

Logistics Management Training for District Storekeepers

Participant Manual



Department of Health, Government of Sindh

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Acknowledgement

The complexity of work at the district storage facilities requires trained staff and defined standard operating procedures to receive, store and distribute health commodities. In this context the development of the *Manuals for Training of District Storekeepers on Logistics Management* becomes an important initiative. The training will contribute to capacity building of district storekeepers on the fundamentals of best storage and store management practices. It will also help to strengthen the understanding of storekeepers in important areas of quality assurance and monitoring and supervision of stores at all levels of supply chain.

The *Participant Manual for Training of District Storekeepers on Logistics Management*, made possible by the support of USAID, through the USAID | DELIVER PROJECT, is a comprehensive manual of its kind for training of district storekeepers.

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COURSE GOALS AND OBJECTIVES

Course Goal:

To develop the knowledge and skills of the storekeeper in logistics management and specific issues related to the management of family planning vaccine commodities.

Course Objectives:

By the end of the course, the participants will be able to:

- explain their responsibilities
- organize the store per layout principles and storage guidelines
- contribute in determining quantity requirements and submit an indent
- receive and issue commodities per established procedures
- conduct physical inventory
- maintain the quality of commodities
- self-monitor store activities

GUIDELINES FOR THE PROPER STORAGE OF HEALTH AND FAMILY PLANNING COMMODITIES

1. Clean store at least once a week.
2. Arrange products in alphabetical order by generic name,
3. Store commodities away from direct sunlight and in a dry, well-lit and well-ventilated storeroom.
4. Keep the fire safety equipment (fire extinguisher/buckets with water & sand) in working condition and in easily accessible places.
5. Store latex products (condoms, rubber gloves) away from electric motors and fluorescent lights.
6. Store narcotics and other controlled substances (inj. Pathedine), life saving drugs (inj. solucortef, inj. aminophyline, inj. sodium bi-carbonate, etc.) and theft-prone items in a locked almirah.
7. Store chemicals and flammable items at a marked place away from medicines and contraceptives.
8. Place commodities on dunnage, racks and shelves so that they are off the floor and away from the walls.
9. Arrange cartons and boxes to ensure first expiry first out (FEFO) and that arrows point up (↑), and identification marks/labels and manufacturing and expiry dates are visible
10. Store office supplies, equipment and old files separately from medicines, contraceptives and other health supplies.
11. Separate and store unusable health commodities at a marked place away from usable commodities and dispose of them at the earliest following established procedures

STORAGE LAY-OUT PRINCIPLES

1) The subject of space calculation seems complicated. Do I need help from technical experts? Perhaps. You can do some initial calculations to see how much space you will probably need. If you believe your future needs will be more than 20% of your current warehouse capacity, you will need to expand your space or even build a new facility. You will need to collaborate with specialists. Their expertise will help you save time and money and avoid costly errors. The USAID | DELIVER PROJECT can refer you to experts.

2) What if I don't even have enough space now?

If you are already short of space, you first have to calculate how much more space you need now so that you can store correctly and apply the Quality Storage Principles to protect your products. Calculate your shortage so you can add this amount to the future space needs.

3) What if I have more space than I need now?

If you do have more space than you need, calculate how much that “extra” space really is. Measure only the space that stays empty. Do not count the space that is empty only when a shipment goes out but fills up again when another shipment comes in. And do not count the handling and packing space or the aisles as extra. When you do calculations for future space needs, you subtract this “extra” from the future needs because you already have it. Maybe you will have no problem for the next few years.

4) What about the new space we got from dejunking?

You should subtract the amount of space you gained by dejunking. This will be “new” space that will help solve your problem. In many warehouses, dejunking greatly increases storage capacity and eliminates the need for more space, at least for a number of years.

5) How do you know how much space you will need?

You have to do an estimation with calculations, but you can make it a good estimation. The basic methodology is simple

6) How many years should the calculations cover?

Start by calculating for one year. Then project the calculations into two years or three years. As with any type of projection, your first year will be the most accurate, and the further you go into the future, the lower your accuracy will be. But it is wise to project for at least three years to give yourself lots of lead time to identify funding, get technical assistance, and have sufficient construction time. It is also wise to update the calculations at least annually, or more often if your needs change rapidly.

7) Where do I start?

It is a good idea to start with your “jumbos.” Jumbos are the most important products to consider when calculating future space needs. These are the products in your warehouse that take up a lot of space because they have large carton size or because they are in large quantities or both. Every warehouse is a little different, and you and your colleagues working in the warehouse will know what products are the true jumbos. You should make a list of the ten or twenty biggest jumbos and begin your work with these products. On the list, include the carton size and number of units of the product per carton. Condoms and insecticide treated mosquito nets are very common on this list.

8) Where do I get information on carton or box size?

For products already in your warehouse, you simply multiply the length, width, and height of a carton of that product. ($L \times W \times H = \text{Volume}$).

If you don't have the product yet, but you know it is coming, you have to call for the information or go online. The USAID | DELIVER PROJECT website, deliver.jsi.com, offers documents with dimensions of many products.

Be careful not to confuse carton size with number of units per carton. Carton size is how much space the carton takes up, and units per carton is how many units of the product each carton contains. A carton may take up .72 m³, but it might contain 2500 units of the product, such as 2500 contraceptive pill cycles. ("Carton" is used here to mean the large outer packing container. Many products also have small inner packing containers, usually called an "inner box.")

9) Why is calculating shelf space different from calculating pallet space?

Shelves are usually several meters long and 25 centimeters to a meter deep and 25 centimeters to a meter high. Four or more shelves can be on top of each other. Shelves are usually for products that are in relatively small or medium size boxes or cartons. You calculate shelf space by multiplying length by depth by height by number of shelves.

Calculating pallet space is easier. It is just the length and width of your pallet space times two meters. The height is always two meters, since that is the maximum you can pile commodities without the danger of crushing the bottom boxes.

Aside from smaller facilities that do not use pallets and store only on shelves, you need to calculate space needs for both shelves and pallets. And notice that you can store almost anything on pallets, but there are some larger cartons that will fit on shelves.

And with shelves, you have to add a percentage for space that cannot be used because the boxes do not fit perfectly to use up all the space on the shelf. For example, three boxes forty centimeters high will not fit on a shelf that is one meter high. Only two boxes will. And there will be twenty centimeters of space that cannot be used.

In some warehouses, at least 15% of shelf space is unusable, but it can be much more depending on the products in the warehouse. You should make your own estimate on what percentage to add for future storage space because of unusable space on shelves.

10) What about cold chain products?

These products do not go on shelves or pallets, but the same principles apply. You calculate using the interior dimensions of the refrigerators. This will vary by model of refrigerator. So you need to multiply the interior volume (L x W x H) of each model of refrigerator you have by the number of that model of refrigerator you have. Then you need to add the totals for all the models to give you your cold chain storage capacity. However, as with shelves, you have to add an estimated percentage for unusable space. The different carton and box sizes will mean that not every centimeter of space is used in a refrigerator.

11) Is it good to have individual rooms for different types of products in a warehouse?

This is not ideal, since it leaves less flexibility as the needs of product groups change. Also, the walls of the rooms can impede good ventilation. And smaller rooms can make it harder to practice FEFO. Do not just pile products in the room so that the older products are at the back. Start by putting the older products on the left as you walk in, and then keep stacking the shipments of newer products just to right of the older ones going clockwise down the left wall, then along the back of the room, and then along the right wall. With this system, it is always easy to find where the oldest products are so that they can go out first, and their space can be replaced by the new products in rotating pattern.

12) How much access and packing space do I need?

Add 100 % for access and packing space. In doing estimations for space, it is not just the volume of the cartons that matters. You always have to estimate for aisles and packing space.

You cannot fill an entire room from one wall to the other wall with cartons. You could not get to the products that you need, and you would have no place to assemble shipments to go out or to receive shipments coming in. Research has shown that a warehouse needs as much open space as it has carton space so that the Quality Storage Principles can be practiced, the stock is well protected, and stock movement can

be fast and efficient.

A supermarket is a good example of this principle. A supermarket cannot just be filled with products from wall to wall with no aisles. Customers and workers have to be able to get in and out to get products to restock the shelves. Space is also needed for cash registers so that people can pay. Supermarkets probably need even more than 100% more space for access and packing, but the same principle applies in warehousing.

But there is one change you need to make in calculating access and packing space. You have to think of it as floor space that goes up only two meters. Shelf space and cold chain space is not involved, but just floor space for aisles and packing. So if you need 10 m³ that becomes five square meters of floor space. In other words, you have to have the five square meters on the floor, and then you can think of it as going up two meters, since that is the height that you may stack products on pallets. This will give you the equivalent in access and packing space that you need.

13) Do I have to plan for the Quality Storage Principles when I calculate?

Definitely! One of the reasons you calculate for space is so that you can still apply the Quality Storage Principles in the future. Without sufficient space, you will have severe storage problems. FEFO will be difficult or impossible to apply since you won't be able to see expiration dates. And you also have to keep products away from walls, etc.

14) If a new warehouse is needed, how can I be sure it will be built correctly?

You need to get professional help. Begin by doing an analysis of your current facility. Identify the problems you have, so that you do not have them in the new space, and look at the strong points in your current warehouse, so that you will be sure to have them in your new facility. Then present your analysis to experts who have a background in storage for public health commodities. Note that regular architects do not have this expertise, but they can serve on a team with you and the experts.

One source of expertise with floor plans and design features for public health commodity warehousing is the USAID | DELIVER PROJECT.

15) Are mistakes ever made in warehouse construction?

Yes, many warehouses aren't built correctly. The errors include narrow aisles, low floors that flood, use of fluorescent lights, insufficient and poorly placed lighting, bad ventilation, incorrect docking heights for lorries, bad window placement, not enough power sources for refrigerators, more interior height than can ever be used, etc., etc. And some warehouses cost more to build than was really necessary.

16) How far ahead do you have to plan for expansion?

At least a year and a half, but even farther in advance is better. Cost estimates need to be developed and funding identified in addition to finalization of building plans and the construction itself.

17) Is renting a solution?

It can be a short-term solution, but it does cost money every month. And there will be damage or theft problems if the rented space is too hot, leaks, or is not secure. Longer term, correctly designed permanent warehousing space is the solution.

18) Can "seatainers" be used as temporary storage?

It is not advisable. ("Seatainers" are the large long containers that are stacked on ships and then loaded individually on lorries for delivery to a warehouse.) Ventilation is the big problem with them. Temperatures rise far above acceptable levels in a packed seatainer with closed doors. Products become DEPS when they have been exposed to high temperatures for too long a period. The products are ruined and have to be destroyed. Also, seatainers need to be elevated off the ground on large blocks so that the floors will not flood if there is rain.

STORE SECURITY RESPONSIBILITIES

S.No.	STOREKEEPER	SUPERVISOR
1.	Clean store at least once a day so that there can be no "dust" on the products and insects cannot take shelter inside the store.	Deploy a cleaner to clean the store at least once a week.
2.	Open store on all work days and put the Exhaust fans and Ceiling fans on during office hours.	Ensure that the store is opened on all workdays and the Exhaust and Ceiling fans are kept on during office hours to keep the temperature under control.
3.	Spray insecticide at a regular interval so that no insect can destroy products.	Ensure regular spraying of insecticides to protect products.
4.	Check that the doors and windows are strong and inform supervisor for any repairing need.	Ensure repairing of doors and windows when needed.
5.	Check that rain does not penetrate through the roof and damage products. Informs supervisor immediately, if it happens.	Take immediate steps for repairing of the roof.
6.	See that the "Fire Extinguishers" are in working condition. Buckets are full of water and dry sands.	Ensure that "Fire Fighting" equipment are in working condition and easily accessible.
7.	Don't keep any product just on the floor and against the walls.	Ensure that no product is kept just on the floor and against the walls.
8.	Stack products following FEFO principles and supply accordingly.	Ensure that storekeeper stacks products following FEFO principles and supply accordingly.
9.	Prepare a list of short-dated products and give to supervisor.	Supervisor informs different clients about the short-dated products and requests to submit indent for them.
10.	Store date expired/unusable products and chemicals at marked places in the store, away from usable products.	Ensure that the storekeeper stores the unusable products and chemicals at marked places in the store, away from usable products.
11.	Check the electric points at a regular interval to avoid any accidents. Inform supervisor if there is a problem.	Take immediate actions for fixing any reported electric problems.
12.	Conduct "Sample" physical inventory to see that the book balance and physical balance match each other and identify any short-dated or date expired products.	Ensure that the storekeeper conducts "Sample" physical inventory, from time to time, to identify

13.	Put off all the lights and fans before closing the store every day.	Ensure that the storekeeper puts off all the lights and fans before closing the store every day.
14.	Properly close the windows and doors at the end office hours and put the sealed lock on the door before leaving office.	Ensure that storekeeper properly close the windows and doors at the end of office hours every day and put the sealed lock on the door before leaving office. Deploy night guards and monitor their works regularly.

STOREROOM MONITORING CHECKLIST

SELF-MONITORING FOR STORE ORGANIZATION

S. No.	Question	Yes	No	Remark
1.	Do I clean (sweep and dust) the store once each week?			
2.	So I have commodities arranged alphabetically by generic name?			
3.	Do I have commodities stored away from direct sunlight, and in a dry, well-lit and well-ventilated storeroom?			
4.	Do I have a fire extinguisher or buckets with water or sand in working condition and easily accessible? Do I keep the buckets filled with sand/water?			
5.	Do I store latex products stored away from electric motors and fluorescent lights?			
6.	Do I keep narcotics, controlled substances, life-saving drugs, and theft-prone items stored in a locked almirah?			
7.	Do I store chemicals and flammable items in a marked place and away from medicines and contraceptives?			
8.	Do I keep my commodities placed on dunnage, racks, and shelves so that they are off the floor and away from the walls?			
9.	Do I arrange cartons to ensure First-Expiry, First-Out (with items expiring sooner placed in front of items expiring later)?			
10.	Do I have cartons/boxes stacked with arrows pointing up () and are all boxes/cartons stored right side up?			
11.	Can I easily see the manufacturing and expiry dates on all boxes and cartons?			
12.	Do I keep my office supplies, equipment and old files stored separately from medicines, contraceptives and other health supplies?			
13.	Do I have unusable commodities stored in a marked place and away from usable commodities?			
14.	Do I inform the appropriate authorities of unusable commodities which are in the storeroom?			

What are your roles and responsibilities?

The most important thing about roles and responsibilities for managing contraceptives, essential medicines and vaccines is that it's everybody's job to make sure that products are available and that there are no stockouts. Because your facility may be short on trained staff you may be asked to help with roles, either on an official or an unofficial basis. The important thing is to stay supplied so that clients can receive the commodities they need.

Find your role and your responsibilities then answer the questions below. When you have finished your trainers will assign you to a small group to explain your answers.

1. What are some of your official responsibilities, as stated in the Table?
2. Are all of these responsibilities new for you, or are you already doing some of them? Explain.
3. Is your facility fully staffed? If not, what are the vacancies?
4. Which of the responsibilities are you most confident about, and which do you want more training on?
5. Are there additional responsibilities you think you may have to do beyond your official role? What are they?
6. Are there any duties listed for your position which are not clear?

