

# Warehouse Standard Operating Warehousing Manual



Medical Store Depot (MSD) Lahore,  
Department of Health,  
Government of Punjab



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# Acronyms

CDC	Centers for Disease Control and Prevention
cm	Centimeter
CW&S	Central Warehouse and Supplies
DEP	damaged or expired products
DHQ	District Health Quarters
DGHS	Director General Health Services
DOH	Department of Health
DTL	Drug Testing Laboratory
EDO	Executive District Officer
EPI	Expanded Programme on Immunization
FEFO	first to expire, first out
GM	General Manager
GoP	Government of Punjab
HR	human resource
IM	inventory management
IRMNCH	integrated reproductive maternal newborn child health
IRV	Issue & Receipt Voucher
ISO	International Organization for Standardization
M&E	monitoring and evaluation
MNCH	maternal, newborn, and child health
MSD	Medical Store Depot
PPE	personal protective equipment
SDP	service delivery point
SKU	stockkeeping unit
SOP	standard operating procedure
THQ	Tehsil Headquarters
TB DOTS	tuberculosis directly observed therapy short course
USAID	United States Agency for International Development
WHO	World Health Organization





# Introduction

The Medical Store Depot (MSD) Lahore is the central repository of medicines and other medical commodities for the province of Punjab. Established in 1874, and housed within barracks that were part of provincial food department, MSD provides all the medical supplies for the secondary- and primary-level healthcare facilities of the province.

The MSD is responsible for—

1. Warehousing for commodities purchased by the Government of Punjab (GoP) and the provincial and federal programs/projects, including District Health Quarters (DHQs)/ Tehsil Headquarters (THQs) hospitals, tuberculosis directly observed treatment short-course (TB DOTS), Expanded Programme on Immunization (EPI), integrated reproductive maternal newborn child health (IRMNCH), maternal, newborn, and child health (MNCH), World Health Organization (WHO), Donation Cell, and Centers for Disease Control and Prevention (CDC) stores.
2. Receiving the stores from the suppliers—ensuring quality and quantity—as per purchase orders.
3. Arranging and conducting the physical inspection of all stocks by the inspection committee.
4. Ensuring quality: Sending the samples of the commodities to drug testing laboratory for analysis.
5. Maintaining the stock properly and keeping their inventory records on ledger books up-to-date.
6. Issuing inspection notes for payments.
7. Issuing the stock to the Districts Executive District Officers (EDOs [Health]), according to the distribution plan issued by the Director General Health Services Punjab, Lahore.
8. Making references/correspondence with authorities.
9. Ensuring the safe storage of the stock—temperature, humidity, and physical damage.
10. Ensuring proper security measures to avoid theft and pilferage.
11. Ensuring an effective firefighting system.
12. Providing a healthy and safe working environment for the workers.



Refurbished MSD Lahore

***MSD is primarily responsible for receiving, storing, and distributing health commodities for the provincial and federal programs. Projects include DHQs, THQs hospitals, TB DOTS, EPI, IRMNCH, MNCH, WHO, Donation Cell, and CDC stores.***

Currently, 4.75 barracks are being used for storage, while 0.25 barracks are being used for administrative purposes. The total storage capacity of the MSD is estimated to be 33,250 cubic feet. In June 2014, the Department of Health, Government of Punjab, asked USAID | Pakistan for technical and financial assistance to upgrade part of the MSD and create modern and efficient warehousing operations similar to the Central Warehouse and Supplies (CW&S), Karachi. The Government of Punjab agreed to co-finance the project for rehabilitation and renovation of the physical infrastructure. For this purpose, the government spent Rs. 16 million

to upgrade two barracks and the related infrastructure. The work was completed in November 2015.

USAID | Pakistan, through the USAID | DELIVER PROJECT (the project) procured and installed pallets, racks, and handling equipment. The storage area of the MSD was been expanded from 10,500 cubic feet to 11,250 cubic feet by installing a three-story racking system. The project also provided IT support, including installation and implementation of inventory management (IM). The MSD warehousing manual was developed to ensure smooth warehousing operations in line with the upgrade by the project. To build requisite capacity, the entire MSD staff was trained.

As this is a first version of this manual, it is strongly recommended that a team of experts review the manual at the provincial level after it is implemented for 8 months to one year; and incorporate any changes, and come up with an updated version. These reviews will accommodate various policy changes, interventions, changes in governance mechanisms, supply chain structure, and others. Additional feedback will be incorporated in the manual, as needed.

***It is STRONGLY recommended that a team of experts should periodically review the manual at the provincial level, and changes if any be incorporated and notified.***

The impact of this intervention will translate into the timely provision of quality products to clients and will improve health outcomes in the province.

# Foreword

Warehousing is a key component of any supply chain, particularly for health commodities. This is especially true in a resource constrained environment like Pakistan. Good warehousing can be a buffer against uncertainties and breakdowns within the supply chain. A properly managed and appropriately stocked warehouse provides a consistent supply of quality products, as needed. With this goal in mind, the Medical Stores Depot (MSD) in Lahore is the main provincial warehouse for medicines and other health commodities, under the overall supervision of the Department of Health (DOH), Government of Punjab (GoP).

There are many challenges to continuous availability of quality medicines and supplies, including an increase in variety and quantities of products (product selection), supplies not meeting the demands (short supplies), and timely allocation of adequate funds and procurement (financing). Good warehousing practices can overcome most of these issues. For example, a warehouse with an operational automated inventory management (IM) using data visibility through daily updated online inventory will help planners allocate adequate funds and procure in a reasonable time to address the supply imbalances.

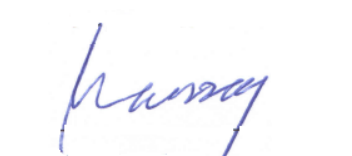
Adequate space to accommodate maximum supplies, at any point in time, is also a must for a warehouse to store commodities using international best practices. With technical support from USAID| Pakistan and co-financing by the GoP, the revamped MSD provides 11,250 cubic feet of storage space, which is considered enough to meet the provincial storage requirements. It has been equipped with a web-based IM, pallet and racking system, modern warehouse material handling equipment, and camera-operated security system; and it is fully furnished. MSD staff have been trained on the revamped warehousing practices, including IM, to meet the operational requirements of the upgraded warehouse. The *Medical Stores Depot Warehousing Manual* includes standard operating procedures; staff job descriptions and checklists, and staff health and safety instructions. The GoP DOH, fully endorsed the manual; the staff must meticulously follow it.

One major attribute of good warehousing is to maintain a regular in-out flow of commodities. Therefore, MSD is not to be used to store commodities in a holding pattern, without a distribution plan, with the exception of a few emergency commodities. All commodities sent through MSD must include a distribution plan that includes the resources needed—transportation, space needed, and duration—in advance. This is essential to avoid leaving commodities in MSD for a long time, which could occupy valuable storage space and cause commodities to expire.

The MSD, under the supervision of the DOH, is committed to maintaining high standards of supply chain management. The MSD staff are required to follow this manual and inform managers of any suggestions for further improvements—the goal is to provide an uninterrupted flow of health commodities to the people of Punjab.



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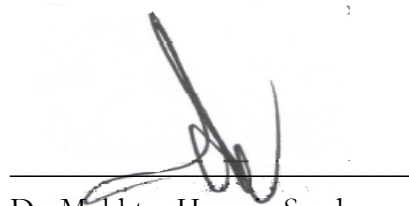
# Acknowledgments

The Department of Health, Government of Punjab, appreciates the productive support of USAID | Pakistan in strengthening the logistics and supply chain management systems of Punjab. We would like to thank the Health Office, USAID | Pakistan, for the leadership and coordinated support, which enabled the USAID | DELIVER PROJECT to successfully develop the manual.

The *Medical Stores Depot Warehousing Manual* is the first comprehensive manual of its kind for managing the Medical Stores Depot (MSD) in Lahore. It is, therefore, a milestone and a model for improved warehousing practices in the province. This manual is based on input and feedback from relevant public sector officials and logistics and supply chain experts at the USAID | DELIVER PROJECT.

As mentioned in the manual, the text in the manual should be reviewed periodically and changes incorporated, as needed.

I also wish to express my 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 *Medical Stores Depot Warehousing Manual*.



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Principal authors: Zafar Jamil and Dr. Muhammad Razzaq worked on this manual with Shyam Lama.



## Top Down Snapshot of Who Does What

Job Title	Reports to	Must Do What
Director General	Secretary	Receive and review warehouse summary reports; provide guidance to the General Manager.
General Manager (Warehouse Director)	Director General	<ul style="list-style-type: none"> <li>• Manage overall operations and supervision</li> <li>• For the commodities, monitor availability, quality, safety, and sufficient shelf life.</li> <li>• Inspect warehousing areas daily to ensure products are not crowded and all areas are clean.</li> <li>• Check inventory data and provide guidance.</li> <li>• Conduct routine communication with the Director General and health officials/stakeholders about availability of supplies.</li> <li>• Ensure warehousing and distribution, per warehouse guidelines.</li> <li>• Hold weekly and monthly meetings with warehouse staff to receive their input and provide guidance.</li> <li>• Meet and brief the Director General regularly and resolve any warehousing-related issues, including CONGESTION/OVERCROWDING, transportation and budgetary requirements.</li> </ul>
Depot Manager	General Manager/Warehouse Director	<ul style="list-style-type: none"> <li>• Assist the General Manager in all aspects of warehouse operations, including adhering to policies and procedures: first-to-expire, first-out.</li> <li>• Review inventory data, conduct routine physical counts to ensure the inventory is correct.</li> <li>• Monitor quality assurance, safety, and sufficient shelf life for commodities; hold weekly briefings for operations staff.</li> </ul>
Senior Storekeeper	Depot Manager	<ul style="list-style-type: none"> <li>• Supervise and monitor the overall warehouse systems and operations, including barcoding, receiving, dispatching, storing stock, and completing checklists.</li> <li>• Identify issues and activities; address them on a daily/weekly basis or bring them to management's attention.</li> </ul>

<b>Job Title</b>	<b>Reports to</b>	<b>Must Do What</b>
<b>Inventory Management Operator</b>	Depot Manager	<ul style="list-style-type: none"> <li>• Carry out operations of inventory management, including barcoding and all transactions (i.e., receipts, issuance, inventory, batch management, and storing stocks in allocated bins).</li> <li>• Prepare summary reports; routinely brief the medical stores department managers on operations and ask for their guidance.</li> <li>• Identify issues and activities and address them on a daily/weekly basis, or notify management.</li> </ul>
<b>Storekeeper (2)</b>	Senior Storekeeper	<ul style="list-style-type: none"> <li>• Carry out day-to-day storekeeping functions, as per the warehouse guidelines, with the Senior Storekeeper and Inventory Management Operator.</li> </ul>
<b>Assistant Storekeeper (2)</b>	Storekeeper	<ul style="list-style-type: none"> <li>• Assist Storekeepers in warehouse operations; organize and supervise labor.</li> </ul>
<b>Loader-Stacker Operator (2)</b>	Assistant Storekeeper	<ul style="list-style-type: none"> <li>• Operate stackers, including receiving, issuance, picking, placement, and storage of stocks; work with the storekeeping staff.</li> </ul>
<b>Picker/Packer (2)</b>	Assistant Storekeeper	<ul style="list-style-type: none"> <li>• Pick and pack supplies and maintain the area, per instructions from the storekeeping staff.</li> </ul>
<b>Laborer (2)</b>	Assistant Storekeeper	<ul style="list-style-type: none"> <li>• Complete loading and unloading of stock and ensure it is stored in the correct space; always use safe handling procedures.</li> </ul>



# **Part 1. Warehouse Standard Operating Procedures**

**Staff Job Descriptions, Procedures, and Checklists**



# Preface

The standard operating procedures (SOPs) are a must for smooth, coordinated operations of any complex management system: warehousing is no exception. The SOP section briefly explains the various steps required for each warehousing functions. The application and practical use of these SOPs will support operations at the warehouse by helping employees to do their jobs more efficiently, reduce errors, and variations, as well as replicate processes across the warehouse. The SOPs comprise three sections:

## Section I: Job Description

Job descriptions, a versatile human resource (HR) management tool, helps supervisors and staff with performance management, training and employee development, compensation, and recognition and rewards. Each job description for the staff at the warehouse includes a job title, essential functions and requirements; and the knowledge, abilities, and skills required to perform a specific job successfully. The details in these job descriptions for the staff at the Medical Stores Depot (MSD) should be extremely helpful in motivating and tracking the performance of employees at the warehouse. It is hoped that the staff will use these job descriptions to further strengthen the effective and efficient operations at the MSD Lahore. See figure 1—the organogram—which lists the job titles for the staff and their general responsibilities.

***It is anticipated that the application and practical use of these SOPs will support operations at the warehouse by helping employees do their jobs more efficiently, reduce errors and variations, as well as replicate processes across the warehouse.***

## Section II: Procedures

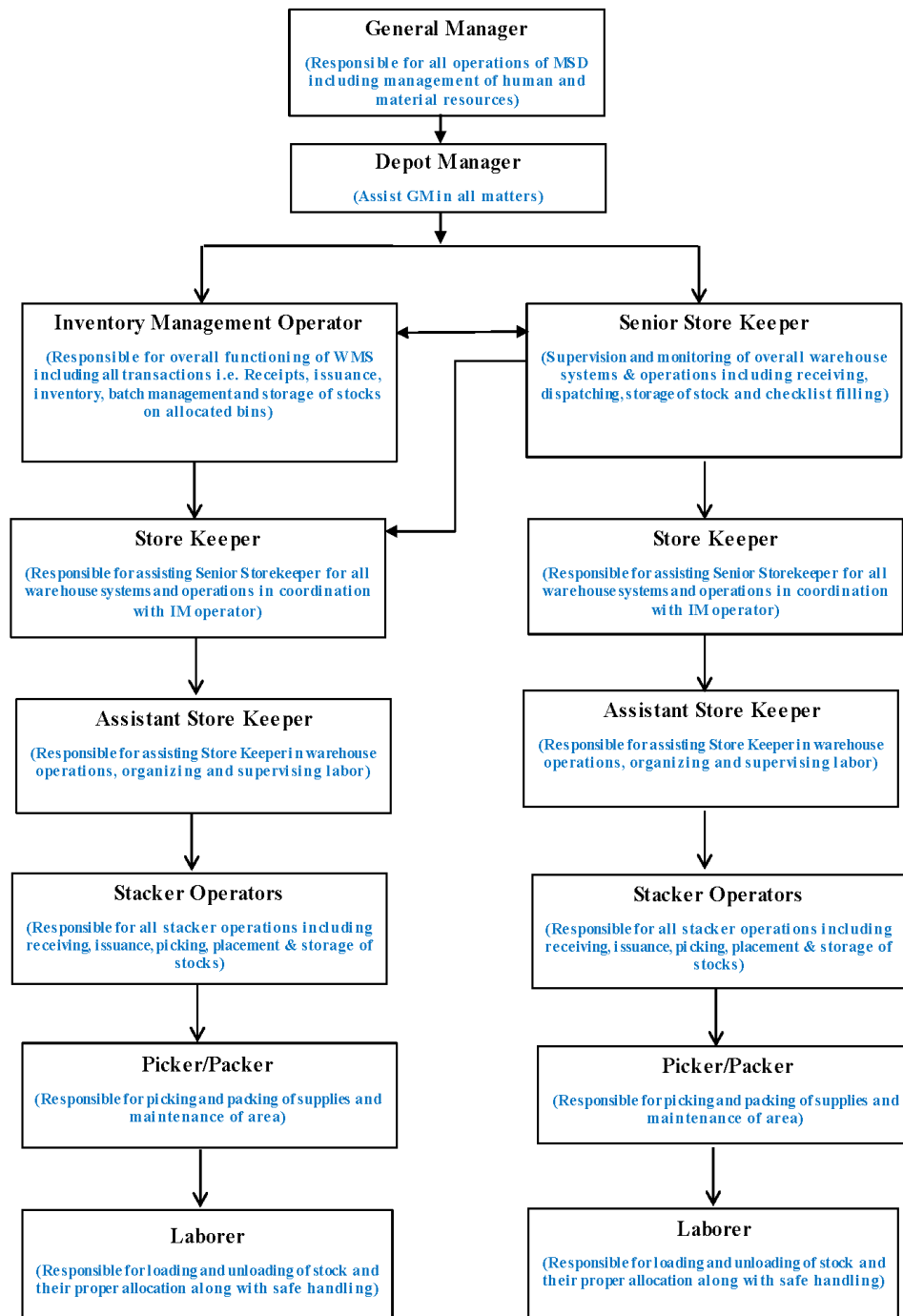
Procedures are written guidelines for various routine functions at the MSD, elaborating how the warehouse receives, issues, stores, and disposes of supplies coming from suppliers in other countries.

