balance of an item that is available in the stock. This must be used for all levels of storage facilities.

6.4.4.1 Sample Bin Card

Name of Article:
Accounting Unit: **Batch/Lot No.:**
Mfg. Date: **Exp. Date:**

Date	Description	Quantity		Balance	Initials
		Receipt	Issued		

The bin card must show all the required information:

- name of commodity
- accounting unit
- batch no. and/or lot no. of commodity (if applicable)

- manufacturing date
- expiry date
- date received/issued
- description
- quantity of commodity received/issued
- balance
- initials of storekeeper or person completing the transaction.

6.4.4.2 How to Use the Bin Card

- Use one card for each stack of commodity.
- For each type of commodity, the storekeeper of the warehouse/store must prepare the card.

Name of Item/Article

Record the name of the item, including the specifications; follow the example.

Accounting Unit

Record the individual piece in the standard packing of a product. It is very important to note that supplies must always be requisitioned, issued, and reported, based on their fundamental accounting unit.

Batch No.

Record the number of the commodities, if any—written on the packing by manufacturers; the number must be clearly mentioned.

Mfg./Exp. Date

Record the manufacturing/expiry dates on the contraceptives in the specified columns; the number is written on the packing by manufacturers and it must be mentioned.

Date

Record the date when the transactions (issues/receipts) are made; this is mandatory.

Description

Record where the material was received or to whom it was issued, on a specific date; this is mandatory.

Signature

The initials of the storekeeper must appear against all entries on the bin card.

Note: It is important that entries on the bin card be recorded on the same date the transaction is made.

6.4.4.3 Example of Bin Card

A total of 40,000 pieces of male condoms were in the stock at the district store; 100,000 pieces of male condoms were received on 12/02/2013 from the CW&S and 60,000 pieces were distributed from district store to five different health facilities on 14/02/2013. The entries made on the bin card are as follows:

BIN CARD

Name of Article: Male Condoms **Accounting Unit: Piece**
No. 123456
Mfg. Date: 02-10-2012 **Exp. Date: 02-10-2017**

Date	Description	Quantity		Balance	Signature
		Receipt	Issued		
12/02/2013	Opening balance			40,000	
13/02/2013	Received from the Central Warehouse	100,000		140,000	
14/02/2013	Issued to health facilities		60,000	80,000	

Note: The example above assumes that the manufacturing and expiry dates of male condoms available in balance and received afterwards are the same. Use separate bin card for items with different expiry dates.

6.5 Transaction Records

Transaction records are used to record information about the movement of stock from one storage facility to another. It is frequently desirable to include the current SOH, as well as losses, adjustments, and consumption data. The issuing facility can use the additional data to evaluate the reasonableness of the quantities requested, or to ration the quantities to deliver if supplies are limited. Warehouse personnel at both issuing and receiving facilities complete the transaction records.

Transaction records are initiated any time a facility requests or issues supplies. They are completed when the receiving facility confirms receipt of the items shipped.

Transaction records are organized by date, which helps to identify the transaction. It can then serve as ticklers, reminders that a request was made and not yet received; or that an item was issued, but confirmation of receipt is still pending. The most common formats are issue and receipt vouchers (CLR-7). A preprinted voucher number on each transaction record helps track individual shipments.

CLR-7

Contraceptives Issue & Receipt Voucher (IRV) for Warehouse

No.: _____Date: _____

Name of Consignee: _____

Designation and Address: _____

Requisition No.: _____ Date: _____

Mode of Dispatch (Truck, Program vehicle etc.) _____

Dispatch document (Challan/Bilty No._____ Program Vehicle No.) _____

Contraceptives		Quantities			Verification (if any) in Quantities		Remarks
Name of contraceptive	Unit	Requisitioned	Dispatched	Received by consignee	Requisitioned and dispatched	Dispatched and received	

Issuer

Signature: _____

Name: _____

Title: _____

Receiver

Signature: _____

Name: _____

Title: _____

6.5.1 Using an Issue and Receipt Voucher (CLR-7)

An issue and receipt voucher (IRV) (CLR-7) is used for any supplies issued at one time from or received by the central and provincial warehouse and stores. IRVs are pre-numbered and prepared with four copies. The original plus three copies are sent to the consignee, with the supplies; the consignee returns a copy to the issuing warehouse/store after indicating the net receipt of the supplies, in the appropriate columns. Both the dispatcher and receiver sign the voucher at their end.

- Lines 1–5: are self-explanatory; the storekeeper of the issuing warehouse fills them out.
- Column 1–4: the storekeeper of issuing warehouse fills them out.
- Column 5: the storekeeper of the receiving warehouse fills them out.
- Column 6: the storekeeper of the issuing warehouse fills them out.
- If the quantity dispatched is more than the quantity requisitioned, the difference will have a plus (+) sign and if it is less, it will have a minus (–) sign.

- Column 7: the storekeeper of the receiving warehouse fills this out; the quantities over- or under-received will be shown as a plus sign (+) or, if it is less, it will have a minus (–) sign—e.g., +30.
- Column 8: used to explain variations, or any other matter, that may be necessary; e.g., damaged container or receipt of commodities after the expiry date or with short expiry, etc.

6.6 Consumption Records

As the name of the record implies, consumption records contain dispensed-to-user data, which records the quantity of each item dispensed to a customer. Consumption records are filled out whenever supplies are dispensed to clients. They are added together at the end of the reporting period, usually monthly or as required. Consumption records are not usually transferred. Their data is complete and the forms are saved at the service delivery facility. The logistics data generated by the SDPs/health facilities are received on a prescribed format; it is consolidated at the district level and entered into the web-based LMIS.

Following is an example of the most commonly used logistics data reporting format at the health facilities; it is the basis for the consolidated information at the district level; it is entered in the web-based LMIS.

SDP/Health Facility: _____ Month: _____

S. No.	Contraceptive	Opening Balance	Received	Issued	Stock on Hand

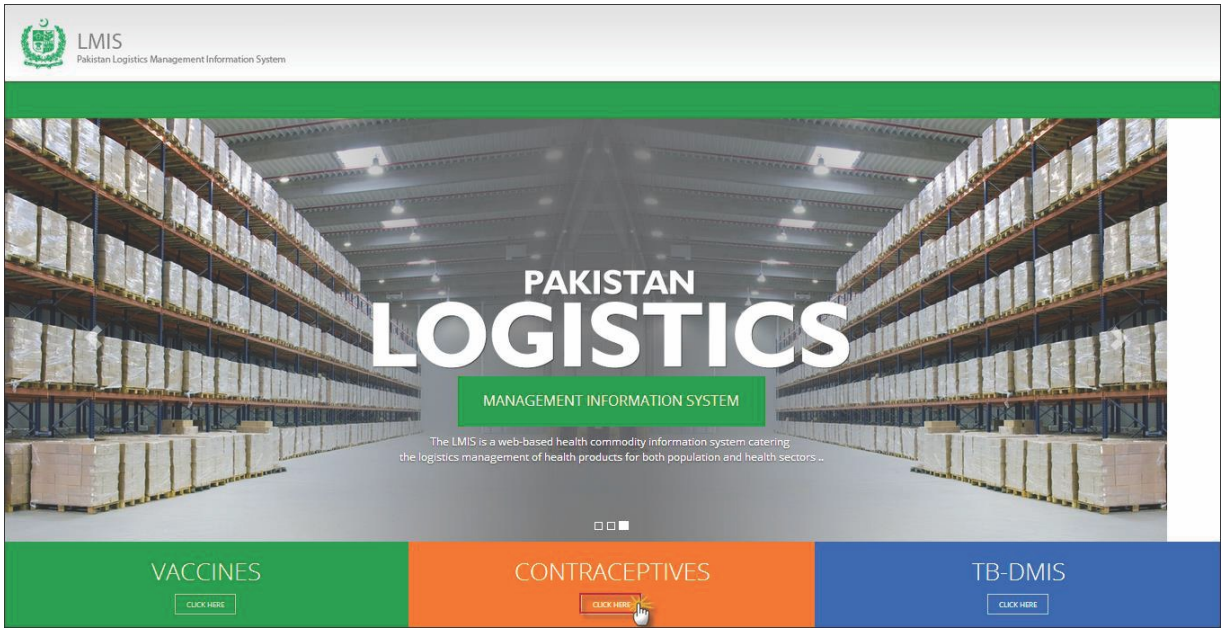
6.7 Structure of the Web-based LMIS, Its Process and Use

The web-based LMIS can be accessed at http://lmis.gov.pk.

The following sections in this chapter describe an introduction to the web-based LMIS. For more details, see the LMIS user manual (http://c.lmis.gov.pk/manuals.php)

6.7.1 Homepage

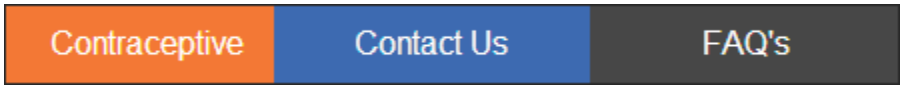
After the user enters the URL http://lmis.gov.pk, a user interface (homepage) is displayed. The homepage displays a basic introduction to the Pakistan LMIS.



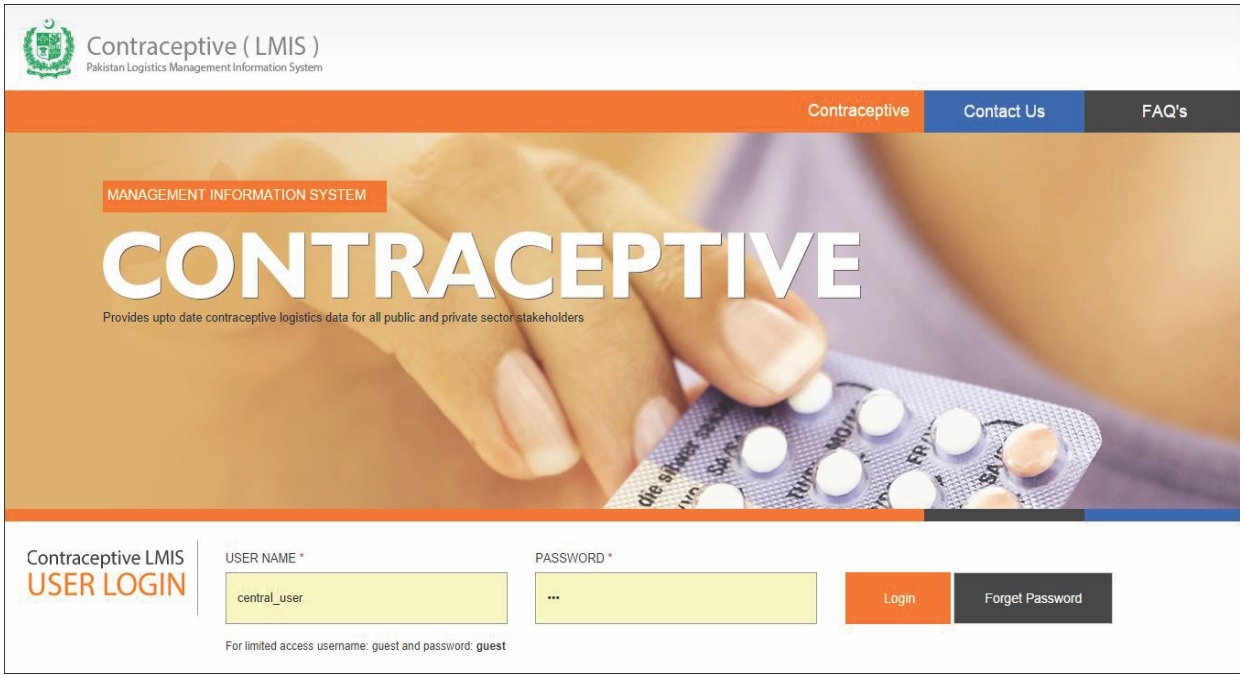
6.7.2 Overview of Homepage Menu

The available menu items can be found on the top of homepage screen. The components are adjacent.

The *Contact Us* tab contains addresses, telephone numbers, and email addresses (where available) as a system communication list for key personnel. Therefore, the user of the Pakistan LMIS can see the contact details of other stakeholders and can contact them, when needed. The menu also contains a Frequently Asked Questions (FAQs) tab that provides guidance, as needed.



To access the contraceptives LMIS, the user selects *Contraceptive*.



Users can also access the contraceptive LMIS application directly by entering http://c.lmis.gov.pk.

6.7.3 User Login

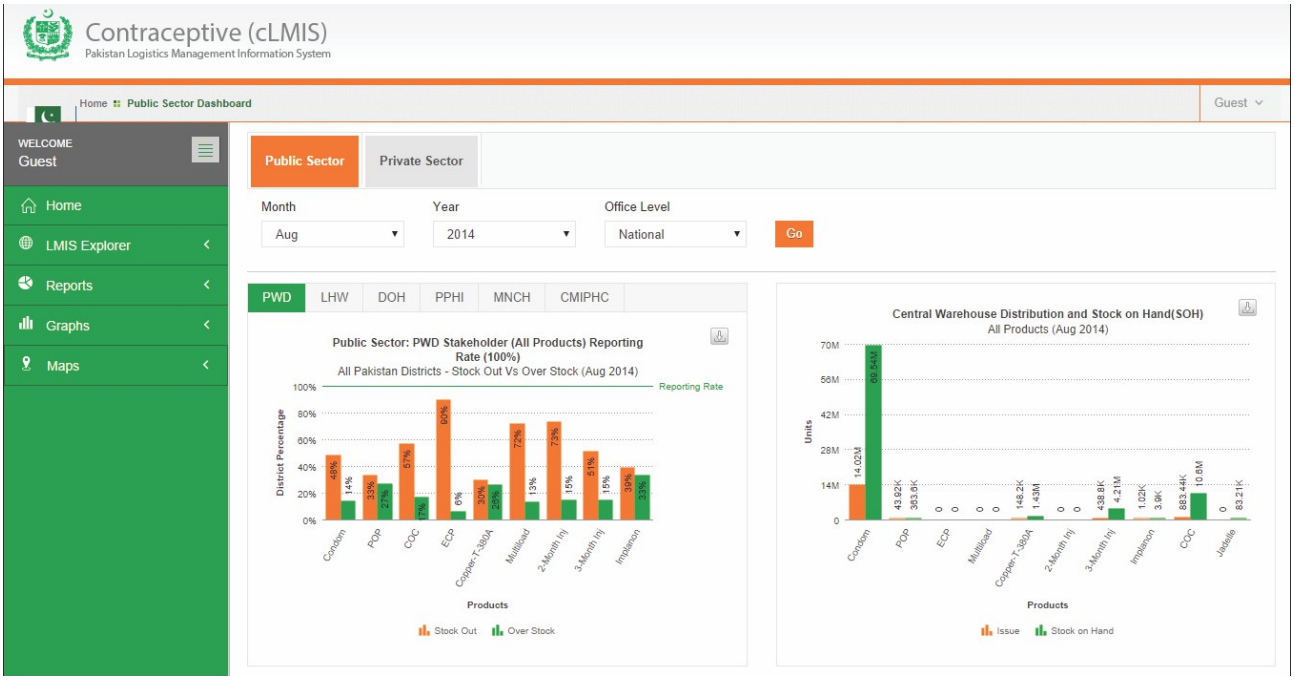
Two types of users can log in to the LMIS:

1. Guest users
2. Stakeholder specific users.

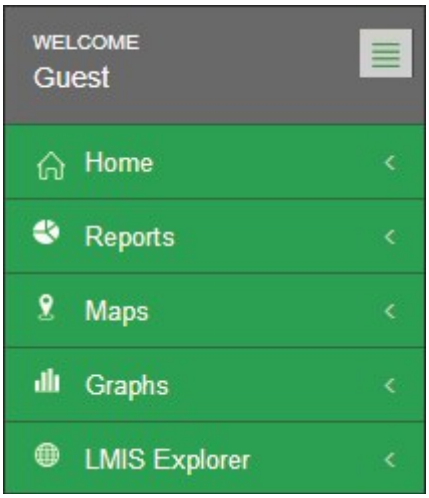
6.7.3.1 Guests

Guests can log in to the LMIS by entering *guest* in both the username and password. When guests log in, they use the menu to view analytical reports, graphs, and warehouse/district stores data entered by the stakeholder specific users, for any period. However, they cannot edit the data.

Welcome Screen:



On the welcome screen, the user will see the side-menu, which includes—



Home: Users can click on this link to view the dashboards.

Reports: Users can click on this link to view analytical reports.

Graphs: Users can click on this link to view simple and comparable graphs.

LMIS Explorer: Users can click on this link to view individual warehouse/store data for any month.

6.8 Reports

When a user clicks on the *Reports* link in the menu, they see the list for all reports; including the national-, provincial-, and district-level reports for both the public and private sectors. It also includes the summary reports, field reports, and stock availability reports.

The link *Reports* displays a drop-down list, which includes the following:

6.8.1 National Report

The national summary report provides periodic consumption, average monthly consumption (AMC), SOH, MOS, and CYP, by commodity, for a specific month. For each commodity, the data is aggregated for all stakeholders in the national summary report.

The national summary report provides the summary statistics, and it opens up various options for exploring additional data through various links.

- The header bar of the report provides information on reporting rate (left side) and availability rate (right side).
- By clicking on *reporting rate*, users can view the districts (by stakeholders) that have not reported for a specific month. If *all* is selected from the option *stakeholder*, all district-level stakeholders who did not report for a specific month will be displayed in the list. For example, a district name will appear twice if both DPIU and District Population Welfare Officer (DPWO) have not reported.
- By clicking on *availability rate*, the MOS for each district store is displayed. The availability rate, by stakeholder, in particular districts, for a specific month, can be filtered from the menu. Separate MOS for field and store are provided, in addition to the aggregate for both.