Key logistics staff at various levels

In a logistics management system, the relevant staff plays a vital role in making the system successful. In Pakistan, there are a number of operational tiers that manage the contraceptive logistic system at central and provincial warehouse, district, and health facility levels. The following table shows various tiers and staffing in the logistics management system:

LEVELS/TIERS	OFFICIALS
At Central Warehouse, Karachi level	Director Central Warehouse Store Supervisor Store Keeper (SK)
At Provincial level	Provincial Logistics Officer / Store Incharge Storekeeper
At District level	DPWO EDO/DHO Health Supervisor Lady Health Workers' Program Store Keeper
At Facility level	Family Welfare Workers / Lady Health Worker Lady Health Visitor / Lady Health Supervisor

**RESPONSIBILITIES OF DIRECTOR (CW&S)/ DPWO/ DHO /
PROVINCIAL/REGIONAL LOGISTICS OFFICER/STORE IN-CHARGE AND
DESIGNATED DISTRICT LOGISTICS OFFICERS**

Responsibility	Task
1. Receiving	<ul style="list-style-type: none"> • Ensure that the Store Keeper(s) (SK) receive all commodities according to the quantity mentioned in the invoice/ IRV/CLR-7. • Ensure that all commodities received are in good condition. • Ensure that the commodities received from the suppliers have adequate shelf life. • Ensure that the invoice/CLR-7/IRV is properly signed by the SK and duly countersigned by the designated authority.
2. Storing	<ul style="list-style-type: none"> • Ensure that storage space is allocated according to efficient store layout principles. • Ensure that the storage racks/cabinets/shelves and equipment are placed according to the layout plan. • Ensure that all commodities are stored on/in the proper specified racks/cabinet/shelf. • Ensure that the SKs follow the storage guidelines strictly in running the warehouse. • Ensure that commodities are arranged following the FEFO principle.
3. Issuing	<ul style="list-style-type: none"> • Ensure that the SK uses the Stock Register properly. • Ensure that the SK determines issue quantity so the recipients can maintain inventory at the max-min MOS level. • Ensure that the SK prepares the CLR-7/IRV • Ensure that the SK issues commodities following the FEFO principle. • Ensure that the SK follows the supply scheduling in supplying commodities. • Ensure that SK correctly maintains the copies of CLR-7/IRV.
4. Recording	<ul style="list-style-type: none"> • Ensure that the SK maintains the Stock Register for recording transactions. • Ensure that the SK records commodities in bin cards and Stock Register. • Ensure that bin cards and Stock Register are up-to-date. • From time to time, check the bin cards and Stock Register to ensure that these are maintained correctly and properly.
5. Disposing Unusable	<ul style="list-style-type: none"> • Ensure that the SK prepares a list of unusable commodities of his warehouse and informs the Supervisor in time. • As Member-Secretary of the condemnation committee, place the file to the authorities for their consent to convene a meeting of the condemnation committee. • Issue notice of meeting to the condemnation committee members at least one week before the meeting. • Prepare the proceedings of the meeting, obtain signatures of the members present in the meeting and send proposal in the prescribed form to the competent authority to get his approval for condemnation.

	<ul style="list-style-type: none"> • Condemn all the approved unusable commodities of his warehouse in the presence of the condemnation committee members. • Ensure that the SK has recorded all the condemned commodities properly in the stock register and bin cards and reported them correctly in the monthly report.
6. Monitoring and Supervision	<p>As head of the warehouse, the Director CW&S/ DPWO/ EDO Health/ DHO/ District Coordinator, LHW will;</p> <ul style="list-style-type: none"> • Routinely monitor the activities of the warehouse staff to ensure that each individual staff completes his assignment as per schedule. • Supervise the employees to ensure that they have the correct knowledge and skills required to perform their assignments. • Provide on-job training if any knowledge and skill deficiency is identified. • Provide supportive supervision to the staff.
7. Reporting	<ul style="list-style-type: none"> • Regularly review reports received from the lower level and send feedback if there are any mistakes, or give suggestions for improvement. • Ensure that the SK prepares all reports on time and submits for review and approval. • Review and approve reports prepared by the SK and ensure that reports are mailed to the appropriate authorities on time.
8. Conducting Physical Verification	<p>As Member –Secretary of annual physical verification committee,</p> <ul style="list-style-type: none"> • Convene meeting of the committee to conduct annual physical verification of warehouse. • Ensure that the members receive notice at least one week prior to conducting the physical verification. • Notify the facilities that receive commodities from the warehouse that during physical verification, there will be no transaction of commodities. • If a discrepancy is identified during physical verification, make the necessary adjustment following the prescribed procedures. • If any new unusable commodity is identified during the physical verification, segregate the unusable from the usable and store them at a place marked for unusable. Properly record the unusable in stock register and other relevant forms. • Use physical verification instrument to record finding of physical inventory and obtain signatures of committee members. • Report findings of physical verification to the appropriate authorities. • Preserve a signed copy of physical verification instrument in the file for record. • Ensure that the SK regularly conducts sample physical verification and keeps the authorities informed on the findings.

RESPONSIBILITIES OF SK/ FWW/ LHW/ LHV

Responsibility	Task
Receiving	<ul style="list-style-type: none"> • Receive all commodities and ensuring that the quantity mentioned in invoice/IRV is delivered. • Make sure that all commodities received are in good condition. • Bring to the notice of the designated officer-in-charge if any commodity is found broken or damaged, or if there is any shortage or excess. • Make sure that the commodities received from the received have adequate shelf life. • Sign copies of invoice/IRV that are sent with commodities and bring them to the designated officer-in-charge for counter signatures. • Return the countersigned copies of invoice/IRV to the supply source. • Preserve the first copy of invoice/IRV in the warehouse.
Storing	<ul style="list-style-type: none"> • Allocate and mark the storage space according to efficient store layout principles. • Place storage cabinet/shelves and equipment at the marked places for different commodities. • Arrange commodities following FEFO principle. • Mark boxes and cartons with manufacturing and expiry dates. • Operate the warehouse following the storage guidelines. • From time to time conduct sample physical verification and complete physical verification once a year to be sure that book balance and physical balance matches each other. • Adjust discrepancies, if any, with the approval of the designated officer following procedures and update records.
Issuing	<ul style="list-style-type: none"> • Review contraceptive requisition forms received from District/ Health Facility to examine and determine the issue quantity to the district store/ facility store. • Take the distribution plan to the designated officer for review and approval. • Prepare invoice/IRV according to the approved quantity. • Present the invoice/IRV to the designated officer-in-charge for review and approval. • Supply commodities through private carrier or departmental vehicle or through other means as per the established schedule. • Supply commodities following FEFO principle. • Preserve the acknowledged copies of invoice/IRV in the warehouse.
Recording	<ul style="list-style-type: none"> • Maintain stock registers to record all transactions for all commodities. • Use computer codes given for each items, if any. • Maintain separate bin cards for each item. • Update stock register and bin cards after every transaction. • Record transferor disposal of unusable commodities in the remarks column of the contraceptive stock register. • Use different ink while recording transfer or destroying of unusable

	<p>commodities in the relevant columns of the stock register.</p> <ul style="list-style-type: none"> • Use separate bin cards for recording transactions of unusable commodities. • Periodically take the stock register to the designated officer-in-charge for review and making necessary comments.
Handling Unusable	<ul style="list-style-type: none"> • Report immediately to the designated officer-in-charge if any commodity in the warehouse is identified as unusable. • Using issue voucher, separate unusable from the usable stock with the approval of the designated officer-in-charge. • Store the unusable stock at a place marked for unusable according to store layout plan. • Use different ink to record transactions of unusable commodities in relevant columns of stock register. • Use separate bin cards for unusable. • Assist the designated officer to condemn unusable. • Report condemnation of unusable through monthly report forms.
Reporting	<ul style="list-style-type: none"> • Collect contraceptive consumption data from the concerned health facilities / SDPs on monthly basis (in case of district SK). • Review Monthly report, submitted by the facilities/districts and provide feedback through the designated officer-in-charge, if any corrective action is required by them. • Prepare monthly report on the prescribed form at the beginning of the month. • Submit the completed report to the designated officer-in-charge for review and approval. • Send the approved report to the appropriate authority by 5th working day of each month to the district and by 10th to the provincial headquarter and by 15th to the CW&S. • Upload the contraceptive consumption data into Web-based LMIS by 10th of each month.
Requisitioning	<ul style="list-style-type: none"> • Prepare quarterly requisition, using integrated CLR-6 format, at end of each quarter. • Obtain the approval of DPWO/ DHO on integrated CLR-6 for quarterly contraceptive requisitioning for the district. • Coordinate with offices of DPWO / DHO for timely submission of integrated CLR-6 to the CW&S. • In case of health facility / SDP, prepare monthly requisition on the prescribed format for submission to the concerned district office.
Conducting Physical Verification	<ul style="list-style-type: none"> • Regularly conduct sample physical inventory so that all the items are covered within the year. • Reorganize store, if needed, to ensure FEFO. • If a discrepancy is identified, adjust records with prior approval of the Designated Officer-In-Charge. • If any new unusable item is identified during physical verifications, immediately segregate it from usable items and store it at the place marked for unusable • Update Stock Registers and Bin Cards.

<p>Maintaining Quality Assurance</p>	<ul style="list-style-type: none">• Follow the storage guidelines in operating the store.• Stack commodities following FEFO.• Record manufacturing and expiry date in stock register.• Issue commodities following FEFO principle.• Prepare list of short date commodities and with approval of the designated Officer-In-Charge and supply source, supply the commodities to departmental and governmental facilities before the expiry of shelf life.• Return to supply source commodities that cannot be used with the shelf life period locally.• Keep the store always clean so that it will be free from insects, bugs, etc.• Regularly disinfect the store.(It needs to be done as recommended by the experts)
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PHYSICAL INVENTORY CONCEPTS

TERM	MATCHING PHRASE / SENTENCE
Inventory	<ul style="list-style-type: none"> • A list of commodities, with quantities, at a particular place on a particular day and time • Example: In my storeroom on May 1, I have 550 100 mg. tablets of paracetamol and 325 250 mg. tablets of paracetamol.
Physical Inventory	<ul style="list-style-type: none"> • The process of counting the total number of commodities or some commodities on a random basis, available in the storeroom on a particular day and at a particular time • Counting by hand, by generic name, by unit, by form, and by power • Example: I count my inventory and find 100 cycles of ampicillin; 50 vials of ampicillin suspension; 2,000 500,000 unit penicillin; 1,700 1,000,000 unit penicillin and 5,475 condoms
Annual Physical Inventory	<ul style="list-style-type: none"> • All of the products/commodities are inventoried at the same time • Generally conducted by the inventory committee once each year • Generally done in case of theft or other exceptional cases, such as taking over of a new store • For stores that have few products can be done more frequently than yearly • Store operations generally cease during the time inventory is counted
Partial or Sample Physical Inventory	<ul style="list-style-type: none"> • Some of the products are inventoried at different times • Can be conducted each month no matter how large the storeroom or how many products are stored • For example, 5 items are counted in January, 5 others in February, 5 others in March, and so on • During the year all products are counted at least once • Store operations can generally continue even while the inventory is taking place

Visual Indicators of Quality Problems

Liquids: <ul style="list-style-type: none"> • discoloration cloudy sediment • broken seal on bottle cracked ampoule/bottle 	Pills (tablets): <ul style="list-style-type: none"> • discoloration • pills crumble • pills missing (from cycle/course) 	Sterile Products (including IUDs): <ul style="list-style-type: none"> • tear in packaging parts missing • Broken or bent parts
Light-sensitive products (such as x-ray film): <ul style="list-style-type: none"> • tear in packaging 	For various kinds of products: <ul style="list-style-type: none"> • packaging is broken 	Tubes: <ul style="list-style-type: none"> • tube is sticky • contents leaking from tube
Latex gloves and condoms: <ul style="list-style-type: none"> • dry/brittle condoms: • packaging is sticky condom or lubricant is discolored 	Any vials: <ul style="list-style-type: none"> • vial is cracked or broken injectable contraceptives: liquid does not return to suspension after shaking 	Foil pack: <ul style="list-style-type: none"> • perforation in packaging
Bulk commodities: <ul style="list-style-type: none"> • pieces stuck together 	Capsules: <ul style="list-style-type: none"> • sticky 	Chemical re-agents: <ul style="list-style-type: none"> • change of color

Shelf life of Contraceptives

Contraceptive Brand Name	Shelf Life
Lo-Femenal (Combined low dose)	5 years
Ovrette (Progestron only) (Pro	5 years
Condom	4 years (USAID)
Copper T 380-A	7 years (USAID)
Micro-Gynon 30	5 years
Micronor	5 years
Megestron	3 years (USAID)
Neo-Sampon	3 years
Depo-Provera	4 years (USAID) 5 years (other)
Norplant	3 or 5 years (USAID)

Note: The shelf life for each product is generally applicable. However, as with all health and family planning commodities, the shelf life should always be double-checked and verified using the manufacture and expiry dates of received commodities.

Self-monitoring Checklist: Physical Inventory

Question	Yes	No	Remarks
Did I count every item in stock by generic name? (ampicillin, penicillin, etc.)			
Did I count every item in stock by power?			
Did I count every item in stock by unit?			
Did I count every item in stock by form?			
Did I count every item in stock by hand?			
Did I record the findings of the physical inventory in the stock on hand column of the appropriate bin cards and inventory control			
Did I record the date of the physical inventory in the appropriate column on the bin cards and			
Did I ensure that the expiry dates are marked and visible on each carton or box?			
Did I move the items which will expire first towards the front of the shelf to facilitate FEFO?			
Did I separate expired or damaged or unusable items from usable items (and make the appropriate entry in the			
Did I adjust discrepancies on the bin cards?			

PHYSICAL VERIFICATION FORM

The sample form shown below must be used to record the results of physical inventories taken in the field. This form should be signed and dated by both the persons who performed the inventory and the Manager in-charge of the store or warehouse.