## Section III: Checklists

A checklist is an indispensable tool for effective monitoring and evaluation (M&E). These SOPs include three checklists for managers and staff, which were developed to ensure that all important aspects of the various functions at the MSD Lahore are covered. The application of these checklists will help the MSD ensure that the best warehousing practices and procedures are followed. Moreover, the checklists can help the MSD to determine if it has delivered against the strategic priorities; met service delivery obligations and key stakeholder expectations; and, therefore, reduced key risk indicators. This will also help the project assess what is working and what is not, adjust plans and strategies, and address new workforce and organizational issues that may arise.

The staff should use the checklists in all their M&E efforts.

**Figure I. Organogram**



## Section I: Job Description

### 1.1. Designation: Senior Storekeeper

#### 1.1.1. Supervision and Monitoring

- a. Provide instructions to the Medical Stores Depot (MSD) staff that all warehouse-related systems and procedures must comply with the standards of the International Organization for Standardization (ISO).
- b. Ensure the safety and monitory maintenance of warehouse staff assets and equipment.
- c. Provide directions and guidance to the warehouse staff to increase warehousing efficiency and meet the defined goals and objectives.
- d. Ensure that warehouse staff have all the resources they require to perform their duties effectively and efficiently.
- e. Supervise and monitor warehouse staff performance by providing on-the-job training, disciplining employees, and appraising job results.
- f. Develop and maintain warehouse work instructions for all tasks and for the people involved in the warehouse operations.
- g. Establish and update work procedures to meet warehouse demands, as per warehouse policy, procedures, and work flow.
- h. Recommend measures to the General Manager (GM) MSD to improve the quality of service, increase the efficiency of the warehouse, and improve the work crew performance and maintenance.
- i. Responsible for the functionality of all equipment, including IT hardware, electric installations, security cameras, and fire extinguishers.

#### 1.1.2. Receiving and Dispatching

- a. Provide directions and guidance to the warehouse staff on receiving supplies, managing warehouse and distribution operations, and using coordination to enforce the operational and warehouse policies and procedures.
- b. Supervise and monitor the warehouse receipt and dispatched inventory status; ensure that supplies received and dispatched in accordance with the warehouse standard operating procedures (SOPs).
- c. Responsible for receiving, storing, and issuing all consignments coming into the MSD.
- d. Ensure that all warehouse receipts and dispatch transactions are reported in the electronic IM and stock manual registers.
- e. Review the consignment documents and inform the Depot Manager for indicating freight forwarders and suppliers immediately about any discrepancy.
- f. Check all the documents and inspect the quality and quantity of the supplies; ask the Depot Manager to verify them.
- g. Report any discrepancies to the Depot Manager and/or GM MSD.
- h. Promptly initiate appropriate action to address any damages, loss, or short supplies; inform the relevant authorities about the physical inspection.
- i. Supervise the quantities to be dispatched, as per distribution plan issued by Director General Health Services (DGHS).
- j. Share the Drug Testing Laboratory (DTL) report status with the inventory management (IM) operator.

- k. Coordinate with the IM operator to print the picking list from the IM and forward the list to the storekeeper.
- l. Ensure the accuracy of the consignments and supporting documentation, stock register, receiving incoming supplies, and routing to the appropriate area, as per the IM allocated location and packaging.

### **1.1.3. Storage**

- a. Supervise and monitor the inventory levels by conducting physical counts and reconciling them with the IM.
- b. Maintain the physical condition of the warehouse building by planning and implementing new ideas, inspecting equipment, and issuing work orders for repair and requisitions for replacement.
- c. Supervise and monitor the protection of all supplies placed in the MSD from internal and external threats.
- d. Closely monitor the warehouse building safety, security, and medicines shelf life; manage all expiry products in accordance with the warehouse disposal policy.

## **1.2. Designation: Storekeeper**

### **1.2.1. Receiving and Dispatching**

- a. Execute the receiving and dispatching of consignments, and prepare and allocate proper space for the received consignment, as per the IM requirements.
- b. Check and review all documentation on the received consignments; report discrepancies immediately to the senior storekeeper for return to the proper authority for correction.
- c. Ensure that all received stock has serial, batch, lot numbers, and shelf life written in a visible font and place them in the quarantine area for further appropriate stacking in the warehouse.
- d. Ensure that a meeting of the physical inspection committee is called after receiving the DTL reports for the physical inspection of stocks.
- e. After approval/acceptance by the physical inspection committee, share the updated consignment data with the IM operator for updating in the inventory management; also, update the manual stock register.
- f. Quickly take action on the districts' distribution plan for the supplies, arrange packages, and assemble the load for dispatching the consignment; do not delay.
- g. Coordinate with the IM operator to implement the distribution, per the allocated picking list; pick stock from the specified area/racks or pallets, based on first to expire, first out (FEFO).
- h. Dispense the picking list to the pickers and packers for preparing the dispatch, load the consignment, and scan the dispatched stock and rack/pallet barcode.
- i. Return the picking list to the IM operator to enable them to update the dispatch transactions in the IM.
- j. File all warehouse-related official correspondence; including received and dispatched letters and memos, based on the instructions from the senior storekeeper.

### **1.2.2. Monitoring, Supervision and Coordination**

- a. Within one week of receipt of stock, ensure that samples of each batch supplied in a consignment is sent to DTL, Lahore, through the concerned provincial inspector of supplies.

- b. Inform the senior storekeeper of the upcoming six-month stock requirements using an estimate based on the IM reports.
- c. At all times, maintain effective stock control at the MSD through the IM.
- d. Ensure a periodic physical count of running lots and coordinate with the IM operator for operator allocation monitoring.
- e. With the IM operator, ensure data quality of the stocks placed under his supervision.
- f. Supervise all issued vouchers and gate passes; keep records up-to-date.

### **1.2.3. Storage and Maintenance**

- a. Scan the received consignments and store them properly in the allocated racks, by lot.
- b. Keep bin cards correctly updated.
- c. Maintain proper storage procedures and conditions.
- d. Ensure that the office furniture, telephone, typewriter, computers, and other equipment are in functional condition.

## **1.3. Designation: Assistant Storekeeper**

### **1.3.1. Receiving and Dispatching**

- a. Assist the storekeeper in executing the receiving and dispatching of stock; and preparing and allocating proper space for the received stock, as per the IM requirements.
- b. Assist the storekeeper in arranging packages; assemble the load for dispatching stock, without any delay, as per the distribution plan.
- c. Organize and supervise labor while loading, picking, packaging, and assembling.
- d. Using the instructions of the store senior storekeeper, file all warehouse-related official correspondence, including received and dispatched letters, and memos.
- e. Supervise the loaders in picking up commodities, as per issuance list for dispatching.

### **1.3.2. Storage**

- a. Maintain proper storage procedures and conditions.
- b. Ensure that all received stock has serial, batch, and lot numbers; and shelf life written in a visible font.
- c. Supervise labor for the proper allocation of space to organize commodities received and consignments to be dispatched, in accordance with the FEFO system.
- d. Organize and supervise labor during loading and picking.

### **1.3.3. Maintenance**

- a. Ensure that the office furniture, telephone, typewriter, computers, and other equipment are in working condition.
- b. Ensure that the record for all issued vouchers and gate passes are kept updated.
- c. Ensure that the warehouse premises are clean and well organized.

## 1.4. Designation: Inventory Management Operator

### 1.4.1. Receiving

- Update IM in real time by entering all transactions—receipts and dispatches—at the MSD. Do this, preferably, through the scanned commodities barcoding system, if it is available.
- After receiving commodities, enter the received stock into the Stock Receive (Supplier) form of the IM (see figure 2).

**Figure 2: Stock Receive (Supplier) Form**

Stock Receive (Supplier)

Fill out this form

Receipt No.	Ref No. *	Stakeholders*	Received Time
	REF-001	Govt. of Punjab	08/04/2016 12:51 AM
Physical Inspection *	DTL *	Distribution Plan *	Category *
Completed	Inprocess	Not Received	DHQ & THQ Program
Product *	Manufacturer *	Batch No. *	Production Date
Disposable Syring 5ml	Nisa Impex Rawalpindi	67998	01/03/2016
Expiry Date *	Unit Price (PKR)	Quantity *	Location *
30/04/2019	4.55	9,000 Pcs	1A1A

Add Stock Receive

- Add Stock Receive to stock in the received list; save and print the form as shown in figure 3:

**Figure 3: Receive List**

Receive List

Date	Rcv. From	Product	Batch	Received	Unit	Manufacturer	Location	Expiry Date	Action
08/04/2016	Govt. of Punjab	Disposable Syring 5ml	67998	9,000	Pcs	Nisa Impex Rawalpindi	1A1A	30/04/2019	✕

Comments (Max 300 Char)

Save & Print

- Check daily stock status through the Batch Management in IM (see figure 4):

**Figure 4: Batch Management**

Search Filters

By Product: Tab RH Search By: Select Search Input:

☐ All Priorities ☐ Priority 1 ☐ Priority 2 ☐ Priority 3 ☐ Finished ☐ Expired by date

Stock Summary Stock-Priority Distribution Manufacturer wise Summary Search

Product Summary: Tab RH

Priority	No. of Batches	Quantity
Priority 2	1	3,000
Total	1	3,000

Batch List

20 records Export to Excel Copy Data Search:

S.No.	Product	Batch No.	Manufacturer	DTL Status	Expiry Date	Cartons	Packs	Quantity	Priority	Placement
1	Tab RH	123/BN	Wyeth Pakistan Karachi	Completed	15/03/2017	3,000	3,000	3,000	Priority 2	
Page Total						3,000	3,000	3,000		

Showing 1 to 1 of 1 entries

Print

Batch status	Description
Priority 1	If expiry is less than 3 months.
Priority 2	If expiry is more than 3 months and less than 12 months.
Priority 3	If expiry is more than 12 months.



### 1.4.2. Storage

- Ensure that all stock placed at the MSD are scanned and arranged by location in IM.
- Using the IM, provide information about any empty places in the warehouse; advise the warehouse staff on the proper management and relocation of stock in MSD.
- Assist storekeeper for placing, managing locations, scanning, and picking of stocks through IM.
- To manage and add the store location bins in IM, select the filters, as shown in figure 5.

**Figure 5: Manage Store Location Bins**

Store\* Row\* Rack\* Shelf\*

Select Store Select Row Select Rack Select Shelf Add

**Dry Store Locations (Bins) List**

5 records Export to Excel Copy Data Search:

S.No.	Location (Bin) Name	Action
1	1A1A	✕
2	1A1B	✕
3	1A1C	✕
4	1A2A	✕

- View different locations bins and place stock in the selected location. To transfer the placed stock, click on the transfer tab (see figure 6).

**Figure 6: Location/Bins List**

**Locations/Bins List**

1A1A	1A2A	1A3A	1A4A	1A5A	1A6A	1A7A	1A8A	1A9A	1A10A
1A1B	1A2B	1A3B	1A4B	1A5B	1A6B	1A7B	1A8B	1A9B	1A10B
1A1C	1A2C	1A3C	1A4C	1A5C	1A6C	1A7C	1A8C	1A9C	1A10C

**Stock in Bin - 1A1A**

Back to Location

5 records Export to Excel Copy Data Search:

S.No.	Product	Batch No.	Cartons	Packs	Quantity	Action
1	Inj.Streptomycin	111222		444	444	Transfer Q
2	Tab RH	ABC123		1500	1500	Transfer Q

Showing 1 to 2 of 2 entries

### 1.4.5. Dispatching

- Send the stock sample to DTL in IM for laboratory testing, if applicable. See figure 7.

**Figure 7: Stock Issue/Dispatch Form**

**Stock Issue/Dispatch**

Please email support@lmis.gov.pk OR contact 051-2655425/2655426 in case of any problem/question.

**Fill out this form**

Issue No. New Issue Date\* Issue Reference Category\* TB Dots Section

District Store\* DTL Punjab

Product\* Tab. RHZE (150+75+400+275) Batch | Quantity | Priority\* 672/PACK | 16,466,688 | P2 Location | Quantity\* Hall-14 | 24700032 Quantity\* 100,000 Pcs

Total available batch quantity 16,466,688 Expiry Date 31/01/2017 Dispatch By

Add Issue

- b. Ask the senior storekeeper for an approved distribution plan for the stock.
- c. Check the priority distribution of batches, DTL, and stock release status in batch management (see figure 8).

**Figure 8: Batch Management**

Tab RH | Select |

☒ All Priorities 
 ☐ Priority 1 
 ☐ Priority 2 
 ☐ Priority 3 
 ☐ Finished 
 ☐ Expired by date

Stock Summary | **Stock-Priority Distribution** | Manufacturer wise Summary

Search

---

**Product Summary: Tab RH**

Priority	No. of Batches	Quantity
Priority 2	1	3,000
<b>Total</b>	<b>1</b>	<b>3,000</b>

---

**Batch List**

20 records | [Export to Excel](#) | [Copy Data](#) | Search:

S.No.	Product	Batch No.	Manufacturer	DTL Status	Expiry Date	Cartons	Packs	Quantity	Priority	Placement
1	Tab RH	123VBN	Wyeth Pakistan Karachi	Completed	15/03/2017	3,000	3,000	3,000	Priority 2	<a href="#">Q</a>
<b>Page Total:</b>						<b>3,000</b>	<b>3,000</b>	<b>3,000</b>		

Showing 1 to 1 of 1 entries | [Print](#)

---

Batch status	Description
Priority 1	If expiry is less than 3 months.
Priority 2	If expiry is more than 3 months and less than 12 months.
Priority 3	If expiry is more than 12 months.

- d. Get the DTL report; to release stock, select the receipt number and search for the receipt voucher details; click the Release Stock for Issuance tab. Update and save the DTL status and distribution plan (see figure 9).

**Figure 9: Release Stock for Issuance**

**Receive Vouchers List**

Select Receipt No. \*

Select | Search

---

**Receive Voucher Details**

Date: 01/03/2016 | Receive No: R16030004

Sr No.	Product.	Batch No.	Expiry Date	DTL Status	Distribution Plan
1	Cream Silver Sulphadiazine1%	734	01/01/2018	In Progress	Not Issued
2	Cream Silver Sulphadiazine1%	735	01/01/2018	In Progress	Not Issued
3	Cream Silver Sulphadiazine1%	736	01/01/2018	In Progress	Not Issued
4	Cream Silver Sulphadiazine1%	756	01/01/2018	In Progress	Not Issued

[Save](#)

- e. After the stock is released, fill, save, and print the Stock Issue/Dispatch form in the IM (see figure 10).