6.8.2 Stakeholder Summary Report

This report provides information about periodic consumption, AMC, and quantities on hand for all products managed in the database, including the MOS for each product. *Average monthly consumption* is the average of the aggregated consumption for the last three non-zero consumption months. *Closing balance* is the actual balance available at all reported facilities—central, provincial, and district stores for all stakeholders.

The stakeholder summary report displays indicators, by province, for a specific stakeholder. Users can select *all* from the stakeholder list to view an aggregate summary for all stakeholders, as well as for a specific commodity, with other filtering options.

6.8.3 Provincial/Region Report

As mentioned above, the summary report can also be accessed through the main menu; using the drill-down approach of selecting and zoning in on the desired data, it can be examined further. By clicking on any of the stakeholders, the province-wide summary for a particular stakeholder will be displayed.

6.8.4 District Report

Going further down the chain, the district report can also be accessed directly from the main menu or through the drill-down approach. The district reports can also be viewed by reviewing the provincial-level reports; by selecting a particular district of interest; the user can view the district report.

The district report provides district-level information on AMC, SOH, MOS, and CYP, for each commodity, in each district.

6.8.5 District Stock Report

Going further down the district, district facilities (field) reports can also be accessed directly from the main menu. The field reports can also be seen by reviewing the district-level reports and then selecting a particular facility of district; the user will then be able to view the field report. Currently, field data are collected manually through the SDP/Health Facility Monthly Contraceptive Report; the requisition format is available at appendix D.

6.8.6 Stock Availability Report

This report shows in-country available stock based on the filters applied at all levels of the supply chain. The available stocks are also shown in the form of MOS, which is calculated from AMC[1]. In this report, only the warehouses/district stores that have reported for the period applied to view the report are displayed.

6.8.7 Non-reported Warehouses Report

This report shows the reporting rate for different warehouses and stores, for a particular month. Users can select the month, province, and type of store; i.e., district store or facility. This report is a good monitoring tool for mangers at the provincial- and federal-levels to view information about the non-reported districts. This report shows (1) total stores; (2) reporting percentages; and (3) list of non-reported districts for the stakeholder, geographical location, and period selected.

6.8.8 Central/Provincial Warehouse Report

This report shows the monthly values for different inventory indicators; i.e., issued, SOH, and received stock of public/private stakeholder's central or provincial warehouses/stores. Users can filter reports, based on the month, stakeholder, and type of store; i.e., provincial- and central warehouses.

6.8.9 Provincial Yearly Report

This report allows the user to view the provincial yearly report, based on the indicators and selected year. Three main indicators can be viewed: issuance (consumption), SOH, and received. This is an aggregate of the selected indicator from the district and the field. Users can filter the report, based on the month, stakeholder, and province/region.

6.8.10 Private Sector Yearly Report

This report shows the monthly values of different inventory indicators: issued, SOH, and received stock of private sector stakeholder's warehouses/stores, in a specific month. Users can filter, based on the month and stakeholder.

6.8.11 Public Private Sector Report

This report helps to view the public- and private-sector share at the national-, provincial-, district-, and field-levels, against some indicators: consumption—AMC, SOH, and MOS. Users can filter, based on the month and geographical levels: national, provincial, district, and facility.

[1] Formula: stock on hand/average monthly consumption = months of stock

6.9 Graphs

The LMIS can also generate easy-to-interpret graphs. Simple and comparative graphs can be viewed by clicking on *Graphs* in the main menu. The drop-down menu will display—*Comparison Graphs and Simple Graphs*. After clicking on simple or comparison graphs, the user is directed toward a page where they can choose various options to create graphs.

6.9.1 Comparison Graphs

- The Graph Comparison Report page includes different filters. The user selects *Option* to compare graphs and generate reports.
- Clicking on *Indicator* gives the user has four options:
  - CYP
  - dispensed
  - MOS
  - SOH.

By clicking on *Compare options*, the user has three options:

- years
- stakeholder
- geographical.

By clicking on *Stakeholder*, the user will see the list of all stakeholders.

Products and *Year* show multiple options to select. The user can choose more than one product and year.

By clicking on *Time Interval,* the user has three options:

- quarter
- half
- annual.

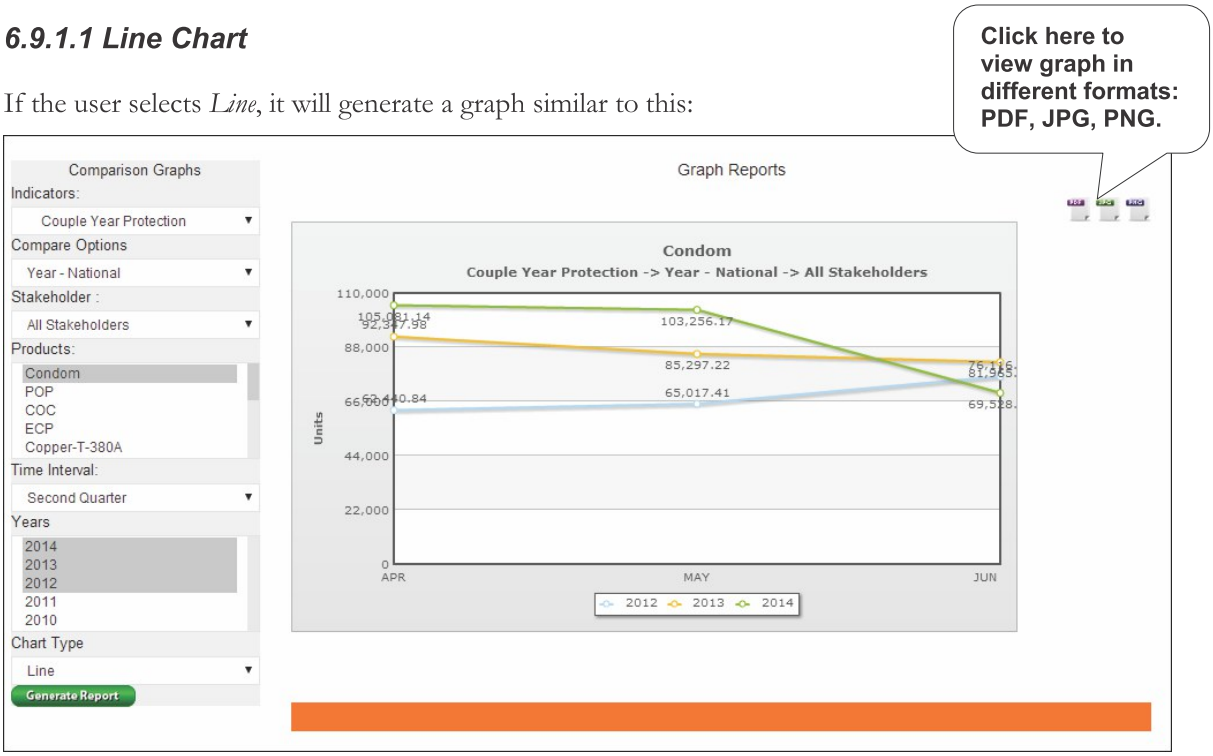
By clicking on *Chart Type*, the user has two options:

- line chart
- bar chart.

After selecting all options, the user will click on *Generate Report*. This will generate a graph based on the selected options.

6.9.1.1 Line Chart

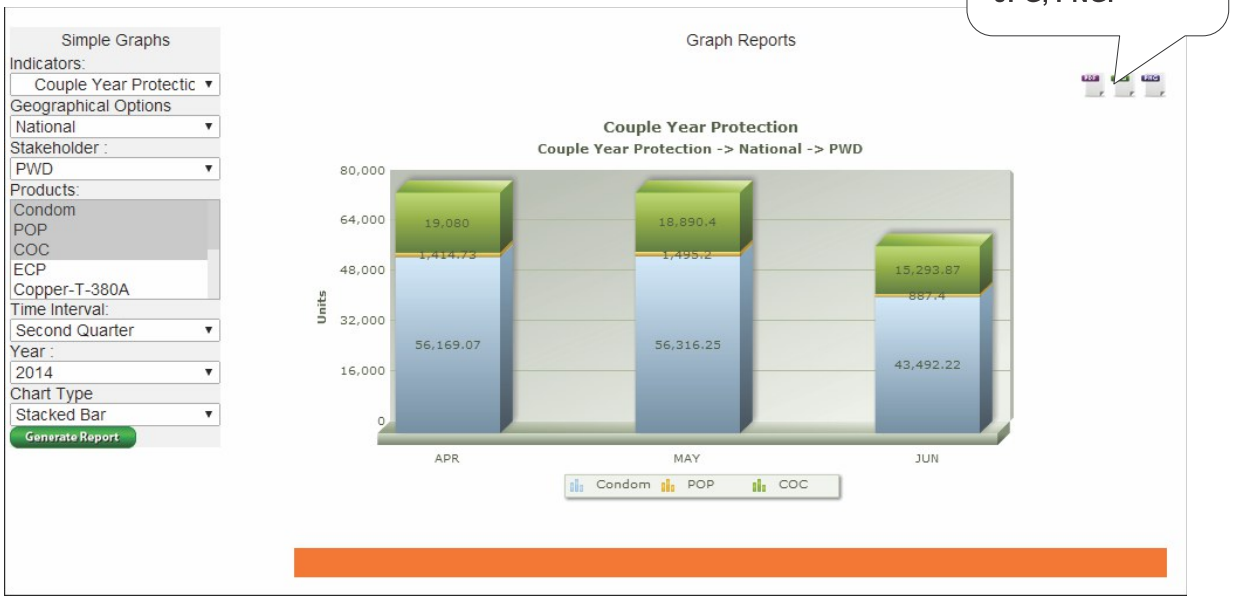
If the user selects *Line*, it will generate a graph similar to this:



6.9.1.2 Bar Chart

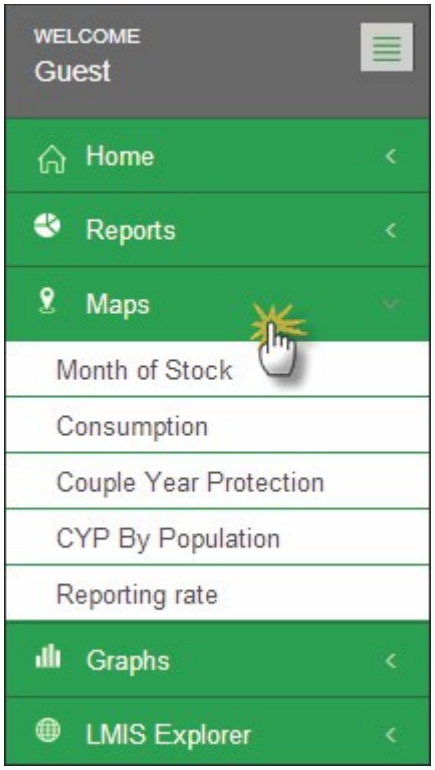
If the user selects bar chart, it will generate a graph similar to this:

6.9.2 Simple Graph Reports



6.10 Maps

The LMIS can also generate easy-to-interpret maps with color codes. These maps can be viewed by selecting the *Maps* tab in the menu. The drop-down menu will be displayed:



After selecting the indicator that will be used to view the map, the user will be directed toward a page to select from various filters.

6.10.1 Month of Stock Map

The MOS map offers the user many filter options. Users can select *Month*, *Year*, *Province/Region*, *Product*, as well as *Level* to analyze the MOS for each district in the selected province. The detailed information can be seen after the user clicks on a specific district on the map.

6.10.2 Consumption Map

The consumption map offers the user filter options, such as *Month*, *Year*, *Sector*, *Stakeholder*, *Province/Region*, *Product;* including *Type* (Consumption and Avg. Monthly Consumption) to analyze product consumption for each district in the selected province. After the user clicks on a particular district on the map, the detailed information is displayed.

6.10.3 Couple Year Protection Map

The *Couple Year Protection* map provides filter options, such as *Month*, *Year*, *Sector*, *Stakeholder*, *Province/Region*, and *Product*, which can analyze the number of couples protected for each district in the selected province. The detailed information is displayed after the user clicks on a particular district on the map.

6.10.4 CYP by Population Map

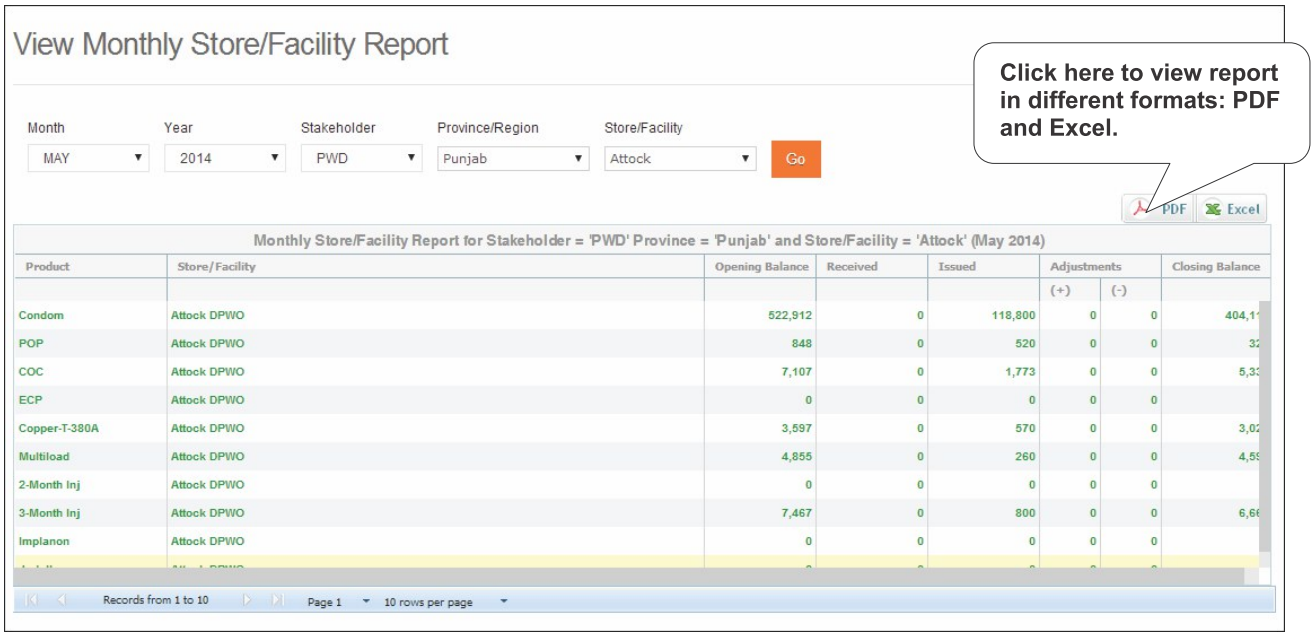
Couple Year Protection map can also be normalized, based on the population of the province. Filter options include Month, Year, Sector, Stakeholder, Province/Region, and Product to analyze the number of couples protected for each district in the selected province, based on that district's population. The detailed information can be seen after the user clicks on a particular district on the map.

6.10.5 Reporting Rate Map

The Reporting Rate Map displays the number of stores and facilities that have submitted the report for each district. Users can see filter options, such as *Month*, *Year*, *Sector*, *Stakeholder*, *Province/Region,* and *Product* to analyze the reporting rate for each district in the selected province, based on the number of facilities in that district. The detailed information can be seen after the user clicks on a specific district on the map.

6.11 LMIS Explorer

In LMIS explorer, the user can see monthly district warehouse or field store reports and data.



Similarly, the user can view monthly field reports and data. If data is not available for that selected field, it will show zeroes for that specific month.

6.12 Data Entry in LMIS

6.12.1 Stakeholder Specific Login (personalization)

The user will be assigned a user name and password that they will use to log in to the system. After successfully logging on, the user will be directed to a *user information* page, specific to the organization. This page will contain specific information about the user's department/organization.