SPECIMEN PHYSICAL VERIFICATION FORM

Facility Name _____

Warehouse/ Store Location _____

Date of Physical Verification _____

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

Comments

Signature

Signature

Signature

Designation

Designation

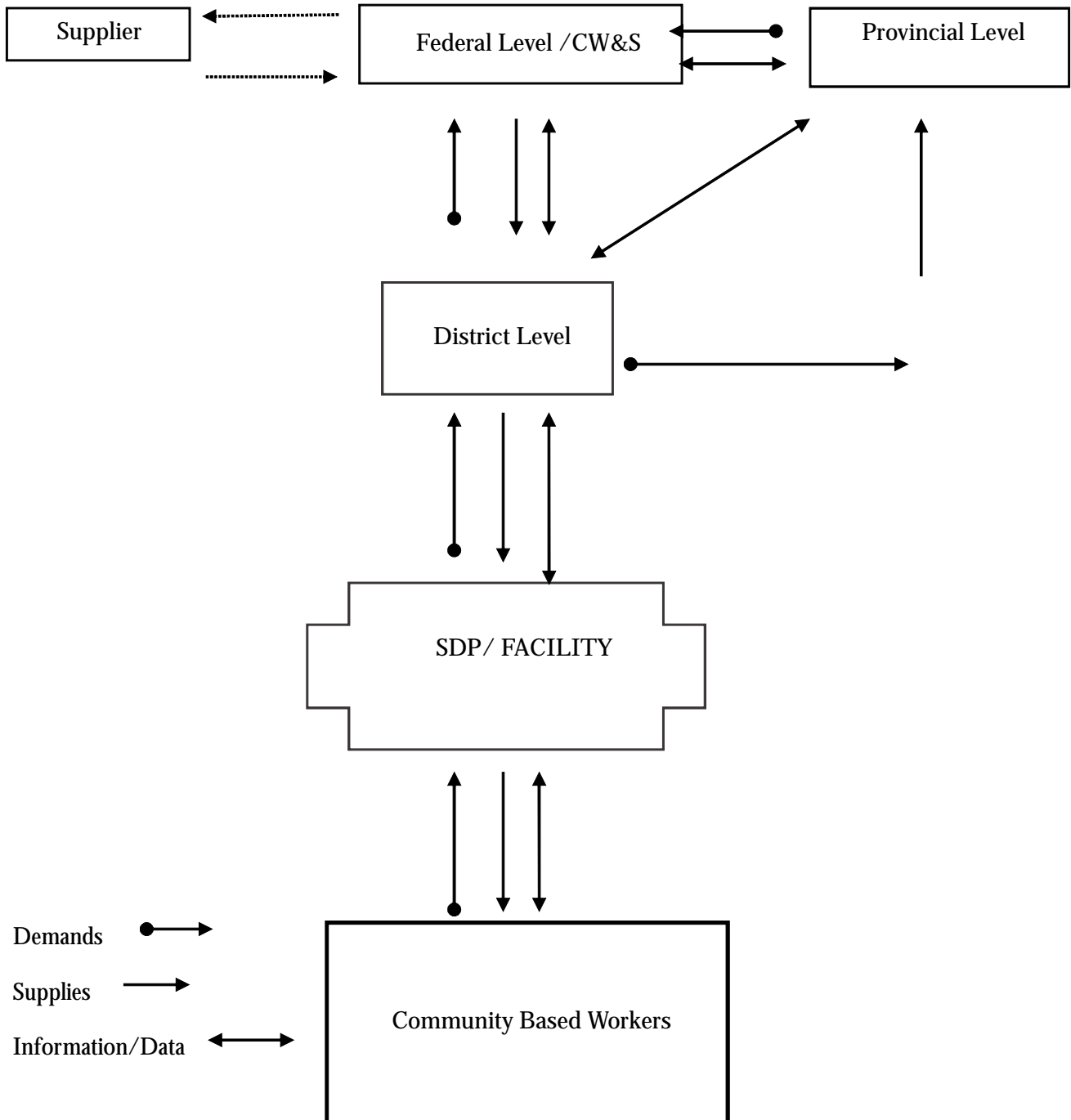
Designation

Date:

FLOW OF COMMODITIES AND DATA

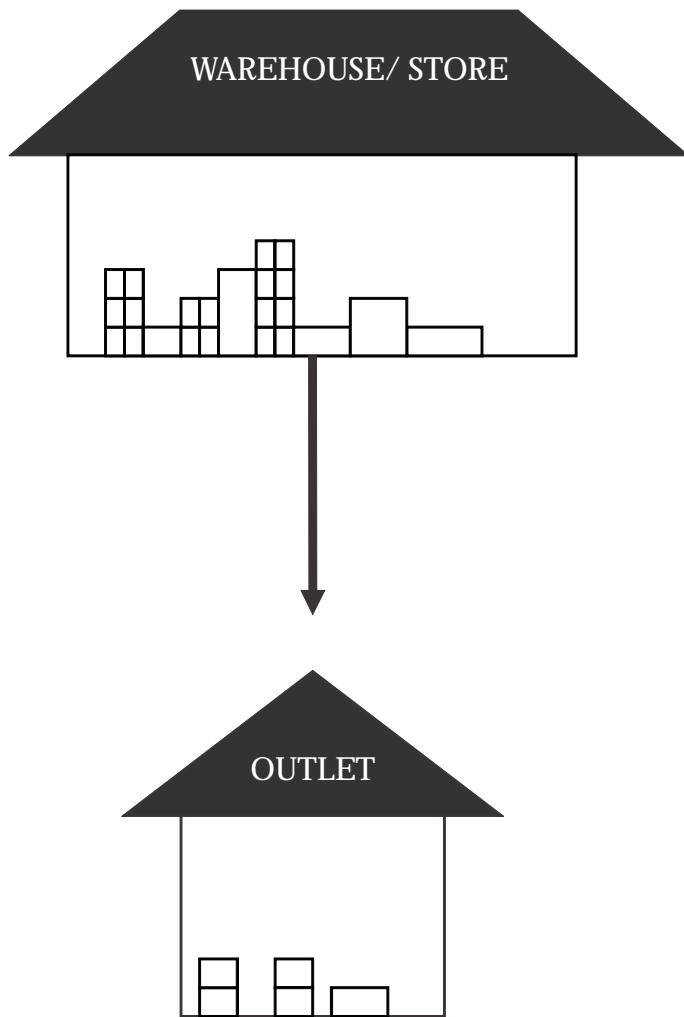
As commodities move down through the Logistics System, information flows up through the system.

PIPELINE

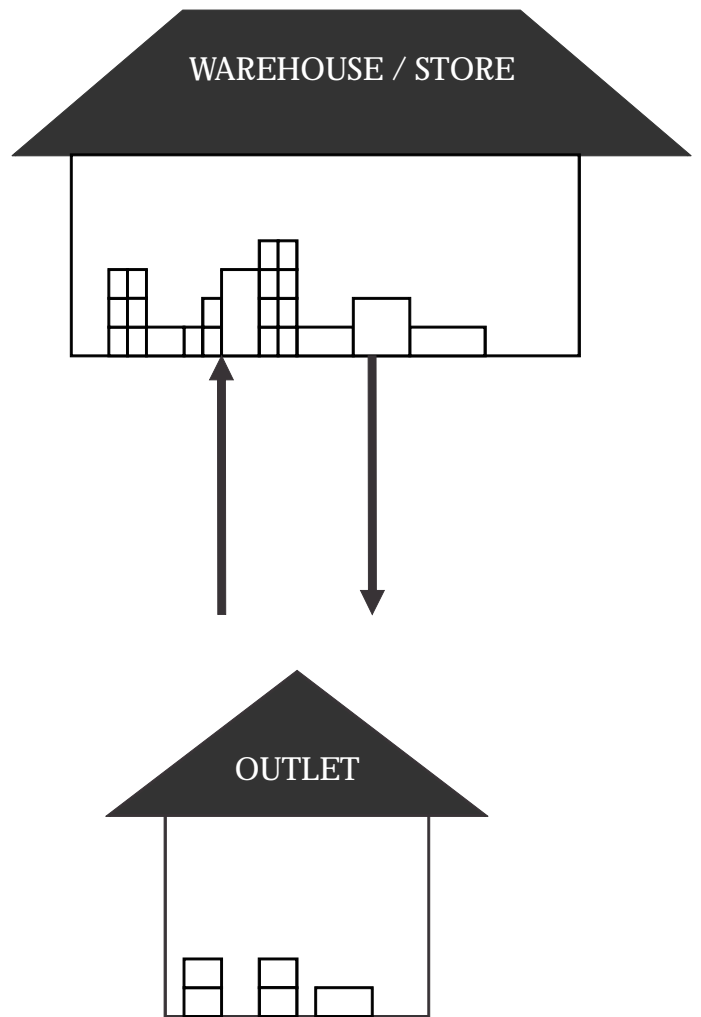


PUSH and PULL Illustration

ALLOCATION (PUSH)



REQUISITION (PULL)



ISSUE AND RECEIPT VOUCHER (CLR-7)

CONTRACEPTIVES ISSUE & RECEIPT VOUCHER (IRV) FOR WAREHOUSE

No: _____ Date: _____

Name of Consignee: _____

Designation and Address: _____

Requisition No: _____ Date: _____

Mode of Dispatch (Truck, Program vehicle etc) _____

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

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

Issuer:
 Signature _____
 Name _____
 Title _____

Receiver:
 Signature _____
 Name _____
 Title _____

HOW TO USE ISSUE/RECEIPT VOUCHER (CLR-7)

An IRV (CLR-7) is used for any supplies issued from, or received by, the Central and Provincial Warehouse and Stores. IRVs are pre-numbered and prepared in four copies, the original plus three which are sent to the consignee (along with the supplies) who then returns the copy to the issuing warehouse/store after indicating net receipt of the supplies in appropriate columns.

- Lines 1-5 at the top of the form are self-explanatory and are filled by the storekeeper of the issuing warehouse.
- Columns 1-4 are filled by the storekeeper of issuing warehouse.
- Column 5 Received by consignee is filled by the storekeeper of the receiving warehouse.
- Column 6 Requisitioned and Dispatched is filled by the storekeeper of issuing warehouse.
- If the quantity dispatched is more than the quantity requisitioned, the difference will have a + sign and if it is less it will be indicated with – sign.
- Column 7 Dispatched and Received is filled by the storekeeper of the receiving warehouse and the quantities over or under received will be shown as + or – as the case may be e.g. +30.
- Column 8 Remarks is used for explaining variations or any other matter that may be necessary e.g. damaged container or receipt of commodities after the expiry date or with short expiry etc.

Exercise

Mr. Abdullah is store keeper of a Provincial Ware house, during the month of September 2014 he received the requisition number 2084/EDOH/ 14 dated 5.9.14, from Dr. Allah Nawaz Executive District Officer Health (EDOH), Qadirpur for supply of contraceptives for the district for next quarter according to the following details:

1. Condoms..... 2,880,000 Pieces
2. OC Pills.....20000 Cycles
3. Injection Depo Provera..... 5000 Vials
4. Injection Noregest 2000 Vials
5. Cu-T..... 500 Pieces

On reviewing the stock position of the said items he found the he has sufficient quantity of OC Pills, Injection Depo-Provera and Cu- T to meet the demand however injection Norigest are out of stock and 2304000 pieces of condoms are available to be issued. After approval from the store manager he issued the items accordingly vide IRV number 1810/14/PW dated 29.9.2014. The consignment was sent to the EDOH through Hired Truck number GB 973, through consignment number 004397 dated 29.9 2014. The consignment was received Mr. Bilal Ali, store keeper of district Qadirpur on 1st October 2014, who found all the supplies according to the IRV except Depo Provera which were 5100 vials. He made the necessary entries on the IRV and after counter signatures from the EDOH returned one copy of the IRV to the provincial ware house.

Exercise Answer Key: Contraceptives Issue & Receipt Voucher (IRV)

No: 1810/14/PW

Date: 29.9 14

Name of Consignee: Dr. Allah Nawaz

Dr. Allah Nawaz

Designation and Address: EDOH, District QadirPur

EDOH, District QadirPur

Requisition No: 2084/EDOH/ 14

Date: 5.9.14

Mode of Dispatch (Truck, Program vehicle etc): GB 973

Dispatch document (Challan/Bilty No. 004397 dt. 29.9.14 Program Vehicle No)

Contraceptives		Quantities			Quantities Verification (if any) in		Remarks
Name of Contraceptive	Unit	Requisitioned	Dispatched	Received by consignee	Requisitioned and Dispatched	Dispatched and Received	
Condoms	pieces	2880000	2304000		(-)57600		
OC Pills	Cycles	20000	20000				
Inj. Depo Provera	Vials	5000	5000			(+) 100	
Inj. Noregest	Vials	2000	00		(-)2000		
Cu-T	Pieces	500	500				

Issuer:

Signature _____

Name: Abdullah Khan

Title: Store Keeper

Provincial Warehouse

Receiver:

Signature _____

Name: Bilal Ali

Title: District store keeper

Qadirpur

BIN CARD

Bin card is a card used to record transactions of issue, receipt or adjustment of each item stored in the warehouse or store at the moment the transaction is done. That is why it is also kept along with the items near the bin. Each item has a separate bin card.

It indicates up-dated balance of an item available in the stock. This must be used for all levels of storage facilities.

How to use the Bin Card

One card must be used for each stack of commodity.

For each type of commodity, the Storekeeper of the warehouse / store must prepare the card.

Name of Item/ Article

Name of the item along with specifications must be written as shown in the example.

Accounting Unit

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

Batch No.

Batch No. of the commodities, if any, (written on the packing by manufacturers) must be clearly mentioned.

Name of Article:

Accounting Unit:

Batch/Lot No.:

Mfg. Date:

Exp. Date:

Date	Description	Quantity		Balance	Initials
		Receipt	Issued		

Mfg./ Exp. Date

In specified columns, manufacturing/ expiry dates on the contraceptives (written on the packing by manufacturers) must be mentioned.

Date

In this column, date must be mentioned on which date transactions (issued/ receipt) are made.

Description

In this column, it must be mentioned from where the material has been received or to whom it is issued on a particular date.

Signature

Initials of storekeeper must appear against all entries on the Bin Card.

Note: It is important that entries on the Bin Card must be recorded on the same date on which the transaction is actually made.

Exercise

A total of 40,000 pieces of Male Condoms were in the stock at the district store. 100,000 pieces of Male Condoms were received on from 12/02/2013 the CW&S and 60,000 pieces were distributed from district store to 5 different health facilities on 14/02/2013. Prepare the Bin Card for male condoms and enter above mentioned information?

Answer Key

The entries made on the Bin Card are as follows:

BIN CARD

Name of Article Male Condoms Accounting Unit: Piece

No. 123456

Mfg. Date: 02-10-2012

Exp. Date: 02-10-2017

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

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

STOCK REGISTER

The basic stock-keeping record is the Stock Register. The purpose of the stock register is to provide an up-to-date record of all transactions of warehouse/storerooms of the commodities received, issued and discarded.

The Stock Register has to be maintained by the Storekeeper and entries have to be verified by the In-charge/logistics manager at each level.

General Instructions: Stock Register

- Name of the warehouse/store will be written only on the cover page of the register;
- Stock Register must be certified by the Officer In-charge as mentioned above, specimen of the certificate is as under:

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

- An Index of Content, which serves as a quick reference guide, is prepared in the beginning of the Stock Register. In this index, the page numbers of the Stock Register, which are allotted to the specific items, will be mentioned against each item's name.
- Separate pages will be used for each commodity. A sufficient number of pages in the stock register must be reserved for each commodity.

Transaction of OCP is recorded at page No. 005 of the Stock Register. In the index, “005” will be written in the column as the page number against which OCP will be recorded.

Index

S.No	Name Item/ Article	Page No.
1.	OCP	005
2.	Condoms	012
3.	Injection Depo provera	020

Specimen Stock Register

Page No.

Contraceptives

Name of item/ Article:

Unit:

1	2	3	4		5	6	7
Date	Received from/ Issue to and Reference	QUANTITY IN UNITS				Name & Signature	Remarks
		Received	Issued		Balance		
			For Care	Discarded			

How to Fill Stock Register

Name of Item/ Article (Top of the page)

Name of the item along with specifications will be written as shown in the example. All the items must be written using their Generic names instead of brand names; however, the brand names can be mentioned in the description column (Column no. 2 of the stock register).

Unit

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

Date (Column No.1)

In this column the on which the transaction (issue/receipt) took place is written.

Received from/ Issued to and Reference (Column No.2)

This column is meant to identify the source from which any quantity is received and the consignee to whom any quantity has been issued from the warehouse/store. Different colored ink must be used for quantities received and issued (preferably red for receipt and blue for issues).

Received (Column No. 3)

In this column, quantity of the item received is recorded.

Issued (Column No. 4 & 5)

FOR CARE In this column the quantity of the item issued for use or onward distribution to the lower levels is recorded.

Discarded

In this column, quantity of the expired/ damaged/ broken/ unusable item will be recorded. The Storekeeper must certify entries and the Officer in-Charge concerned.

Balance (Column No. 6)

In this column, the balance quantity of items available in the warehouse/store after receipt or issuance is recorded.

Name and Signature (Column No. 7)

In this column, Storekeeper must sign and the Officer-in-Charge must initial against each transaction.

Remarks (Column 8)

In this column, remarks may be given, e.g. expiry date/expired quantities of the item, physical conditions or any notation concerning any unusual condition or specific situation may be made.

Note: when there is no place left on the page for further entries, then; on the bottom of the same page mention the next allotted page number of the stock register using red ink, e.g. Balance Carried Forward (BCF) to page number..... The next page of the stock register for the item so carried forward will start by referencing the previous page number, e.g. Balance Brought Forward (BBF) from page number..... In case the stock register is finished, mention the following statement at the end of every item.

* Balance Carried forward to Stock Register No.....page No.

* New Stock Register must contain the following statement at the start of every page: "Balance Brought Forward from stock register No..... Page No...."