**Figure I0: Stock Issue Dispatch Form**

Stock Issue/Dispatch

Please email support@imis.gov.pk OR contact 051-2655425/2655426 in case of any problem/question.

Fill out this form

Issue No. T16040001 Issue Date\* 08/04/2016 01:51 AM Issue Reference REF-00001 Category\* DHQ & THQ Program

Store\* District Attock Store

Product\* Select Batch | Quantity | Priority\* Location | Quantity\* Quantity\* Unit

Total available batch quantity Expiry Date Dispatch By

Add Issue

---

Stock Issue/Dispatch List

Issue Date	Product	Unit	To Store	Location	Issued Qty	Batch No.	Expiry Date	Action
08/04/2016	Inj.Lignocaine HCL2%	Pcs	District Attock Store	0-Temp	500	LDJ-028W	01/01/2018	✖

Comments (Max 300 Char)

Issue Period Select Period

Print Save Pick List

- f. Prepare four copies of the Issue & Receipt Voucher (IRV) in IM; ask the Depot Manager or GM MSD to sign the four copies; send two copies to the consignee (including original IRV) and retain the remaining two copies in MSD Lahore.
- g. Ensure that stock is released, as per the FEFO system.

#### 1.4.6. Monitoring/Maintenance

- a. Ensure that all features of the IM are working appropriately and are error free; report any problems with the IM immediately.
- b. Ensure that all the IM equipment is running smoothly and kept in good working condition.
- c. Work closely with the senior storekeeper and ensure that the stock information in the IM is the same as the physical stock, location, rack, and pallet.
- d. Monitor and check all products for name, location, rack, and pallet; make sure they are correctly indicated in the IM.
- e. Identify and correct any incorrect entries in the location, rack, and pallet, in all areas: A, B, C, and D.
- f. Print the stock reports and reviews, ask the store supervisor to sign them, and file them accordingly.
- g. Prepare and print inventory reports for the warehouse supervisor.
- h. Immediately report any short expiry to the management.
- i. Offer suggestions for improving and increasing the efficiency of the warehouse IM.

## **1.5. Designation: Loaders–Stacker Operators**

### **1.5.1. Receiving and Dispatching**

- a. Unload and place stock in the receiving area so it can be easily counted.
- b. Count received stock; immediately report any deficiency, surplus stock, or damaged packing to the storekeeper.
- c. Ensure that areas reserved in the stores for stock placement are empty before storing.
- d. Store the stocks as advised by the storekeeper.
- e. Receive the list of the stocks that the storekeeper will dispatch.
- f. Identify the stocks, as per the priority list. Match batch numbers and quantities.
- g. Shift the stocks to the dispatch/loading area. Count, verify batch numbers, and ensure that supplies are damage free.
- h. Load the supplies in the container based on the container load plan.

### **1.5.2. Picking and Packing**

- a. Pack and unpack items to be stocked on shelves/racks in warehouses or storage yards.
- b. Use basic safety equipment—safety helmets, shoes, gloves, and so on—while working
- c. Follow the direction of the store supervisor to pick pallets from the racks; place them in the container.
- d. When operating the stacker, follow all safety and security requirements; safeguard other warehouse staff while operating the stacker.
- e. Always using full control and balance, pick pallets from the racks or container.
- f. Always use normal speed while the stacker is carrying pallets; keep your eyes on the surroundings.

### **1.5.3. Monitoring/Maintenance**

- a. Identify damaged and defective items; report them to the storekeeper.
- b. Clean and maintain supplies, tools, and equipment to ensure compliance with safety regulations.
- c. Clean the fork lifter and warehouse machines, as scheduled or required.
- d. Ensure that equipment is stored safely and securely.
- e. Ensure that fire extinguishers are usable and are easily accessible.
- f. Ensure that warehouse buildings and facilities are well maintained.
- g. Check the battery charging status before starting the stacker.
- h. Visually inspect the stacker before operating it.
- i. Stay fully aware of stacker operating and maintenance procedures.
- j. Do not allow unauthorized people to start or operate the stacker.
- k. Park the stacker properly in the parking area and charge the battery.
- l. Dispose of sewage using the set policies and procedures.

### **1.5.4. Storage**

- a. Store items in the warehouse in an orderly and accessible manner.

- b. Operate all equipment safely and efficiently according to all relevant policies and procedures of the warehouse.
- c. Maintain proper storage procedures and conditions.
- d. Keep the storage area clean.
- e. Designation: Picker/Packer

#### **1.5.5. Receiving and Dispatching**

- a. Load and unload the vehicles.
- b. Conduct a visual inspection of the received stock and provide a report.
- c. Reconcile the physical count with paper documentation; report discrepancies, if any.
- d. Scan the receipt and dispatch stock and rack/pallet barcode; report the data to the IM operator to update the transaction.
- e. Check the weights, packing condition, shelf life, etc.; provide a report.

#### **1.5.6. Picking and Packing**

- a. Supervise labor to correctly pick and place the stock in the correct location and rack, per IM requirements.
- b. Move stock to receipt area picks/placed commodities, per IM allocated location.
- c. Identify the repackaging and palletization requirements; repack cartons, if required.
- d. Closely coordinate with the IM operator to get instructions for placing and picking stock, per the allocated area in the warehouse.
- e. See other duties within the SOP section on Repacking Consignments at MSD Lahore.

#### **1.5.7. Storage**

- a. Maintain proper storage procedures and conditions.
- b. Keep storage area clean.

### **1.6. Designation: Laborer**

#### **1.6.1. Receiving and Dispatching**

- a. While receiving and dispatching, segregate each batch of stock.
- b. Load and unload vehicles; correctly place the consignment following the instructions from the loaders–stacker operators and picker.
- c. Follow the safe handling protocols for consignment when receiving and dispatching.
- d. Dispose of all packing materials from warehouse at the time of receipt/issuance, if present, as per procedure.

#### **1.6.2. Picking and Packing**

- a. Follow the safe handling protocols when picking and packing.
- b. Move stock to receipt area; pick/place the stock at the allocated location in the warehouse.
- c. Count each batch after stacking.
- d. Identify the repackaging and pillarization requirements; repack cartons, if required. Remove/dispose of packing material.
- e. To avoid an accident, follow the health and safety precautions while loading and unloading consignments in the warehouse.
- f. Maintain proper storage procedures and conditions.

## Section 2: Procedures

### 2.1 Receiving Consignments

- 2.1.1. The MSD Lahore receives all documents well before the consignment arrives.
- 2.1.2. The senior storekeeper reviews the consignment documents and informs the Depot Manager for informing freight forwarders and suppliers immediately if any documents are missing.
- 2.1.3. Consignment is received at the MSD

Lahore and is off-loaded in the presence of the senior storekeeper.



Receiving supplies at MSD Lahore.

- 2.1.4. The senior storekeeper checks all the documents and inspects the quality and quantity of the supplies; the Depot Manager verifies them.
- 2.1.5. The senior storekeeper immediately reports to the Depot Manager and GM MSD of any damages, losses, or shortages, or any other discrepancies.
- 2.1.6. The senior storekeeper promptly initiates appropriate action to address any damages, loss, or short consignment; and informs the relevant authorities about the physical inspection.
- 2.1.7. The GM MSD charges the necessary claims against the freight forwarders and suppliers, in accordance with the appropriate procedures of the MSD Lahore.
- 2.1.8. The senior storekeeper ensures that the received consignment are the same quantity as described in the document packing list and that they are properly marked.
- 2.1.9. The storekeeper, under the supervision of the senior storekeeper, sorts the received consignments by item number and batch number, and ensure they are placed in the quarantine area for further appropriate stacking in the warehouse.
- 2.1.10. The storekeeper scans the received consignments and stores them properly in the allocated scanned racks, by lot.
- 2.1.11. The storekeeper, under the supervision of the senior storekeeper, ensures that the received quantities are recorded in the IM in real time, as described in IM operators' job descriptions and updated properly in the manual stock register.
- 2.1.12. If the consignment requires laboratory testing, the Depot Manager takes a random sample from the consignment and sends it to the Director of the Government DTL, Lahore, for laboratory testing.
- 2.1.13. After receiving the DTL report, the physical inspection committee, nominated by the competent authority, inspects the consignment.
- 2.1.14. The IM operator enters the received stock into the IM.

- ***The senior storekeeper checks all the documents and inspects the quality and quantity of the supplies and has the Depot Manager verify them.***
- ***The received consignment is placed in the warehouse properly in racks according to FEFO system.***

- 2.1.15. The received consignment is properly placed in the warehouse in racks, according to the FEFO.
- 2.1.16. The GM MSD Lahore informs the DGHS department about the inspection of the received stock and requests that for the distribution plan to be issued.
- 2.1.17. GM MSD issues the Inspection note (I note) for clearance of payments, after accepting the supplied stock, as per purchase order specifications and its recommendations.

## **2.2 Storage of Consignments**

- 2.2.1. Under the supervision of the senior storekeeper, all supplies are stored and placed in the allocated area and on the allocated racks.
- 2.2.2. Do not lean supplies over the edges of the racks.
- 2.2.3. Repair and repack damaged cartons before placing them on the racks and pallets.
- 2.2.4. Scan each carton and place it on the allocated scanned rack and pallets by lot and batch.
- 2.2.5. The IM operator places the stocks in location bins of the IM.
- 2.2.6. Store all products using the required temperature; do not expose them to direct sunlight.
- 2.2.7. Monitor the temperature and record it on a daily basis.
- 2.2.8. To protect the quality of the supplies, ensure that the roof is not leaking.
- 2.2.9. Keep the storage area clear and clean; keep the aisles empty, which will allow the stacker to move freely and people to walk through.
- 2.2.10. Disinfect the storage area and spray every third month against insects, rodents, and other harmful bacteria, which could threaten the supplies and the staff's health.
- 2.2.11. Use stackers to place pallets on the racks; do not use staff to place the pallets.
- 2.2.12. Update each item's bin cards in the appropriate warehouse location whenever the status of stocks change.
- 2.2.13. Periodically, do a physical count to detect discrepancies—monthly, quarterly, and annually.



Storage of supplies at MSD Lahore

- ***Scan each carton and place on the allocated scanned rack and pallets by lot and batch.***
- ***Keep the storage area clear and clean; empty the aisles to enable operation of the stacker and to allow people to walk through.***

## 2.3 Dispatching Consignments

- 2.3.1. The senior storekeeper dispatches the dispatch quantities, as per the distribution plan as issued by the DGHS.
- 2.3.2. The MSD will not dispatch any consignment until they receive the DTL report and recommendation from the physical inspection committee.
- 2.3.3. The senior storekeeper shares the DTL



Dispatching consignments at MSD Lahore.

- status report with the IM operator.
- 2.3.4. The IM operator updates the DTL status of the stock to release the stock for issuance.
- 2.3.5. After the stock is released, the IM operator dispatches the stock in the IM.
- 2.3.6. The storekeeper dispatches the near expiry first.
- 2.3.7. The senior storekeeper coordinates with the IM operator, prints the picking list from the IM, and forwards the list to the storekeeper.
- 2.3.8. The storekeeper dispenses the picking list to the pickers and packers for preparing the dispatch load consignment. They pick the supplies from the allocated racks and pallets and properly scan the cartons and racks.
- 2.3.9. The storekeeper returns the picking list to the IM operators and reports on the picked medicine supplies; the IM operator updates the inventory of each dispatched consignment accordingly.
- 2.3.10. The senior storekeeper supervises the loaders; the packed consignment ready for dispatch is loaded onto the trucks for onward distribution.
- 2.3.11. The authorized person from the EDO/H receives a goods receipt note from MSD for further distribution.
- 2.3.12. The IM operator prepares three copies of the IRVs from the approval sheet; the Depot Manager or GM MSD signs the IRV.
- 2.3.13. Of the three copies, two copies are sent to the consignee with the original IRV; the third copy is retained, including a photocopy, in MSD Lahore.
- 2.3.14. The consignee verifies the received quantities with the quantities listed in the IRV.
- 2.3.15. The warehouse recordkeeper maintains the records and the approval sheet for all the stakeholders.

***The storekeeper  
dispatches the near  
expiry first.***

## 2.4 Repacking Consignments

- 2.4.1. Ensure that the carton used to repack the supplies is in good condition.
- 2.4.2. For protection, always use plastic tape to seal the cartons so they do not break at the edges.
- 2.4.3. Repack the supplies so that the supplies cannot be easily removed from inside the carton while they are being moved from origin to destination.
- 2.4.4. Paste clearly visible tags on the repacked cartons that indicate the handling, placing, and storage precautions.

***Paste visible tags on the  
repacked cartons  
indicating the handling,  
placing, and storage  
precautions.***



- 2.4.5. Using the provided repacking list, ensure that the right item, and the right quantity, for the right district are repacked.
- 2.4.6. Provide a packing list of the repacked quantity including information about the items, district, and complete address; send the packing lists with the cartons to the consignee.
- 2.4.7. Ensure that the carton is secured and properly packed on all sides.

**Figure 11: Repacking Supplies for Distribution**



## **2.5 Safe Disposal of Unusable Supplies**

### **2.5.1. Administrative Process:**

- a. Periodically (preferably every quarter) form a disposal committee that includes the DOH, GoP, and chaired by a nominated director from the department; including the GM MSD as its member. The committee should inspect and recommend commodities for disposal, including the method.
- b. If, for any reason, supplies are unusable (expired, damaged, etc.), the Depot Manager seals the stock and GM MSD immediately stops the distribution of the unusable stock.
- c. Using the proper procedures, the GM MSD Lahore notifies the DOH of the unusable health supplies.
- d. To initiate further processes, the DOH receives the detailed reasons for the unusable medicines.
- e. The DOH notifies the GM MSD, Lahore, of the process for dealing with unusable supplies; this may include a laboratory test or removing them from stock immediately.
- f. The GM MSD, Lahore, forms a committee for the safe and secure disposal of unusable stock after it is declared unusable.
- g. The committee disposes of unusable stock and records all the proceedings; the disposal process must follow the standard disposal procedures.

**Figure 12: Disposal of Unusable Supplies**



### **2.5.2. Major Steps of Safe Disposal**

Following are the major steps that must be taken to safely dispose of the unusable medicines supplies:

#### **a. Sorting and Categorizing:**

The first stage of sorting is to separate the commodities that are classified as controlled substance, toxic or hazardous products, and products that are not controlled.

Usually, the supplies are a combination of non-pharmaceutical materials and larger quantities of packing. The second step, therefore, is to sort the materials by type: tablets, injections, etc. Following are the categories of materials:

1. Solids: tablets, capsules, latex condoms, etc.
2. Semi-solid: creams, lotions, gels, etc.

***Make sure the disposal process is in accordance with the standard disposal procedures recommended by the disposal committee.***

### 3. Liquids: syrups, suspensions, injections (vials/ampoules), etc.

The sorting is essential because the flammable and/or water reactive chemicals must only be destroyed in a chemical waste disposal facility. A Depot Manager and senior storekeeper supervise the sorting activities. The decision about the method of disposing of the commodities is then determined.

Identify all near-expiry medicines and biologicals that have 25 percent of shelf life left; circulate the list of items to any group that may be able to use the items before the expiry date.

#### b. Process:

The MSD staff trained on the sorting and knowledgeable of health and safety risks associated with handling the material, must be responsible for sorting. The orderly sorting should be done in an open or well-ventilated building, as close as possible to the stockpiles.



Staff should be supplied with personal protective equipment (PPE), such as gloves, boots, overalls, dust masks, etc. After the health commodities are sorted, carefully pack them in the steel drums or containers, such as sturdy cardboard boxes; clearly identify the contents on the outside of the containers. Place the containers in a designated area until the disposal is complete. To avoid confusion, if possible, place the in-date commodities and expired commodities in a separate room.