To obtain LMIS data and reports, the user must successfully log in with their username and password. System users are defined by relevant stakeholders and the level in the supply chain they represent. For example, the Population Welfare Department (PWD) users work under Provincial PWD and District Population Welfare Officer. Similarly, for the LHW' program, the users are authorized personnel from the District Program Implementation Unit (DPIU) and the Provincial Program Implementation Unit (PPIU). Table 5 includes the activities that various users will be able to perform after they log in:

Table 5: Stakeholder and Level-Specific Activities Users Can Perform in LMIS

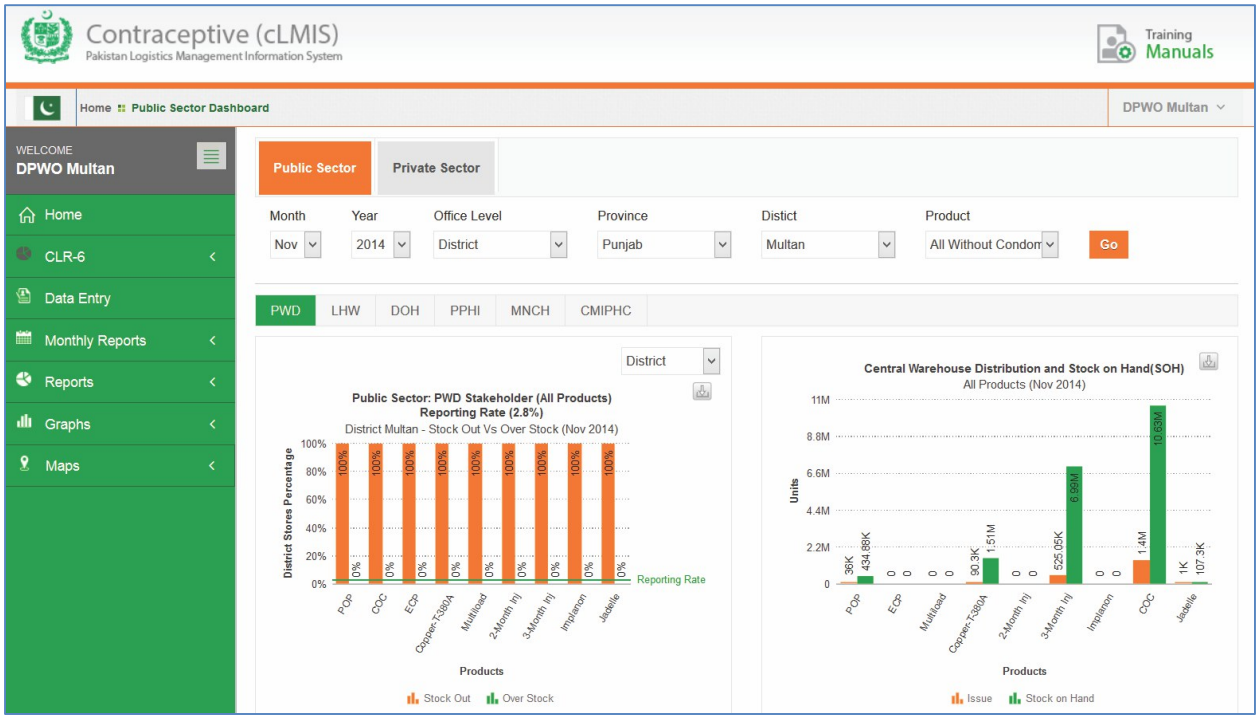
Stakeholder	Activity	Level			
		CW&S*	District	Province	National
Population Welfare Department	Data entry	✔	✔		
	Reports	✔	✔	✔	✔
	Graphs	✔	✔	✔	✔
Lady Health Worker's Program	Data entry	✔	✔	✔	
	Reports	✔	✔	✔	✔
	Graphs	✔	✔	✔	✔
Department of Health	Data entry	✔	✔	✔	
	Reports	✔	✔	✔	
	Graphs	✔	✔	✔	
Private Sector	Data entry	✔	✔	✔	✔
	Reports	✔	✔	✔	✔
	Graphs	✔	✔	✔	✔

** The Central Warehouse is responsible for entering all central-level stock status updates into the LMIS.*

After successfully logging in, the user will be directed to the stakeholder-specific page. Based on the privileges the system administrator assigned for the user, various menu items will appear on the interface homepage.

6.12.2 Authenticated User

After successfully logging in, the following menu will be displayed; the user can select any option:



- **DPWO Multan**: Name of the current user.
- **Sign Out**: Sign out and the LMIS homepage is displayed.
- **Change Password**: Change their password.
- 

: Click on this icon to return to the main page, which was the first screen displayed after logging in.
- **Data Entry**: Enter monthly reports.
- **Monthly Reports**: View theirs and other warehouse/stores reports.
- **Reports**: View pre-published analytical reports.
- **Maps**: View analytical reports as maps.
- **Graphs**: View pre-published graphs.
- **LMIS Explorer**: View monthly warehouse report.
- **CLR-6:** Add or view requisition requests.
- **Inventory Management:** Manage the inventory of the district facility/store.

6.12.3 Data Entry

Welcome: DPWO_Multan

Store/Facility	Last Update	Reporting Months
Multan		Aug-2014 (Draft)
Multan Field Office	25/07/2014 05:56:38 AM	Jun-2014 Add Jul-14 Report

After the user selects the warehouse and the month where they will add data, a data entry screen is displayed that the user can fill in and save. By default, the user can enter the last month's data and edit the last report.

Store/Facility: Multan; Monthly Report: Aug-2014

S.No.	Article	Opening balance	Recieved	Issued	Adjustments (+)	Adjustments (-)	Closing Balance
1	2	3	4	5	6	7	8
01	Condom	150	3400	0	0	0	3550
02	POP	588	720	0	0	0	1308
03	COC	0	0	0	0	0	0
04	ECP	0	100	0	0	0	100
05	Copper-T-380A	0	0	0	0	0	0
06	Multiload	0	300	0	0	0	300
07	2-Month Inj	0	0	0	0	0	0
08	3-Month Inj	0	0	0	0	0	0
09	Implanon	800	100	0	0	0	900
10	Jadelle	0	0	0	0	0	0
		RESET	SAVE				

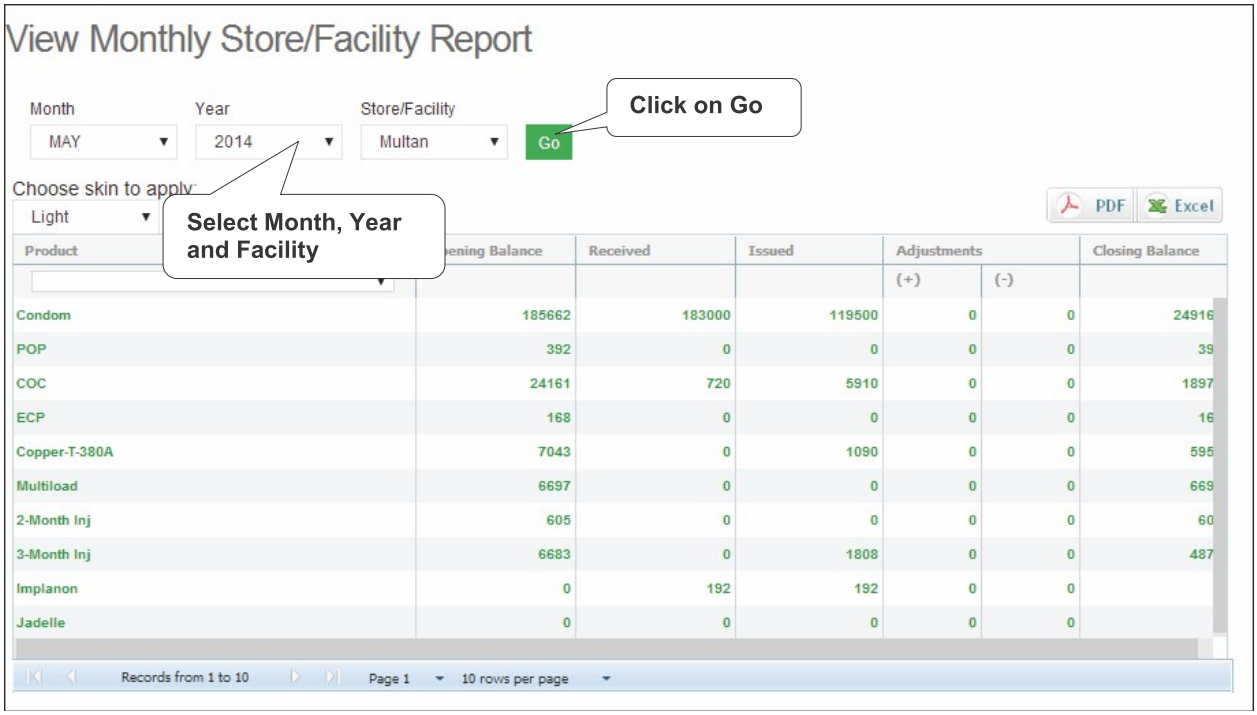
Click save to confirm your changes.

6.13 Viewing Reported Data for Different Months

To view *My Reports,* the user can click on the already reported reports.

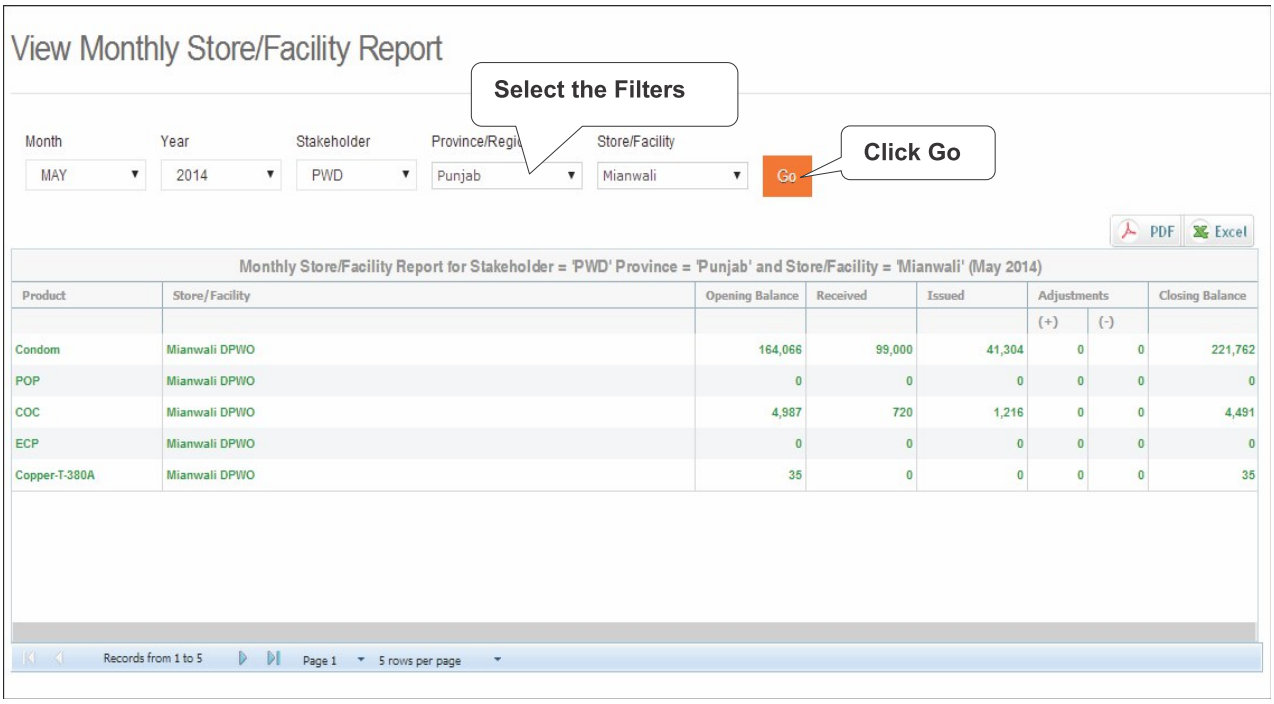
6.13.1 My Reports

The LMIS will display data for that month after the user selects any of the assigned warehouse/store and clicks on *Go*.



6.13.2 Other Warehouse Reports

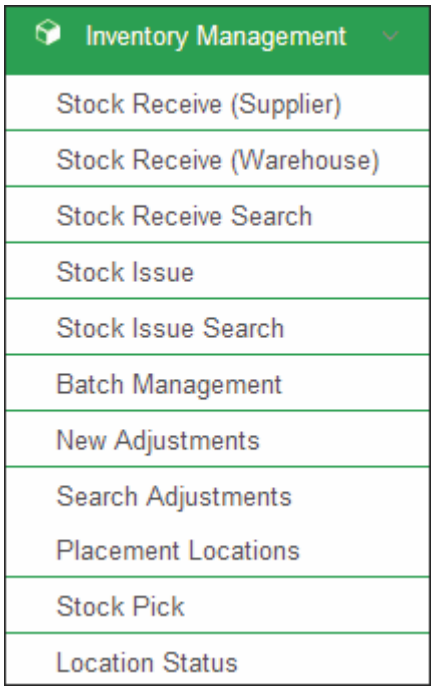
To view reports from other warehouses, the user can click on *Other Warehouse Reports*. To view data from a particular month, the user can select any of the stores/facilities in a district.



6.14 Inventory Management

Inventory management, a component of supply chain management, is used to supervise the flow of goods from manufacturers to warehouses, and from these facilities to the point of sale. One key function of inventory management is to keep a detailed record of each new or returned product as it enters or leaves a warehouse or at the point of sale.

Inventory management feature enables the store user to manage the inventory for the district warehouse. The store user can select from the following options:



- **Stock Receive (Supplier)**: Receive stock directly from the supplier (district-level users).
- **Stock Receive (Warehouse)**: Receive stock from other warehouses (district-level users).
- **Stock Receive Search**: Search for the received stock from other warehouses or suppliers (district-level users).
- **Stock Issue**: Stock is issued to warehouses/stores on demand.
- **Stock Issue Search**: Search for the issued stock to other warehouses (district-level users).
- **Batch Management**: When stock is received, batches are marked with the latest expiry date as *Running*, to ensure this stock is issued first.
- **New Adjustments**: If stock is lost or recovered, adjustments can be added to the cLMIS.
- **Search Adjustments**: Search the added adjustments for a selected duration.
- **Placement Locations**: Manage the location of stock within the store/warehouse. **Stock Pick**: Select *Issue No.* to pick a particular product from the voucher list.
- **Location Status**: Check the stock available at a particular location in the store and transfer it to another location.

6.14.1 Stock Receive (Supplier)

Users at the district level can receive stock directly from the supplier. Users can add information, including *Funding Source*, *Product*, *Manufacturer;* and batch information: *Batch No.*, *Expiry Date,* and *Quantity* for the required product.

Specify the following information:

- **Receipt No.**: An automatically generated number for identifying the receive transaction.
- **Ref No.**: Specify the receive reference.
- **Received Date:** Expands the date picker tool and selects the date.
- **Receive From**: Select the supplier for the product.
- **Product**: Select the product from the list.
- **Manufacturer**: Select or add the manufacturer for the selected product.
- **Batch No.:** Specify the batch number for the product.

- **Expiry Date:** Expands the date picker tool, or enters the required date using the format dd/mm/yyyy.
- **Quantity:** Add the received quantity for the selected product.

Click on *Save Entry* to add the entry to the receive list. The entry moves to the *Receive List*. You can add new entries, as required. All of the entries will be displayed in the *Receive List*.

The user can also click on *Save & Print* to save the complete receive list. After the user saves the receive list, the *Receive Order* is saved and a *Stock Receive Voucher* is created.

6.14.2 Stock Receive (Warehouse)

Storekeepers at the district level can receive the stock being issued by the central warehouse. Storekeepers will be able to receive products against the issue voucher number provided by the central warehouse user.

Add *Issue Number* to search for the required entry in the database. The issued entry will be displayed.

Review the details for the issued product.

- **Product**: Displays the product name.
- **Batch:** Displays the batch number for the product.
- **Quantity:** Displays the issued quantity.
- **Adjusted Quantity:** If the received quantity is different than the issued quantity, enter the adjusted quantity in this text box.
- **Adjustment:** Specify the adjustment type.
- **Receive Reference**: Specify the receive reference.
- **Receive Date:** Click on *Receive Date* to expand the date picker tool and specify the received date.

Check the icon at the end of the row; click on *Save & Print*.

6.14.3 Stock Receive Search

User can search the received stock by *Receive No.*, *Receive Ref* or *Batch No*. Users can also select *Warehouse Supplier* and *Product* to search a specific stock.

To search for a receive entry, specify the following filters:

- **Search By**: Specify the unique identifier for the search. The options include:
  - **Receive No.: If the receive number is known, select this option and specify the *Receive No.* in the adjacent text box.**
  - **Receive Ref: Select this option and then specify the *Receive Ref* in the adjacent text box.**
  - **Batch No.: Select this option and then specify the Batch No. in the adjacent text box.**
- **Warehouse Supplier:** Select the warehouse supplier; this is optional field.
- **Product:** Select the required product from the list.
- **Date From, Date To:** Click on *Date* to expand the date picker tool and select dates.

Click on *Search*.

The required entries are displayed in the *Receive Search* list.

6.14.4 Stock Issue

District-level users can select this option to issue stock. At the national level, the stock issue is based on the districts requisition (CLR-6); districts can issue stock to health facilities based on sub-district product consumption. Provincial and district storekeepers can also issue the stock back to the respective upper-level store, if required.

To issue stock, specify the following filters:

- **Date:** Click on date to expand the date picker tool and add a date.
- **Stakeholder:** Select stakeholder from the list**.**
- **Office:** Select office from the drop-down list.
- **Store:** Select the store from the list.
- **Product:** Select the product from the list.
- **Batch No.:** Select the batch no. for the selected product.
- **Quantity:** Add quantity from the quantity of the product available.
- **Expiry Date:** Click on date to expand the date picker tool and add a date.

Click on Add Issue**.**

The newly added entry is displayed in the Issue list. Click on Save**.**

6.14.5 Stock Issue Search

District-level users can also search the issued stock by *Issue No.*, *Issue Ref,* or *Batch No.* Users can also select *Warehouse Supplier* and *Product* to search for a particular stock. The system provides an option to print a filtered search, as well as individual transactions. Users can also print stock issue summary; as well as detailed list, based on product and location.

To search for an issued entry, specify the following filters:

- **Search By**: Specify the unique identifier for the search. The options include—
  - **Issue No.: If the issue number is known, select this option and specify the *Issue No.* in the adjacent text box**
  - **Issue Ref: Select this option and then specify *Issue Ref* in the adjacent text box.**
  - **Batch No.: Select this option and then specify the *Batch No.* in the adjacent text box.**
- **Warehouse Supplier:** Select the warehouse supplier. This is optional.
- **Product:** Select the required product from the list.
- **Date From, Date To:** Click on the date to expand the date picker tool.

Click on *Search.*

The specified issued stock will appear in the *Issue Search* list.