Example

Stock Register

Page No. 005

Medicines/ Supplies

Name of item/ Article: OCP

Unit: Tablet

1	2	3	4		5	6	7
Date	Received from/ Issue to and Reference	QUANTITY IN UNITS			Balance	Name & Signature	Remarks
		Received	Issued				
			For Care	Discarded			
15/1/2014	Received from CWH vide Receipt Voucher No. 1162/ dated 15/1/2014	50,000			50,000		
30/1/2014	Issued to RHC xyz		20,000		30,000		
2/2/2014	Issued to RHC abs		20,000		10,000		
10/3/2014	Received from province vide Receipt Voucher No. 1180/ dated 20/02/2014	40,000			50,000		

Exercise

Mr. Saif Ullah is the store keeper of district store Hayatabad, on 1st July 2014, he had following items at the store:

Condoms: 72,000 Pieces, OC Pills: 3256 Cycles, Injection Depo Provera: 2225 Vials

On 6th July 2014, he received fresh supplies from the provincial ware house vide voucher number XYZ, dated 3rd July 2014, it contains following items:

- Condoms: 100800 pieces
- OC Pills: 5000 cycles

On 10th July, he issues contraceptives to 5 service delivery out lets according to following details:

1. BHU Rajanpur: vide IRV 2314, Condoms 4320 pieces, OC Pills 300 cycles, Depo Provera injection 120
2. BHU Mithi: vide IRV 2315, Condoms 3600 pieces, OC Pills 105 cycles, Depo Provera injection 75
3. RHC Kalat: vide IRV 2316, Condoms 21600 pieces, OC Pills 550 cycles, Depo Provera injection 350
4. FWC Pubbi: vide IRV 2317, Condoms 3600 pieces, OC Pills 55 cycles, Depo Provera injection 12
5. FWC Mariabad: vide IRV 2317, Condoms 2880 pieces, OC Pills 40 cycles, Depo Provera injection 10

On 16th July he received another supply from the provincial warehouse under IRV #LMQ , dated 11 July 2014, containing 1500 vials of injections Depo Provera,

There was no further receipt/ issue during the month. Make entries in the stack register and update it.

Answer Key:

Page No. 1 Contraceptives
 Name of item/ Article: Condoms Unit: Pieces

1	2	3	4		5	6	7
Date	Received from/ Issue to and Reference	QUANTITY IN UNITS			Balance	Name & Signature	Remarks
		Received	Issued				
			For Care	Discarded			
1.7.14	O/B				3256		
6.7.14	Provincial warehouse IRV XYZ dated 3.7.14	5000			8256		
10.7.14	BHU Rajanpur: IRV 2314		300		7956		
10.7.14	BHU Mithi: IRV 2315		105		7851		
10.7.14	RHC Kalat: IRV 2316		550		7301		
10.7.14	FWC Pubbi: IRV 2317		55		7246		
10.7.14	FWC Mariabad: IRV 2317		40		7206		

Public Sector Requisitioning
Contraceptive Requisitioning Form (Integrated CLR-6)

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

Department of Health											
A - Executive District Officer - EDO-Health (Static facilities including Tertiary Care Hospitals)											
S.No	Description	Condom (No.)	Oral Pills(M.Cycles)			IUD (Pieces)		Injectables(Vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1		2	4	5	6	7	8	9	10	11	12
PART - A (To be filled by Re quester)											
A-1	Consumption during the last quarter										
A-2	Stock at the end of last quarter at district Store										
A-3	Stock at the end of last quarter at health outlets										
A-4	Total Stock Available (A2+A3)	0	0	0	0	0	0	0	0	0	
A-5	Desired stock level for 2 quarters (A1x2)	0	0	0	0	0	0	0	0	0	
A-6	Replenishment Requested (A5 -A4)	0	0	0	0	0	0	0	0	0	
B - District Program Implementation Unit-DPIU (Community based distribution-LHW Programme)											
PART - A (To be filled by Requester)											
B-1	Consumption during the last quarter										
B-2	Stock at the end of last quarter at district Store										

D-4	Total Stock Available (D2+D3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D-5	Desired stock level for 2 quarters (D1x2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D-6	Replenishment Requested (D5-D4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Replenishment for DOH		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Population Welfare Department																		
E - District Population Welfare Office - DPWO																		
PART - A & B (To be filled by Requester) - Part - A																		
1	Avg. quarterly sale on the basis of last three months consumption																	
2	Sale/Use Last Month																	
3	Amount of sales proceeds deposited in bank/treasury (Attach original paid challan)																	
4	Bank/Treasury challan no. & Date																	
S.No	Description	Condo in (No.)	Oral Pills(M.Cycles)			IUD (Pieces)			Injectables(Vials)			Remarks						
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)	Implant								
1	2	3	4	5	6	7	8	9	10	11	12							
PART-B																		
E-1	Consumption during the last quarter																	

E-2	Stock at the end of last quarter at district Store																	
E-3	Stock at the end of last quarter at population outlets																	
E-4	Total Stock Available (E2+E3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E-5	Desired stock level for 2 quarters (E1x2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E-6	Replenishment Requested (E5-E4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F - Reproductive Health Centers (RHS-A)																		
PART - A & B (To be filled by Requester) - Part-A																		
1	Avg quarterly sale on the of last three months consumption																	
2	Sale/Use Last Month																	
S.No	Description	Condom (No.)	Pills(M.Cycles)	IUD (Pieces)		Injectables(Vials)		Oral		Implant		Remarks						
1	Amount of sales proceeds deposited in band/treasury (Attach original paid challan)	3	4	5	6	7	8	9	10	11	12							
3	Bank/Treasury challan no & Date																	
PART-B																		
F-1	Consumption during the last quarter																	
F-2	Stock at the end of last quarter at district Store																	

F-3	Stock at the end of last quarter at health outlets																	
F-4	Total Stock Available (F2+ F3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F-5	Desired stock level for 2 quarters (F1x2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F-6	Replenishment Requested (F5-F4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G - Marie Stopes International (MSI)																		
PART - A & B (To be filled by Requester) - Part-A																		
S.No	Description	Condom (No.)	Pills(M.Cycles)			IUD (Pieces)		Injectables(Vials)		Implant	Remarks							
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)									
1	2	3	4	5	6	7	8	9	10	11	12							
1	Avg. quarterly sale on the basic of last three months consumption																	
2	Sale/Use Last Month																	
3	Amount of sales proceeds deposited in bank/treasury (Attach original paid challan)																	
4	Bank/Treasury challan no. & Date																	
PART-B																		
G-1	Consumption during the last quarter																	
G-2	Stock at the end of last quarter at district Store																	
G-3	Stock at the end of last quarter at health outlets																	

G-4	Total Stock Available (G2+G3)	0	0	0	0	0	0	0	0	0	0	0	0	0
G-5	Desired stock level for 2 quarters (G1x2)	0	0	0	0	0	0	0	0	0	0	0	0	0
G-6	Replenishment Requested (G5-G4)	0	0	0	0	0	0	0	0	0	0	0	0	0
H - Family Planning Association of Pakistan (FPAP)														
S.No	Description	Condom (No.)	Oral Pills(M.Cycles)			IUD (Pieces)			Injectables(Vials)			Implant	Remarks	
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)					
1	2	3	4	5	6	7	8	9	10	11	12			
PART - A & B (To be filled by Requester) - Part-A														
1	Avg. quarterly sale on the basis of last three months consumption													
2	Sale/Use Last Month													
3	Amount of sales proceeds deposited in bank/treasury (Attach original paid challan)													
4	Bank/Treasury challan no. & Date													
PART - B														
H-1	Consumption during the last quarter													
H-2	Stock at the end of last quarter at district Store													
H-3	Stock at the end of last quarter at health outlets													
H-4	Total Stock Available (H2+H3)	0	0	0	0	0	0	0	0	0	0	0	0	0
H-5	Desired stock level for 2 quarters (H1x2)	0	0	0	0	0	0	0	0	0	0	0	0	0

S.No	Description	Condom (No.)	Oral Pills(M.Cycles)			IUD (Pieces)		Injectables(Vials)		Implant	Remarks
			POP	COC	EC	Multiload	Copper-T	Norigest (NET-EN)	Megestron (DMPA)		
1	2	3	4	5	6	7	8	9	10	11	12
H-6	Replenishment Requested (H5-H4)	0	0	0	0	0	0	0	0	0	
Total Replenishment for PWD		0	0	0	0	0	0	0	0	0	
Grand Total		0	0	0	0	0	0	0	0	0	
PART - B (To be filled at warehouse)											
7	Quantity Approved										
8	Relevant Issue Voucher										

EDO (Health) / DHO

Signature_____

Name_____

Designation_____

Date_____

DPWO

Signature_____

Name_____

Designation_____

Date_____

Integrated CLR-6 Job Aid

This form is used by all district level public sector Family Planning Service Providers (DPWO, DOH & LHW, PPHI) for requesting contraceptives from Central Warehouse.

The new integrated CLR-6 was introduced in 2012 and it compiles requests from departments of Health and Population at district level. This form indicates the stock status and consumption during the past quarter and indicates the quantity requested for each contraceptive for this quarter. Immediately below is a job aid which explains how to complete the form with the CLR 6 following.

Job Aid: Completing the Integrated Contraceptive Requisition Form CLR 6

Purpose:	To request contraceptives from Central Warehouse and provide a report on consumption and stock status to PWD, DOH and P& D
Used by:	All district level public sector Family Planning Service Providers (DPWO, DOH & LHW, PPHI)
Completed By:	District level Officer in Charge at the DOH and PWD
When to Perform:	Quarterly
Materials Needed:	Updated Stock Cards for last 3 months, LMIS Reports, calculator, pen
Signed by:	District Population Welfare officer and Executive District Officer Health

Step	Action	Notes
1	For: Insert the name of the person or position who the Requisition is intended for	For Example: Director of Central Warehouse
2	Requisition No: Insert the appropriate Requisition number	This is determined by each District. Consult with the In Charge.
3	Requisition Date: Write the date that you are sending in this order.	The Requisition should be completed at the end of the reporting period. Example: 1 April 2013
4	Department of Health Section A-D All steps are completed by following the instructions below. The only difference is who fills out sections A – D.	Section A is completed by the District Officer for the district Section B is completed by the District Program Implementation Unit (DPIU) Section C is completed by PPHI/CMIPCH Section D is completed by MNCH
5	Section A A-D 1 Provide the consumption at your facility for the past quarter	Completed by Executive District Officer Provide this information for all products/columns on the form.
6	A-D 2 Provide the amount of stock on hand at the district store at the end of this quarter	Conduct a physical inventory and update your stock cards afterwards.
7	A-D 3 Provide total amount of stock at all health outlets in this district at the end of this quarter	Find this by reviewing all facility reports.

8	A-D 4 Determine the desired stock amount for the next two quarters.	Multiply the figure in A1 by 2. (Double your consumption for the quarter that just ended)
9	A-D 5 Determine your replenishment	(A5 - A4) subtract how much stock you have from the total you wish to have for the next period.

1	<p>Population Welfare Department</p> <p>Sections E-H All sections are completed by following the steps below. The only difference is who fills out parts E – H.</p>	<p>Section E is completed by DPWO Section F is completed by Reproductive Health Centers (RHS) Section G is completed by Marie Stopes Int'l Section H is completed by Family Planning Associations of Pakistan (FPAP) Each Section has two parts - an A and B. Each part A and B is the same for all Sections</p>
2	Sections E-H, Part A1 Avg. quarterly sale on the basis of last three months consumption	Calculate the average sale per month based on the last quarter consumption and write in Pak rupees. The condoms are sold at 0.5 Rs per unit while all other contraceptive at 3 Rs. / unit or cycle
3	E-H, A 2 Sale/Use Last Month	Indicate sale in Pak rupees for all contraceptives in this cell. The sale is calculated by multiplying the use/consumption by sale prices
5	E-H, A 3 Amount of sales proceeds deposited in bank/treasury (Attach original paid challan)	Write amount that was deposited from these sales into the bank or treasury. Remember to keep track of your receipts or bank numbers
6	E-H, A 4 Bank/Treasury challan no. & Date	Write the reference number of challan no. with date
7	E-H, B 1 Consumption during the last quarter	Add up the total consumption for all products during the quarter that just ended. Find this information from the web-based LMIS if consumption data is regularly entered into it every month
8	E-H, B 2 Stock at the end of last quarter at district Store	This should be done by conducting a physical count. Update the corresponding stock cards at the same time so your true balance is known.
9	E-H, B 3 Stock at the end of last quarter at health facilities	Add the monthly reports from all the health facilities in the district. Make estimates for non-reporting facilities
10	E-H, B 4 Total Stock Available	Add steps 2+3 above

11	E-H, B 5 Desired stock level for 2 quarters	Multiply step 1 (Consumption during the last quarter) X 2
12	E-H, B 6 Replenishment Requested	Subtract step 4 from step 5 desired stock level – total stock available

Task is complete when:

- The Requisition Number and Date are filled in.
- When either sections A- D or sections E – H have been completed for the 9 commodities.
- The Maximum Quantity for the District to have on hand is calculated
- The Order Quantity is calculated.
- The name, signature and date of the person are filled in.
- An authorized person signs and dates the requisition
- Send CLR 6 to Central Warehouse
- Confirm CWH has received CLR 6

Integrated CLR 6 Exercise

Following is the consumption data for COC in your district. Please fill in the appropriate cells in the CLR-6 form to complete the requisition.

COC issued to clients from facilities during from 01 Oct to 31 Dec 2013

	Facility-A	Facility-B	Facility-C	Facility-D
Consumption	832	765	1,032	755
Stock on hand (as of 31 Dec 2013)	1,003	432	654	109

Stock on hand at district store as of Dec 31, 2013 is 1,200 cycles of COC

S. No.	Description	Condom (No.)
1	2	3
PART - A (To be filled by Requester)		
A-1	Consumption during the last quarter	
A-2	Stock at the end of last quarter at district Store	
A-3	Stock at the end of last quarter at health outlets	
A-4	Total Stock Available (A2+A3)	
A-5	Desired stock level for 2 quarters (A1x2)	
A-6	Replenishment Requested (A5-A4)	

Sample data for condoms:

Date	Received from	Issued to	IV/Memo No.	Qty.	Present Stock	Signature	
						Storekeeper	Supervisor
02/05/12	CWH		183/00	250	380	Md. Ali	B. Hossain
06/05/12		LHW		50	330	Md. Ali	
15/05/12		FWC		100	230	Md. Ali	
22/05/12		RHC		200	130	Md. Ali	

Sample data for iron tablets:

Date	Received from	Issued to	IV/Memo No.	Qty.	Present Stock	Signature	
						Storekeeper	Supervisor
02/05/00	Medical Stores Depot (MSD)		183/00	500	1225	Md. Ali	B. Hossain
06/05/00		LHW		50	1175	Md. Ali	
15/05/00		BHU		100	1075	Md. Ali	
22/05/00		LHV		250	825	Md. Ali	

Sample data for paracetamol:

Date	Received from	Issued to	IV/Memo No.	Qty.	Present Stock	Signature	
						Storekeeper	Supervisor
02/05/00	MSD		183/00	200	235	Md. Ali	B. Hossain
06/05/00		LHW		75	160	Md. Ali	
15/05/00		LHW		50	110	Md. Ali	
22/05/00		THQ		100	10	Md. Ali	

Sample data for eye ointment:

Date	Received from	Issued to	IV/Memo No.	Qty.	Present Stock	Signature	
						Storekeeper	Supervisor
02/05/00	DRS		183/00	50	105	Md. Ali	B. Hossain
06/05/00		senior staff nurse		20	85	Md. Ali	
15/05/00		health inspector		50	35	Md. Ali	
22/05/00		pharmacist		15	20	Md. Ali	

SELF-MONITORING CHECKLIST: RECEIVING GOODS

Question	Yes	No	Remarks
Did I ensure that the quantity of products received matches the quantity written on the issue voucher?			
Did I check the quality and expiration of the products?			
If I found damaged or expired goods, did I resolve the situation with the supplier? (for FP commodities: Did I mark the discrepancy on the IIV and return the product to the supply source?)			
Did I sign for receipt of the commodities?			
Did I take the commodities and the issue voucher from the supply source?			
Did I convene the standing committee?			
If any discrepancies were found, did I take action as instructed by the committee?			
Did I get the signatures of committee members?			
Did I send the duplicate voucher to the supply source within 7 days?			
Did I store the commodities following FEFO?			
Did I update the bin card(s) and inventory control register?			
Did I file the original of the issue voucher?			