Disposal of unusable supplies in a landfill.

#### 2.5.3. Safe Disposal Procedures

First, explore the possibility of returning unusable commodities to the manufacturers for safe disposal. If this is not possible, use any of the following processes that are suitable for the situation:

##### a. Landfill

Landfill is the oldest, most widely practiced, method of disposing of solid waste. An appropriate landfill includes an excavated pit away from water courses and above the water table. Do not use uncontrolled dumping, which is harmful for the environment. Immediately cover materials disposed of in a landfill with fresh municipal waste at the base of the working face of the landfill.

##### b. High Temperature Incineration

Some industries have furnaces that operate at above 850°C, with long combustion retention time; they disburse exhaust gases via tall chimneys to a high altitude. If this method is



Two types of incinerators

selected, note that it may not be cost effective. A rule of thumb is that no more than 5 percent of the value of the commodities should be used as fuel in these furnaces.

### c. Medium Temperature Incineration

For medicines and similar materials, in particular, do not use a two-chambered incinerator—it operates at the minimum temperature of 850°C and has a combustion retention time of at least 2 seconds in the second chamber and open burning at low temperatures. It will release aerosol fumes into the open air.

### d. Encapsulation

To use this method, commodities are placed in plastic or steel drums. When the containers are about 90 percent full, 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.

### e. Inertization

This primarily involves removing all packaging materials from the waste commodities and grinding the waste while 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.



Example of inertization

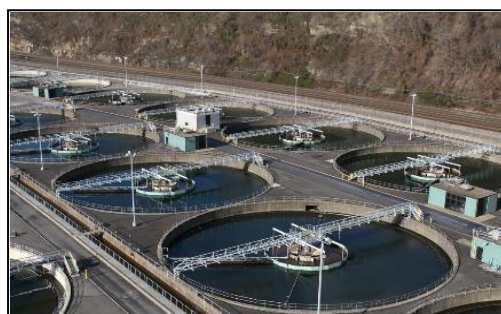
The process is relatively inexpensive and can be easily done. The main requirements are a grinder or a road roller to crush the supplies; a concrete mixer; labor force; and a supply of cement, lime, and water.

The approximate ratio by weight used is as follows:

Waste commodities: 65 percent; lime: 15 percent; cement: 15 percent; and water: 5 percent.

### f. 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 plants 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.



Aerial view of a sewer treatment plant

### g. 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).

### h. Sharps Pit

Improper disposal of sharps waste poses a high risk of disease transmission for healthcare workers, waste workers, and the general public.

Sharps are often collected in cardboard safety boxes and burned in small incinerators. Several non-burn methods have been developed in response to concerns about air pollution and the short lifespan of brick incinerators. The methods generally require the following steps:

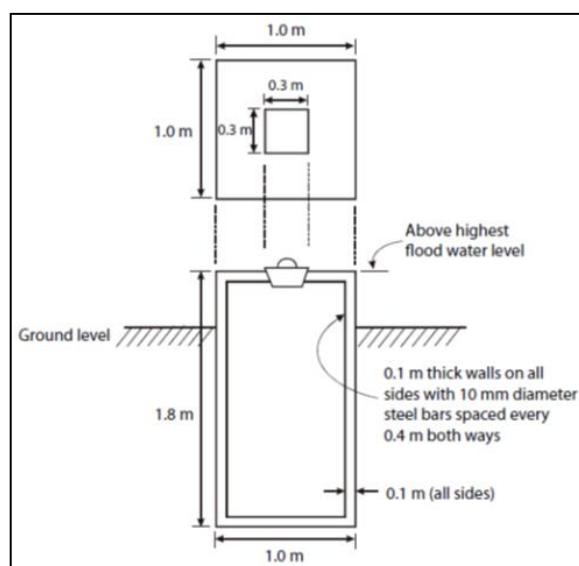
1. Using onsite mechanical needle cutters or electric needle destroyers.
2. Shred the treated plastic parts.
3. Bury the metal pieces in sharps pits.
4. Melt the plastics again for recycling.

Alternatively, the sharps waste can be autoclaved, shredded, and then encapsulated in cement blocks that later become useful items, such as hospital benches.

In facilities where burning devices cannot reach high temperatures, or where transport of the safety boxes to a treatment facility is not an option, needle removers and sharps pits may be an option to safely dispose of used needles. Protected sharps pits are constructed onsite, set in the ground, and designated for disposal of sharps only (i.e., no injection devices, such as used syringes). Locate them away from ground water sources; ensure the bottom of the pit is above the water table—and usually lined with concrete or brick. The approximately 1 meter long chute should extend from the top of the pit, including a lid that will prevent water from entering. Fence in the entire structure to prevent unauthorized entry.

#### 2.6. The suggested sharps pit in figure 13 can be placed at various locations in MSD and modified as needed.

**Figure 13: Illustration of a Sharps Pit**





## GUIDELINES FOR PROPER STORAGE OF HEALTH COMMODITIES

- Clean & disinfect the store and monitor the storage conditions regularly
- Store supplies in a dry, well-lit and well –ventilated storeroom, out of direct sunlight
- Secure the store room from water penetration
- Always store all commodities in a manner that facilitates First Expiry First Out (FEFO) policy for stock management
- Maintain cold storage, including a cold chain , for commodities that require it
- Keep narcotics and other controlled substances in a locked place
- Store flammable products separately using appropriate precautions
- Stack cartons at least 10 cm (4 in) off the floor, 30 cm (1 ft) away from the walls and no more than 2.5 m (8 ft) high.
- Store medical supplies separately away from insecticides ,chemicals, old files, office supplies and other materials
- Update the stock in Bin cards and maintain the files daily
- Physically count the Health Commodities on regular basis and reconcile with the system minimum once a month
- Arrange cartons so arrows point up and ensure that identification labels, expiry dates, and manufacturing dates are visible
- Ensure that fire safety equipment are available and accessible and that personnel are trained to use it
- Separate and process disposal of damaged or expired stocks without delay as per SOPs

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### Section 3: Checklists

#### 3.1. Warehousing System Monitoring and Evaluation Checklist

Date from: \_\_\_\_\_

Date to: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Next inspection date: \_\_\_\_\_

\*NS = Not Sure, \*NA = Not Applicable

S.No	Warehousing Monitoring & Evaluation	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
1	Designated staff receives the stock and places it per the FEFO system.								
2	For received stock, all shipment documents are properly reviewed and put into the file.								
3	Received stock is physically checked for quantity, quality, and packing.								
4	For received stock, barcodes on the cartons are scanned; updates are made in the IM.								
5	For received stock, physical count is reconciled with the shipment documents.								
6	For received stock, damages, losses, errors, and discrepancies are reported.								

S.No	Warehousing Monitoring & Evaluation	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
7	For received stock, racks and items are named and reported in the IM.								
8	Received stock is entered in the IM per location, racks, and pallets.								
9	Received stock is entered in the correct quantity and product name in the bin cards and stock cards.								
10	Designated staff receiving the stock understand the receiving procedures and systems.								
11	Designated staff are properly trained in receiving stock and reporting.								
12	Designated staff understand the loss and damage policy for reporting.								
13	Designated staff has all required stationery and equipment to do their work efficiently.								

S.No	Warehousing Monitoring & Evaluation	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
14	Designated staff have the proper manuals and warehouse operating forms.								
15	Stock requisitions are received promptly for further action.								
16	Stock is dispatched per the requested item and quantity.								
17	Stock is dispatched per the FEFO system.								
18	Stock is dispatched; a physical count is reconciled with the dispatched requisition.								
19	Stock dispatched is properly reported in the IM.								
20	Designated staff take precautionary measures to safeguard stock from rodents, insects, loss, and damages.								
21	Stock dispatched is updated in the bin cards and stock cards.								



S.No	Warehousing Monitoring & Evaluation	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
22	Stock dispatched has proper stock issuing vouchers and gate passes.								
23	Designated staff report and update the IM regularly.								
24	Designated staff manage stock in the IM per the FEFO system.								
26	Designated staff manage inventory by location, rack, and pallet.								
27	Designated staff can report and print stock sufficiency reports through the IM daily.								
28	Designated staff can show the stock location, rack, and pallet for each item in the warehouse in the IM.								
29	Designated staff can report dispatched stock by stakeholder, district, and province in the IM.								
30	Designated staff can report the received quantity by product, lot,								

S.No	Warehousing Monitoring & Evaluation	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
	location, and rack in the warehouse, using the IM.								
31	All stock received and dispatched is correctly reported in the IM.								
32	All warehouse operating equipment: stackers, fork lifters, computers, etc., are in working condition and are maintained.								



### 3.2. Warehouse Safety and Security Evaluation Checklist

Date from: \_\_\_\_\_

Date to: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Next inspection date: \_\_\_\_\_

\*NS = Not Sure, \*NA = Not Applicable

S.No	Warehouse Safety and Security	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
1	Are all warehouse exits clearly marked and clear of obstructions (barriers)?								
2	Are the warehouse aisles clear of storage?								
3	Are all pallets, racks, and shelving undamaged?								
4	Are all materials stacked properly and not leaning?								
5	Are all materials secure and not leaning off the edge of the racks?								
6	Are guardrails (sign of dangerous area) present in areas with overhead storage above offices or platform?								
7	Do stacker operators get proper training to operate the stacker or forklift?								

S.No	Warehouse Safety and Security	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
8	Are horns used during backing, blind corners, and other potentially dangerous situations?								
9	Do forklifts travel at safe speeds?								
10	Do operators wear seat belts?								
11	Are keys removed and forks lowered when forklifts are parked?								
12	Are stackers charged in a place free from combustibles and with adequate ventilation?								
13	Are fire extinguishers placed in each area of the warehouse and are they accessible?								
14	Are fire extinguishers checked monthly?								
15	Are flammable and combustible materials stored in flame-proof storage cabinets?								
16	Is there adequate equipment to minimize								

S.No	Warehouse Safety and Security	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
	employee lifting of heavy or awkward objects?								
17	Are electrical outlets, junction boxes, and other electrical components properly covered?								
18	Are extension cords in good repair, properly grounded, etc.?								
19	Are panel boxes doors labeled and closed?								
20	Are individually keyed locks and tags available for lock and lockout tags for the equipment?								
21	Are equipment-specific lock and lockout tag procedures available?								
22	Is PPE available?								
23	Do employees know when to wear PPE?								
24	Is PPE in good repair?								
25	Is PPE available in appropriate sizes?								
26	Do designated staff randomly check the								

S.No	Warehouse Safety and Security	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/Remarks
		Name	Designation						
	warehouse fire-fighting system?								
27	Do designated staff keep the warehouse building in good condition?								
28	Do designated staff monitor security guards night and day to ensure warehouse security?								
29	Do designated staff properly lock the warehouse main doors and main exit gate?								
30	Does the gate keeper/guard register visitor's information, as required?								
31	Does the gate keeper/guard check incoming and outgoing stock documentation and registering information?								

### 3.3. Transport Evaluation Checklist

Date from: \_\_\_\_\_ Date to: \_\_\_\_\_

Name: \_\_\_\_\_ : Designation: \_\_\_\_\_

Next inspection date:

\*NS = Not Sure, \*NA = Not

Applicable

S.No	Transport	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/ Remarks
		Name	Designation						
1	Does the driver check the oil level daily?								
2	Does the driver check the hoses monthly?								
3	Does the driver check all belts monthly?								
4	Does the driver check the tire pressure daily?								
5	Does the driver check the coolant/antifreeze monthly?								
6	Does the driver change the air filter based on the recommended mileage?								
7	Does the driver change the engine oil based on the recommended mileage?								
8	Does the driver change the oil filter based on the								



S.No	Transport	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/ Remarks
		Name	Designation						
	recommended mileage?								
9	Does the driver check the brake fluid every 3 months?								
10	Does the driver check the battery water level weekly?								
11	Does the driver check the steering fluid every 3 months?								
12	Does the driver check the headlights daily?								
13	Does the driver have a spare tire in the vehicle?								
14	Is the driver aware of basic government traffic rules and regulations?								
15	Does the driver carry the required documents, license, vehicle registration book, etc.?								
16	Are vehicles in working condition available when required?								

S.No	Transport	Responsible Person		Evidence	Yes	No	*NS	*NA	Conclusion/ Remarks
		Name	Designation						
17	Does the driver maintain the vehicle logbook properly?								
18	Does the driver maintain the vehicle fuel book properly?								



## **Part 2. Staff Health and Safety Procedures**



# Preface

Staff health and safety remains a concern of paramount importance in any warehouse. The Medical Store Depot (MSD) Punjab, Lahore, is committed to ensure workplace safety and security. The goal is to avoid workplace violence and to ensure a safe and healthy work environment for all warehouse staff. The safety and security guidelines provided in this section lay out strict measures for compliance to ensure a safe work environment for all the MSD staff. With a zero tolerance policy, these measures mitigate and prevent workplace health and safety hazards to a considerable extent. Therefore, understanding and implementing these guidelines is important for staff to avoid direct and indirect risks to their lives.

These guidelines also include a workplace safety and security checklist to guide the teams and individuals on how to carry out a self-assessment of their surroundings. This will also be very beneficial for each warehouse department (store, administration, transport, and finance) to do a hazard assessment against specific workplace safety and security issues, as indicated in the checklist. The safety and security checklist assessment helps determine the risks for the warehouse employees, supplies, and assets, as well as to evaluate their susceptibility to workplace violence by sharing their findings and observations with the responsible departmental heads or managers. It is also the responsibility of every manager to review the checklist and to counter all the safety and security hazards that threaten staff health and safety, as well as the warehouse assets and supplies.

The authors hope that the employees of the medical store will find these guidelines user friendly and practical for a safe and healthy working environment.

## 1. Compliance Statement

The Medical Store Depot (MSD) Lahore staff health and safety procedures have a *zero tolerance policy* against threats of physical harm, intimidation, or any hostile act toward warehouse employees and supplies. The health and safety procedures encourage immediate relief for all employees and departmental managers and supervisors, if an incident occurs. The manual also provides guidelines for managers when they encounter anticipated workplace hazards, threats, or violence. The active implementation of the warehouse staff health and safety procedures includes the following steps:

- 1.1. Educating warehouse employees, supervisors, and managers on staff health and safety procedures, across the board, and motivating staff to adopt precautionary measures while performing their duties. Supervisors and managers should encourage and counsel staff members to promote an elevated sense of responsibility toward health and safety in the workplace.
- 1.2. Training and counseling of managers, supervisors, and employees who show a lack of compliance with workplace practices, per the designated health and safety checklist. Managers and supervisors are required to educate their subordinates and provide on-the-job training in basic health and safety.
- 1.3. Recommending warehouse senior officers and managers of corrective actions for those who repeatedly failed to comply with the warehouse staff health and safety procedures and practices.

## 2. Reporting

- 2.1. Employees working in the warehouse should immediately report incidents of threats or acts of physical or direct or indirect harm to supplies and staff.
- 2.2. Soon after reporting, employees must immediately follow up on the incident.
- 2.3. Managers and supervisors should encourage reporting behavior within the staff and encourage a sense of responsibility toward staff health and safety procedures.
- 2.4. Managers and supervisors should also make staff aware of the consequences of health and safety procedures and encourage them to identify and report any existing potential threats and anticipated threats within their areas of work. This will enable the staff to stay responsible, accountable, and vigilant about their surroundings.