6.14.6 Batch Management

After the stock is received in the warehouse, each package is identified by its batch number and expiry date. Each batch is sorted by its expiry date using the *first-to-expire, first-out* rule. When batches of stock are added to the cLMIS, the account user usually assigns the batches with latest expiry date as *Running*. The running batches are issued first. The cLMIS provides a section for batch management of each product. Each batch will have a status; i.e., *Running, Stacked,* and *Finished*. District-level users will be able to change the status from *Running* to *Stacked,* as needed.

Stock can only be issued if the system has set their batch status to *Running*. One or more batches can be set to running, depending on the quantity and expiry date of the product.

The system provides a summary of batches for each product with a total quantity.

Batch management summary for the stock will be displayed in a pop-up window.

To mark the status of the batch, you can specify search criteria for the required batch, as follows:

- **Product:** Select the required product from the list.
- **Status:** Specify the status of the batch that you are trying to find.
  - **Running: Only the batches with the *Running* status can be issued.**
  - **Stacked: Stacked batches represent that they are stacked in the warehouse and cannot be issued.**
  - **Finished: Batches are finished.**
  - **Total: The total number of running and stacked batches.**
- **Batch No.:** As an option, specify the batch no. of the required batch.
- **Ref. No.:** As an option, specify the ref. no. of the required batch.

Click on *Search.*

6.14.7 New Adjustments

Occasionally, users want to manually update the number of items in stock. If items are lost or damaged, or less inventory was received than expected, stock adjustments can be added to manage the inventory.

District-level users can add adjustments of stock as theft, lost, lost recovered, expired, or damaged.

To add new adjustments, specify the following criteria:

- **Adjustment Date:** Select adjustment date to expand the date picker tool and select the date.
- **Ref. No.:** Optionally, specify the ref. no. of the batch.
- **Product:** Select the product from the list.
- **Batch No.:** Specify the batch no. of the batch.
- **Adjustment Type:** Specify the adjustment type.
- **Quantity:** Specify the quantity of the product.
- **Comment**: Add comments, if any.

Click on *Save***.**

6.1.1 Search Adjustments

District-level users can also search adjustments to stock by adjustment type and product. The system provides an option to print a filtered search and individual transactions.
To search for adjustments, specify the search criteria:

- **Adjustment No.:** An automatically generated unique identifier for the adjustment.
- **Adjustment Type:** Specify the adjustment type.
- **Product:** Select the product from the list.
- **Date From, Date To:** Click on the date to expand the date picker tool and select the dates.

Click on *Search***.**

6.14.9 Placement Locations

District-level users can manage placement locations for the stock within the warehouse by adding *Area*, *Row*, *Rack*, *Rack Type*, *Pallet,* as well as *Level.*

To manage locations for the stock within the warehouse, select the following filters:

- **Area:** Select the area for the location.
- **Row:** Select the row for the location of stock.
- **Rack:** Select the rack for the stock location.
- **Rack Type:** Select the rack type as single or double.
- **Pallet:** Select the pallet for the stock location.
- **Level:** Select the level to locate the list.

Click on *Save Entry***.**

The location list of stock placement locations is available. The user can also search for a stock location from the list.

6.14.10 Stock Pick

District-level users have an option to issue stock to the Central Warehouse, provincial facilities, as well as field offices. After a district-level user issues stock to a field office, it is placed in a location within the warehouse. Users can manage placement location of the stock from *Location Status* (see the next section).

From the *Issue Voucher List*, select *Issue No.* to select a stock for any specific product.

Click on *Pick***.**

6.14.11 Location Status

District users can select *Area* and *Level* to show a particular location for allocating the stock.

Click on *Show Status***.** The placement location will be displayed.

When the user clicks on the placement location, the details of the product at that location will be displayed.

To transfer the stock available at this location—

- Add quantity of boxes under *Transfer***.** (The quantity of boxes to transfer should be less than or equal to the available number of boxes.)
- Select the location to transfer stock.
- Click on *Save***.**
- To add more stock to this location, click on *Add More Stock***.** A complete list of received stock will be displayed.

6.15 Gate Pass

After a stock is selected to transfer to another location, a new gate pass will be created. To create a new gate pass, select the *Issue No.* of the products to be picked, including the vehicle and vehicle type. The user will also add the quantity to be picked from the issued quantity of the product.

Select *Gate Pass* from the main menu to issue a new gate pass or to view a list of gate passes.

6.15.1 New Gate Pass

Click on *New Gate Pass* under the *Gate Pass* tab.

To issue a new gate pass, you can specify the following:

- **Date From, Date To:** Click on the date to expand the date picker tool and select the dates.
- **Vehicle Type:** Select a vehicle type.
- **Vehicle:** Select a vehicle from the list or check *other*.
- **Issue No.**: Select one or multiple issue numbers from the displayed list.
- **Date:** Click on date to expand the date picker tool and select the date.

The issued products will be displayed in the list. Add the quantity to create gate pass from the issued quantity

Click on *Save*.

6.15.2 View Gate Pass

Click on *View Gate Pass* under the *Gate Pass* tab.

To view the list of issued gate pass, you can specify the following:

- **Date From, Date To:** Click on the date to expand the date picker tool and select the dates.
- **Vehicle Type:** Select a vehicle type.
- **Vehicle:** Select a vehicle from the list or check *other*.

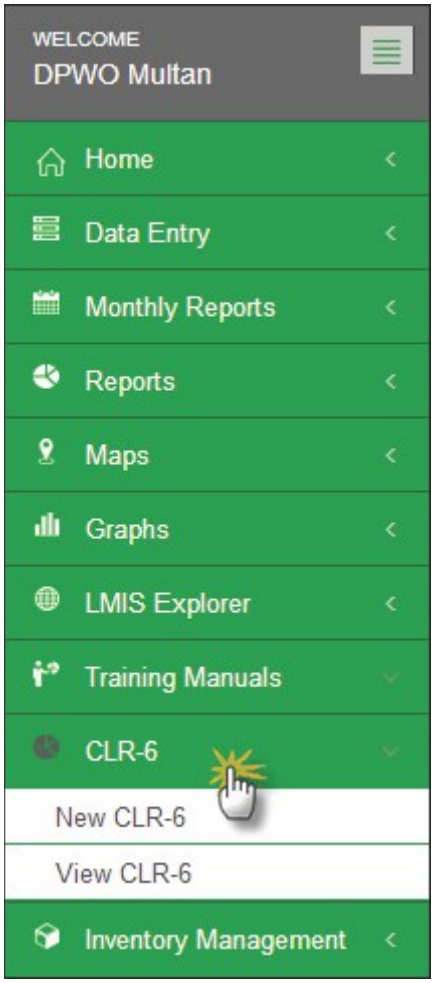
Click on *Go*.

The list of gate passes will be displayed.

6.16 Stock Requisition (CLR-6)

The EDO (H) is using the Stock Requisition (CLR-6) form for commodity requests from CW&S. EDO (H) staff prepare this requisition form once a quarter, in consultation with the storekeeper of DPWO. This form indicates the stock status and consumption during the quarter and indicates the quantity requested for each contraceptive being used in the respective districts.

The district store users were required to fill out the Requisition (CLR-6), based on the previous consumption of that district and submit them to the Central Warehouse. However, in Release-2 of cLMIS, Requisition (CLR-6) is automatically generated using previous consumption trends for the required quantity of products for the next quarter.



6.16.1 New CLR-6

The new Requisition (CLR-6) auto-fills the fields using the previous consumption data for a district, in a selected quarter. Previously, the requester filled out this sheet. District-level users can create requisitions and electronically submit them to the Central Warehouse. The management of the Central Warehouse will review these requisitions, and stock will be issued, depending on the stock availability and approval.

6.16.2 View CLR-6

District-level users can also view a comprehensive list of requisition requests submitted to the Central Warehouses. Details of each requisition will also be available for district-level users to view.

A submitted Requisition (CLR-6) can be viewed, any time, by the requester.

For more details, please visit http://c.lmis.gov.pk/manuals.php

Chapter 7: Warehousing

7.1 Introduction

A *warehouse* is a building specifically designed or used to store large quantities of commodities; but, a *store* is a room(s) that may be part of a building, but it is used for other purposes. The type, location, and size of warehouses/stores within the logistics system can have a significant impact—positive or negative—on the operational efficiency of the system. Ideally, warehouses are managed so that the stacked commodities are always available and accessible when needed, and are kept in good condition. Warehousing refers to a complete system of managing the commodities, including storage, recordkeeping, order processing, and planning distribution.

7.2 Storage/Warehouse Levels

In Pakistan, the following storage levels are part of the contraceptives logistics systems, which may vary in size and location:

- Central (main) Warehouse at Karachi
- provincial/regional warehouse
- district (intermediate) store
- SDP/health facility store.

7.3 Warehouse/Store Size

Each storage facility has a unique requirement for its size. The size of the warehouse/store depends on the maximum amount of stock that needs to be stored. Space is used differently at different levels.

When calculating the available and/or required space at the district- or lower-levels, commodities should not be stacked higher than 8 feet, unless a pallet rack system is available. Another important factor is that sufficient space must be allowed for corridors between stacks to allow for movement of stocks into and out of the storage area, and for ventilation. Currently, the adequacy of the district stores varies—environment, conditions and size. It is recommended that alternative storage space be acquired and refurbished, subject to the availability of funds.

7.4 Warehouse Processes

Following are the basic warehousing processes that are performed in a warehouse:

- receiving/unloading
- inspection
- inventory control (for more detail, see chapter 8)
- storage
- replenishment
- order picking
- checking

- packing
- shipping and loading.

Every activity includes one or more tasks. Although the number of tasks will vary from situation to situation, all warehouses have a common set of tasks. Following are the typical activities involved when receiving goods:

- Establish the correct unloading area and ensure it is safe and suitable for the operation.
- Record the arrival of the vehicle and note the seal number, if applicable.
- Break the seal in the driver's presence, whenever possible.
- Check the documentation and record each item against the consignment note.
- Ensure that the vehicle is safe before unloading.
- Assemble the goods, if necessary, in a goods receipt assembly area.
- If necessary, transfer goods from delivery pallets and cages to an internal method for moving and handling the goods.
- Check the goods for condition, possible damage, and, where appropriate, carry out required quality checks.
- Report discrepancies and condition/quality problems immediately.
- Determine the location where the goods will be stored and move them out of the goods receipt area as quickly as possible.

The tasks concerned with the bulk storage operation include the following:

- Obtain instructions on where to place the goods.
- Move to that location.
- Place materials/goods in that location.
- Record the location used.
- Consolidate partly filled locations by moving cartons/bags from one location to another.
- Obtain instructions for replenishing goods to the picking areas.
- Replenish the picking areas.
- Report/remove damaged goods.
- Return to the pickup point.
- Report actions.

The tasks concerned with consignment picking include the following:

- Collect picking documents.
- Collect equipment for transporting.
- Locate picking face.
- Check and pick the correct quantity.

- Travel to subsequent picking places.
- Note and advise any discrepancies/damaged goods.
- Travel to sorting, consolidation, packing, and dispatch area.
- Prepare kits and repack.
- Note and advise for the replenishment requirements.
- Complete and forward documentation to concerned department.

The tasks to be undertaken in the dispatch area include the following:

- Check notes/goods picked.
- Repack and repallet.
- Record the batch and serial numbers.
- Prepare documentation.
- Label consignments.
- Compile load.
- Confirm load/documentation.
- Load vehicle in sequence.
- Seal vehicle and obtain signature.
- Arrange vehicle movement.
- Open and/or close shutters or doors.

7.5 Warehouse Procedures and Policies

To operate a warehouse efficiently and consistently, it is necessary to define the procedures that will be used in all activities and the policies that will govern these procedures. The humanitarian organization will usually document the procedures and policies. It is the responsibility of the warehouse/inventory manager to ensure the defined policies and procedures are followed.

7.5.1 Procedures

The procedures document defines how the warehousing processes described in 6.5 will be carried out and how it can be viewed as the *best practice* of the organization. The advantages of creating and using a procedures document are as follows:

- The effectiveness and efficiency of all warehouse operations across the organization can be controlled.
- With standardization, staff can be trained faster and more efficiently.

The performance of warehouse operations across the organization can be compared:

- The procedures can be customized and aligned with other functions to optimize the performance of the entire department.
- The procedures allow for visibility of the operations for the department.

However, these procedures require adequate care to avoid limiting the role of the local initiative, which may be needed to deal with local conditions. To optimize local performance, this can usually be achieved by limiting the level of detail defined by the procedures document, allowing more flexibility, and/or arranging *dispensations* to allow departure from the procedures.

The procedures will normally cover the following activities:

- method of stock checking
- handling stock losses
- controlling receipts
- completing inspections
- controlling rejected material
- controlling issues
- handling unwanted material and scrap
- recording stock.

The document will also, typically, have copies of standard documents and forms to be used in the warehouse activities, such as stock record cards and a goods receipt register.

Policies define the general conduct of the warehouse operation. Examples of the types of policies that organizations will define are—

- health and safety
- human resources management
- security
- pest control
- warehouse maintenance and cleaning
- quality control
- recordkeeping and reporting.

As with procedures, policies are usually documented and copies are kept at each facility.

7.6 Storage Space Calculations

The managers at the provincial- and district-level must determine the required storage space and they must acquire suitable space, in accordance with the storage guidelines. Many other factors must be considered for establishing provincial-, regional-, and central-level warehouses. Following are simple formulas to calculate the space required at the district- and/or lower-level storage facility.

7.6.1 Number of Cartons to Be Stored

Number of cartons = Number of units to be stored/Number of units per cartons

7.6.2 Calculate the Space Required

Storage space required in cubic feet (volume) = Number of cartons × carton size

Floor Space Required

Floor space (sq. ft.) = Storage space required/8 feet (maximum stack height)

Total Space Required

Floor space × 4 (factor used for aisles, corridors and handling) = Total space

Note: The multiplying factor can be adjusted based on the level, size of the store, and availability of the space.

7.7 Tools and Equipment Required for Stores

The following tools and equipment are required for the district stores for day-to-day management, including repair and maintenance of the store.

S. No.	Item	S. No.	Item
1	Saw	16	Mop and bucket
2	Hammer	17	Spare bulbs
3	Nails/screws	18	Wheelbarrow
4	Chisel	19	Hand strapping tool with strapping material
5	Scissors	20	First aid box
6	Thread	21	Thermometers/humidity meter
7	Pliers	22	Liquid quantity measures (beakers, flasks, etc.)
8	Screw drivers	23	Measuring tape
9	Insulation and strapping tape	24	Electronic measuring scale
10	Rope and twine	25	Rat traps
11	Plastic bags	26	Insecticidal spray pumps
12	Wooden pallets	27	Insecticidal spray
13	Aluminum ladder 8–12 feet	28	White board with markers
14	Broom and wiper	29	Wooden planks
15	Cobweb brush	30	Firefighting equipment

7.8 Storage Layout Principles

The main storage layout principles include allotting—

- an easily accessible place for fast-moving items

- a separate space for slow moving items
- a space at a corner of the store for storing unusable products
- a separate space for storing chemicals and insecticides, etc.

7.9 Guidelines and Best Practices for Proper Storage and Managing Materials

7.9.1 Complying with Local Legislation

The warehouse manager is responsible for ensuring that the operation complies with local rules and regulations—ignorance of the law is no defense. The manager must identify the regulations that apply to the operation and take steps to ensure that the operation and all its employees follow these regulations.

Managers often encounter the following regulations:

- employment regulations
- health and safety rules
- rules that govern the operation of forklift trucks
- food hygiene
- storage of dangerous materials
- storage of drugs
- building regulations
- financial accounting rules.

Regulations on these and other subjects vary around the world; the warehouse manager must not assume that rules in one location also apply to other areas.

7.9.2 Storage Environment

- Clean and disinfect the storeroom regularly; take precautions to discourage harmful insects and rodents from entering the storage area.
- Store health commodities in a dry, well-lit room.
- Cross-ventilate the store; if needed, install ceiling and exhaust fans.
- Keep track of the weather conditions—turn on the ceiling fans during daylight hours.
- When the temperature exceeds 25°C, always turn on the exhaust fans.
- Maintain the cold chain for sensitive items; always use it, when required.
- Display thermometers on the wall(s); record two readings per day in a separate register, preferably at 9:00 a.m. and 2:30 p.m.
- Position the incandescent lighting fixtures (no tube lights) at suitable intervals.
- Once a year, paint store walls with a lime-based substance (whitewashed).
- Ensure that the roofs do not leak; managed rain/floodwater by installing proper external drainage.
- Ensure that the sun does not shine directly on the stored commodities.

- Raise the floor at least 6 inches above the plinth; ensure that it is flat and cemented.
- Periodically disinfect the walls and under-ceilings with a mild commonly available household spray.
- Equip storerooms with pallets, racks, shelves, and lockable almirahs.
- Equip storerooms with functional (up-to-date) fire extinguishers.
- Designate security guards (at least three) to ensure the physical security of the area.
- Maintain visitors' books for signature and comments of authorized personnel who visit the storeroom/warehouse.

7.9.3 Arrangement of Stock

- Stack cartons on pallets with a minimum of 4 inches—9–10 centimeters (cms)—space between the floor and the bottom of the cartons.
- Ensure the carton labels are visible, with the right side up.
- Position/affix bin cards, including up-to-date information, on stacks, shelves, almirahs, and/or on racks.
- Ensure the space between stacks and walls is at least 12 inches (33 cms).
- Ensure stacks are not higher than 8 feet (2.5 meters). If the lower cartons show squashing/buckling/compression at the required height, maintain the height at the level of the load-bearing capacity of the cartons.
- Align/straighten the stacks vertically; ensure they do not lean left or right.
- Maintain at least 3 feet, or a 1-meter, space between stacks.
- Do not store contraceptives and medicines in the same room with insecticides, volatile chemicals, and fluids—for example, alcohol, kerosene, diesel, and petrol.
- Do not store non-usable equipment—machinery; spare parts; expired, obsolete materials; old files; obsolete stationary; and other printed materials—in the same space as contraceptives.
- When issuing commodities, adopt and practice first-in, first-out (FIFO) and first-to-expire, first-out (FEFO) methods.