SELF-MONITORING CHECKLIST FOR RECORDING

At the time of an issue:

Question	Yes	No	Remarks
Did I update the bin cards and stock register at each issue?			
Did I note the amount issued and bring the balance up to date by subtracting the quantity issued from the previous stock on hand?			

At the time of a receipt:

Question	Yes	No	Remarks
Did I update the bin cards and stock register at each receipt?			
Did I note the amount received and bring the balance up to date by adding the quantity received to the previous stock on hand?			

At the time of physical inventory:

Question	Yes	No	Remarks
Did I update the bin cards and stock register at each physical inventory?			
Did I note any discrepancies on the bin cards and inventory control register, add (for excess) or subtract (for shortage), and bring the balance up to date?			

District Contraceptive Stock Report

Distribution

1. Province Office
2. Office Copy For the Month of _____ Year _____ Name of District _____

(PART -I)												
District Store	CONDOM (Units)	ORAL PILL (Cycles)			IUD (Pieces)		INJECTABLE (Vials)		Nurplant	Contraceptive Surgery (Cases)		REMARKS
		(Micrograms/Le-Feminal/ etc)	Ethinon Tablet	Postinor 2/ etc		Multinord/ etc	Norgestrel/ etc	Megestrol/De-po/ etc		CS (Cases)		
		COC	POP	(EC)	Copper-T 380-A	Copper-T 375	Net-Ea	DMPA		Male	Female	
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Opening Balance												
2. Received From Central Warehouse												
3. Issued To Field												
4. Closing Balance												
(i) District Store												
(ii) Field												CS (Cases)
Total												
5. Expired Stock												
6. Untraceable Stock												
(PART -II)												
Field	CONDOM (Units)	ORAL PILL (Cycles)			IUD (Pieces)		INJECTABLE (Vials)		Nurplant	Contraceptive Surgery (Cases)		REMARKS
		(Micrograms/Le-Feminal/ etc)	Ethinon Tablet	Postinor 2/ etc		Multinord/ etc	Norgestrel/ etc	Megestrol/De-po/ etc		CS (Cases)		
		COC	POP	(EC)	Copper-T 380-A	Copper-T 375	Net-Ea	DMPA		Male	Female	
1	2	3	4	5	6	7	8	9	10	11	12	13
01. FWCs												
Opening Balance												
Received From District Store												
Sold												
Closing Balance												
02. MSUs												
Opening Balance												
Received From District Store												
Sold												

SDP/Health Facility Monthly Contraceptive Report and Requisition

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

Prepared by: Signature _____ Name _____ Designation _____ Date _____	Verified by: Signature _____ Name _____ Designation _____ Date _____
--	--

Job-Aid.....Instructions for filling the SDP Report

1. Facility: write down the name of service delivery point sending the report e.g. BHU Mirpur or FWC Haripur.
2. District: Write down the name of relevant district e.g. district Peshawar
3. Reporting Month: Month along with year for which the report is being prepared e.g. April 2014.
4. Opening Balance: The stock of relevant contraceptive available is store at the start of relevant month.
5. Received: The total quantity of relevant contraceptive received (from all source) during the reporting month.
6. Issued: The total quantity of relevant contraceptives issues to clients during the reporting month.
7. Adjustments (+)/ (-): Any adjustments made in the stock during the month in light of physical verification or expiry destructions etc.
8. Closing Balance: The stock of relevant contraceptive at the end of the reporting month.
9. Next Month's requirement: The estimated requirement for next month (based on the estimates of number of visits or AMC), Subtracting the closing balance.
10. Prepared By: signatures, name and designation of the person preparing the form (store Keeper).
11. Verified By: Signatures, name and designation of person verifying the report (In charge of facility or MS of hospital etc.)

Exercise: SDP/Health Facility Monthly Contraceptive Report and Requisition:

Mr. Asif is the storekeeper of BHU Hatian, district Attock, this facility provides condoms, COC Pills, 2-Months and 3- Months injections and Copper-T, to the clients. On 1st April 2014 the stock position at the health facility was as under: Condoms 720 pieces, COC pills 45 cycles, 2- months injections 25 vials, 3 months injections 18 vials, and 5 pieces of Copper –T. The details of contraceptives issues from the facility during the month is Condoms 680 pieces, COC pills 33 cycles, 2- months injections 18 vials, 3 months injections 12 vials, and Copper –T 3 pieces . During the month the facility received 432 condoms, 20 cycles of COC, 10 vials each of 2-months and 3- month's injection. No adjustments were made during the month. The AMC for different methods at this BHU is Condoms 700 pieces, COC pills 40 cycles, 2- months' injections 24 vials, 3 months injections 20 vials, and Copper –T 4 pieces.

Fill in the SDP/Health Facility Monthly Contraceptive report and Requisition form for the said month:

Answer Key:

SDP/ Health Facility Monthly Contraceptive Report and Requisition

Facility: BHU Hatian

District: Attock

Reporting Month: April 2014

Item Name	Opening Balance	Received	Issued	Adjustments		Closing Balance	Next Month's Requirement
				(+)	(-)		
Condoms	720	432	680	Nil	Nil	472	228
COC	45	20	33	Nil	Nil	32	08
POP	N.A	N.A	N.A	Nil	Nil	N.A	N.A
ECP	N.A	N.A	N.A	Nil	Nil	N.A	N.A
Copper -T	05	00	3	Nil	Nil	02	02
Multi Load	N.A	N.A	N.A	Nil	Nil	N.A	N.A
2- Months inj.	25	10	18	Nil	Nil	17	07
3- Months inj.	18	10	12	Nil	Nil	16	04
Implanon	N.A	N.A	N.A	Nil	Nil	N.A	N.A

Prepared By:

Signature _____

Name: Asif

Designation: Store Keeper

Date: 30.04. 2014

Verified By:

Signature _____

Name _____

Designation: MO In Charge

Date: 30.04.2014

VISUAL INDICATORS OF CONTRACEPTIVE QUALITY PROBLEMS

Oral Contraceptives:

Do not use the pills in a packet if:

- a pill crumbles when it is pushed through the aluminum backing
- the aluminum packaging for any of the pills is broken
- the packet is missing pills
- some pills are not the correct color

Condoms:

Do not use condoms if:

- the condom packets are sticky or brittle
- condoms or their lubricants have discolored

Note:

Condoms can be damaged by prolonged exposure to sunlight, temperatures over 40°C, humidity, ozone (produced by fluorescent lights, electric motors, smog), or contact with any oil (e.g., mineral or vegetable oils). Chemical products should not be stored in the same warehouse with condoms, as petroleum vapors and various types of liquid solvents damage the condoms.

IUDs:

Do not use IUD if:

- sterile packaging has been broken or perforated
- the IUD has parts missing

Note:

All product contents should be in the sterile wrapper, and the insert information must be legible. It is acceptable for the copper on copper-bearing IUDs to darken. Note: Shelf-life is different from use life; many IUDs are now effective for up to eight years after insertion even if the IUD was inserted near (but always before) its expiry date.

Injectables:

Do not use injectables if:

- vials are cracked or broken
- contents do not return to suspension after shaking

Note:

Vials will remain potent and stable up to the expiry date if stored at room temperature (15-30°C). If contents separate, shake to restore suspension.

Implants:

Do not use implants if:

- the implant's sterile packaging is broken
- some of the capsules are missing

Note:

Implants must be protected from excessive heat and direct sunlight, and must be stored in a dry place.

SHELF LIFE OF CONTRACEPTIVES

Contraceptive Brand Name	Shelf Life
Lo-Femenal (Combined low dose)	5 years
Ovrette (Progestron only)	5 years
Condom	4 years (USAID)
Copper T 380-A	7 years (USAID)
Micro -Gynon 30	5 years
Micronor	5 years
Megestron	3 years (USAID)
Neo-Sampoon	3 years
Depo-Provera	4 years (USAID) 5 years (other)
Norplant	3 or 5 years (USAID)

Note: The shelf life for each product is generally applicable. However, as with all health and family planning commodities, the shelf life should always be double-checked and verified using the manufacture and expiry dates of received commodities.

SUPERVISION CHECKLIST FOR VISITS TO HEALTH FACILITIES

Supervisor Conducting Visit: _____

Name of facility supervisor: _____

Health Facility Name: _____

Date of supervision visit: _____

Date of last supervision visit: _____

Name and title of the staff member(s) interviewed: _____

Preparation for the visit:

1. Prepare a schedule for the visits to the health facilities
2. Take copies of the Checklist for most or all of the staff you will visit
3. Arrange for transport and allowances at least one week prior to visit.
4. Notify the health facilities of your visits.
5. Review the report from the last visit and the recommendations that were made.
6. Take along the SOPs for the System, this checklist and a calculator.
7. Take along extra LMIS forms and RH commodities that facilities may need

Upon arriving at the facility:

1. Meet with the facility in-charge, make introductions, give your objective(s) for the visit, and ask for permission to visit with the staff
2. Assemble the staff when appropriate.
3. Enquire and verify if the SOPs are available in the facility and used.
4. Make notes on the back of the checklist as you go along, and invite them to do the same thing. You can share your notes later
5. Don't try to do a Physical Inventory of all the commodities. Use your best judgment as to which are the indicator or high usage commodities and spot check on a number of these.
6. Keep a folder of the Checklists you have completed so that you can see the progress of individual sites and also note trends and problems in the area Consider what priority changes or improvements you want to see in in the system before the next visit Make agreements on them

Checklist Purpose:

To ensure that:

1. planned logistics activities are being carried out properly and according to schedule;
2. all records are correctly maintained and reports are submitted in a timely manner;
3. established logistics guidelines and procedures are being followed;
4. logistics personnel are doing their jobs properly, and if not, why not;
the performance of logistics personnel continuously improves.

Item	Action
1	Review the last visit trip report and note points which required some action at either end.
2	<p>Are logistics records (LMIS forms) being filled in completely and accurately? Are they being submitted in a timely manner and to the appropriate places?</p> <p>(If not, do personnel know how to fill in the forms? Do they know the procedures for submitting them? If not, provide on-the-job training.)</p>
3	<p>Are reproductive health commodities being ordered and issued according to established policies?</p> <p>(If not, do personnel know the established policies regarding ordering and issuing? If not, provide on-the-job training.)</p>
4	<p>Storage of Reproductive Health Commodities:</p> <ul style="list-style-type: none"> a. Is storage area clean? _____ b. Is storage area safe from water damage? _____ c. Is storage area well lighted and well ventilated? _____ d. Is cold storage/chain maintained for drugs that require it? _____ e. Are cartons/boxes stored off the floor? _____ f. Are cartons/boxes stacked away from walls? _____ g. Are cartons/boxes marked with expiry dates? _____ h. Are commodities stored to facilitate FEFO distribution? _____ i. Are commodities stored separately from office supplies, insecticides, and chemicals? _____ <p>(If not, do personnel have the required knowledge/skills related to storage? If not, identify knowledge/skill deficiencies and provide on-the-job training)</p>
5	<p>Are commodities being issued according to the FEFO guideline (FIRST-To-Expire, FIRST OUT)?</p> <p>(If not, do personnel understand the principle of FEFO? If not, explain the principle and provide ideas on how commodities should be stored to facilitate FEFO distribution.)</p>
6	<p>Have procedures to get rid of expired or damaged commodities been undertaken?</p> <p>(If not, do personnel know the procedures? If not, review the procedures with them.)</p>
7	<p>Are stock levels at each facility adequate (not above the maximum quantity; not at an emergency order level)?</p> <p>(If you think there is a problem, advise the facility personnel accordingly. Take the necessary actions to correct the situation.)</p>
8	<p>Check the Months of Stock on hand for key commodities. Use the formula:</p> $\frac{\text{STOCK ON HAND}}{\text{AVERAGE MONTHLY ISSUES}} = \text{MONTHS OF STOCK ON HAND}$ <p>(If stocks are not within the recommended maximum and minimum levels, advise the facility personnel accordingly; provide OJT for assessing stock status if needed, and take the necessary actions to correct the situation.)</p>

9	<p>Are physical inventories being conducted and properly recorded on the Inventory Control Card?</p> <p>(If not, do personnel know how to conduct a physical count and why it is important to do so? If not, take a physical count of stock with the personnel and emphasize the importance of conducting routine physical inventories. Demonstrate how to record a physical count on the Inventory Control Card.)</p>
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Form-A-1 (EPI)



Expanded Program on Immunization, Government of Pakistan

Stock Issue & Receipt Voucher

(To be filled by Federal/Provincial/District Warehouses)



Routine Immunization

Supply from (Federal/Provincial): _____ Issued To (Province/District): _____ Date: _____

S.No	Products	Doses per vial	Manufacturer	Batch #	Expiry Date (MM/YY)	Unit Cost (\$)	Issue Quantity		Receive Quantity			
							Vials/ Nos. (F)	Total Doses (G = A x F)	Vials/ Nos. (I)	Total Doses (J = A x I)		
		A	B	C	D	E	F	G	H	I	J	K
1	BCG	20										
2	DIL BCG											
3	TOPV	20										
4	Pentavalent	01										
5	Pneumococcal (PCV10)	02										
6	Measles	10										
7	DIL Measles											
8	TT	10										
9	TT	20										
10	HBV (Birth dose)	10										
11	IPV	10										
12	AD Syringes 0.5 ml											
13	AD Syringes 0.05 ml											
14	Recon. Syringes (2 ml)											
15	Recon. Syringes (5 ml)											
16	Safety Boxes											
17												
18												
19												
20												

Note: Use blank rows, if needed to add more than one batch received for one product/new products

Issued by - Name & Designation: _____
 Warehouse Name: _____
 Signature & Date: _____

Received by - Name & Designation: _____
 Warehouse/store Name: _____

Job-Aid: How to use Form A-I Stock Issue & Receipt Voucher for Routine Immunization

Note: *This form shall replace the old forms*

A – Stock receipt voucher from Suppliers

B - Stock receipt voucher from Warehouse

C – Stock issuance voucher

From / User	Federal / Provincial / District EPI Stores
To / For	Provincial / Divisional / District EPI Stores
Timeline	As and when required

Step by step procedure

A. This form is to be filled by federal / provincial / district EPI store in-charge for issue / dispatch of vaccine to next level.