***Employees working in the warehouse should immediately report incidents of threats or acts of physical or direct or indirect harm to supplies and staff.***

## 3. Responsibility

### 3.1. Warehouse Managers and Supervisors

- 3.1.1. Working in various functions of the warehouse, they should review all the previous and current incidents and identify repeated threats or violations. After the review, they must take appropriate steps to mitigate and prevent a repetition of the incident or violation.
- 3.1.2. They should visit the scene of the incident immediately and control the situation, as well as arrange for basic healthcare, per requirements.
- 3.1.3. They should determine the cause of the incident by physically inspecting the site.

- 3.1.4. They should prioritize the interviews of threatened or injured employees. Additionally, managers must also record the statements of witnesses, collect evidence from the surroundings, and record and report it.
- 3.1.5. They should examine the warehouse workplace to determine risk factors associated with the incident. Managers must include any previous reports of inappropriate behavior by the perpetrator, if appropriate, for corrective actions.
- 3.1.6. They should take corrective action to prevent the incident from recurring and provide all the resources, services, and guidance necessary to correct the perpetrator.
- 3.1.7. They should ensure that the provisions of staff health and safety procedures are followed by carefully monitoring the employees' compliance with the principles of health and safety procedures.
- 3.1.8. They should coordinate the assessment and provide assistance to ensure that the principles of staff health and safety procedures are being implemented, per the described checklist.
- 3.1.9. They should implement and maintain staff health and safety procedures in work areas of all the sections and departments of the warehouse.
- 3.1.10. They should conduct an initial assessment of warehouse staff health and safety procedures, when appropriate, and update the staff health and safety checklist.
- 3.1.11. They should conduct a further evaluation of potential risk factors that are inappropriate for staff health and safety from various aspects. Moreover, they should render advice on precautions and mitigation any potential threats.
- 3.1.12. They should ensure that the work environment is kept physically safe and secure by embracing the principles of the staff health and safety procedures checklist.

### **3.2. Employees**

- 3.2.1. While working, all employees should follow the principles of the warehouse staff health and safety procedures checklist; in so doing, they should support a safe and secure working environment to safeguard other employees and supplies from potential threats.
- 3.2.2. Individual warehouse employees should report to their immediate supervisor any workplace violence or any violation of the principles set forth by the staff health and safety procedures.
- 3.2.3. They should inform his or her immediate supervisor of potential risks that may harm him or her or other staff or supplies.
- 3.2.4. They should conduct a personal health and safety assessment to identify potential threats to the workplace environment by keeping in mind the warehouse supplies and assets.

## **4. Workplace Violence Classification**

While working in the MSD Lahore, employees are vulnerable to various types of threats that can directly or indirectly endanger their lives. However, it is important to understand that any workplace situation, or activity they perform in the



warehouse, may be subject to more than one type of threat. Summarized below are some of the threats that may occur in the MSD vicinity.

- 4.1. Employee workplace violence can involve an assault or threat because of the workplace condition. For example, employees are attempting to deliver services, as described in their duties, but the environment is not appropriate for them to perform these duties safely and securely. Because most duties are performed without considering any prior precautionary measures; any possible risk could be considerably reduced if the supervisor or manager is notified immediately of a problem.
- 4.2. Employee workplace violence may also involve an assault or threat by pressuring employees to do their job without ensuring adequate safety and security equipment, tools, training, and an appropriate healthy and safe working environment.
- 4.3. An unskilled and inexperienced stacker operator using a forklift can cause a workplace assault or threat of violence, or untrained loading and unloading labor, and untrained truck drivers.
- 4.4. Inappropriate preparations in the case of fire, and inattention to inadequate and old electric wires in the warehouse, may amount to workplace assault or a threat of violence.
- 4.5. An inefficient response mechanism—for example, no fire alarm or firefighting system and no first aid kit—would also be considered as an assault or threat of violence.
- 4.6. Poor construction of the building and old or out-of-order forklifts, racks, stackers, trucks, and vehicles may cause employee workplace harm.
- 4.7. It is also an assault or threat of violence to fail to promote and create a safe and secure working environment or ignore day-to-day working hazards and their mitigation.

***Any possible risk could be considerably reduced if the supervisor or manager is notified immediately about any problem.***

## **5. Communication**

- 5.1. The General Manager (GM) MSD should maintain a safe, healthy, and secure workplace environment. The environment must demonstrate an open, two-way communication among employees, managers, and supervisors about workplace health and safety and security issues.
- 5.2. Staff health and safety procedures and security checklist should encourage a continuous flow of communication between the warehouse management and the employees. The environment should be free of reprisal, fear, or ridicule; communication must be easily understood.
- 5.3. Communication that concerns staff health and safety includes the following processes:
  - 5.3.1. Ensure a proper orientation on warehouse staff health, safety, and security procedures for all new employees, subcontractors, transport providers, and donors' delegates. Inform them about the required specific rules and principles of staff health and safety.

***Staff health and safety procedures and security checklist should encourage a continuous flow of communication between the warehouse management and the employees.***

- 5.3.2. Ensure that the training programs address specific aspects of workplace staff health and safety threats.
- 5.3.3. Include regular weekly staff health and safety meetings in the workplace security discussions to promote a *zero tolerance philosophy*.
- 5.3.4. Post and distribute warehouse workplace safety and security information.
- 5.3.5. Warehouse senior management must encourage the zero tolerance philosophy among warehouse employees, to ensure that employees promptly report staff health and safety workplace security hazards or threats of violence.
- 5.3.6. Provide information about the procedures for protecting warehouse employees and reporting physical violence, or threats of retaliation by the person engaging in such conduct.

## **6. Hazard Assessment**

- 6.1. Staff health and safety hazard assessments should be performed and reviewed periodically by the warehouse manager to develop/revise a warehouse security checklist. This can be done by periodic interviews with warehouse employees and a subsequent warehouse workplace evaluation. The assessment should also incorporate warehouse security hazards and threats related to workplace violence.
- 6.2. Complete periodic inspections of the staff health and safety principles checklist, based on the following schedule.
  - 6.2.1. Conduct a monthly review of the warehouse environs and warehouse working environment, including the tools and equipment that pose high security risks for employees; also include the warehouse building, installed racks, and pallet condition.
  - 6.2.2. Conduct a review of previously unidentified health and safety hazard reports and use the precautionary measures to mitigate the identified security hazards.

## **7. Incident Investigation**

- 7.1. The following principles are used to investigate incidents at the warehouse related to staff health and safety. These investigations, *by a manager or supervisor*, must include violence or threats of physical injury, including the following:
  - 7.1.1. Review previous safety and security incidents and list the incident type, categorize why it occurred, and when and where it occurred.
  - 7.2.1. Visit the incident scene as soon as possible.
  - 7.2.3. A manager or supervisor should interview threatened or injured employees and witnesses immediately and collect evidence from the surroundings where the incident occurred.
  - 7.2.4. A manager or supervisor should examine the warehouse workplace for security risk factors associated with any incident, including previous reports of inappropriate behavior by the perpetrator. Take appropriate action against the perpetrator if negligence or a deliberate violation is found.

## **8. Hazard Correction**

A hazard threat, if addressed in a timely manner, reduces its severity. The first observer should immediately report a threat. The respective immediate managers are responsible for ensuring that the staff health and safety procedures follow the prescribed warehouse safety checklist. Staff should conduct frequent follow up with the concerned person until the threat is mitigated.

## **9. Training, Instruction, and Information**

- 9.1. The MSD Lahore established the following principles of training, instruction, and information for all warehouse employees that pertain to staff health and safety procedures.
  - 9.1.1. All warehouse employees, including managers and supervisors, are given training on staff health, safety procedures, and the warehouse safety checklist.
  - 9.2.1. All new employees and current staff who have not been trained receive training and instruction. Managers and supervisors should approve all the staff health and safety instructions for all suppliers, transport providers, and any other worker who, directly or indirectly, work in the warehouse operations.
  - 9.2.1. Managers and supervisors should have the latest information on workplace security, violence control, warehouse safety, security principles violations, safe work practices, updated safety checklists, and principles related to staff health and procedures.
- 9.2. The general features of staff health and safety training instruction should include the following:
  - 9.2.1. Clearly review the health and safety procedures to staff by explaining the accountability measures of any incident, violent acts, threats, or intentional violation of warehouse safety and security principles.
  - 9.2.2. Recognize health and safety security hazards, which include the risk factors associated with various types of violence, which can come from individual violations of warehouse safety and security principles, or negligence of particularly alarming threats.
  - 9.2.3. Take necessary measures to prevent warehouse workplace violence, security hazards, or threats; and report them to the appropriate authority for timely correction and prevention.
  - 9.2.4. Provide information and training to summon others for assistance during or after the incident.
  - 9.2.5. Provide clear information and instruction on escape routes in case of a fire.
  - 9.2.6. Provide emergency medical care in the event of any violent act or incident. Moreover, arrange post-event trauma counseling if requested by staff.
  - 9.2.7. Make warehouse employees and managers and supervisors aware of the communication and reporting procedures.
  - 9.2.8. Provide training on self-protection and hazard prevention techniques.
  - 9.2.9. Make staff aware of indicators that can lead to violent acts by other staff when they are performing their duties.

## 10. Recordkeeping

- 10.1. Maintain all records of reported incidents with the Directorate of the MSD, Punjab.
- 10.2. Document the records of the recommendation reports for future reference.
- 10.3. Maintain the proper documentation of staff health and safety training for each warehouse employee. Include the employee's name and training dates, type of training, and training providers' records. Maintain this document at MSD Lahore.
- 10.4. For all incidents, maintain the inspection records, reports, and training documentation for three years.

***Maintain proper documentation of staff health and safety training for each warehouse employee.***

## Warehouse Staff Health Safety and Security Checklist

\*NS = Not Sure, \*NA = Not Applicable

No.	Warehouse Safety and Security Activity	Evidence	Yes	NO	*NS	*NA	Conclusion/Remarks
1	Are all warehouse exits clearly marked and clear of obstructions (barriers)?						
2	Are the warehouse aisles clear of storage?						
3	Are all pallets, racks, and shelving in good condition and undamaged?						
4	Are all materials stacked properly and not leaning?						
5	Are all materials secure and not leaning off the edges of the racks?						
6	Are guardrails (sign of dangerous area) present in areas of overhead storage above offices or platform?						
7	Do stacker operators have proper training to operate the stacker or forklift?						
8	Do operators use horns during						

No.	Warehouse Safety and Security Activity	Evidence	Yes	NO	*NS	*NA	Conclusion/Remarks
	backing, blind corners, or other potentially dangerous situations?						
9	Do forklifts travel at a safe speed?						
10	Do operators wear seat belts?						
11	Are stackers charged in a place free from combustibles and with adequate ventilation?						
12	Are fire extinguishers placed in each area of the warehouse and are they accessible?						
13	Are fire extinguishers checked monthly?						
14	Are flammable and combustible materials stored in flame-proof storage cabinets?						
15	Is adequate equipment available to minimize employee lifting heavy or awkward objects?						

No.	Warehouse Safety and Security Activity	Evidence	Yes	NO	*NS	*NA	Conclusion/ Remarks
16	Are electrical outlets, junction boxes, and other electrical components properly covered?						
17	Are extension cords in good repair, properly grounded, etc.?						
18	Are panel box doors labeled and closed?						
19	Are individually keyed locks and tags available for lockout/tagout of equipment?						
20	Are equipment-specific lockout/tagout procedures available?						
21	Is PPE available—helmets, safety shoes, goggles, masks, and protective suits?						
22	Do employees know when to wear PPE?						
23	Is PPE in good repair?						
24	Is PPE available?						
25	Is a first aid kit available in all sections of the						

No.	Warehouse Safety and Security Activity	Evidence	Yes	NO	*NS	*NA	Conclusion/Remarks
	warehouse working area?						
26	Are the warehouse main blower fans in working condition?						





# Appendices



## Appendix I

# Warehouse Self-Assessment Tool

The warehouse self-assessment tool has seven sections:

- a. Warehouse Infrastructure
- b. Layout Planning and Operations
- c. Warehouse Equipment
- d. Special Storage
- e. Security and Safety
- f. Human Resources.

Each section targets a specific and important aspect of warehousing. While this assessment is as comprehensive as possible, some areas may not apply, such as the cold chain. This assessment will help you understand what any weaknesses so you can focus on improving those areas. It will also help you understand where you need to divert resources or ask for more resources. In addition, it can help highlight some strengths of your warehouse so you and others understand what you are doing well.

Complete the assessment, as much as it is applicable, when you are physically in the warehouse.

At the end of each section, add the numbers and calculate a score. To calculate a percentage, divide the score by the total number of questions in the section.

At the end of the assessment is a scoring sheet that you can use to compile scores for each section, as well as an area to summarize key strengths and weaknesses for each section.

SECTION A: WAREHOUSE INFRASTRUCTURE PLANNING		Score	Maximum Score
A1.	Is the ceiling in good condition (not warped, free of holes)? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A2.	Do the ceiling or walls show any staining, indicating a leak? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A3.	Is the floor in good condition, level, free of dust, and free of holes? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A4.	Are the walls in good condition; are they clean and painted? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A5.	Is the lighting adequate throughout, without too much direct sunlight? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A6.	Is the storeroom fitted with air-conditioners or ventilation /fans that can maintain a temperature of <24C° at midday? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A7.	Is a working thermometer installed and are temperature charts used? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A8.	Is the storage area visually free from harmful insects and rodents? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A9.	Are there frequent interruptions to the main electrical supply (more than 2 times a week)? <input type="checkbox"/> Yes <input type="checkbox"/> No (No = 1)		1
A10.	Does staff report breakers tripping when it rains or when the air-conditioners are on full load? <input type="checkbox"/> Yes <input type="checkbox"/> No (No = 1)		1
A11.	Does the warehouse have a generator? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A12.	Can the generator handle the full site load? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A13.	Is the budget sufficient for purchasing generator fuel? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
A14.	Is a maintenance plan on file for the generator? <input type="checkbox"/> Yes <input type="checkbox"/> No		1
TOTAL			___/14
SCORE FOR THE SECTION			___%
Additional Notes			

SECTION B: LAYOUT PLANNING AND OPERATIONS EFFICIENCY			Score	Maximum Score
B1.	In an average week, are there any days when orders are not processed?	<input type="checkbox"/> Yes <input type="checkbox"/> No (No = 1)		1
B2.	In an average week, are there any days when receipts are not processed?	<input type="checkbox"/> Yes <input type="checkbox"/> No (No = 1)		1
B3.	Can delivery vehicles access loading/receiving bays?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
B4.	Are receiving and dispatch areas separated?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
B5.	In the receiving area, is there sufficient secure space to arrange and sort an incoming delivery?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
B6.	Is there a designated space for expired or damaged goods?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
B7.	Is there sufficient secure space to assemble outgoing deliveries?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
B8.	Is the existing floor space for pallet stacking, shelving, or racking less than 75% full?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
B9.	Are the aisles between the stacked pallets or racking clear of stored commodities?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
TOTAL				___/9
SCORE FOR THE SECTION				___%

Additional Notes

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SECTION C: WAREHOUSE EQUIPMENT			Score	Maximum Score
C1.	Are sufficient pallets available?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
C2.	Are sufficient pallet jacks available?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
C3.	If pallet racks are available, is an operable fork truck with a maintenance schedule also available?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
C4.	Is a storage system used (shelving, racks, or pallet stacking); is it in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
C5.	Is there adequate aisle space and clearance for material handling equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
C6.	If commodities are stored on the floor, are they stacked less than 2.5 meters high?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
C7.	Are cartons in good condition, (not crushed from mishandling or poor stacking.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
C8.	Are cartons and products off the floor and protected from water and dust?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
TOTAL				___/8
SCORE FOR THE SECTION				___%