7.10 Commodities Requiring Controlled Temperature

Some commodities, such as injectable contraceptives, need a special environment during storage and transportation. It is necessary to maintain the desired temperature throughout the distribution process, based on the needs of the item. Non-compliance with the instructions may result in the commodity losing its efficacy; for example, a Depo-Provera (DMPA) injection.

Clients and service users must receive correct and appropriate contraceptives, in the best condition. All staff who handle medications/pharmaceutical products that require controlled temperatures, must ensure the safe care, custody, and administration of the health commodities.

7.11 Custody and Accounts of Warehouse

The officer entrusted with commodities of any kind should take special care in arranging for their safe custody, keep them in good condition, and protect them from damage or deterioration. Suitable accommodations should be provided, particularly for valuable and combustible commodities. To prevent loss by theft, accident, fraud, or other reasons, the officer should maintain suitable accounts and inventories and prepare correct returns for the commodities in their charge. They should be able, at any time, to check the actual balances with the book balances and the payment to suppliers, etc.

Note: For detailed storage guidelines, please refer to the pocket guide, *Guidelines for the Storage of Essential Medicines and Other Health Commodities,* which is available from the USAID | DELIVER PROJECT.

Chapter 8: Inventory Management

8.1 Introduction

An inventory is a physical resource that an organization holds to meet future requirements; whereas, inventory management refers to a set of policies and controls that determine the maintenance levels of inventory for replenishing stock. This helps determine when large orders should be made. Inventory management and control are important to ensure—

- improving clients services
- economizing when purchasing
- economizing when transporting
- hedging against the future
- ensuring the immediate availability of items with a long lead time
- maximizing the level of customer service by avoiding understocking
- maintaining inventory levels
- determining when the organization/department should replenish its inventory
- determining when the organization/department should place an order for a new lot
- determining how much the organization/department should order.

8.2 Signs of Poor Inventory Management

The following would indicate poor management:

- increasing number of back orders
- increasing number of orders cancelled
- wide variance in turnover of major inventory items between stores
- lack of sufficient storage space
- deteriorating relationship with stakeholders
- holding large quantities of obsolete or expired items
- continuing high shrinkage or inventory loss rates.

8.3 Inventory Control System

To avoid under- or overstocking or stockouts, the organization should observe the following maximum/minimum definitions and other principles:

Minimum quantity: Under normal circumstances, the stock should not fall below this stock level (number of months of supply) or threshold.

Minimum stock level = Lead time stock level + Safety stock level

Maximum quantity: Under normal conditions, the stock level (number of MOS) should not exceed this inventory level or threshold.

Maximum stock level = Minimum stock level + Review period stock level

Following are the maximum/minimum levels to be followed at the district- and health-facility levels:

District-level maximum = 6 MOS
District-level minimum = 3 MOS
Health facility-level maximum stock = 3 MOS
Health facility-level stock minimum = 1 MOS

8.4 Average Monthly Consumption

AMC is the average number of units of contraceptive methods dispensed in one month. The average is usually based on quantities that were dispensed over a six-month period. In certain situations, when the demand is changing rapidly, the average should be based on shorter periods—for example, two or three months. For AMC, in case of inconsistent or unstable use, use consumption only for those months when consumption was stable; ignore seasonal and other effects, such as irregular supply.

Review period (also known as order interval): The routine interval of time between reviews of stock levels. It is also known as the *resupply interval*.

Lead time: The duration between the time supplies are ordered—or, in a push system, allocated—and when they are received and available for use.

Safety stock: The buffer or reserve stock—expressed in months of supply—kept on hand to protect against stockouts caused by delayed deliveries or unexpected increases in demand.

8.5 Push and Pull System

In a *pull system*, the quantity to be ordered is determined by the person placing the order; in a *push system*, the quantity to be ordered is determined by the person who fulfills the order. Both push and pull approaches can be used in one system; however, it is usually inefficient to combine the two system among facilities at the same level. For example, a pull system can be used from the central level to the provincial level, and a push system can be used from the provincial level to the district level. But, it becomes cumbersome for the warehouse managers if some districts are pulling supplies while other districts want the supplies to be pushed to them. For the pipeline to work, the proper quantities must be ordered and dispatched in the shortest possible time. Using two systems at one level only adds to confusion and delays.

It is also important that, when a logistics system is designed, the lower levels and the higher levels understand who decides what quantities are to be ordered. If staff at the higher level think it is a push system, and staff at the lower level thinks it is a pull system, lower-level staff may become confused when the quantity they receive is not the same as the quantity they ordered. If this happens often enough, lower-level staff may assume that they will never receive what they order and stop ordering. Similarly, if different levels of staff have a different understanding about which policy prevails—either a pull or push system—the higher level may assume that supplies are not needed because no order had been placed; the lower level thinks that supplies were not sent because they were not unavailable. The design of the system must eliminate such misunderstandings. The Central Warehouse in Pakistan follows a pull system using requisitions from the district level. The district also follows the same procedure to supply contraceptives to the health facilities.

8.6 Receipt of Commodities

Contraceptives received should be examined and counted at the time of delivery. A responsible officer should take charge to determine if the quantities are correct and if their quality is good; the officer should record a certificate to that effect. The officer receiving the commodities should also be required to give a certificate that they received the materials and recorded them in the appropriate stock register.

8.7 Issue of Commodities

When contraceptives are issued from stock, the officer in charge of the commodities should ensure that a properly authorized person (1) made the requisition/indent on the prescribed form, (2) examined it carefully with reference to the orders or instructions for the issue of contraceptives, and (3) signed it, after making suitable alterations under his dated initials in the description and quality, if they are unable to comply with the requisition in full. A written acknowledgment should be obtained from the recipient at the time the stock is issued.

8.8 Physical Verification

A physical verification is used to determine whether there is any discrepancy between the paper documentation and the physical stock situation. This helps managers establish accountability and evaluate the work of the storekeepers. It also enables managers to decide about the need for distribution of near-to-expire stock and the disposal of expired stocks. A committee, designated by competent authority, should complete a physical verification of all commodities at least once every year.

An accurate list of inventory, or an account of all commodities in the custody of government officers, should be maintained in a form prescribed by an authority that is competent to verify the commodities at any time; therefore, transactions must be recorded as they occur. A certificate of verification of commodities, with its results, should be recorded on the list, inventory, or account, where the verification was carried out.

To do a physical verification, the following instructions should be observed:-

- Verification must always be made in the presence of the officer responsible for the custody of the commodities, or a responsible person appointed by the officer.
- All discrepancies must be corrected immediately to ensure the commodities account represents the accurate state of the commodities.
- Shortages and damages, as well as unserviceable commodities, should be reported immediately to the authority authorized to write off the loss.

8.9 Physical Verification Form

The sample form below must be used to record the results for all physical inventories that the managers take in the field. The person who performed the inventory, and the manager in charge of the store or warehouse, must sign and date this form.

SPECIMEN PHYSICAL VERIFICATION FORM

Facility Name _____

Warehouse/ Store Location _____

Date of Physical Verification_____

#	Item Name	Physical Balance	Balance on Stock Register	Discrepancy		Remarks
				Excess	Shortage	

Comments: _____

_____

Name:_____ Name:_____ Name:_____

Signature:_____ Signature: _____ Signature: _____

Designation:_____ Designation: _____ Designation: _____

Date: _____

Chapter 9: Requisition

9.1 Introduction

The success of every logistics system rests on an efficient requisitioning mechanism. A carefully selected requisitioning system helps to avoid over- and understocking.

9.2 Contraceptives Requisitioning (CLR-6)

Previously, Pakistan's Health and Population Departments used the CLR-6 and CLR-6(H) for contraceptives requisitioned from the Central Warehouse, Karachi. Before devolution, the former Ministry of Population Welfare (MoPW) used the CLR-6 and the former Ministry of Health (MoH) used the CLR-6(H). The district offices at their respective departments generated both forms. Now, the district officers of both the Population and Health Departments are required to prepare the prescribed integrated CLR-6 jointly and send these forms to the Central Warehouse, Karachi, once a quarter. The concerned provincial departments should be kept informed during all correspondence with the CW&S.

CW&S, Karachi, is the custodian of all the public sector contraceptives and, with policy changes after devolution, CW&S stock is considered to be *one* stock. Integrated requisitioning was introduced; all provinces and regions agreed on the new CLR-6 format.

The two main stakeholders in the integrated CLR-6—i.e., the DoH and the PWD of each province and region. This form is completed at the district level during quarterly meetings; it is signed by district officers from both departments. The DPWO is the secretary of the meeting, while the chairman is the Executive District Officer Health—EDO (H)/District Health Officer (DHO).

EDO(H)/DHO is responsible for its own contraceptive requisitioning; the LHW program; Peoples Primary Health Care Initiative (PPHI)/Chief Minister's Initiative for Primary Health Care (CMIPHC); MNCH program; and all tertiary care hospitals (TCH) located in any of the districts vicinity. The DoH demand in the CLR-6 will include a TCH requirement that can be obtained manually through the SDP/Health Facility Monthly Contraceptive Report and Requisition format (see appendix D).

DPWO is responsible for Family Welfare Centers (FWCs), Mobile Service Units (MSUs), and Reproductive Health Centers (RHSs).

NGOs—i.e., MSS and FPAP—will submit the CLR-6 separately by collecting information from the districts and submitting district-wide and total demand to the CW&S. Deliveries against the demanded quantities will be made to their identified central point/stores.

Six data fields are needed for each commodity requested:

- consumption during the last quarter
- stock at the end of the last quarter at the district store
- stock at the end of the last quarter at the population and health facilities
- total stock available (sum of stock, both field and district store)
- desired stock level for two quarters (calculated from consumption)
- replenishment requested (calculated by subtracting *Total Available Stock* from *Desired Stock Level* for two quarters).

In addition to these indicators, DPWO has to submit their sales, because PWD is not providing contraceptives free of cost to its clients.

9.3 Public Sector Integrated CLR-6

All district-level public sector family planning service providers (DPWO, DOH, and LHW, PPHI/CMIPHC, MNCH, and TCH) use this form to request contraceptives from the Central Warehouse.

In 2012, the integrated CLR-6 was introduced after a policy decision by the federal and provincial health and population departments. It compiles requests from the district level. The form indicates the stock status and consumption during the past quarter and indicates the quantity requested for each contraceptive for the next quarter.

9.4 Private Sector Integrated CLR-6

All private family planning service providers (MSS, FPAP, etc.) use this form to request contraceptives from the Central Warehouse. In April 2013, a policy decision was made to introduce the integrated CLR-6 separately for the private sector. The head of the district organization will submit the requisition to the head office of the organization. The head offices of the private sector organizations will compile requests from the district level and submit consolidated contraceptive requisitions to the CW&S. The requisition will show the stock status and consumption during the past quarter and will indicate the quantity requested for each contraceptive for the quarter.

The main steps to complete the CLR-6 form, both for public and private sector are listed below:

9.5 Completing the Integrated Contraceptive Requisition Forms

Purpose: To request contraceptives from the Central Warehouse, based on consumption and stock status.

Used by: All district-level public sector family planning service providers (DPWO, DoH and LHW, PPHI, MNCH, and TCH) and private sector organizations (FPAP and MSS, etc.)

Completed by: The public sector district-level officer in-charge/designated officer

When to perform: Quarterly

Materials needed: Stock cards/stock register for last three months, LMIS reports, calculator sector, and the designated officer for the private organizations.

Signed by: DPWO, EDO (H)/DHO, and designated officer from the private sector.

Following are the steps to complete the public sector CLR-6 (see table 6):

Table 6: Steps to Complete the CLR-6

Step	Action	Notes
1	**To:** Insert the name of the person or position who will receive the requisition	For example: Director, Central Warehouse
2	**District Name:** Insert the name of the district	Name of the requesting district
4	**Requisition No.:** Insert the appropriate requisition number	Each district determines this, in consult with the in-charge.
5	**Requisition Date:** Write the date	The requisition should be completed at the end of the reporting period. Example: 1 April 2013
Department of Health		
6	**Sections A–D** Follow the instructions below to complete each step. The only difference is who fills out sections A–D.	The district officer for the district completes section **A**, including the tertiary care hospital located in the relevant district vicinity. The District Program Implementation Unit (DPIU) of LHW program completes section **B**. PPHI/CMIPCH completes section **C**. MNCH completes section **D**.
7	**Section A** **A–D 1:** Enter the consumption at your facility for the past quarter.	The Executive District Officer/District Health Officer completes section A. Enter this information for all products/columns on the form.
8	**A–D 2:** Enter the amount of SOH at the district store, at the end of this quarter.	Conduct a physical inventory and update your stock cards when it is complete.
9	**A–D 3:** Enter the total amount of stock at all health outlets in this district, at the end of this quarter.	To determine this number, review all facility reports.
10	**A–D 4:** Determine the desired stock amount for the next two quarters.	Multiply the figure in A1 by 2 (double the consumption for the quarter that just ended).
11	**A–D 5:** Determine your replenishment.	(A5–A4) Subtract the amount of current stock from the total wanted for the next period.

Population Welfare Department		
1	**Sections E–H** Complete all sections by following the steps below. The only difference is who fills out parts E–H.	The DPWO completes section E. The Reproductive Health Centers (RHS) complete section F. Each section has two parts—A and B. Each part—A and B—is the same for all sections.
2	**Section E–H, Part A1** Avg. quarterly sale, based on the last three-months consumption	Calculate the average sale per month, based on the last quarter consumption; write in Pakistan rupees. The condoms are sold at 0.5 rupees per unit; all other contraceptives are sold at 3 rupees/unit or cycle.
3	**E–H, A2** Sale/use last month	Indicate sale in Pakistan rupees for all contraceptives in this cell. Calculate the sale by multiplying the use/consumption by the sale price.
5	**E–H, A3** Amount of sales proceeds deposited in bank/treasury (attach original paid challan).	Enter amount that was deposited from these sales into the bank or treasury. Remember to keep track of your receipts or bank numbers.
6	**E–H, A4** Bank/treasury challan no. and date	Enter the reference number of challans, with date.
7	**E–H, B1** Consumption during the last quarter	Add the total consumption for all products during the quarter that just ended. Locate this information from the web-based LMIS, if consumption data are regularly entered into it every month.
8	**E–H, B2** Stock at the end of the last quarter at the district store	Conduct a physical count. Update the corresponding stock cards at the same time so the true balance is known.
9	**E–H, B3** Stock at the end of last quarter at the health facilities	Add the monthly reports from all the health facilities in the district. Make estimates for non-reporting facilities.
10	**E–H, B4** Total stock available	Add steps 2 + 3 above.
11	**E–H, B5** Desired stock level for 2 quarters	Multiply step 1 (consumption during the last quarter) × 2.
12	**E–H, B6** Replenishment requested	Subtract step 4 from step 5 Desired stock level—total stock available

Following are the steps to complete the private sector CLR-6 (for individual district). See table 7.

Table 7: Steps to Complete the Private Sector CLR-6 for the Individual District

Step	Action	Notes
1	**Name of the organization:** Enter the name of the district.	Name of the requesting district.
2	**Quarter/Year:** Enter the quarter and year.	Complete the requisition at the end of the reporting period. Example: 1 April 2013
3	Enter the total consumption for all the health facilities in the district managed by the organization, for the past quarter.	District head of the organization completes this. Enter this information for all products/columns on the form.
4	Enter the amount of SOH at the district store at the end of this quarter.	Conduct a physical inventory and update the stock cards.
5	Enter the total amount of stock at all health outlets in this district at the end of this quarter.	Review all facility reports.
6	Enter the total stock available at the district.	Total stock = B + C.
7	Determine the desired stock amount for the next two quarters.	Multiply the figure in column A by 2—double the consumption for the quarter that just ended.
8	Determine the replenishment.	Subtract the current stock from the total wanted for the next period. Replenishment required= E – D.

Following are the steps to complete the private sector CLR-6 (for the head office of the private organization). See table 8.

Table 8: Steps to Complete the Private Sector CLR-6 for the Head Office (private organization)

Step	Action	Notes
1	**Name of the organization:** Enter the name of the organization.	Name of the requesting organization
2	**Quarter/year:** Enter the quarter and year.	Complete the requisition at the end of the reporting period. Example: 1 April 2013
PART-A		
3	Enter the average quarterly sale of the organization for the past quarter.	Designated person from the organization completes this. Enter this information—compile information from all the districts—for all products/columns on the form.
4	Sale/use last month	Average all the districts.
5	Amount of sales proceed deposited in the bank/treasury—attach original paid challan with receipt nos.	Compile information from all the districts and write total in the column.
PART-B		
6	A-1: Enter the consumption during the last quarter.	Compile information from all the districts and provide the total amount.
7	A-2: Enter the amount of SOH at the district stores at the end of this quarter.	Compile information from all the districts and provide the total amount.
8	A-3: Enter total amount of stock at all health outlets in this district at the end of this quarter.	Compile information from all the districts and provide the total amount.
9	A-4: Enter the total stock available at the organization.	Total stock = A-2 + A-3.
11	A-5: Determine the desired stock amount for the next two quarters.	Multiply the figure in column A1 by 2—double your consumption for the quarter that just ended. Desired stock level = A1 x 2.
12	A-6: Determine the replenishment.	Subtract how much stock is available from the total desired for the next period. Replenishment required = A-5 – A-4.