B. Form contains 3 carbonized copies of white yellow and blue colors.

- 1) Write issuing store name in the space “Supply from”
- 2) Write receiving store name in the space “Issued to”
- 3) Write date of issue / dispatch
- 4) Columns B to H should be filled by issuing store (federal / provincial).
- 5) Enter manufacturer's name in column 'B'.
- 6) Enter batch / lot number in column 'C'.
- 7) Use blank rows in case of more than one batch of same vaccine
- 8) Enter expiry date for each batch in column 'D' as (MM / YY)
- 9) Write unit cost in US dollars in column 'E'
- 10) Enter quantity issued as number of vials / syringes / safety boxes in column 'F'
- 11) Enter quantity issued as number of vaccine doses in column 'G'. To calculate multiply number of doses per vial given in column 'A' with number of vials issued in column 'F'.
- 12) Write VVM (vaccine vial monitor) stage 1 or 2 in column 'H'.
- 13) Enter name & designation of person issuing the stock
- 14) Write name of the issuing warehouse
- 15) Sign the form.
- 16) Keep one copy for record and send two copies with the stock to receiving store

C. Columns I to K will be filled by the receiving store in-charge (provincial / district).

- 1) Enter quantity received as number of vials / syringes / safety boxes in column 'I'
- 2) Enter quantity received as number of vaccine doses in column 'J'. To calculate multiply number of doses per vial given in column 'A' with number of vials received in column 'I'.
- 3) Write VVM (vaccine vial monitor) stage 1 or 2 in column 'K'.
- 4) Enter name & designation of person receiving the stock
- 5) Write name of the receiving warehouse
- 6) Sign the form.
- 7) Keep one copy for record and send one copy back to the issuing store

Form-A-II (EPI)



Expanded Program on Immunization, Government of Pakistan

Stock Issue & Receipt Voucher

(To be filled by District/Tehsil/Taluka Stores)



Campaigns Type (_____)

Supply from (District/Tehsil/Taluka): _____ Issued To (Tehsil/Taluka/UC): _____ Date: _____

S.No	Products	Doses per vial	Manufacturer	Batch #	Expiry Date (MM/YY)	Issue Quantity		Receive Quantity	
						Vials/Nos. (E)	Total Doses (F = A x E)	Vials/Nos. (H)	Total Doses (I = A x H)
1	mOPV1	20	B	C	D				
2	bOPV	20							
3	tOPV	20							
4	Measles	01							
5	DIL Measles								
6	TT	10							
7	AD Syringes 0.5 ml								
8	Recon. Syringes (5 ml)								
9	Safety Boxes								
17									
18									
19									
20									

Note: Use blank rows, if needed to add more than one batch received for one product/new products

Issued by – _____
 Name & Designation: _____
 Store Name: _____
 Signature & Date: _____

Received by – _____
 Name & Designation: _____
 Store Name: _____
 Signature & Date: _____

Job-Aid: How to use Form A-II Stock Issue & Receipt Voucher for SIAs

Note: *This form shall replace the old forms*

B - Stock receipt voucher from Warehouse

C – Stock issuance voucher

From/ User	District & Sub-district EPI Stores
To/For	Tehsil / Union Council / Health Facility
Timeline	As and when required

Step by step procedure

- A. This form is to be filled by divisional / district EPI store incharge for issue / dispatch of vaccine to next level.
- B. Form contains 3 carbonized copies of white yellow and blue colours.
- 1) Write issuing store name in the space “Supply from”
 - 2) Write receiving store name in the space “Issued to”
 - 3) Write date of issue / dispatch
 - 4) Columns B to G should be filled by issuing store.
 - 5) Enter manufacturer's name in column 'B'.
 - 6) Enter batch / lot number in column 'C'.
 - 7) Use blank rows in case of more than one batch of same vaccine
 - 8) Enter expiry date for each batch in column 'D' as (MM / YY)
 - 9) Enter quantity issued as number of vials / syringes / safety boxes in column 'E'
 - 10) Enter quantity issued as number of vaccine doses in column 'F'. To calculate multiply number of doses per vial given in column 'A' with number of vials issued in column 'E'.
 - 11) Write VVM (vaccine vial monitor) stage 1 or 2 in column 'G'.
 - 12) Enter name & designation of person issuing the stock
 - 13) Write name of the issuing warehouse
 - 14) Sign the form.
 - 15) Keep one copy for record and send two copies with the stock to receiving store
- C. Columns H to J will be filled by the receiving store incharge (tehsil / UC / health facility).
- 1) Enter quantity received as number of vials / syringes / safety boxes in column 'H'
 - 2) Enter quantity received as number of vaccine doses in column 'I'. To calculate multiply number of doses per vial given in column 'A' with number of vials received in column 'H'.
 - 3) Write VVM (vaccine vial monitor) stage 1 or 2 in column 'J'.
 - 4) Enter name & designation of person receiving the stock
 - 5) Write name of the receiving warehouse
 - 6) Sign the form.
 - 7) Keep one copy for record and send one copy back to the issuing store

Exercise for Completing the A-II Form

Using the data below complete the Issuing part of the Stock Issue and Receipt Voucher
The vaccines are coming from Karachi District and being sent to Saddar Town
The date is January 2nd 2016

The vaccines being sent are:

- 300 mOPV1 vials from Novartis with an expiry date of 6-16 with batch # 142722 and a VVM stage 2
- 400 bOPV vials from Sanofi France with an expiry date of 7-16 with batch # L5092-1 and a VVM stage 2
- 350 Measles vials from Serum India 9-16 with batch #s 004F4087 and 004F4077 and VVM stage 1

These materials were issued by Mohammad Abbas, storekeeper from Karachi South Store

When you have completed entering the Issuing data suppose that you are the receiving facility at Saddar Taluka and complete the Receive Quantity columns appropriately with what you discovered when opening up the cold box....

mOPV vials received in good condition 300 with a VVM stage 2

bOPV vials received in good condition 395 with five cracked and leaking all with VVM stage 2

Measles vials received in good condition 100 with the batch ending in 087 having a VVM stage of 1 and 250 with the batch ending in 077 having a VVM stage of 2

They were received by Tariq Siddique stores manager at Saddar Central

Answer key:

Expanded Program on Immunization, Government of Pakistan
 Stock Issue and Receipt Voucher
Routine Immunization
 Campaigns Type (_____)

Supply from (District/Tehsil/Taluka):__Karachi South Store__ Issued To (Tehsil/Taluka/UC): _Saddar Town_ Date: 2/1/2016

S. No	Products	Doses per vial	Manu facturer	Batch #	Expiry Date (MM/YY)	Issue Quantity			Receive Quantity		
						Vials/ Nos.	Total Doses (F= AxE)	VVM Stage	Vials/ Nos.	Total Doses (I= AxH)	VVM Stage
		A	B	C	D	E	F	G	H	I	J
1	mOPV1	20	Novartis	142722	June 2016	300	6000	2	300	6000	2
2	bOPV	20	Sanofi France	L5092-1	July 2016	400	8000	2	395	7900	2
3	tOPV	20									
4	Measles	01	Serum India	004 F4087 and 004F4077	Sept 2016	350	350	1	100-004F4087 250-004F4077	100 250	1 2

5	DIL Measles									
6	TT	10								
7	AD Syringes 0.5 ml									
8	Recon. Syringes (5 ml)									
9	Safety Boxes									
17										
18										
19										
20										

Note: Use blank rows, if needed to add more than one batch received for one product/new products

<p>Issued by – Name & Designation: Mohammad Abbas, Storekeeper Store Name: _____ Karachi South Store _____ Signature & Date: _____</p>	<p>Received by – Name & Designation: Tariq Siddique, Store Manager Store Name: _____ Saddar Central _____ Signature & Date: _____</p>
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Expanded Program on Immunization, Government of Pakistan
Consumption & Requisition Form



Routine Immunization

Health Facility/Store: _____ UC _____ Tehsil/Taluka: _____ District: _____ Province: _____ Date: _____ (MM/YY)

Product	Dose per Vial	Operating Balance		Received Doses/Nos.	Children Vaccinated/Doses Administered	Vials Used	Unusable Vials	Closing Balance		Max. Stock Level	Request (I = H - G)		Replenishment		
		Doses/Nos.	B					Doses/Nos.	C		Doses/Nos.	E		Vials/Nos.	F
BCG	20														
DIL BCG															
TOPV	20														
Pentavalent	01														
Pneumococcal (PCV10)	02														
Measles	10														
DIL Measles															
TT	10														
TT	20														
HBV (Birth dose)	10														
IPV	10														
AD Syringes 0.5 ml															
AD Syringes 0.05 ml															
Recon. Syringes (2 ml)															
Recon. Syringes (5 ml)															
Safety Boxes															

Note: i. Use blank rows, if needed to add more than one batch received for one product/new products

ii. This report to be sent every month by every HF to the district by 7th of next month and by every district to the province by 10th of next month. Provinces will send this to Federal EPI by every quarter.

Prepared By _____ Medical Officer / In-charge (Signature) _____ Date: _____

Job-Aid: How to use Form B: Consumption & Requisition Form for Routine Immunization

Note: *This form shall replace the old forms*

D – Monthly consumption reporting form (EPI center)

E – Provincial Vaccine Requisition Form

F – Divisional/District/Sub-District Vaccine Requisition Form

G – Union Council (EPI Center) Vaccine Requisition Form

From/User	Health Facility / Union Council / Tehsil
To/For	District / Divisional / Provincial EPI centers
Timeline	Monthly

Step by step procedure

- A. This form is to be filled by health facility / UC, EPI centers as monthly consumption report and requisition for next month.
- B. Form contains 3 carbonized copies of white yellow and blue colors.
- C. EPI center will send the report & requisition to the respective district.
- D. District EPI Center will compile the reports of all its EPI centers in to one Form B and send the consumption & requisition report by 10th of every month to the respective provincial EPI center.
- E. Provincial EPI centers will compile all the reports of respective districts/divisions into one form and send the monthly consumption & requisition report to federal EPI cell
 - 1) Write health facility / store name , UC, Tehsil/Taluka, District, Province names
 - 2) Write month and year of the consumption report
 - 3) In case of District Report, write the district and province name
 - 4) The reporting center will fill in columns B to I
 - 5) Column 'J' will be filled by the respective stock issuing EPI store
 - 6) Enter number of doses available at the center on 1st of the month in column 'B'
 - 7) Enter number of doses received during the month in column 'C'
 - 8) Enter number of doses administered during the month in column 'D'
 - 9) Enter number of vials used during the month in column 'E'
 - 10) Enter number of unusable vials (expired, damaged due to any reason) during the month in column 'F'
 - 11) Enter actual balance of vaccine vials at the end of reporting month in column 'G'
 - 12) Enter maximum stock level (number of vials) for the respective facility. Should be equal to 2 months requirement for Districts / Health facility and 6 months for province
 - 13) Enter number of vaccine vials required for the next month. This will be equal to number of vials in column H minus number of vials in column G.
 - 14) Write name and designation of person completing the form, sign and enter the date
 - 15) Keep one copy for record and send two copies to the respective district / province
 - 16) The respective province / district will fill in column 'J' and enter the number of vials issued to the respective district / EPI center

FORM B (ONLY FOR SINDH PROVINCE)



ROUTINE IMMUNIZATION MONTHLY VACCINATION REPORTING FORM



MONTHLY TARGETS

Month	Year			Children Live Birth
District				Surviving Children (0-11 M)
Taluka				Children Aged (12-23 M)
UC				Pregnant Women
Health Facility				CBA's

Product	Opening Balance (Doses)	Received (Doses)	Number of Children Vaccinated (0-11 Months)						Number of Children Vaccinated (12-23 Months)						Closing Balance (Doses)	Unusable (Doses) * *
			#	Fixed		Outreach		Fixed		Outreach						
				Inside UC	Outside UC	M	F	M	F	Inside UC	Outside UC	M	F			
BCG																
Hep-B																
tOPV			0													
			1													
			2													
			3													
			Total													
Pentavalent			1													
			2													
			3													
			Total													
Pneumococcal (PCV-10)			1													
			2													
			3													
			Total													

IPV			1														
Measles			1														
			2														
			Total														

TT- Coverage

Product	Opening Balance (Doses)	Received (Doses)	S. No	Pregnant Women	CBAs	Closing Balance (Doses)	Unusable (Doses) **
TT			1				
			2				
			3				
			4				
			5				
			Total				

Other Items

Product	Opening Balance (No)	Received (No)	Dispensed (No)	Closing Balance (No)
Diluent BCG				
Diluent Measles				
AD Syringes 0.5 ml				
AD Syringes 0.05 ml				
Reconstitution Syringes (BCG 2 ml)				
Reconstitution Syringes (Measles 5 ml)				
Safety Boxes				

*Vaccine expired, exposed to heat or unusable due to any other reason

Job-Aid: How to use Form B: Routine Immunization Monthly Vaccination Reporting Form (Sindh)

Note: *This form shall replace the old forms*
D – Monthly consumption reporting form (EPI center)

From/User Health Facility / Union Council / Tehsil
To/For District / Divisional / Provincial EPI centers
Timeline Monthly

Step by step procedure

- A. This form is to be filled by health facility / UC EPI centers as monthly consumption report.
- B. Form contains 3 carbonized copies of white, yellow and blue colors.
- C. EPI center will send the report to the respective tehsil.
- D. Tehsil EPI Center will compile the reports of all its EPI centers in to one Form B and send the consumption report by 10th of every month to the respective district EPI center.
- E. Provincial EPI centers will compile all the reports of respective districts/divisions into one form and send the monthly consumption report to federal EPI cell.

Routine Immunization

1. Write health facility / store name, UC, Tehsil/Taluka and District names.
2. Write month and year of the consumption report.
3. Write the monthly targets for Children Live Birth, Surviving Children (0-11 M), Children Aged (12-23 M) and Pregnant Women.
4. Enter number of doses available at the center on 1st of the month in Opening Balance column.
5. Enter number of doses received during the month in Received column.
6. Enter number of doses administered to FIXED male and female children (inside and outside UC) from 0 to 11 months during the month.
7. Enter number of doses administered to OUTREACH male and female children from 0 to 11 months during the month.
8. Enter number of doses administered to FIXED male and female children (inside and outside UC) from 12 to 23 months during the month.
9. Enter number of doses administered to OUTREACH male and female children from 12 to 23 months during the month.
10. Enter actual balance of vaccine in doses at the end of reporting month in Closing Balance column.
11. Enter number of unusable doses (expired, damaged due to any reason) during the month in the Unusable Doses column.

TT-Coverage

12. Enter number of doses available at the center on 1st of the month in Opening Balance column.
13. Enter number of doses received during the month in Received column.
14. Enter number of doses administered to PREGNANT WOMEN during the month.
15. Enter number of doses administered to CBAs (15-49 years) during the month.
16. Enter actual balance of vaccine in doses at the end of reporting month in Closing Balance column.
17. Enter number of unusable doses (expired, damaged due to any reason) during the month in the Unusable Doses column.

Other Items

18. Enter number of items available at the center on 1st of the month in Opening Balance column.
19. Enter number of items received during the month in Received column.

20. Enter number of items dispensed during the month.
21. Enter actual number of items at the end of reporting month in Closing Balance column.
22. Keep one copy for record and send two copies to the respective tehsil / district.