Additional Notes

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SECTION D: SPECIAL STORAGE REQUIREMENTS		Score	Maximum Score
D1. Does the location store products that require cold chain; does it have designated cold chain facilities?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D2. Is the capacity sufficient for cold chain products?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D3. Are all refrigerators and cold rooms operational?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D4. Are temperatures monitored for each discreet storage unit?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D5. Do the refrigerators run on solar power?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D6. If the cold chain facilities run on electricity, is there a back-up source of power (i.e., generator)?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D7. Is funding available for the back-up source of power?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D8. Is an area designated for flammable hazardous items?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D9. Are flammable/hazardous items kept in a separate area away from the main buildings?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
D10. Are high-value commodities kept in a locked or caged area?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
TOTAL			___/10
SCORE FOR THE SECTION			___%
Additional Notes			

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SECTION E: INVENTORY MANAGEMENT		Score	Maximum Score
E1. Are paper or electronic inventory records updated for each receipt and issue?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
E2. Are ledgers maintained and are corresponding bin cards maintained in the storerooms?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
E3. Are ledgers legibly and accurately maintained—audit a sample and cross-check the same sample on the corresponding bin card?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
E4. Is a process in place to investigate and resolve discrepancies on records?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
E5. Is a system of rolling stock checks in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
E6. Are full physical inventory stock counts done at least every 3 months?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
E7. Is the write off and destruction of damaged or expired stock processed regularly?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
E8. Are products organized according to FEFO?	<input type="checkbox"/> Yes <input type="checkbox"/> No		1
TOTAL			___/8
SCORE FOR THE SECTION			___%
Additional Notes			

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SECTION F: SECURITY AND SAFETY		Score	Maximum Score
F1.	Is the building perimeter surrounded by a high wall or fence, with the entry guarded?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
F2.	Is access to the warehouse limited to designated staff only?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
F3.	Are windows intact and burglar-proof?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
F4.	Are the doors and windows solid and well secured?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
F5.	Is the store secured with a lock and key, but accessible during normal working hours?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
F6.	Is firefighting equipment available; do the labels on the firefighting equipment indicate that it was serviced within the last year?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
F7.	Are staff trained on how to use the firefighting equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
F8.	Are items of personal protective equipment being used (gloves, boots, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
TOTAL			___/8
SCORE FOR THE SECTION			___%

Additional Notes

SECTION G: HUMAN RESOURCES		Score	Maximum Score
G1.	Does the facility have personnel responsible for warehouse management (supervisor); are they present and accountable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
G2.	Is an organizational structure and chart posted that shows each warehouse-related post?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
G3.	Are enough staff available to run the warehouse; do they have authority to oversee warehouse management?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
G4.	Are records of external visits or audits maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
G5.	Are job descriptions posted for all positions at the warehouse?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
G6.	Are up-to-date SOPs for all functions and processes posted onsite?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
G7.	Is active on-the-job training available for staff?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
G8.	Is a process in place for new hire orientation?	<input type="checkbox"/> Yes <input type="checkbox"/> No	1
TOTAL			___/8
SCORE FOR THE SECTION			___%

Additional Notes



**Warehouse Assessment Questionnaire Scoring Sheet Results**

SECTION	KEY STRENGTHS	KEY WEAKNESSES	SECTION SCORE
A. Warehouse Infrastructure Planning			
B. Layout Planning and Operations Efficiency			
C. Warehouse Equipment			
D. Special Storage Requirements			
E. Inventory Management			
F. Security and Safety			
G. Human Resources			

## Appendix 2

# Warehouse Performance Matrix

The four categories of performance measurement include—

- quality
- response time
- cost
- productivity.

In each category, we define the metrics, provide a formula, and described the purpose and issues related to the metric, as well as the sources needed to obtain data for the metric and requirements for the data.

To help relate the 13 metrics back to the warehouse self-assessment, they are organized to match the categories reviewed in the self-assessment.

If a certain category in the assessment has a low score, use the metrics listed here to show how any interventions in this area have improved the performance.

### 4.3.1. Infrastructure

- a. Total Warehousing Cost

### 4.3.2. Layout and Operations Capacity

- a. Warehouse Order Processing
- b. Put-away Time
- c. Put-away Accuracy
- d. Picking Accuracy Rate
- e. Percentage of Storage Space Dedicated for Handling

### 4.3.3. Warehouse Equipment and Storage:

- a. Storage Space Utilization
- b. Value of Product Damaged in the Warehouse

### 4.3.4. Special Storage

### 4.3.5. Inventory Management

- a. Inventory Accuracy

### 4.3.6. Security & Safety

- a. Warehouse Accident Rate
- b. Defined Security Measures

#### 4.3.7. Human Resources

##### a. Units Moved Per Person Per Hour

### **Warehousing/Storage:**

### **QUALITY**

#### **A. Inventory Accuracy Rate**

##### **Definition:**

This indicator measures the percentage of warehouse or storage locations that did not have inventory discrepancies when stock cards were compared to a physical inventory count out of the total number of locations under review, during a defined period of time. Alternatively, this indicator can be calculated for a single facility as the percentage of months or quarters with no inventory discrepancies out of the total number of months or quarters in the review period (e.g., annual).

##### **Formula:**

Alternatively, this indicator can be calculated for a single facility as the percentage of months or quarters with no inventory discrepancies out of the total number of months or quarters in the review period (e.g., annual).

$$\frac{\text{number of storage locations with no inventory discrepancies}}{\text{total number of storage conditions under review}} * 100$$

$$\frac{\text{number of months/quarters with no inventory discrepancies}}{\text{total number of months/quarters in review period}} * 100$$

##### **Purpose and Issues:**

The inventory accuracy rate can be used to assess the overall inventory control performance for a group of storage facilities or for one storage facility over a set of review periods. Inventory accuracy is critical for managers to know how much they have in stock at any given point in time and to know when a new order must be placed to replenish stock. This discrepancy analysis can help managers identify storage locations that are having problems with inventory management; the analysis can lead to opportunities for improvement.

<b>Data Sources</b>	<b>Data Requirements</b>
<ul style="list-style-type: none"><li>• Stock cards and inventory reports from information systems, etc.</li><li>• Physical inventory report</li><li>• Storage location listing.</li></ul>	<ul style="list-style-type: none"><li>• Inventory discrepancy calculations for each storage facility included in review</li><li>• Total number of storage locations under review</li><li>• Total number of months/quarters in review period.</li></ul>

#### **B. Put-Away Accuracy**

##### **Definition:**

This indicator is the percentage of items placed in the correct location or bin in a warehouse or storage area.

**Formula:**

$$\frac{\text{number of items in correct location}}{\text{total number of items}} * 100$$

### Purpose and Issues:

This indicator measures a facility's ability to stock items in the correct location so they can be quickly and easily located. This can indicate whether staff is practicing good warehousing practices and guidelines.

This indicator can be measured during a site visit or during periodic checks at the facility over a specified length of time. For example, during a quarterly period, the number of times items were found in the wrong location.

Data Sources	Data Requirements
<ul style="list-style-type: none"><li>• Site visits for visual inspection of location of items</li><li>• Map or guidelines of intended storage locations for products.</li></ul>	<ul style="list-style-type: none"><li>• Number of items in their correct location in the storage area</li><li>• Total number of items in storage area under review.</li></ul>

### Related Indicators:

$$\frac{\text{number of items in correct location and also in the correct quantities}}{\text{total number of items}} * 100$$

## C. Picking Accuracy Rate

### Definition:

This indicator is defined as the percentage of items or lines picked accurately (i.e., the correct items and quantities) from storage, based on a request or packing list, and then placed into the appropriate container.

### Formula:

$$\frac{\text{number of items of lines picked without errors with correct items and quantities}}{\text{total number of items or lines picked}} * 100$$

### Purpose and Issues:

This indicator measures whether items are accurately selected from storage and placed into a container to be shipped to the requesting facility. It can reveal the ability of the facility to pick requests correctly in terms of quantity and item. Errors can result in stockouts or overstocks at the ordering facility. To collect data for this indicator, a review of items just before they are loaded for transporting can be conducted to determine the accuracy of picked items compared against an invoice or requisition form. It can be calculated for a single order or for all orders during a defined period of time.

Data Sources	Data Requirements
<ul style="list-style-type: none"><li>• Order requests</li><li>• Packing list</li><li>• Physical count.</li></ul>	<ul style="list-style-type: none"><li>• Quantities ordered</li><li>• Quantities picked.</li></ul>

## D. Warehouse Accident Rate

### Definition:

This indicator measures the total number of accidents occurring in a warehouse or other storage facility during a defined period of time.

### Formula:

Number of accidents occurring at the storage location per  
hour/day/week/month/quarter

### Purpose and Issues:

This indicator can reveal poor warehouse management and practices, untrained staff, unclear safety guidelines, faulty equipment, or poor conditions. It can help pinpoint areas that need improvement by determining the cause of the accidents—because of human error or other reasons. With intervention, accidents should decrease in frequency.

Data Sources	Data Requirements
<ul style="list-style-type: none"><li>• Interviews with warehouse staff</li><li>• Incident reports</li><li>• Visit of warehouses.</li></ul>	<ul style="list-style-type: none"><li>• All accident reports during a specified period of time.</li></ul>

### Related Indicators:

- Average number of accidents per hour/day/week/month/quarter.

## E. Defined Security Measures

### Definition:

This indicator measures whether guidelines or standard operating procedures (SOPs) are in place that provide instructions to prevent theft or leakage at a given storage location.

### Formula:

Are warehouse guidelines or standards in place that define the security measures? (yes/no)

### Purpose and Issues:

Implementing proper security measures at storage facilities will help prevent theft and leakage of products, thus saving money and increasing the availability of commodities. The program should have defined and detailed instructions for facilities to follow to ensure that the facility is secure and the products protected. Evaluators should also assess the quality or thoroughness of these guidelines or SOPs and the facilities' level of adherence.

Data Sources	Data Requirements
<ul style="list-style-type: none"> <li>Security measures</li> <li>Interviews with staff.</li> </ul>	<ul style="list-style-type: none"> <li>Warehouse or storage location SOPs and/or security guidelines.</li> </ul>

## **RESPONSE TIME**

### **A. Warehouse Order Processing Time**

#### **Definition:**

This indicator measures the average amount of time (e.g., minutes, hours, days, weeks) from the moment an order is received at the storage facility until the time the order is actually shipped to the client. The order processing time can be calculated for a specific shipping facility averaged across orders or, on average, for orders to a specific client or for a specific product.

#### **Formula:**

$$\frac{\sum (\text{date \& time order is shipped} - \text{date and time shipping order was received})}{\text{total number of orders processed}}$$

#### **Purpose and Issues:**

This indicator helps monitor the order processing performance and the efficiency of a shipping facility. It also helps identify opportunities for improving staff performance in order management and a facility's response time.

Data Sources	Data Requirements
<ul style="list-style-type: none"> <li>Order requests</li> <li>Shipping log reports.</li> </ul>	<ul style="list-style-type: none"> <li>Date and time shipping order was received</li> <li>Date and time order is shipped</li> <li>Total number of orders processed.</li> </ul>

### **B. Customs Clearance Cycle**

#### **Definition**

This indicator measures the amount of time (e.g., minutes, hours, days, weeks) from the moment the cargo arrives in the port or airport until the moment that it clears customs, arrives at the warehouse, and is ready to be put away. This indicator can be calculated by product or supplier, or the average across products or suppliers, during a specified period of time. If other factors affect getting the product from the port to the warehouse, such as a lack of equipment at the port facility, evaluators can scale this calculation down to the specific amount of time that the products were sent to the customs office until the customs office cleared and released them.

#### **Formula:**

$$\text{Warehouse arrival date and time} - \text{port/airport arrival date and time}$$

#### **Purpose and Issues:**

The indicator can help identify delays in customs clearance and, with additional research, the causes involved—such as incomplete paperwork, poor material description, missed certificate of

origin, etc. Based on the result, opportunities for improvement can be identified and actions taken to minimize the amount of time required for products to clear customs and to be made available at the warehouse.

Data Sources	Data Requirements
<ul style="list-style-type: none"> <li>Packing lists, invoices, entry notice</li> <li>Receiving report</li> <li>Customs reports.</li> </ul>	<ul style="list-style-type: none"> <li>Cargo arrival date at the port/airport</li> <li>Cargo arrival date at the warehouse.</li> </ul>

#### **Related Indicators:**

- Average customs clearance time per month/quarter/year
- Average customs clearance time for a specific product per month/quarter/year.

### **C. Put-Away Time**

#### **Definition:**

This indicator measures the amount of time it takes from when a product(s) is unloaded from a truck, after arriving at a warehouse or other storage location, to when it is stored in its designated place and is ready for picking. This indicator can be calculated by product, or by shipment, or as an average across products or shipments, during a specified period of time.

#### **Formula:**

Date and time product(s) unloaded    date and time product(s) stored in designated spot

#### **Purpose and Issues:**

Measuring the put-away time can help improve productivity by monitoring the efficiency of the put-away processes and the staff responsible for the task. It can help managers identify work conditions or processes that need improvement, as well as the need for staff training.

Data Sources	Data Requirements
<ul style="list-style-type: none"> <li>Shipment receipt vouchers</li> <li>Time sheet for put-away activity per employee</li> <li>Number of employees.</li> </ul>	<ul style="list-style-type: none"> <li>Put-away time in hours</li> <li>Quantity of pallets or volume in cubic meters.</li> </ul>

#### **Related Indicators:**

- Average put-away time for all products per month/quarter/year
- Average put-away time for a specific product or shipment per month/quarter/year.

## **COST/FINANCIAL**

### **A. Total Warehousing Cost**



**Definition:**

The total warehousing costs collect all costs related to warehousing, such as labor costs and warehouse rent; or mortgage payments, utility bills, equipment, material- and information-handling systems, etc. It also includes costs related to systems, supplies, and any other material used specifically in warehousing. This indicator is usually measured annually.

This indicator can also be calculated as the total warehousing cost per piece/ stockkeeping unit (SKU)/product/line by dividing the total warehousing cost by the quantity of stocked units or by the volume of stocked items in cubic meters (m<sup>3</sup>), per storage area (m<sup>2</sup>), or program.

**Formula:**

Total warehousing cost = sum (labor, space, utilities, material, equipment, information systems, etc.)

$$\frac{\text{total warehousing cost}}{\text{quantities of stocked units or m}^3 \text{ or m}^2}$$

**Purpose and Issues:**

Using this indicator, managers can monitor the costs of different components in a warehouse, as well as compare costs between different warehouses. It can help identify the most cost-effective warehouses, and can also lead to an analysis of best practices.

Dividing total warehousing costs by units or area can also indicate storage usage, cost effectiveness, etc. By dividing the warehousing costs per SKU, this indicator provides the management team with excellent detailed cost visibility.

Data Sources	Data Requirements
<ul style="list-style-type: none"> <li>Yearly accounting sheets</li> <li>Payroll.</li> </ul>	<ul style="list-style-type: none"> <li>Labor cost</li> <li>Warehousing space cost (per m<sup>2</sup>)</li> <li>Cost of warehousing material</li> <li>Equipment costs</li> <li>Total inventory on hand in units (or volume m<sup>3</sup>).</li> </ul>

**Related Indicators:**

- Average inventory cost per storage point.

**B. Value of Product Damaged in the Warehouse****Definition:**

This indicator calculates the value of products damaged, during a defined period of time (usually one year), in the warehouse, as a percentage of the value of all shipped products during that period.