See appendix C for the Private Sector Requisitioning form.

9.5.1 Exercise for Completing the CLR-6

To complete the requisition, fill in the quarterly consumption data for COC of district on the CLR-6 form.

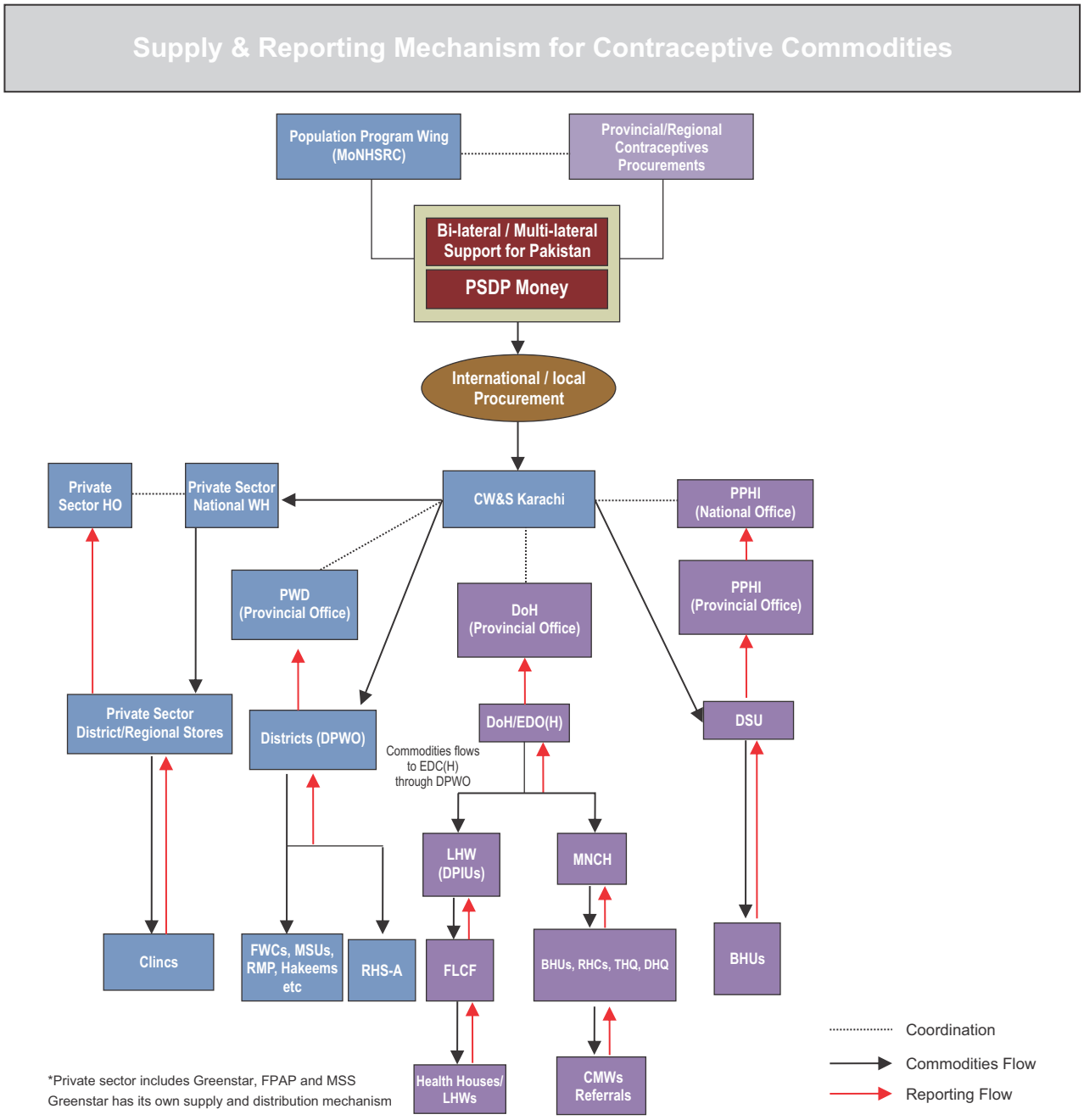
9.5.2 Data

Description	Facility A	Facility B	Facility C	Facility D	District	Total
Consumption	832	765	1,032	755	—	3,384
Stock on hand—as of 31 December 2013	1,003	432	654	109	1,200	2,198

1.1.1 Example: Filled in CLR-6 as Per Data Given Above

S. No.	Description	COC (No.)
1	2	3
PART - A (To be filled by Requester)		
A-1	Consumption during the last quarter	3,384
A-2	Stock at the end of last quarter at district store	1,200
A-3	Stock at the end of last quarter at health outlets	2,198
A-4	Total stock available (A-2 + A-3)	3,398
A-5	Desired stock level for 2 quarters (A-1 x 2)	6,768
A-6	Replenishment requested (A5 – A4)	3,370

Figure 3: Supply and Reporting Mechanism for Contraceptive Commodities



9.6 Contraceptive Reporting and Requisitioning by SDPs

The SDPs/health facilities of health and population welfare departments will use following format for contraceptive reporting, as well as requisitioning from the concerned district offices, on a monthly basis, as per inventory level defined for them. This will include the contraceptive stock position in the respective SDPs.

SDP/Health Facility Monthly Contraceptive Report and Requisition

Facility _____ District_____ Reporting Month_____

Item Name	Opening Balance	Received	Issued	Adjustments (+)	Adjustments (-)	Closing Balance	Next Month Requirement
Condoms							
COC							
POP							
ECP							
Copper-T							
Multiload							
2-Months Inj							
3-Months Inj							
Implanon							

Prepared by:
Signature_____
Name_____
Designation_____
Date_____

Verified by:
Signature_____
Name_____
Designation_____
Date_____

9.7 Transportation

Transportation, the essential part of supply chain, plays a very important role in making the commodities available to end users. Transportation refers to the movement of commodities from one level to other, using any mode; keeping in mind the weight, volume, storage temperature, and terrain to destination. The modes of transport can be road, sea, and air. In Pakistan, contraceptives are transported primarily by road.

9.7.1 Current Transportation Practices in Pakistan

For international consignments, public (health and population) and private sectors import contraceptive commodities in the country primarily by sea and air routes. The relevant public sector department is responsible for clearing consignments from the sea and airports. A clearing agent is hired to ensure the shipment is cleared from the ports. The clearing agent is also responsible for using the truck trailers to transport the commodities from the port to the desired storage facility. The transportation cost, with the loading/unloading, is included in the contract amount for the clearing agent. Because CW&S, Karachi, is a central repository for storing contraceptives in Pakistan, it receives consignments either from within the country or from outside sources.

The CW&S managers use private goods forwarding agencies to transport the commodities directly to the public sector district stores by road. The consignments are dispatched once a quarter.

Districts distribute contraceptives to the health facilities/SDPs once a month. In the PWD, the service providers collect contraceptives from the District Population Welfare Office during the first week of each month and use their own arrangements to transport them. However, in the DoH, official transport is used to distribute the commodities to facilities.

To ensure commodity security and avoid stockouts at the facilities, the transportation mechanism should be based on the following parameters:

9.7.2 Mode Selection Criteria

Four key criteria can be used when comparing different modes of transportation:

1. speed of the mode
2. reliability of the mode to fulfill the service requirements
3. comparative unit costs
4. flexibility of the mode.

Speed and reliability will have a major impact on the ability to deliver humanitarian aid effectively and efficiently to where it is needed.

1. Speed

The nature of a mode usually determines the speed at which goods can be moved. However, the nature of the modal infrastructure can also impact the relative speed of that mode. Environmental factors, such as congestion on roads and adverse weather conditions, can impact the ability to move at the optimal speed.

2. Reliability

The reliability of a transport service to deliver the correct goods; in the right condition; at the required time; every time, is a major aspect of customer expectation.

Unreliable service, in terms of planned aid delivery, can have a critical impact on the ability of a program team to meet its humanitarian objectives.

3. Cost

The cost of a mode will often be expressed in terms of the unit cost for transporting the goods or materials, rather than an absolute figure. This could be expressed as a cost per carton or sack, cost per ton, cost per pallet, and others. The distance the goods have to travel must also be considered. For example, the modal cost can also be expressed in terms of a value per ten kilometers.

Understanding costs at this level of detail allows a very precise comparison of modes. However, if the goods are in the form of a full load, and there is a choice of available modes for the consignment size, the absolute cost for transportation can be compared. For instance, transport can be quoted as a cost per 24-ton load from point A to point B.

4. Flexibility

Flexibility relates to the scope for variation in a mode.

The infrastructure in which a mode has to operate will affect the flexibility of that mode. Comparatively speaking, road transport is a very flexible mode, due to the road infrastructure, which most countries have. Rail, for example, is less flexible, because it is constrained by the available fixed infrastructure.

The selection of mode of transport should be rational.

The following key factors should be considered during transportation:

- proper packing of commodities

- proper loading/stacking of commodities; i.e., right-side up, especially for liquids
- proper shelter to protect commodities from environmental and climatic conditions during transportation
- proper documentation (issue/receipt voucher) of loaded commodities completed and provided to transporter
- consignee (recipient) notified in advance.

Chapter 10: Quality Assurance

10.1 Introduction

Quality assurance (QA), a broad concept, covers all matters that individually or collectively influence the quality of the product. The total package of arrangements will ensure the quality of the contraceptives. QA, therefore, incorporates several factors, and it is an integral part of all key activities in procurement. The implementation of a QA system in procurement—including systems for prequalification, storage, and distribution—may affect costs. However, the benefits of ensuring quality outweigh the cost investment because it reduces the possible losses caused by the purchase and supply of substandard products. The following methods are normally used for quality assurance of procured items:

- physical inspection
- laboratory analysis.

10.2 Physical Inspection

Physical inspection is the comparison of a commodity's attributes to those of a standard or norm, such as the procurement specification. Any deviation between the inspected product and the applicable specification constitutes a defect. Defects can range from minor and unimportant to critical and significant variables. During a physical inspection, the condition of the package and labeling, as well as the unit, will be assessed.

Observation of Inspection Committee

No. of samples taken randomly from each batch: _____

S. No.	Batch No.	Manufacturing Date	Expiry Date	*Shelf Life	Quantity in Accounting Unit	Actual Quantity in Accounting Unit	Shortage Excess in per Accounting Unit	Remarks (if any)
1.								
2.								

Comments:

_____

_____

S. No. Name of the Member Designation & Signature

1. _____ _____

2. _____ _____

Calculate Shelf Life

$$\text{Shelf life at the time of receipt} = \frac{\text{Remaining months in expiry on date of receipt}}{\text{Total Shelf Life in Months}} \times 100$$

For example:

Commodity type=Male condoms

Date of receipt=August, 2012

Date of manufacturing=January 2012

Date of expiry = December 2015

Shelf life at the time of receipt = 40 × 100/48=83%

10.3 Quality Assurance of Contraceptives

Contraceptives are usually imported; because supplies are received with a detailed lab analysis of the product, further laboratory analysis is not needed. However, in the case of local purchase, samples should be sent to the Central Drugs Testing Laboratory (CDL) or Provincial Dugs Testing Laboratory *before* any distribution takes place.

10.4 Inventory Management Practices for Quality Assurance Purposes

The storage guidelines will be strictly followed:

- Bin cards will be maintained as per standard instructions.
- Transportation guidelines will be strictly followed.

10.5 Response to Complaints on Quality of Products

Complaints about the quality of the products may originate from a variety of sources, including clients or warehouse/store personnel. To the extent possible, the specifications and number of complaints should be documented. In the case of users' complaints, it is critical to establish the validity and reliability of the complaints. If many similar complaints are received about a product, an effort must be made to trace the complaint to a specific batch, and possibly a specific warehouse/store or distribution point. After this link is made, the remaining stored stocks of the commodity should be sampled and inspected. When inspecting in response to complaints, the aim should be to isolate and remedy the problem.

The extent and scope of inspection depends on the nature of the complaint. For example, if the complaint relates to the condition of the inner boxes, shipping cartons and inner boxes should be the focus of the inspection. Alternatively, if the complaints relate to the product itself, the unit of the product should be the target of the inspection. In some cases, it may be appropriate to arrange for analytical testing in response to specific product complaints. The responsibility of undertaking visual inspection and reporting the findings of the inspection follow:

10.5.1 Role of Health Facility Level or Below

The facility in-charge is responsible for establishing the validity and reliability of the complaints; for remedial action, they will prepare and submit their findings in an official note to the district. A sample should be enclosed, if necessary, with the report.

10.5.2 Role of District Level

The district manager is responsible for validating the complaints received from the facility-level or at the district level; they will submit their findings, including samples and an official note, to the provincial/regional level for necessary remedial action.

10.5.3 Role of Provincial/Regional Level

The provincial/regional logistics/warehouse manager is responsible for submitting their findings to the provincial/regional head about any complaints received from different levels; they must submit the samples to the federal- or provincial-level testing laboratories for analysis by a competent inspector.

10.6 Commodities Near Expiry

In some cases, a product may have been in storage long enough that it is near (six months or less) its expiration date. It should be determined whether the quantity of soon-to expire stock is in excess of the organization's needs in the catchment's areas that will be served for the next six months.

If the product is in excess, the excess quantity should be calculated and the higher level should be notified; if there are shortages in other districts or provinces, the excess can be shifted to those areas. If other provinces/districts, do not have shortages, then alternative distribution solutions and mechanisms must be initiated. The product that cannot reasonably be expected to be consumed by its expiry date should be quarantined and ultimately destroyed. (Refer to the government rules for *disposal of unusable materials*.)

10.7 Guidelines for Quality Assurance

- Determine specification for the contraceptives, including special packaging.
- Use limited tenders and prequalified suppliers.
- Prepare and enforce quality-related contract specifications.
- Request product samples before purchasing.
- Inspect shipment before acceptance.
- Ensure that laboratory tests confirm compliance with standards.

10.8 Maintaining Quality

- Ensure that port clearance is done as quickly as possible.
- Ensure proper transportation conditions.
- Ensure proper storage conditions.
- Counsel clients.
- Use proper dispensing containers with written labels.
- Involve health service providers in QA.
- Suspect product: report, test, and follow up.

Chapter 11: Disposal of Unusables

11.1 Introduction

Supplies become unusable for many reasons. The supplies may arrive past or near their expiry date or they may be inappropriate for what is needed. There may be inadequate space and staff may not be sufficiently trained to take proper care of the supplies; in this case, even supplies with a long shelf life may be mismanaged and, eventually, expire or be damaged. The main reasons for commodities becoming unusable are—

- damaged by insects
- damaged by water penetration
- extreme heat inside the storeroom
- direct sunlight falling on the products
- color changes
- excessive humidity inside the storeroom.
- improper stacking.

In addition to those listed above, other situations can cause wastage/expiry of contraceptives, medicines, and other items.

11.1.1 Relevancy

Sometimes, supplies are not relevant to the clients' needs, particularly when donations are received that do not comply with local policies and standard treatment guidelines. Imported items may not be properly registered in the country; and, therefore, are not allowed for use and reach their expiry date before the issue is resolved.

11.1.2 Quality

The quality of supplies may not comply with the standards.

11.1.3 Quantity

The quantity procured may be more than is needed because of unrealistic forecasting and other factors, and the product may expire before it can be consumed.

11.1.4 Improper handling

Damage can occur because of improper storage environment or conditions; or careless handling of commodities at various levels of storage, distribution, and transportation.

11.2 Safe Disposal of Expired or Damaged Commodities

- Safely disposing of these items often becomes challenging. Improperly discarded medications can pollute our water supply and affect fishery and wildlife.
- The approval from competent authority should be obtained when writing off all losses, deficiencies, or depreciation in the value of commodities.

Following are some guidelines to be followed immediately if supplies become unusable, for any reason.

- Immediately stop the distribution of supplies.
- Send a report to the immediate supervisor; e.g., health facility in-charge, EDO, or Director General; include the name of the items, quantity, manufacturing date, and period of storage. Also, explain the circumstances under which these items were considered unusable, outdated, expired, or spoiled.
- On receipt of the report, the supervisor will review the circumstances that led to the spoilage of commodities; they will decide whether to accept the reported stock as unusable, or have it inspected or lab tested.
- If they determine that the reported stock is unusable, the supervisor, in consultation with the relevant expert, will specify a location for disposal and will specify the procedure to be followed for the destruction/disposal of the spoiled stock.
- For this purpose, the supervisor will name a committee that will make the necessary arrangements; they will, also, witness the destruction/disposal process.

11.3 Major Steps of Safe Disposal

The following are the major steps that must be taken to safely dispose of unusable commodities.

11.3.1 Sorting and Categorization

The first stage of sorting is to separate the commodities that are classed as controlled substance, toxic or hazardous products, and uncontrolled products.

Most often, the supplies are a mix of non-pharmaceutical materials and larger quantities of packing. The second step, therefore, is to sort the materials by form—type, such as tablets, injections, etc. This is necessary because the flammable and/or water reactive chemicals must only be destroyed in a chemical waste disposal facility. A trained pharmacist should supervise the sorting activities. The decision about the method of disposing of the commodities will then be determined.

11.3.2 In-Date and Useful Materials

Near-expiry material, with 25 percent of shelf life left, should be identified; the list of items should be circulated to any group that could use the items before the expiry date.

11.3.3 Expired Contraceptives

Solids: tablets, latex condoms, devices, etc.

Semi-solid: creams, lotions, gels, etc.

Liquids: vial and ampoules, etc.