Exercise to fill Form B: Routine Immunization Monthly Vaccination Reporting Form (Sindh)

*Please fill in Form B Sindh below following this job aid using the data (within the parenthesis)

- 1) Write health facility / store name, UC, Tehsil/Taluka and District names. (Zaibun Nisa Hospital, UC-1, Saddar, Karachi)
- 2) Write month and year of the consumption report. (June 2016)
- 3) Write the monthly targets for Children Live Birth, Surviving Children (0-11 M= 213), Children Aged (12-23 M=222) and Pregnant Women (PW=234).
- 4) Enter number of doses available at the center on 1st of the month in Opening Balance column. (BCG 60, tOPV 86, Measles 50)
- 5) Enter number of doses received during the month in Received column. (BCG 60, tOPV 300, Measles 50)
- 6) Enter number of doses administered to FIXED male and female children (inside and outside UC) from 0 to 11 months during the month.
(BCG inside M=10, F=10, outside M=10, F=10)
(tOPV 0 row inside M=19, F=12, outside M=7, F=6)
(tOPV 1 row inside M=19, F=12 outside M=7, F=6)
(tOPV 2 row inside M=31, F=22 outside M=9, F=12)
(tOPV 3 row inside M=49, F=37 outside M=9, F=7)
(Measles 1 row inside M=21, F=10, outside M=4, F=3)
(Measles 2 row – none administered to males or females)
- 7) Enter number of doses administered to OUTREACH male and female children from 0 to 11 months during the month. . (BCG M=10, F=10) (tOPV M=0, F=0) (Measles M=0, F=0)
- 8) Enter number of doses administered to FIXED male and female children (inside and outside UC) from 12 to 23 months during the month. (BCG M=60, F=0) (tOPV M=0, F=0)
(Measles 1 row M=6, F=3, 2 row 0)
- 9) Enter number of doses administered to OUTREACH male and female children from 12 to 23 months during the month. (none administered to either males or females for any vaccine)
- 10) Enter actual balance of vaccine in doses at the end of reporting month in Closing Balance column. (BCG=30) (tOPV=96) (Measles=30)
- 11) Enter number of unusable doses (expired, damaged due to any reason) during the month in the Unusable Doses column. (0 unusable doses for BCG, tOPV, nor Measles)



Expanded Program on Immunization, Government of Pakistan
Demand, Consumption & Receipt Form



Campaigns Type ()

UC Tehsil: District: Province: Campaign Date: from to (MM/YY)

Product	DEMAND						CONSUMPTION					
	Doses per Vial	Target #	Wastage factor	Required		Opening Balance	Requested G = E - F	Received	Children Vaccinated/ Doses Administered	Vials Used	Unusable Vials	Closing Balance
				Doses D = B x C	Vials/Nos. E = D/A							
A	B	C	D	E	F	G	H	I	J	K	L	
mOPV1	20		1.12									
bOPV	20		1.12									
TOPV	20		1.12									
Measles	10		1.11									
DIL Measles												
TT	20		1.11									
AD Syringes 0.5 ml												
Recon. Syringes (5 ml)												
Safety Boxes												

Note:

- i. Use blank rows, if needed to add more than one batch received for one product/new products
- ii. Columns B to G to be filled and sent to the issuing authority at least 2 weeks before the SIA. Column H to K to be filled and sent within 1 week after completion of the SIA

Requested by --
Name & Designation: _____
Store Name: _____
Signature & Date: _____

Received by --
Name & Designation: _____
Store Name: _____
Signature & Date: _____

Reported by --
Name & Designation: _____
Store Name: _____
Signature & Date: _____

Job-Aid: How to use Form C: Consumption & Requisition Form for SIAs

Note: *This form shall replace the old forms*

D – Monthly consumption reporting form (EPI center)

E – Provincial Vaccine Requisition Form

F – Divisional/District/Sub-District Vaccine Requisition Form

G – Union Council (EPI Center) Vaccine Requisition Form

From/User	Health Facility / Union Council / Tehsil
To/For	District / Divisional / Provincial EPI centers
Timeline	Requisition 2 weeks before SIA. Report within one week of SIA

Step by step procedure

- A. This form is to be filled by health facility / UC, district / division and provincial EPI centers as consumption report for every SIA.
- B. Form contains 3 carbonized copies of white yellow and blue colours.
- C. EPI center will send the requisition to the respective district / province by filling the columns B to G at least 2 weeks before the SIA.
- D. EPI center will complete the form by filling in columns H to L and send it to the respective district / province within one week of the completion of SIA
- E. District EPI Center will compile the reports of all its EPI centers in to one Form C and send the report to the respective provincial EPI center.
- F. Provincial EPI centers will compile all the reports of respective districts/divisions into one form and send the report to federal EPI cell
 - 1) Write health facility / store name , UC, Tehsil/Taluka, District, Province names
 - 2) Write date month and year of the SIA
 - 3) In case of District Report, write the district and province name only
 - 4) Enter the targeted number of children to be vaccinated during the SIA in column 'B'
 - 5) Enter number of doses required for the target in column 'D' including the wastage by multiplying number in column B with wastage factor in column C
 - 6) Enter number of vials required in column 'E' by dividing number of doses in D with A
 - 7) Enter number of vials available at the center as balance from previous activity in column 'F'
 - 8) Enter number of vials to be requisitioned in column 'G' by subtracting F from E
 - 9) Enter number of vials received for the activity from respective district / province in column 'H'
 - 10) Fill in columns I to L after the activity
 - 11) Enter number of doses administered during the activity in column 'I'
 - 12) Enter number of vials used during the activity in column 'J'
 - 13) Enter number of unusable vials (expired, damaged due to any reason) during the activity in column 'K'
 - 14) Enter actual balance of vaccine vials at the end of activity in column 'L'
 - 15) Write name and designation of person completing the form, sign and enter the date
 - 16) Keep one copy for record and send two copies to the respective district / province
 - 17) The respective province / district will compile the report and send to the respective provincial / federal EPI center

PROPER STEPS FOR RECEIVING VACCINE DELIVERIES

1. Vaccine Arrival Report (VAR) is available
2. Know who to notify when a vaccines shipment comes in. Have a back-up person if they are not available
3. Immediately unpack and examine deliveries upon arrival.
4. Examine shipping container and contents for signs of physical damage.
5. Cross-check contents with packing slip to be sure they match.
6. Check expiration dates to ensure that vaccines or diluents have not already expired or will expire soon.
7. Check that (freeze-dried) vaccines have been shipped with correct type and quantity of diluents.
8. If heat or cold damage is suspected check: Cold Chain Monitor(s) if present, or VVMs and contact the facility which shipped it or the immunization program for guidance depending upon policy. Note: CCMs are one-time use and should be discarded.
9. If vaccines were properly packed there should be an insulating barrier (such as bubble wrap, Styrofoam pellets, or some other barrier) between vaccines and the refrigerated or frozen coolant Packs.
10. After contents have been checked according to procedures, immediately store vaccines and diluents at recommended temperatures and record each vaccine and diluent, noting all details on the Stock Issue and Receipt Voucher.
11. Do NOT leave shipping container unpacked and unattended as vaccines and diluents inside might warm to inappropriate temperatures and become unusable. Staff members who accept deliveries for the facility must be aware that vaccine deliveries require immediate attention and know their responsibility in assuring cold chain is maintained.

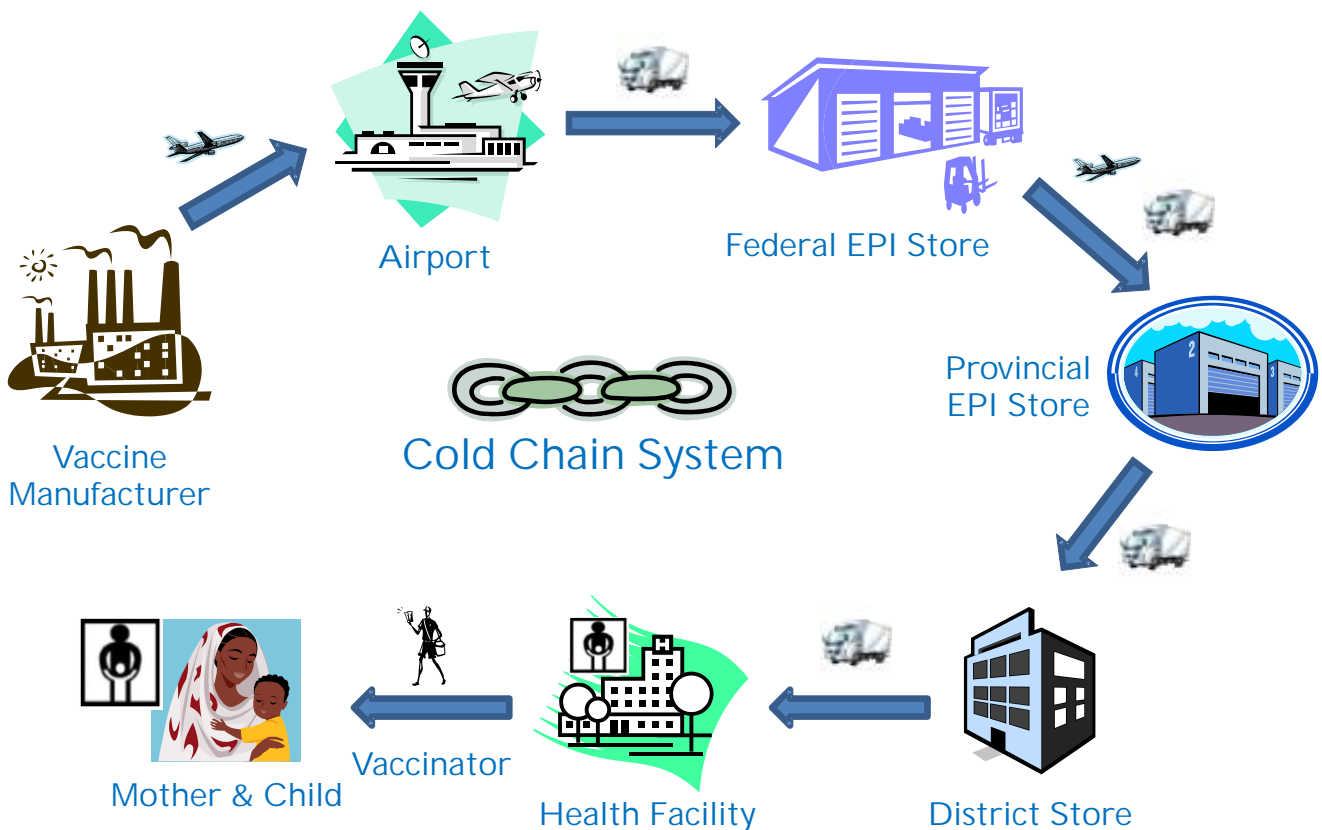
THE COLD CHAIN SYSTEM

The cold chain system is a means for storing and transporting vaccines in a potent state from the manufacturer to the person being immunized. This is a very important component of an immunization program, since all vaccines lose potency over time, especially if exposed to heat, and in addition, some also lose their potency when frozen. Attention to maintaining correct temperatures during storage and transport of vaccine is thus a major task for health workers.

The cold chain system comprises three major elements:

- Personnel, who use and maintain the equipment and provide the health service;
- Equipment for safe storage and transportation of vaccines; and
- Procedures to manage the program and control distribution and use of the vaccines

The Cold Chain System



VACCINE STORAGE

Shows the maximum times and temperatures for storage of EPI vaccines at different levels of the cold chain as recommended by WHO. During transport between one level and the next, all vaccines must be maintained at a temperature between +2° and +8°C. If unopened and OPV, Measles or Mumps vaccines become unfrozen during transit, they can be safely re-frozen at the next level without any harm or loss of potency to the vaccine.

RECOMMENDED VACCINE STORAGE TEMPERATURES/TIMES FOR DIFFERENT LEVELS OF THE COLD CHAIN

Vaccine	Primary	Intermediate		Health center	Outreach site
	Federal	Provincial	District Store	DHQ, THQ, RHC, BHU	
Maximum Storage time	up to 6 months	up to 3months	up to 1 month	up to 1 month	Daily Use
OPV	-15 to -25°C		+2 to +8°C		
Measles	WHO no longer recommends that freeze-dried vaccines be stored at -20 C. Storing them at -20 C is not harmful but it is unnecessary. Instead, these vaccines should be kept in refrigeration and transported at +2 to +8 C temperature				
BCG					
Hepatitis B					
Pentavalent					
PCV10					
TT					

Vaccine Potency

If a vaccine loses some or all of its potency due to exposure to heat, its outward appearance may be unchanged. The Vaccine Vial Monitor (VVM) is a small indicator attached to each vial, which keeps a constant record of its exposure to heat. If the vaccine is exposed to temperatures above +8°C, the indicator progressively changes color, and gives health staff an immediate warning that the vaccine has been damaged.

Important Points:

- Remember to check the expiry dates of all vaccines and ensure that they will not expire during storage or before they can be distributed and used.
- Rotate vaccine stock: vaccine received first should be distributed or used first (“FIFO & FEFO”) unless a Vaccine Vial Monitor (VVM) shows that another batch should be distributed or used first
- At the district level,
 - keep the vaccines for a maximum of 1 month :
 - store all vaccines at +2° to +8°C.
 - send vaccines to health facilities in insulated containers or refrigerated vans at +2° to +8°C.
- At the health facility level:
 - keep all the vaccines for a maximum of 1 month:
 - store all vaccines at +2° to +8°C.

EQUIPMENT FOR VACCINE STORAGE

Cold Chain equipment designed for vaccine storage has to meet two major requirements:

- It must ensure optimum temperature conditions for vaccine storage all year round;
- It must be large enough to hold the maximum vaccine stock to be stored at the level of the cold chain where it will be used.

The different quantities of vaccine to be stored at each level in the cold chain require different equipment. Regular temperature monitoring is essential for all types.

District Level

The following equipment is normally used at the district level:

- medium capacity top-opening or “ice-lined” refrigerators (ILR);
- medium capacity top-opening freezers;
- upright household two-compartment refrigerator/freezers

Health facility level

One or more of the following types of equipment is normally used at the health facility level:

- small “ice-lined” refrigerators;
- upright household two-compartment refrigerators/freezers;
- small top-opening freezers

COLD CHAIN EQUIPMENT AND ITS USE

EQUIPMENT FOR VACCINE TRANSPORTATION

For transportation of vaccines from one place to the other following equipment / items are used to maintain the cold chain:

- Cold boxes
- Vaccine carriers
- Icepacks

All transportation links in the cold chain must be able to protect vaccines from heat and sunlight. Cold boxes and vaccine carriers are designed to give the required protection.

COLD BOXES

A cold box is an insulated container with a tight fitting insulated lid. The temperature inside the box is maintained by icepacks. The cold box is designed for:

- Collection and transport of large quantities of vaccine at temperatures between 0° to +8° C;
- Storage of vaccine during maintenance periods, e.g. when cleaning or defrosting a refrigerator or freezer; and
- Emergency storage of vaccine, e.g., during breakdowns of cold chain equipment, power failures, and similar situations.

Different levels of the cold chain require different types and sizes of cold boxes, according to the population served. An example is shown in Error! Reference source not found.:

Cold Box used in the cold chain
(small, long range, vaccine storage capacity 7 liters; Cold life 114 hours)



How to load a Cold Box:

Remember that DPT, Pentavalent, TT and hepatitis B vaccines must not be frozen. If vials of these vaccines make direct contact with frozen icepacks in a cold box, they may easily freeze and the vaccine will be destroyed. To avoid such damage:

- icepacks should not be taken from freezer and placed directly in a cold box containing these vaccines; leave icepacks for a few minutes until water droplets appear on their surface before putting them in the cold box;
- place a layer of plastic foam, cardboard or similar packaging material between the vaccine packets or vials and the icepacks. This will act as an insulating barrier, and protect vaccines from freezing.