**Formula:**

$$\frac{\text{total value of damaged products}}{\text{value of shipped products}} \times 100$$

### Purpose and Issues:

Inappropriate warehousing conditions or handling of products can lead to inventory damage. This indicator can help put the value of products damaged into perspective and can be used to help identify the causes, as well as, the actions needed to avoid such damages, including better infrastructure, manpower, training, etc.

Data Sources	Data Requirements
<ul style="list-style-type: none"><li>• Invoices from vendors</li><li>• Inventory reports, issue vouchers</li><li>• Stock records</li><li>• Accident reports</li><li>• Damage reports.</li></ul>	<ul style="list-style-type: none"><li>• Value of damaged products</li><li>• Value of shipped products.</li></ul>

## PRODUCTIVITY

### A. Storage Space Utilization

#### Definition:

Storage space utilization indicates the percentage of the total storage space actually being used out of the total storage space available.

#### Formula:

$$\frac{\text{total storage space in use (m}^3\text{)}}{\text{total storage space available (m}^3\text{)}} \times 100$$

### Purpose and Issues:

Based on this indicator, managers can monitor storage capacity and utilization at a warehouse. By assessing storage space utilization, managers can look for opportunities to improve storage capacity (e.g., remove expired products, dejunking, reorganizing) and maximize the use of the storage space, or request a re-evaluation of layout, material flow, shelves disposition, etc.

Data Sources	Data Requirements
<ul style="list-style-type: none"><li>• Inventory reports</li><li>• Warehouse floor plan</li><li>• Site visit.</li></ul>	<ul style="list-style-type: none"><li>• Total in use storage area: volume of inventory in stock (m<sup>3</sup>)</li><li>• Total storage space capacity (m<sup>3</sup>).</li></ul>

### B. Units Moved Per Person Hour

#### Definition:

This indicator measures the number of units (e.g., boxes, pallets) or weight moved during a defined period of time, per person hour, for each person working during that period. It can be considered both when receiving and shipping inventory.

$$\frac{\text{total number of units moved (or weight)}}{\text{total number of person-hours}}$$

**Purpose and Issues:**

This indicator helps measure material handling productivity for a period of time (hours, days, or months). It helps compare productivity levels in different working shifts or different warehousing locations. It can be a source for identifying needs for training and measuring its effectiveness.

Data Sources	Data Requirements
<ul style="list-style-type: none"><li>Receiving reports, invoices, packing lists</li><li>Time sheets, punch cards.</li></ul>	<ul style="list-style-type: none"><li>Number of units moved (receiving or shipping) during a specified time period, per person</li><li>Total persons and hours spent moving material during a specified time period.</li></ul>

**C. Percentage of Storage Space Dedicated to Product Handling****Definition:**

This indicator measures the percentage of total storage area that is dedicated specifically to product handling (receiving, unloading, packing, loading, and dispatching).

**Formula:**

$$\frac{\text{storage area dedicated to product handling (m}^2\text{)}}{\text{total storage area (m}^2\text{)}} \times 100$$

**Purpose and Issues:**

For an average volume of products, it is recommended that a certain percentage of the storage area be dedicated specifically to product handling. The amount of handling space needed depends on the volume of product moving through the storage area and the equipment required to move the products. This dedicated area is critical for the efficient operations of the storage facility as it allows for organized and efficient receiving, unloading, packing, loading, and dispatching of products; and it protects products from the elements during receiving and packing.



## Appendix 3

# Storage Guidelines

1. Clean and disinfect the storeroom regularly. Take precautions to prevent harmful insects and rodents from entering the storage area.	<p>Rodents and some insects—for example, termites and roaches—like to eat certain health commodities, like oral contraceptives. They also eat shipping cartons and inner packaging. Pest-proof your store to stop the pests from getting in. If your store becomes infested, use appropriate pesticides and also cats, which are effective against termites, rodents, roaches, etc.</p> <p>After you clear pests from the store, keep it clean. A clean store keeps pests away. Food and drinks in the warehouse increase the risk of pests.</p>
2. Store health commodities in a dry, well lit, well-ventilated storeroom—out of direct sunlight.	<p>A hot store may cause damage to some of the commodity supplies, which will <i>decrease shelf life</i>. For example, the shelf life of oral contraceptives and condoms is usually 4 to 5 years. However, the shelf life, particularly for condoms, will probably be much shorter if the temperature inside the warehouse rises above 40°C.</p> <p>Use ceiling fans and/or forced ventilation. Direct exposure to sunlight can also reduce the shelf life of commodities. Use roofing and windows that shade the interior of the store from sunlight. Store supplies in their shipping cartons.</p>
3. Protect storeroom from water penetration.	<p>Water can destroy commodity supplies or their packaging. If packaging is damaged, the customer will not want the product, even if the commodity is undamaged. Repair the warehouse so water cannot enter.</p> <p>Stack commodity supplies off the floor on pallets (at least 10 cm off the floor and 30 cm away from walls), because moisture can seep through walls and floors and into the commodity supplies.</p>
4. Keep fire safety equipment available, accessible, and functional. Train employees to use it.	<p>Stopping a fire before it spreads can save considerable money in stored commodities and save the storage space. Keep fire extinguishers accessible and in working order. Keep one extinguisher near the door and others throughout the inside of larger warehouses. Ensure that the right equipment is available—use water on wood and paper fires but do not use it on an electrical or chemical fire.</p>

5. Store latex products away from electric motors and fluorescent lights.	Latex products, including condoms, can be damaged if they are directly exposed to fluorescent lamps. The lamps and electric motors produce a chemical called ozone, which can rapidly deteriorate condoms. Move condom boxes away from these sources. Leave condoms in paper boxes and cartons.
6. Maintain cold storage, including a cold chain, as required.	Cold storage, including the cold chain, is essential for maintaining the shelf life of certain drugs. After these items are removed from cold storage, they become irrevocably damaged. If electricity is unreliable, bottled gas or kerosene-powered refrigeration may be needed. For immunization campaigns, cold boxes or insulated coolers may be sufficient for rapid transport.
7. Limit storage area access to authorized personnel. Lock up controlled substances.	To ensure that all stock movement is authorized, lock the storeroom, limit access to persons other than the storekeeper and his/her assistants, and verify that both incoming and outgoing stock matches the documentation. Periodically perform a systematic physical inventory to verify inventory records.
8. Stack cartons at least 10 cm off the floor, 30 cm away from the walls and other stacks, and no more than 2.5m high.  Note: This may not be possible in all health centers.	Use pallets to keep products off floors where they will be less susceptible to pest, water, and dirt. Stack pallets away from walls to promote circulation and prevent cartons from moisture damage; place them far enough apart so an employee can walk completely around each pallet. This promotes air circulation and facilitates movement of stock, cleaning, and inspection.
9. Arrange cartons with arrows pointing up (↑), with identification labels, expiry dates, and manufacturing dates clearly visible.	Arrows indicate that the commodity should be stored with the arrows pointing up. If shipping cartons do not show either a date of manufacture or an expiration date, clearly mark the date of receipt of supplies at the receiving warehouse on the cartons and bin cards.  Write large, easy-to-read numbers with a marking crayon. If the original markings are small or difficult to read, rewrite the manufacturing or expiration dates in large numbers.
10. Store health commodities to facilitate FEFO procedures and stock management.	Ensure FEFO is followed; recently received commodity supplies may sometimes be <i>older</i> than the store's existing stock.
11. Store health commodities away from insecticides, chemicals, flammable products, hazardous materials, old files, office supplies, and equipment; always use appropriate safety precautions.	Insecticides and other chemicals may affect the shelf life for many products. Storing old junk may slow down access to products. Some medical procedures require the use of flammable products. Bottled gas or kerosene is used to power refrigerators, alcohol is used in sterilization, and mineral spirits is used to power Bunsen burners. Store these products away from other products, near a fire extinguisher.

12. Separate damaged and expired health commodities from usable commodities, remove them from inventory immediately, and use established procedures to dispose of them.	By separating these products, it is easier to implement FEFO. By destroying damaged products immediately, more space will be available.
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## Appendix 4

# Seven Steps for Dejunking

If storage space at your facility is being compromised by too many expired and damaged stock taking up valuable space on your shelves, consider dejunking, or methodically removing these materials. Use these steps to guide you in this process.

### Step 1: Get Prepared

**Step 1** of the seven steps for dejunking should begin almost immediately after you return to your site. Review the list below and discuss the list with your trainers and colleagues in the workshop. Do you want to add any items to the list? Are some items unclear? Should the items be in a different order?

- Try to reschedule significant incoming or out-going shipments on the days when you plan to dejunk your space.
- Remind your colleagues or supervisors that you plan to take significant quantities of damaged or expired products (DEPs) and junk out of the warehouse and you will stack them where they cannot be stolen until they are destroyed (if they are DEPs) or sold or given away (if they are junk).
- This is a good time to begin organizing a destruction committee, but do not delay the dejunking process until you have the committee organized.
- Take *Before* photos throughout the warehouse. Make sure the photographs show the real condition of the storage place. You will use these photographs to compare with the *After* photographs so that the difference is completely clear. Put the *Before* and *After* pictures on display in the warehouse so your supervisor and colleagues can see the changes.
- Be sure you have the right basic equipment; you may need to borrow some. The basics include calculators, a trolley to carry boxes, several brooms, and large dustbins. Clip boards are very useful as you do inventories and bring your records up-to-date. Markers or chalk can be used to mark DEPs. Get additional copies of bin cards and stock record cards in case you need them; photocopy them if necessary. Everyone should wear appropriate clothes. Dejunking can be very dirty work!
- If others are going to help you, schedule the days they will be there. You may need extra people for steps 2, 3, and 6. Make sure you have exact jobs for everybody to do and give them clear instructions. You do not want them to waste time or do double work. An example is that some people can be taught to check all the stock and mark DEPs and put them on the inventory form. (See annex A and B in this handbook.) Other people can pile this stock outside.
- What other actions will help you prepare?

### Step 2: Increase Your Storage Space



In step 2, you can begin increasing your storage space. You will remove two types of materials from your warehouse.

**Junk** is the first type to remove. These are the inappropriate items that are not public health commodities: office equipment, old furniture, tires and other vehicle parts, and containers of chemicals. There are many other types of junk. This junk may have some value and may be usable, but it does not belong in a storage place for essential medicines and contraceptives.

**DEPs** are the second type to remove. They are the various medicines, contraceptives, and related products that are past their shelf life or have been damaged and can no longer be given to clients.

Inventory both types of materials as you take them out of the warehouse. Keep a record of what you *dejunk*.

Plan your strategy so you can work quickly and use the people helping you efficiently. Some sub-steps of the suggested strategy are—

**Sub-step 1: Make safety your first consideration.** You do not want anybody to be injured. Accidents can happen if people climb on shelves, if shelves or boxes of stock fall on them, if chemicals are spilled, etc.

**Sub-step 2: Ensure that everyone knows their job.** The people working on the dejunking team need to know their specific duties and what system is being used. Who will inventory the junk? Who is identifying DEPs and inventorying them? How are DEPs being marked? Who is using what equipment? Who is stacking items outside the warehouse? Where are they putting them?

**Sub-step 3: Take out items that will give you the most work space the fastest.** This will usually be the large and obvious things, such as old tires, furniture, and other large pieces of *junk*.

**Sub-step 4: Use a clipboard.** Keep an inventory list of all of the junk and damaged and expired stock as it is taken out.

**Sub-step 5: Pile similar items together outside the warehouse.** For example, put all the old furniture together, all the vehicle parts together, and so on. This will make it easier for you and colleagues or officials who will move, sell, or give away the junk.

**Sub-step 6: Identify expired stock by looking at the expiration (EXP) date.** This is the date the product will expire and no longer usable. An exception is if stock is marked only with the date of manufacture. This is usually written as the manufacturing date (*MFG*). If only *MFG*, and not *EXP*, is marked, count the shelf life from the *MFG* date. *EXP* and *MFG* are, of course, always marked in the European calendar.

**Sub-step 7: Put separated stock in one location.** Separated stock is the same product stored in more than one place in the warehouse. The separated stock might have the same expiration date. Correct your bin card and/or stock record card as you work. You may have two forms for the separated stock and you may need to combine the two forms into one corrected form with the totals and other information. Write a note that the increase in stock was because separated stock was combined. Discard the bin card that is no longer needed.

**Sub-step 8: Do not pile DEPs in one large mixed pile as you take them out of the warehouse.** Pile them by product. For example, keep all the expired amoxicillin together; also,

all the expired or damaged Microgynon, and so on. You can easily recheck your inventory, and the destruction committee can confirm exactly the quantities will be destroyed.

**Sub-step 9: Use this test to identify *damaged* products that cannot be used:** If the product is damaged and you would not use the product yourself, or give the product to a family member, it is DEP and should be destroyed. The damage could be from crushing, water damage, insects or rodents, etc. On the inventory form, mark the type of damage.

**Sub-step 10: Do not open unopened expired boxes.** If an unopened box of something is past the expiration date, do not open it. The entire box is expired. If the box has been opened, however, check to see if all the products in the box are really expired. Put any unexpired units with the good stock that you will keep.

**Sub-step 11: Open damaged boxes.** Unless it is obvious that the entire box is damaged, open the box to see if all the units inside are damaged. Are they all crushed or water damaged? If some of them are not damaged, take them out and put them with the good stock that you will keep.

**Sub-step 12: Do not use quality storage standards as you pile the DEPs outside.** These are bad products waiting to be destroyed! Pile them on the ground in the sun or even the rain. However, be sure you are leaving them in a place where they cannot be stolen. You do not want children to play with them or somebody to attempt to sell them on the black market.

**Sub-step 13: Do not ship out nearly expired products.** You have to be sure that the nearly expired products can be given to clients in enough time before they expire. For example, unless you are in an urban area with very short lead times, if you are at the zonal level and you have pills that have four months of shelf life left, do not ship them out. Keep them until they expire and then count them as DEPs. It will take too long for them to get to the woreda, then to the service delivery point (SDP), and the client. They will expire first. One solution is possible if there is a nearby clinic or SDP not far from your warehouse that is willing to accept them because they can give them to clients before they expire.

**Sub-step 14: Estimate the *new* storage space you gained.** Use the inventory forms for DEPs and junk to estimate. For example, if the DEPs for one product make a pile of about 50 centimeters by one meter, by one meter, mark one-half of a cubic meter for that product. Make similar estimates for all the junk you removed. The estimate does not have to be exact; you only need a general idea. It is not unusual to find that you have five or ten cubic meters, or much more, of *new* storage space. This is a good estimate to have during an Open House and when you do resource mobilization. It is a measure of your good work.

You have completed **step 2** when you have inventory sheets that lists all the junk and DEPs and they are piled outside the warehouse. At this point, your warehouse will look very different. You are making progress!

### **Step 3: Use Shortcuts to Clean the Warehouse**

After you remove the junk and DEPs from your warehouse, you can begin the serious cleaning. The following shortcuts will save time.

- Make sure you have the best tools you can find. Borrow them, if necessary. Try to have enough tools, including cleaning materials, such as brooms, shovels, dust bins, cleaning clothes, soap, etc. For example, you will waste time if the people helping you are standing around because you do not have enough brooms. If you have electric power, an electric cleaner will be a major help. Be sure the extension cords will reach the whole warehouse.
- Remind people to wear appropriate clothes. Cleaning can be dirty work!

- Clean from the top to the bottom. Clean off the tops of boxes and high shelves first. If you sweep the floors first, you will just have to sweep them again as you clean off the boxes and shelves that are higher up.
- Clean and sweep from the back to the front door, or if you have doors in the back and the front, start in the middle and go toward the doors.
- Sweep dirt into small piles and pick up the piles. Sweeping dirt into one large pile takes more time and creates more dust.
- In extreme cases, you may want to sprinkle water on the floor to help control dust. This could help keep the boxes from being covered in dust again.
- Clean windows and walls last. If you do them first, they can just get dirty again as you sweep the floors and dust rises into the air.
- If you are lucky enough to get an electric cleaner, get electric cords that are long enough to reach the whole warehouse.
- Start very early in the morning if the weather will be hot.
- What other shortcuts can you think of?