11.3.4 Process

Ideally, staff trained on the sorting, and who are aware of health and safety risks associated with handling the materials criteria, should do the sorting. The sorting should be carried out in the open or in a well-ventilated building, as close as possible to the stockpiles; the process should be orderly.

Staff should be supplied with protective equipment, such as gloves, boots, overalls, dust masks, etc. After the commodities are sorted, they should be carefully packed in the steel drums or containers, such as sturdy cardboard boxes; the contents should be clearly identified on the outside of the containers. Until the disposal is complete, to avoid confusing the products with in-date commodities, the materials should be kept in a dry and secure room, preferably in a separate room.

11.3.5 Safe Disposal

First, the possibility of returning unusable commodities to the manufacturers for safe disposal should be explored. If this is not possible, any of the following processes, suitable to the situation, can be carried out.

11.3.6 Landfill

Landfill is the oldest and most widely practiced method of disposing of solid waste. An appropriate landfill will include an excavated pit away from water courses and above the water table. Uncontrolled dumping, which is harmful for the environment, should not be used. Materials disposed of in a landfill should be covered immediately by fresh municipal waste at the base of the working face of the landfill.

11.3.7 Encapsulation

This involves placing the commodities in plastic or steel drums. When the containers are full to about 90 percent, fill the remaining space with a media; such as cement, lime mortar, plastic foam, or bituminous sand. Seal the drum and place it at the base of the working face of a landfill. For cytotoxic materials, use 40 percent cement, 30 percent water, and 30 percent waste, by weight; mix it well and allow it to settle for 7–28 days, prior to moving it to the landfill. This will form a firm immobile solid block that will securely isolate the waste. To determine the most cost-effective ratio to achieve a minimum permeability of the blocks, experiment with the mixture.

11.3.8 Inertization

This primarily involves removing all packaging materials from the waste commodities and grinding the waste by adding a mixture of water, cement, and lime to form a homogeneous paste. The liquid paste is transported, by concrete mixer truck, to a landfill and decanted into normal urban waste. The paste sets into a hard harmless substance that can be disbursed in the urban waste.

The process is relatively inexpensive and can be easily done. The main requirements are a grinder or a road roller to crush the supplies; a concrete mixer; labor force; and a supply of cement, lime, and water. The approximate ratio by weight used is as follows:

Waste commodities: 65 percent; Lime: 15 percent; Cement: 15 percent; and Water: 5 percent.

11.3.9 Sewer

Some liquid can be diluted with water and flushed into the sewers, in small quantities, over a period of time, without any serious public health or environmental effect. If a sewer or well-functioning sewage treatment plant are not available; liquids, other than cytotoxic products, can first be diluted with a large volume of water and poured into large water courses, if they are immediately diluted and dispersed by the flowing water.

11.3.10 Medium Temperature Incineration

Two chambered incinerators that operate at the minimum temperature of 850ºC, with a combustion retention of time of at least 2 seconds in the second chamber and open burning at low temperatures, should not be used, particularly, for contraceptives and similar materials; it will cause aerosol fumes to be released into the open air.

11.3.11 High Temperature Incineration

Some industries have furnaces that operate at above 850ºC, with long combustion retention time; they disburse exhaust gases via tall chimneys to a high altitude. If this method is selected, it should be noted that it may not be cost effective. A rule of thumb is that no more that 5 percent of the value of the commodities should be used as fuel in these furnaces.

11.3.12 Chemical Decomposition

If an appropriate incinerator is not available, chemical decomposition is another option. This tedious, time-consuming method has another drawback; the treatment chemicals must be available at all times and this method cannot be used for large quantities—e.g., over 50 kilograms.

Chapter 12: Monitoring and Supervising the Logistics System

12.1 Monitoring and Supervising the Logistics System

This chapter reviews the field monitoring system that tracks the logistics performance of all districts in Pakistan—across the Health Department, the Population Welfare Department, and private sector partner organizations. To strengthen the system and make it more sustainable, routine monitoring and supportive supervision will be institutionalized across all levels of the public health system.

The monitoring and supportive supervision system has the following objectives:

1. Strengthen the availability, distribution, and consumption practices for contraceptives at all levels of the supply chain; improve the data visibility in the system.
2. Strengthen the capacity, as well as the processes and performance, of the supply chain using supportive supervision and feedback mechanisms.
3. Ensure the quality of data, based on physical checks, against the LMIS reports.

Continuous monitoring of the logistics system is required to indicate and analyze how well the system is functioning and to identify areas that require investigation. The warehouses and storerooms at each level of the supply chain need to be visited regularly to determine whether sufficient quantities of health commodities are available and to evaluate the storage conditions and logistics related records.

Regular availability of health commodities in sufficient quantities and good recordkeeping at facilities are positive indicators that the system is working properly. If the monitor finds insufficient commodities, if they are not stored properly, or there are problems with records, they should analyze why it is happening and possibly provide on-the-job support to the staff to improve the situation.

Monitoring the logistics activities at the district-, health- and population facilities are an important part of the health managers' duties. One prime objective of the monitoring visit is to rectify any problem that can be solved, on the spot, without involving upper-level management. The monitoring officers are required to provide on-the-job training for any facility staff that needs it. Regular monitoring prevents small problems from becoming large problems.

The monitoring must be supportive; it should also offer an opportunity for the lower-level employees to learn from the monitoring officers. Reviewing the web-based LMIS reports is an essential and routine first step for all supervisors who monitor performance. Supervisors should determine their visits based on the performance of the facilities (or districts), as reported/presented in the web-based LMIS.

12.2 How the Monitoring Plan Works

Who is involved?

Designated provincial- and district-level staff from the health and population welfare departments, including representatives from vertical programs—i.e., LHW and MNCH are involved. Development partners' representatives who are relevant to the contraceptive supply chain management system can also be invited to the joint monitoring, if the relevant department considers it appropriate. LMIS master trainers can also accompany the monitoring officer from the district office to the SDPs of health and population departments.

Where does it take place?

The monitoring will take place at the health facilities/SDPs, as well as the district stores and provincial warehouses.

What is the frequency of monitoring?

Monitoring and supportive supervision is a continuous process that is carried out by the logistics managers. However, to make it more strategic, it should take place once a quarter. Because of the large number of facilities, only a sample size should be monitored. The facilities will be identified for monitoring, based on their LMIS reports; those with problems will receive more attention.

How will monitoring be conducted?

During the monitoring, the joint monitoring teams, using prescribed field monitoring checklist, will review the provincial warehouses, district stores, and SDPs. The checklist will allow team members to identify and discuss key issues and challenges and minimize the chance of missing any important elements. Checklists also provide a uniform dataset for evaluations, across time and facilities.

Before leaving a monitoring site, the joint monitoring team will provide direct feedback to relevant teams/managers and supervisors on key findings at their facilities; they will recommend any corrective action necessary to strengthen health commodity management practices. These actions will then help the department focus on the next monitoring session; the follow up can be reviewed during that time.

Provincial- and district teams will reinforce and complement each other. Each team will facilitate the findings and communication between different levels, ensuring that appropriate action points are followed up. The provincial team will monitor and provide feedback to the district team for follow up at the district- and facility-levels. The district will also do their own monitoring of their target facilities and conduct follow up, as needed.

Before data are entered into the LMIS for all facilities, the officials nominated for monitoring and supervision will do a physical count, every month, at the facilities. This practice will provide the actual data at each facility for analysis and additional recommendations. Provincial and district teams will ensure that this happens. For data accuracy, the routine data visibility will remain on the web-based LMIS. The adjustments will be made once a quarter when a report of monitoring is issued.

Following the visits, the monitoring reports will be shared with all stakeholders once a quarter. These will be discussed at the quarterly meeting of the provincial Reproductive Health Commodity Security (RHCS) committee and/or at the District Health Planning & Management Team (DHPMT) meetings for additional corrective measures. The Logistic Procurement Cell (LPC) and M&E cells within the Director General Health Services (DGHS) will become the operational arms for this committee.

Preparation Needed for Monitoring—Provinces

For provincial teams to successfully monitor, they will need to—

- Designate provincial staff from all relevant departments to visit the districts, health facilities, and SDPs.
- Develop well-defined scopes of work for all monitoring officials, with expected outputs and mechanism/timeline for follow up on action items.
- Establish data compilation, analysis, and interpretation mechanisms at the provincial level.
- Develop an action-oriented plan to monitor district- and sub-district–level supply chain management interventions, which strategic- and policy-level officials will established and carry out.

Preparation Needed for Monitoring—Districts

For district teams to successfully do their monitoring, they will need to—

- Develop the capacity of the district monitoring teams to use the prescribed monitoring checklist (available in the manual), review key logistics indicators, and respond with appropriate plans to address needed areas.
- Coordinate and collaborate within district management for regular monitoring and follow up at SDPs.
- Collaborate with government stakeholders to include monitoring responsibilities.
- Consider (with the government) including a new workforce, like the District Health Information System Coordinators, into the monitoring activities.

12.3 Web-Based LMIS—A Monitoring Tool

The web-based application creates an LMIS system contextualized to fit the local stakeholder structure and the devolution of health and population programs to provincial governments. The system brings in district-level reporting by aggregating facility-level data through paper-based reports. With a unified system for reporting and requisitioning, the web-based LMIS system can integrate information from all levels and sectors. The web-based LMIS can be accessed at http://lmis.gov.pk

The web-based LMIS provides information for the policymakers, planners, district managers, and service providers to ensure the smooth functioning of the logistics management system. It provides basic data on available stock; consumption per unit of time; level of stock in months; and other useful information at the district-, province-, and national-levels.

Planners and policymakers use this information to forecast requirements and budgetary allocations at the national- and provincial-levels. They can also monitor the stock availability situation at various levels, including the central warehouse, provinces, and districts. Managers at the national-, provincial-, and district-levels can also use the information generated through the web-based LMIS for monitoring stock situations at the district level; i.e., stockouts, overstocking, understocking, expired/damaged stock, etc.; and to correct the situation. District managers can also use this information to adjust and transfer stock from surplus to deficient districts by monitoring stock availability through the web-based LMIS.

12.4 Format Checklist for Field Monitoring and Supervision

The following checklist will enable the policy- and operational-level officers at the national-, provincial-, and district-levels monitor all the logistics system components. However, managing officers should not confine themselves to the checklists only. Monitoring staff are encouraged to ask questions outside the checklist to identify the logistics related issues/problems and gather all the necessary information. They should understand the situation on the ground to keep managers well informed at all levels, so they can make appropriate decisions to improve the system. A table of key indicators, used for monitoring, follows the checklist. Reading this will help clarify the monitoring process.

12.5 Logistics Monitoring Checklist Format

Name of storage facility:_____ Visit date:_____

Monitoring officer: _____

Name of facility in-charge:_____

Name of storekeeper:_____

Storage

Is adequate space available for storing the commodities?	Yes/No
Is the storage space cleaned properly?	Yes/No
Is direct sunlight observed near the commodities?	Yes/No
Are pallets available?	Yes/No
Is there good cross-ventilation?	Yes/No
Is a thermometer hung on the wall and a temperature chart maintained?	Yes/No
Are supplies stacked properly?	Yes/No
Is first-to-expire, first-out methodology followed?	Yes/No
Is a cooling system available for cold room items?	Yes/No

Inventory Control

Are bin cards used?	Yes/No
If yes, are entries in the proper order?	Yes/No
Are stock registers maintained by date, according to prescribed procedures?	Yes/No
Are issue/receipt vouchers/CLR-7 maintained?	Yes/No
Do the supplies match the quantities received from the Central/provincial/district store/donor? (Compare the CLR 6 with the Monthly Contraceptive Report & Requisition Form.)	Yes/No
Does a physical stock count confirm the quantity shown on inventory control records?	Yes/No
Are the monthly inventory reports prepared and submitted regularly?	Yes/No
Are commodities being distributed regularly?	Yes/No
Have there been any product stockouts during the last three months?	Yes/No
Are requisitions sent for resupply of commodities on a regular monthly/quarterly basis, as per prescribed procedures?	Yes/No

Quantities of Contraceptives Observed on the Date of Inspection

S. No.	Name of the Item	Quantity Available in Stock	Average Monthly Consumption	Sufficiency in Number of Months
1	Condom			
2	POP			
3	COC			
4	ECP			
5	Cu-T			
6	Multiload			
7	2-month injection			
8	3-month injection			
9	Implant			

LMIS

Is a trained LMIS operator present in the district office?	Yes/No
Is the web-based LMIS being used regularly?	Yes/No
Are health facilities/SDPs consolidated data reported regularly to the LMIS?	Yes/No

Comparison of LMIS with Physical Store Data

Month/Year……...

S. No.	Name of the Item	Opening Balance		Received		Issuance		Closing Balance		Difference in Closing Balance
		LMIS	Store	LMIS	Store	LMIS	Store	LMIS	Store	
1	Condom									
2	POP									
3	COC									
4	ECP									
5	Cu-T									
6	Multiload									
7	2-month Injection									
8	3-month Injection									
9	Implant									

Human Resources

Do designated staff store commodities properly and maintain proper storage conditions?	Yes/No
If not, how is the store being run? 1. Someone with additional charge_____ 2. Officer in-charge/manager is in charge _____ 3. No official responsible person_____	
Has the designated staff received formal training in storekeeping?	Yes/No
If yes, what is the exact title of the training?	
Does the storekeeper have basic knowledge of store maintenance?	Yes/No
If yes, has he received training on the web-based LMIS?	Yes/No

Key Monitoring Indicators

Function	Key Indicators	Criteria	Decisions Rule
Storage conditions	Adequate storage conditions	Fulfilled as per the *Contraceptives Logistic Manual* and meet all nine criteria for *storage conditions*	80% of facilities meet criteria
Storage space	Adequate space for storing commodities	Able to hold stock levels at their maximum levels, as per the maximum/minimum inventory control system	80% of facilities meet this criteria
Inventory control	Stock register/bin cards maintained according to prescribed procedures	Meet requirements, as per *Contraceptives Logistic Manual* and criteria in the checklist	80% of facilities meet criteria
	Issue/receipt vouchers/CLR-7 files maintained	Meet the requirements, as per *Contraceptives Logistic Manual* and as per checklist	80% of facilities meet criteria
	Stockout of any product during the last three months	Meet the requirements, as per *Contraceptives Logistic Manual* and as per checklist	80% of facilities meet criteria facilities
Stock availability	Minimum months of stock available, by product	Meet the requirements, as per *Contraceptives Logistic Manual* and as per checklist	80% of facilities meet criteria
Validation of LMIS	Comparison of LMIS and physical count (difference in the closing balance and LMIS is less than +/- 10%)	—	80% of facilities meet criteria
Human resources	Designated staff manage/administer store	Meet the requirements, as per *Contraceptives Logistic Manual* and as per checklist	80% of facilities meet criteria
	Designated staff trained in storekeeping	Meet the requirements, as per *Contraceptives Logistic Manual*/training manual and as per checklist	80% of facilities meet criteria

Chapter 13: Common Logistics Problems, Causes, and Examples of Possible Solutions

13.1 Common Logistics Issues

Table 9 lists the common problems, probable causes, and possible solutions for logistics issues.

Table 9: Common Logistics Problems, Probable Causes, and Possible Solutions

Problem	Probable Causes	Possible Solutions
Undersupply	• Poor forecasting • Inaccurate or incomplete count of products on hand • Seasonal increase in product use • Slow administrative procedures • Failure to move products rapidly • Inadequate or infrequent supply.	• Improve data used for forecast • Review inventory control procedures. • Adjust subsequent issue quantities; transfer product from low-use areas. • Improve receipts and inspection procedures. • Streamline distribution procedures; seek alternate transport. • Find alternate source of supply.
Oversupply	• Poor forecasting • Inaccurate or incomplete counts of products on hand • Seasonal decline in product use • Decline in product use due to user preference • Administrative bottlenecks • Failure to move products rapidly to facilities • Same product now available from other sources.	• Improve data used for forecast. • Review inventory control procedures. • Adjust subsequent issue quantities; transfer products to high-use areas. • Train staff to deal with side effects and propaganda. • Streamline official procedures. • Transfer products to areas of high use. • Improve coordination with line organizations; investigate why clients use other sources.
Expired stock	• Oversupply • Failure to use oldest products first • Accepting products at or near	See the solutions for oversupply above. • Implement first-to-expire, first-out

	expiration date • Non-use due to deteriorating packaging.	procedures; improve warehouse practices. • Implement policy that products must have a minimum shelf life remaining when received. • Improve storage and shipping procedures; reduce handling; use damaged items for training; implement policy to refuse delivery of damaged products.
Damaged stock	• Improper handling • Improper storage • Inadequate packaging • Poor shipping practices.	• Give warehouse staff feedback; increase supervision to improve handling procedures; reduce handling; encourage supply transactions in lot sizes. • Review policies on proper storage of supplies with warehouse personnel and increase supervision; repair/renovate storage facilities; reduce product exposure to light, water, chemicals, and pests. • Specify type of packaging that supplier should use; use better materials for repack. • Improve shipping conditions; seek alternate transportation.
Stock records different than physical inventory	• Incorrectly recorded receipts and issues; faulty arithmetic • Delayed entries • Use of improper count units • Failure to conduct physical inventories frequently enough • Same products stored in different locations • Theft and pilferage.	• Promote care in recording entries and doing computation; simplify forms and records; provide refresher training for staff. • Encourage prompt entries and checking of all transactions. • Implement policy to ensure that everyone uses the same units (e.g., cycle of pills). • Ensure that inventories are conducted periodically; provide funds to conduct inventories. • Consolidate same products in one location. • Improve security.