#### **Step 4: Destroy the Bad Stock: the DEPs**

- Destruction of DEPs is not a regular part of the dejunking process, but it is important.
- Destroy DEPs, as soon as possible, to prevent theft or accidental distribution.
- In step 2, you made an inventory list of your DEPs, which is a requirement for the destruction process. You now have a list of what products are to be destroyed, the quantity of the products, and the specific reason for being destroyed. This information is on the inventory sheet you wrote from annex A. The destruction committee will need this document.
- If you have formed a destruction committee, you may be able to do the destruction while you continue the remaining steps in dejunking. It is a good idea to remove the stock before you have the Open House.
- By practicing the FEFO guidelines regularly, you will have fewer products that get near the end of their shelf life. Ship out the oldest stock first, unless it is already very old and might not reach the clients and be used before it expires. It is better to keep it in your warehouse until it expires rather than send it out and have it expire in another location.
- Annex C in this handbook explains the destruction process and provides advice on how to do the actual destruction.

#### *The Question of Temporary Pallets*

If you do not have any pallets, consider using the cardboard boxes from the DEPs as temporary pallets. Flatten the DEPs boxes and pile stock on them when you do not have any wooden pallets. This is only a temporary solution until you can get real wooden pallets; it is better than piling stock on the bare floor.

#### **Step 5: Doing a Physical Inventory and Updating Bin Cards and Stock Record Cards**

After you remove the DEPs and junk, cleaned, used your new floor plan, and selected an organizational system for your warehouse, the next step is to do a physical inventory—count all your stock and update your records. A physical inventory is an accurate count of the products in the warehouse to be sure the records are correct. It will show how much stock of everything you

have in your warehouse. Because of all the work you have done so far, the physical inventory will be much easier.

- You will need calculators and pens or pencils. Clipboards or similar items are useful for writing on forms while you are walking around. Keep a supply of bin cards and/or stock cards; if all the lines are full, you can start a new one.
- Start by looking for *separated stocks*. For example, you may have the same product in two or three different places. Make sure all the separated stock is in the same location so you can count it.
- It may be more effective to work in teams of two people, if possible. One person can use the calculator and count the products; the other person can write the numbers on the stock record cards and, if you have them, on the bin cards. The second person does not need to make any corrections, if the count is correct.
- Remember, the records are always kept by specific units: for example, bottles, condom pieces, or pill cycles. Do not count by boxes or cartons. Different manufacturers and donors have different size boxes or cartons. For example, *31 cartons* does not indicate how much you have. You do not know how much is in that particular carton.
- If you have unopened boxes, and the weight of the box is the same as other unopened boxes, you do not have to open the box to count the contents. Multiply the number of unopened boxes by the number of units in each box.
- If boxes are open, or if the weight does not seem to be the same as the other boxes, open the box and count the contents.
- You may need to correct four kinds of errors on your bin cards and stock record cards. They are described below, followed by instructions for correcting the four types.
  - 1) **Old errors.** These math mistakes on the bin cards and/or stock cards were there before you started dejunking. The addition or subtraction was incorrect; the errors could be positive or negative. Correct the errors now.
  - 2) **Separated stock errors.** These mistakes only happen when you have the same type of product in more than one location. Combine the stock in one place; use one bin card and/or stock card for the combined stock. Discard the old bin card and/or stock card.
  - 3) **DEPs errors.** These are the stock subtractions when you took out damaged or expired stock. The stock was not usable, and it should not count as part of your stock on hand. DEPs are always subtractions. If you had no DEPs for a product, you have no DEPs errors to correct.
  - 4) **Miscounting errors.** These mistakes are made because, at some time, someone counted the stock incorrectly. This is one of the main reasons for doing a physical count. You need to know how much stock you have. These errors could be positive or negative. When you correct the bin card and/or stock card, write the date and note that the correction was made during of a physical inventory.

### How to correct the bin card or stock card

- 1) **Correct old errors by first carefully reviewing the bin card or stock cards.** Using a calculator, determine if the addition and subtraction totals are correct. Do not cross out every number and correct everything back to the old math error; this could go back months or even years. Calculate the correct amount and write it as a new entry on the card, including the current date and a note that it is a math correction and include the date of the correction. If math errors were made on two or more dates, write the dates of all the errors you correct. Write in any corrections with today's date. Someone can look for old errors while other staff finish removing DEPs and clean the area.

- 2) **To correct separated stock errors, count all the separated stock** for a product when you put it in one place. Add all the stock on one bin card and/or stock card, write today's date, and note that this is combined separated stock. Throw away the old bin cards and/or stock cards. You do not need it, and it could cause errors later.
- 3) **Use the inventory form for DEPs from annex A to correct the DEP errors.** The DEPs were counted as good stock, but they were not good stock. Subtract the number of DEPs removed as listed on the DEPs inventory form, write today's date, and note that the subtraction was made during a dejunking.
- 4) **To correct miscount errors, add or subtract to ensure the accurate amount is on the bin card and/or stock card.** Write today's date and note that a miscount was found during a physical inventory.

### Step 6: Applying the Guidelines of Quality Storage for Health Commodities (See Storage Guidelines in appendix 3)

### Step 7: Completing the Post-Dejunking Checklist

Your dejunking is complete only when you can answer *YES* to at least the first seven items on this checklist. Complete this list before your Open House.

1. \_\_\_\_ Do you know how much stock of every product you have on hand in your warehouse? In other words—"Are your bin cards and stock cards accurate and up-to-date?"
2. \_\_\_\_ Are you using all the Guidelines of Quality Storage in step 8?
3. \_\_\_\_ Are you ready to receive an incoming shipment and enter it in the inventory accurately and quickly? (Or, if you pick up your stock from the next highest level, are you ready to enter it when you bring it back?)
4. \_\_\_\_ Are you ready to send out orders to the lower levels accurately and efficiently?
5. \_\_\_\_ Does everyone who works in the warehouse understand the organizational system you use? Do you have a map or diagram of your organizational system—by type of product or by program—on the wall near the entrance so it is always easy to see where to put the products?
6. \_\_\_\_ If you need to mobilize resources to make repairs or get needed equipment, do you have the list with the price estimates?
7. \_\_\_\_ Are you ready to show the warehouse to any visitor and explain your organizational system for placing the products?

The following are highly recommended:

8. \_\_\_\_ Do you have *before* and *after* photographs on the wall by the system diagram so that everyone remembers what the warehouse looked like before dejunking and how it should always look after the dejunking? (step 2)
9. \_\_\_\_ If you have a Storage Guidelines Chart (step 8), put it on the wall.
10. \_\_\_\_ Is the information for your Plan B, even if it is not complete, posted on the wall? This includes people to contact and telephone numbers, depending on how your Plan B works. (step 11)
11. \_\_\_\_ Do you have a shipping calendar on the wall? (Under step 13 in this handbook.)

## Appendix 5

# Making a New Floor Plan for Your Warehouse to Maximize Capacity

This is an opportunity to make your work easier and save time by designing an efficient floor plan of your warehouse. You will have much less stock than you usually have, and you can make many of the changes that you want. Follow these guided questions to help you set a new floor plan that works for your facility.

**Question 1.** What changes in your floor plan can you make that cost little or no money? For example, what items can you move to create a more efficient place? Make a list. What changes can you make at a later date after you have mobilized the resources? See annex D in this handbook.

**Question 2.** Is your packing space large enough? You must have a large space near the main door to quickly unload an incoming truck. You can use the same space to pack orders that you are sending out. Can you work with your packing space on the floor, or is it important to have some tables in the packing space for receiving and packing shipments? Keep equipment, such as a trolley or ladder, near the packing space. This is also a good place for fire safety equipment so it is always visible and accessible.

**Question 3.** Do you need wider passageways between the shelves or rows of stock? Can large boxes and trolleys move down the pathways easily?

**Question 4.** Would it be efficient to change the direction of the rows? This is likely if the rows are perpendicular to the front door and you cannot see down the rows. Usually, the rows run from front to back, so you can walk from the front door down any row to the back of the warehouse.

**Question 5.** Do you need a new opening halfway down the rows to create a new passageway through the openings and allows you to go from one row to the next without walking all the way to the end of the rows?

**Question 6.** Do you need to make a new space or more space for pallets on the floor? Some items—for example, condoms and mosquito nets—are large and occupy a lot of space. In some warehouses, these items are never put on shelves. They stay on pallets.

**Question 7.** Will any changes make better use of natural light from doors and windows? Products should not be in direct sunlight. But, it is a advantage if more indirect light goes down the passageways, rather than being blocked by the rows.

**Question 8.** Do any repairs need to be made? Make a list. Make minor repairs immediately. Major repairs may have to wait until you can mobilize the resources to pay for them. Use the

form in annex D in this handbook to list them. **Leaks in the ceiling are always a priority.** Until the leaks are fixed, do not stack or shelve stock near that area; the water will damage the stock.

**Question 9.** Do you really need any equipment? Make a list and start mobilizing your resources. Use the form in annex D in this handbook. Prioritize the items and estimate the price after each item.

**Question 10.** Do you need space for a table or desk, so you have a place to sit and keep records more easily? Where would you put it?

**Question 11.** Now, look ahead briefly to step 8 in this handbook. Step 8 explains the guidelines of quality storage. Later, you will study it as a separate step in more detail. As you redesign, pay special attention to these guidelines:

- Can you make any changes that would improve the ventilation?
- Do you have stock piled on the floor? This is a major problem in many places. To avoid water damage, always put stock on pallets or on shelves at least 10 centimeters (cms) off the floor, if possible. Obtaining pallets or shelves should be a priority on your list of equipment to mobilize resources. In a warehouse with very few resources, this can be a serious problem. If you do not have pallets or shelves, try to put your stock on flattened cardboard boxes, which will provide some protection from the floor; put them on the driest part of the floor.
- Do you have stock that touches the walls? Put at least 30 cms of space between a wall and the products to prevent moisture and heat from harming the products; the ventilation is better. Also, insects and rodents can cause unseen damage if products touch the walls.
- Is any of your stock stacked more than two and a half meters high? Change this to reduce the danger of crushing boxes.
- If you have fluorescent lights, have you stocked condoms and rubber gloves far away from these lights? (Fluorescent lights look like long white tubes. Over time, fluorescent lights will harm the latex in the condoms and gloves. If you have electric motors, such as electric refrigerators for the cold chain, keep latex products away from them.)
- Look at the other Quality Storage Guidelines to see other improvements you need to make.

**Question 12.** What else can you do that will make it easier to run your warehouse faster and easier?

After you study these questions, and looked at your own *before* floor plan, you are almost ready to draw your own *after* floor plan for your warehouse.

## Appendix 6

# Selecting a Warehouse Organizational System

Two major systems are recommended for organizing the products in your warehouse. They both have advantages and disadvantages. Compare them and decide the system that will work best for you and your warehouse.

### Organizing Products by Program

With this system, put all the products for each program together. In the example below, the six programs put the products in six groups.

- Essential Drugs—Passageways 1 and 2
- TB and Leprosy—Passageway 3
- Vaccines and other Cold Chain—Back left corner in refrigerated section
- Malaria—Half of Passageway 4, (except that treated mosquito nets are kept on pallets near the right wall of the warehouse)
- Contraceptives—Passageways 5 and 6
- HIV and AIDS—Other half of Passageway 4.

Notice that not all the programs have the same amount of space because not all programs have the same amount of products.

One advantage of organizing products by program type is that when visitors from a particular program come to see your warehouse, it is very easy to show them the exact location of the products.

However, there are disadvantages. Organizing products by program can take up more storage space. You may need to have duplicate recordkeeping if the same product is used in two different programs. You may be limited if you want to use a product from one program for another program. And, sometimes a product will expire, or get close to expiring, when it is reserved for a particular program.

Organizing products by program is not perfect, but organizing products by type is not perfect either. Both organizational systems have disadvantages. You must choose the system that works best for you.

### Organizing Products by Type

In this system, products are grouped by type. In the simple example below, several types are listed, but your warehouse may have more types or fewer types. You may decide to use different ways to categorize them.



- Pills and capsules, arranged alphabetically by generic name, then by size
- Syrups, arranged alphabetically by generic name, then by bottle size
- Creams and ointments arranged alphabetically by generic name
- Expendable medical supplies (bandages, gloves, cotton balls, syringes, etc.)
- Durable medical supplies (scales, medical instruments, stethoscopes)
- information, education, and communication/behavior change communication materials, various blank forms
- Mosquito nets
- Cold chain products.

### **No matter which system you use—**

- With any system, always keep cold chain products together.
- Put *fast moving* products near the main door as much as possible. This means keeping products that are frequently shipped in and out should be close to the front. Put products that move more slowly farther back. For example, if Microgynon and other contraceptives are fast moving, put them close to the door. It is better to walk a few meters than to walk to the back of the warehouse every time you bring some in or ship some out.
- The exception may be certain bulky products that you always keep on pallets in a certain part of the warehouse, regardless of what system you use. Mosquito nets and boxes of condoms are two examples.
- Put heavy products on lower shelves or on pallets to avoid lifting them and to prevent them from falling on someone.

### **How do you choose a system?**

No system is perfect, but consider these points when you select a system for your warehouse:

- Is it easy to use correctly to prevent errors in the records?
- Is it easy to place incoming shipments in the right place?
- Is it easy to find products for out-going orders?
- Is it easy to understand and use, even with new untrained staff?
- Is it easy to explain to visitors or officials from various programs?
- Does it reduce distances for walking and carrying fast-moving products?
- Is it what you need for the conditions in your warehouse?

### **After you chose your system—**

#### **▪ Here are the basic points:**

- 1) At the bottom, write a numbered list of your products by type **or** by program.
- 2) Draw your new floor plan.
- 3) Put in the numbers from your list at the bottom of the page.
- 4) Redraw, as necessary. You may want to change the first version of your drawing. You learn each time you draw.

- **Draw a very large version of your prospective warehouse.** If you do not have very large paper, put six or eight sheets of ordinary paper together to make a large map.
- **Use it like a map of your new floor plan and the system that shows which product types or which programs go where.** Put the map on the wall. Make sure everybody who is working with you understands the map of your new warehouse floor plan; it shows where you put products according to the system you picked: organized by program **or** by type of product.
- **Put up signs at the end of each row** to help avoid mistakes and to save time. As a simple example, the signs could say—
  - Row 1—Essential Drugs
  - Row 2 TB and Leprosy
  - Row 3—Family Planning
  - Row 4—Family Planning Continued.
- **Put the various products in their place, based on the new system.** This will take time, but after the new system is working, you will save time everyday.
- **Keep the bin cards with the products as you move them.**
- **Practice FEFO.** Put the oldest stock in front of the newer stock on shelves and on top of newer stock on pallets to ensure the older stock goes out first. You will be able to fill orders much faster.
- **Leave extra shelf space for the incoming shipments.** For example, do not put all the Microgynon pills and all the Lo-Femenal pills side by side. Leave adequate space between them for the next shipment. You have more room than before. Use it.



## Appendix 7

# The Six Rights of a Logistics System

Are you doing your part to ensure that the Six Rights are being met for those you serve through this warehouse?

The **RIGHT** goods in the  
**RIGHT** quantities in the  
**RIGHT** condition delivered to the  
**RIGHT** place at the  
**RIGHT** time for the  
**RIGHT** cost.







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