Appendix A

Sample Job Description for Logistics Staff

For the smooth and efficient logistics system of the department, the roles and responsibilities (job description) for the logistics staff is listed below:

Store Officer/In-Charge:

1. Advise the DPWO/DHO about the timely procurement and required delivery schedule of commodities.
2. Monitor monthly data uploading into the web-based LMIS.
3. Prepare/calculate the annual requirements for commodities; forward these to the competent authority.
4. Calculate the storage space and plan for using that space.
5. Supervise the storekeeper's day-to-day activities.
6. Assess and prepare specifications for the purchase, repair, and maintenance of durable goods.
7. Biannually, monitor the logistics system and take a physical inventory and verification of the warehouse/stores.
8. Periodically, prepare a summary of obsolete, unusable, and expired materials; manage the disposal, in accordance with the policy.
9. Prepare distribution plans for the commodities; submit them to the competent authority for approval.
10. Verify IRVs.
11. Manage the timely transportation of commodities to the lower-level facilities.
12. Assist in undertaking and managing all procurements.
13. Collaborate with donor agencies for managing donations/grants received.
14. Coordinate with other health and population stakeholders for supply chain matters.
15. Plan and coordinate quarterly meetings of the provincial/regional logistics officers.

Storekeeper

1. Dedicate at least 80 percent of his duty time to the office established in the warehouse.
2. Once a month, upload contraceptive consumption data into the web-based LMIS.
3. Maintain the warehouse and its commodities, using the guidelines:
    - Responsible for cleanliness and orderliness of the warehouse.
    - Operate ventilation systems.
    - Maintain record of temperature during working hours.
    - Periodically, disinfect the warehouse.

- Maintain the security of the warehouse. Keep the doors and windows of the warehouse locked after duty hours. The main door lock must be sealed; emboss the seal.

4. Maintain the records for all transactions related to inventory management, including maintenance of bin cards, stock registers, and preparing issue/receipt vouchers.
5. Collect and receive materials; document these activities.
6. Provide information and summary reports to management, when requested, for the periodic receipt and issue of commodities.
7. Assist the store officer/in-charge in developing a distribution plan, and distribution and transportation of commodities.
8. Regularly, prepare lists of near-expiry (six months before their expiry) and unusable/expired commodities.

Appendix B

Public Sector Requisitioning

Contraceptive Requisitioning Form (Integrated CLR-6)

For: _____ Requisition No.:_____ Requisition Date: _____

DEPARTMENT OF HEALTH											
A - Executive District Officer–EDO Health (Static Facilities)											
S. No.	Description	Condom (no.)	Oral Pills (m. cycles)			IUD (pieces)		Injectables (vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
PART - A (To be filled in by requester)											
A-1	Consumption during the last quarter										
A-2	Stock at end of last quarter at district store										
A-3	Stock at the end of last quarter at health outlets										
A-4	Total stock available (A2 + A3)										
A-5	Desired stock level for 2 quarters (A1 x 2)										

S. No.	Description	Condom (no.)	Oral Pills (m. cycles)			IUD (pieces)		Injectables (vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
A-6	Replenishment requested (A5 - A4)										
B - District Program Implementation Unit - DPIU (Community-based distribution - LHW Program)											
PART - A (To be filled in by requester)											
B-1	Consumption during the last quarter										
B-2	Stock at the end of last quarter at district store										
B-3	Stock at the end of last quarter at health outlets										
B-4	Total stock available (B2 + B3)										
B-5	Desired stock level for 2 quarters (B1 x 2)										
B-6	Replenishment requested (B5 - B4)										
C- PPHI/CMIPHC (static facilities)											
PART - A (To be filled in by requester)											
C-1	Consumption during the last quarter										
C-2	Stock at the end of last quarter at district store										
C-3	Stock at the end of last quarter at health outlets										

S. No.	Description	Condom (no.)	Oral Pills (m. cycles)			IUD (pieces)		Injectables (vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
C-4	Total stock available (C2 + C3)										
C-5	Desired stock level for 2 quarters (C1 x 2)										
C-6	Replenishment requested (C5 - C4)										
D - Maternal, Neonatal, and Child Health (MNCH)											
PART - A (To be filled in by requester)											
D-1	Consumption during the last quarter										
D-2	Stock at the end of last quarter at district store										
D-3	Stock at the end of last quarter at health outlets										
D-4	Total stock available (D2 + D3)										
D-5	Desired stock level for 2 quarters (D1 x 2)										
D-6	Replenishment requested (D5 - D4)										
Total Replenishment for DoH											

POPULATION WELFARE DEPARTMENT											
S. No.	Description	Condom (no.)	Oral Pills (m. cycles)			IUD (pieces)		Injectables (vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
E - District Population Welfare Office - DPWO											
PART - A & B (To be filled in by requester) Part -A											
1	Avg. quarterly sale based on last three months consumption										
2	Sale/use last quarter										
3	Amount of sales proceeds deposited in bank/treasury (attach original paid challan)										
4	Bank/treasury challan no. & date										
PART-B											
E-1	Consumption during the last quarter										
E-2	Stock at the end of last quarter at district store										
E-3	Stock at the end of last quarter at population outlets										
E-4	Total stock available (E2 + E3)										
E-5	Desired stock level for 2 quarters (E1 x 2)										
E-6	Replenishment requested (E5 - E4)										

F - Reproductive Health Centers (RHS-A)											
S. No.	Description	Condom (no.)	Oral Pills (m. cycles)			IUD (pieces)		Injectables (vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
PART - A & B (To be filled by requester) Part -A											
1	Avg. quarterly sale based on the last 3 months consumption										
2	Sale/use last quarter										
3	Amount of sales proceeds deposited in bank/treasury (attach original paid challan)										
4	Bank/treasury challan no. & date										
PART-B											
F-1	Consumption during the last quarter										
F-2	Stock at the end of last quarter at district store										
F-3	Stock at the end of last quarter at health outlets										
F-4	Total stock available (F2 + F3)										
F-5	Desired stock level for 2 quarters (F1 x 2)										
F-6	Replenishment requested (F5 - F4)										
Total Replenishment for PWD											
Grand Total											

S. No.	Description	Condom (no.)	Oral Pills (m. cycles)			IUD (pieces)		Injectables (vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
PART - B (To be filled in at warehouse)											
Quantity approved											
Relevant issue voucher											

EDO(H)/DHO

Signature: _____

Name: _____

Designation: _____

Date: _____

DPWO

Signature:_____

Name:_____

Designation:_____

Date:_____

Appendix C

Private Sector Contraceptives Requisitioning (Part A)

To:											
Organization:							Quarter:		Year:		
							Requisition No.:				
							Requisition Date:				

S. No.	Description	Condoms (no.)	Oral Pills (cycles)			IUD (pieces)		Injectables (vials)		Implant	Remarks
			COC	POP	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
PART - A & B (To be filled by requester) Part -A											
1	Avg. quarterly sale based on last 3 months consumption										
2	Sale/use last quarter										
3	Amount of sales proceeds deposited in bank/treasury (attach original paid challan)										
4	Bank/treasury challan no. & date										
PART-B											
A-1	Consumption during the last quarter										

A-2	Stock at the end of last quarter at district store										
A-3	Stock at the end of last quarter at health outlets										
A-4	Total stock available (A2 + A3)										
A-5	Desired stock level for 2 quarters (A1 x 2)										
A-6	Replenishment requested (A5 - A4)										

Prepared by:

Signature:_____

Name:_____

Designation:_____

Date:_____

Verified by:

Signature:_____

Name:_____

Designation:_____

Date:_____

Organization contact details: *(office address, phone/cell #, email ID):*

_____

_____

Private Sector Contraceptives Requisitioning (Part B)

This form will be consolidated in Part-A of the form

To:									
Organization:						Quarter:		Year:	
						Requisition No:			
						Requisition Date:			
SR#	Province	District	Product Name	Consumption during the last quarter	Stock at the end of last quarter at district Store	Stock at the end of last quarter at health outlets	Total Stock Available (B+C)	Desired stock level for 2 quarters (Ax2)	Replenishment Requested (E-D)
				A	B	C	D	E	F
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
	Total								

Appendix D

SDP/Health Facility Monthly Contraceptive Report and Requisition

Facility: _____ District:_____

Reporting Month:_____

Item Name	Opening Balance	Received	Issued	Adjustments		Closing Balance	Next Month Requirement
				(+)	(-)		
Condoms							
COC							
POP							
ECP							
Copper-T							
Multiload							
2-month inj.							
3-month inj.							
Implanon							

Prepared by:

Signature:_____

Name:_____

Designation:_____

Date:_____

Verified by:

Signature: _____

Name: _____

Designation: _____

Date: _____

Appendix E

Terms of Reference for the Condemnation Committee

1. The committee will examine the commodities identified by the date expired/unusable and determine if they are unusable. The committee will advise, in writing, that these items can be destroyed, with the approval of competent authority.

2. A proposal, with a copy of the condemnation committee meeting proceedings will be sent to the competent authority; it will request their approval to condemn the unusable commodities.

3. After the approval of the competent authority, another meeting of the committee will be convened to destroy the approved unusable commodities.

4. The committee will prepare a report after the destruction is complete. This report or certificate of disposal will indicate—

    - the item destroyed, including its quantity
    - date and place of destruction
    - method of destruction.

    Each committee member will sign the report.

5. The committee will ensure that the disposal of unusable items has been completed, in accordance with the Environmental Protection Agency (EPA) regulations.

6. The certificate will be prepared in triplicate. The original will be given to the Director General, Health and Director General, PWD; a copy will be retained in the record of the appropriate unit.

7. The certificate of destruction will be the basis for writing off the destroyed quantity in the stock register.

Appendix F

Frequently Asked Questions

Following are some of the frequently asked questions that personnel working with the logistics management system may ask. This is a quick reference; detailed explanations are available in the main text of this manual.

Q1. What is contraceptive logistics manual?

Ans: An instruction book that is used as a training aid within the stores. It gives the logistics personnel and storekeeper a precise and complete step-by-step guide to the working of the store and its activities—from stock control to materials handling. The manual is usually in the store and it can be used as often as necessary.

Q2. What is logistics?

Ans: It is the part of the supply chain process that deals with planning, implementation, and control of the acquisition; storage and flow of materials from the point of origin to the point of consumption to meet client's requirements; and the simultaneous flow of related information across all entities involved in the process.

Q3. What should be done when a new consignment arrives?

Ans: Check documents for correctness. Initiate unloading. Release the vehicle as soon as possible. Arrange for inspection, both quantity and quality. Complete receipt formalities, as per the procedure in the manual. Update all necessary records.

Q4. What is an invoice?

Ans: It is a document sent by the supplier, with the supplies. It indicates the order reference description of items and quantities of items in the consignment. Every consignment must have an invoice. The invoice reference and date are important information to be used in all future correspondence with the supplier, for supplies covered by the invoice.

Q5. What is visual inspection?

Ans: This will detect damaged or expired contraceptives. A storekeeper should always visually inspect and check the cartons to ensure they are not damaged and there are no obvious signs of contraceptive damage, such as leakage or discoloration. For incoming materials, part of the process is to count the supplies and compare the actual quantities received with the invoice or duplicate of the issue/receipt voucher.

Q6. Where and how are the contraceptives to be stored?

Ans: Store them in the place specified on dunnage, shelf, or in an almirah, as per the guidelines in the main text of this manual. Always make an effort to use maximum vertical space, remembering the safety of everyone working or visiting the store. Some items must be stored separately and should be stored in specific conditions—for example, aqua-based injectables.

Q7. What are storage guidelines and why should they be followed?

Ans: This set of guidelines should be followed to protect the quality and integrity of the items in stock; while, at the same time, making them available for use when required. They ensure maximum efficiency, orderliness, and safety for staff; they are the *standard* for use in stores throughout the province/region, at all levels of the system.

Q8. Do some items need specific environmental conditions for storage?
Ans: Yes, some items like aqua-based injectables must be kept at a low temperature, as specified. A store is provided with a refrigerator to store them. However, all items should be protected from dust and direct sunlight.

Q9. What is shelf life of a contraceptive?
Ans: The period of time a contraceptive can be stored without affecting its usability, safety, purity, or potency.

Q10. What is meant by expiry date?
Ans: This date is usually written on packages or on containers. After this date, the contraceptive should not be used because it will have lost its quality, effectiveness, or potency.

Q11. What should be done if the supply does not have an expiry date?
Ans: When contraceptives only have manufacturing dates and no expiry date, the expiry dates can be calculated using the concept of shelf life. Each type of contraceptive has a shelf life determined by the manufacturer—usually four to seven years. For contraceptives without an expiry date printed on their packages/containers, calculate the expiry date by adding the years of recommended life, as indicated on the package, to the manufacturing date. If in doubt, ask for guidance from the manager concerned.

Q12. What should be done if commodities that are received at a store have expired?
Ans: Check and inspect the commodities as soon as they are received; if they have expired, immediately return them and report the matter to the next higher authority.

Q13. What should be done if commodities become unusable during storage?
Ans: Make a list of the items. Segregate the stock and update the records. Initiate action for taking approval for disposal. Condemn all the approved unusable commodities, as per the manual, or approved procedure, as per detailed guidelines in the main text of this manual.

Q14. Where should unusable commodities be kept?
Ans: When any commodity becomes unusable, for any reason, at any level—facility level, district store, or warehouse—the commodity must immediately be separated from the usable commodity and stored at a specified place away from the usable commodities. The storekeeper must inform his superior authority after they have identified the unusable commodity.

Q15. What should be done if supplies are returned from the end users because they are expired/damaged/unfit for use?
Ans: Take back the commodities and make a record of such commodities; report it to the higher authority. Update the various records in the store, as per guideline in the main text of this manual.

Q16. What is meant by maximum quantity level?
Ans: This is the maximum quantity of a contraceptive in stock; the amount of stock should not go higher than this, under normal circumstances. The maximum stock level (in quantity) of an item should not be exceeded, as a result of stock replenishment.

Q17. What does minimum quantity level mean?
Ans: The quantity of a contraceptive in stock, the amount of stock should not go lower than this, under normal circumstances. The minimum stock level (in quantity) of an item should not be lower; therefore, the item must be replenished before the stock level is depleted further.

Q18. What is emergency indent?
Ans: It is an indent raised by a store in an emergency to meet the requirement of an item when the stock drops below the minimum stock level specified in the main text of this manual and no supply is in transit for the immediate future. The storekeeper is expected to notify his superior and immediately raise an indent to meet the emergency.

Q19. Why do stock emergencies occur?
Ans: Normally, such a situation arises if the demand for an item suddenly increases or the replenishment supply on the previous occasion was inadequate or delayed, which resulted in the stock level at the store falling below the minimum level specified in the main text of this manual. It may also occur if a sizable quantity in stock, as per the stock register, becomes unusable or unavailable for issue, due to any reason.

Q20. What should be done if a discrepancy is found between the actual stock and the balance in the inventory register?
Ans: First, to reconcile the discrepancy, check all the relevant documents—issue voucher, receipt voucher, chits, memos, etc. Check for any sign of pilferage. Report immediately to the next higher level and ask for instructions or help. Write the report to make it easy to maintain a record about the problem reported and the solution provided. It is advisable to keep a register specifically for this purpose in each store.

Q21. What is the FEFO principle?
Ans: First-to-expire, first-out (FEFO) is a storekeeping principle—items on receipt are stocked so that the lots that will expire first are issued first. In some cases, the expiry date of supplies that have been received recently may be earlier than those of the existing stock. In this case, always store the commodities that will expire first on top and in front so they are issued first.

Q22. Is it necessary to clean the store regularly?
Ans: Yes, it must be cleaned regularly and, also, disinfected as often as necessary; or as per the advice of the officer in-charge. Refer to the main text of this manual for details.

Q23. If the store does not have a fire extinguisher, what should be done?
Ans: Arrange for two buckets—fill one with dry sand and the other with clean water. Use them in place of a fire extinguisher.

Q24. What should be done if problems are encountered when filling in the various forms and reports?
Ans: Job aids for filling in all the forms and reports are in the main text of this manual. Ask your superiors for help. Do not send a report or fill in a form unless you are sure the information is correct.

Q25. What is dunnage?
Ans: This is a raised platform of wood or steel where contraceptives are placed. It prevents moisture from damaging the commodities. In a mechanized store, the flat pallets used to operate the forklift can be used as a dunnage.

Q26. What is a bin card (CLR-4)?
Ans: This card is used to record transactions of issue, receipt, or adjustment of each item stored in the warehouse or store at the moment the transaction takes place. That is why it is also kept with the items near the bin. Each item has a separate bin card.

Q27. What is an Issue/Receipt Voucher (CLR-7)?
Ans: The CW&S uses the CLR-7 to replenish stock for the district store.

Q28. What is stock register (CLR-5)?
Ans: This is the permanent document used to record transactions at each store; i.e., receipt, issue, and adjustment for all commodities, for all the stakeholders.

Q29. Must the stock register (CLR-5) be posted every day?
Ans: Yes, a sound and efficient logistics management system works on the principle of updating all records of transactions on a day-to-day basis.

Q30. What specific points should be taken care of during a site visit?
Ans: When a supervisor visits a service delivery site, the contraceptive logistics system is one program that should be examined. The supervisor can use all or some of the questions in the list for monitoring and supervision to determine if the logistics system is operating properly. Refer to the main text of this manual.

Q31. What should be done if a district SDP has an overstock of contraceptives?
Ans: A report is sent immediately to CW&S, Karachi, to ask their permission to shift the stock to the adjoining districts that have an understock. The SDPs should immediately return the surplus stock to the district office for distribution to the understocked SDPs. In both cases, proper entries must be made in the contraceptives stock register.

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