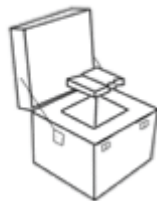
For other vaccines, i.e., OPV, Measles and Mumps, these precautions are not necessary, and icepacks may be placed in a cold box direct from the freezer. Prepare a cold box as follows:

- Take the required number of icepacks from a freezer;
- if required, wait for a few minutes until water droplets appear on the surface;
- wipe the icepacks dry and place them so as to cover bottom and internal walls of the cold box;
- if required, put plastic foam, cardboard or similar material to protect Pentavalent, TT and hepatitis B vaccines;
- place vaccines, thermometer and/or Cold Chain Monitor card carefully in the box; (if mixed vaccines, put OPV, measles, BCG at the bottom and closest to the icepacks; Pentavalent etc in the center and farthest from the icepacks)
- place cardboard or similar material and additional icepacks on top of vaccines;
- close the lid tightly;

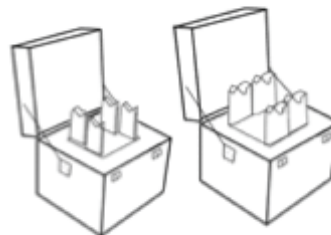
do not include diluent for freeze-dried vaccines in the cold box. This does not need to be kept cold during transport, and will occupy useful space in the cold box

HOW TO LOAD A COLD BOX

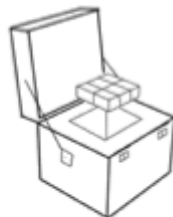
1. Place ice packs in the bottom



2. Place ice packs on all sides



3. Place Vaccines into cold box



5. Place ice packs on top



Don't use excessive ice, especially for short journeys with DPT or other adsorbed vaccines

VACCINE CARRIERS

A vaccine carrier is an insulated box with a tight fitting insulated lid. The temperature in the vaccine carrier is maintained by icepacks. The vaccine carrier is designed for:

- Transportation of small quantities of vaccine at a temperature between 0° and 8° C within one working day;
- Storage of small quantities of vaccine needed for immunization during the working day, thus avoiding frequent opening of the refrigerator;
- Storage of small quantities of vaccine in emergency situations, e.g., during breakdowns of cold chain equipment, power failures, and similar situations.

Some vaccine carriers now have a foam pad fitted under the lid ; this has slits which safely hold opened vials in use, and protects the other, unopened vials inside the carrier. This avoids having to open and close the lid itself each time an opened vial is needed.

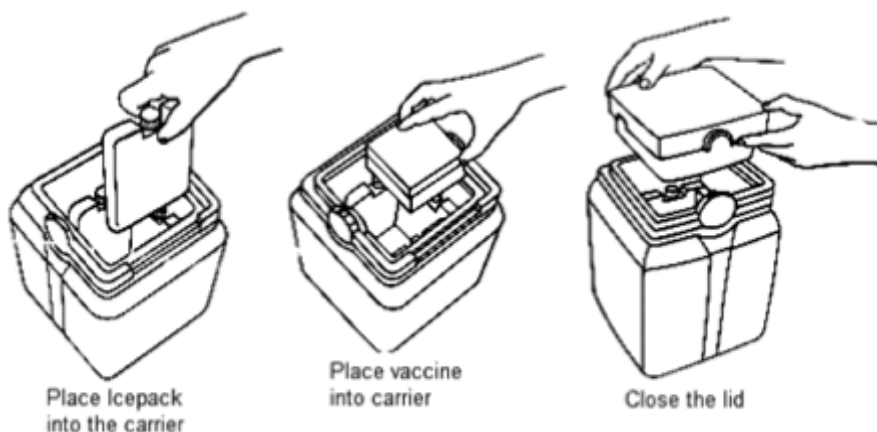
Vaccine Carriers



How to load a vaccine carrier (see Figure 1)

Follow the same instructions as given above for loading a cold box, but in this case note that diluents for freeze-dried vaccine should be packed together with the vaccines. Instructions are otherwise identical.

Figure 1: How to load a vaccine carrier



ICEPACKS

Icepacks are rectangular plastic containers to be filled with plain water. The icepacks, once frozen, are used to maintain the temperature between 0 and +8°C in cold boxes and vaccine carriers.

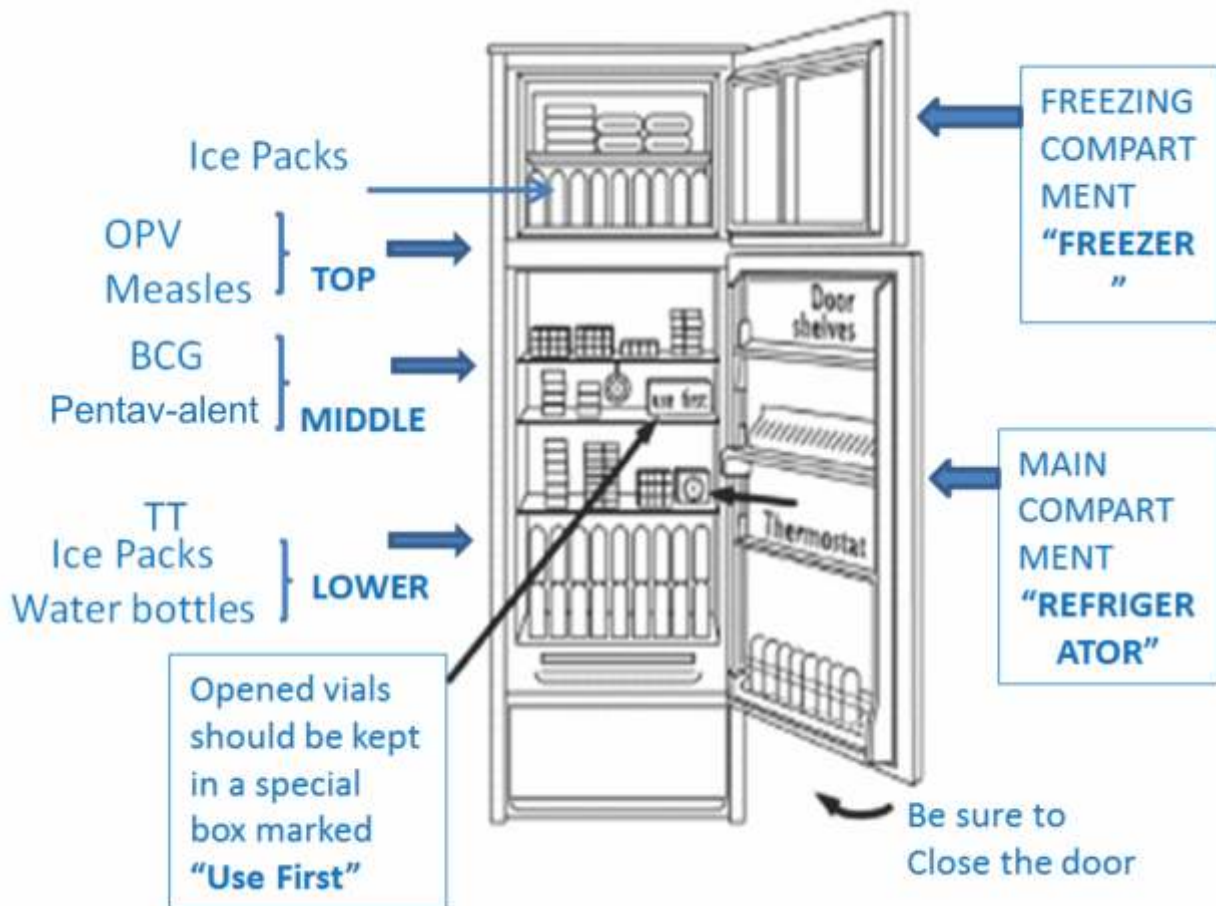
GENERAL RULES FOR USING VACCINE REFRIGERATORS

Health facility refrigerators are used to store vaccines and diluents. Several types of refrigerator are available and the arrangement of items inside them varies according to the type.

The following general rules (Dos and Don'ts) apply to all health facility refrigerators.

DO arrange the vaccines in the health facility refrigerator like this:

- Wherever possible, store vaccines and diluents in a refrigerator that is reserved for this purpose only. If other heat-sensitive supplies, such as drugs, ointments, sera and samples, have to be stored in the refrigerator, label them clearly and keep them completely separate from the vaccines and diluents.
- Store all vaccines in the refrigerator at 0 to +8 °C.



Freezing compartment (top):	ice packs, ice;
Refrigerator First shelf:	Live viral vaccines (polio, measles, etc.);
Second shelf:	BCG and other non-adsorbed vaccines, thermometer suspended);
Third shelf:	Pentavalent & other adsorbed preparations, diluent, thermostat;
Fourth/lowest shelf:	water containers.

- Always arrange vaccines and diluents so that air can circulate freely; this also makes it easier to handle the vaccines.
- If vaccines or diluents are supplied in their original cartons, arrange the boxes so that there is at least a two-centimetre space between stacks. Mark the cartons clearly and make sure the markings are visible when the door or lid is opened.
- If vaccines or diluents are supplied as individual containers (vials, ampoules or tubes), use a plastic tray, plastic box or other arrangement to store the vaccines in an orderly fashion.
- If diluent is packaged with the vaccine, store the complete packaged product in the refrigerator. If diluents are supplied separately from the vaccine, store them in the refrigerator if there is adequate space. If there is not adequate space, move the diluents to the refrigerator at least 24 hours before they are needed so they are cooled.
- Place vaccines with VVMs that show the most heat exposure (darker squares) in a separate container in the refrigerator, clearly marked “Heat-exposed vials – Use first”. If there are other vaccines of the same type in the refrigerator, the vaccines with the darkest squares should be always used first even if the expiry date is later than the vaccines with the lighter squares.
- If a multi-dose vial policy is in place, follow the instructions for handling opened multi-dose vials exactly as described in the national policy. If an opened multi-dose vial will be used for the next session, the vials must be placed in a separate container in the refrigerator, which is clearly marked “Opened vials – Use first.” A summary of the WHO Multi-dose Vial Policy is outlined in the box below. The local policy may be different.
- Place OPV, measles and mumps vaccine closest to the evaporator.

DON'T arrange the vaccines in the health facility refrigerator like this:

- Never store food or drink in a vaccine refrigerator.
- Do not open the door or lid unless it is essential to do so. Frequent opening raises the temperature inside the refrigerator.
- If there is a freezer compartment, do not use it to store vaccines and diluents.
- Do not keep expired vaccines in the refrigerator. Do not keep vaccines with VVMs that have reached, or are beyond, their discard point. Do not keep reconstituted vaccines for more than six hours, or after the end of an immunization session. Discard all these items immediately according to your national guidelines. Refer any questions to your supervisor.

CONTROL AND MONITORING OF TEMPERATURES

Maintaining correct temperatures during storage and transport of vaccines is a critical task for the health worker. Temperatures must be regularly measured and recorded in order to:

- ensure storage of all vaccines at the correct temperature conditions, and
- ensure the correct operation of the cold chain equipment.

Monitoring of temperatures should be a routine activity, and a task that is carried out at the start and end of each working day. There are a number of different types of monitoring devices to help you measure, control and record storage temperatures.

Cold Chain Monitor Card

A cold chain monitor card (CCM) is designed to follow the vaccines from the point of manufacturer to the end user. Throughout the journey the CCM monitors the temperature and will keep a record of vaccine exposures that have been experienced.

Vaccines delivered through UNICEF are shipped with one CCM per 3,000 doses of vaccines. The CCM has a temperature-sensitive indicator comprising 4 "windows" labeled A, B, C and D. There are spaces to record the vaccine type, manufacturer, shipment date, dates of receipt and dispatch, the name of health centre and indicator readings. There is also a table for interpreting its readings and user instructions.

The monitor is activated by removing a small protective strip, and after activation the indicator will show an irreversible color change in one of the 4 "windows" if storage temperature rises above a certain level. (For imported vaccines, the CCM is activated by the vaccine manufacturer). The first three windows of the indicator (A, B and C) will change gradually and irreversibly from white to blue when temperatures are above 10°C. First A will change then B and then C.

The A, B and C indicators change relatively slowly, for instance, at a temperature of 21° C window A changes its color entirely in 2 days; window B, in 6 days and window C, in 11 days.

If the temperature exceeds 34° C, window D changes in color from white to blue also.

COLD CHAIN MONITOR CARD (CCM)

1 **Vaccine Cold Chain Monitor**

Date in	Index	Location	Date out	Index

2

3

	If A all blue	If B all blue	If C all blue	If A, B & C & D all blue
Polio	Use within 3 months	TEST VACCINE BEFORE USE These vaccines may be used	Use within 3 months	Use within 3 months
Mexasol & Yellow Fever	Use within 2 months			
DPT & BCG	Use within 3 months			
TT & DT & Hepatitis B	Use within 3 months			

4 **SUPPLIER FOURNISSEUR**

Name: _____
 Non: _____
 Date of dispatch: _____
 Date of expiration: _____
 Vaccine: _____
 Vacin: _____

5

Keep the Cold Chain Monitor with your vaccine

When the Monitor arrives
 complete the top part of the card
 - fill in the date
 - fill in the index (-, A, B, C and/or D)
 - fill in the location

When the Monitor leaves
 complete the top part of the card
 - fill in the date
 - fill in the index (-, A, B, C and/or D)

If windows A, B, C & D are all white use vaccines normally.

If the windows A to C are completely blue, but window D is still white it means that the vaccine has been exposed to a temperature above 10°C but below 34°C for the following number of days:

6

	INDEX		
	A	AB	ABC
At a temperature of 12°C	3 days	8 days	14 days
At a temperature of 21°C	2 days	6 days	11 days

If window D is blue it means that there has been a break in the cold chain of a temperature higher than 34°C for a period of at least two hours. Check the cold chain.

The instruction "use within three months" should not be followed if either the expiry date or any local cold chain policy requires a shorter period before use or disposal of the vaccine.

Assembled & distributed by Berlinger Genserschwil Switzerland

The front of the cold-chain monitor has:

- 1) A record form that health workers fill in to show when vaccine shipments are received and dispatched.
- 2) An indicator that is a heat-sensitive strip (Monitor Mark TM) with four windows, marked A, B, C and D.
- 3) An interpretation guide explaining what to do with vaccines that have been exposed to high temperatures.
- 4) A space for filling in the following information: name of supplier/manufacturer, date of dispatch, type of vaccine. For cold-chain monitors packed with vaccines supplied by UNICEF this space is already filled in by the manufacturer.

The back of the cold-chain monitor has:

- (5) Instructions on use.
- (6) A table giving information on the time and temperature characteristics of the indicator (Monitor Mark TM).

How to use the CCM card:

On receipt of vaccines with a CCM, enter on the top part of the card:

- the date of receipt of vaccine.
- the index (i.e., amount of blue) shown in the windows, (A,B,C and/or D)
- the name of health facility.

On dispatch of vaccines with a CCM, enter on the top part of the card:

- the date of dispatch of vaccine.
- the index (i.e., amount of blue) shown in the windows, (A,B,C and/or D)

How to interpret the CCM:

- If windows A, B, C and D are all white, use vaccines normally.
- If windows A only, A and B, or A, B and C are completely blue, but window D is still white it means that the vaccine has been exposed to a temperature above +10°C but below 34°C for the number of days shown in Table 5.
- Follow instructions on card before using the vaccines.
- If window D is blue it means that there has been a break in the cold chain of a temperature higher than 34°C for a period of at least two hours. This would indicate a serious cold chain failure has occurred, and an immediate investigation is needed.

Table: Time-temperature exposure of CCM card

	Index		
Windows completely blue	A	AB	ABC
At a temperature of 12°C	3 days	8 days	14 days
At a temperature of 21°C	2 days	6 days	11 days

WHAT IS VACCINE VIAL MONITOR AND HOW DOES IT WORK?

A vaccine vial monitor (VVM) is a label containing a heat-sensitive material which is placed on a vaccine vial to register cumulative heat exposure over time.

The combined effects of time and temperature cause the inner square of the VVM to darken, gradually and irreversibly. A direct relationship exists between the rate of colour change and temperature:



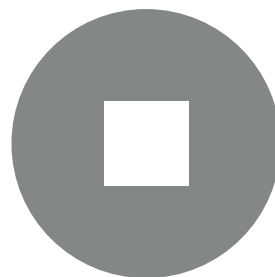
- The lower the temperature, the slower the colour change.
- The higher the temperature, the faster the colour change.

The vaccine vial monitor (VVM) is a type of monitor device applied directly to each vaccine vial by the manufacturer. It enables the health worker to verify at the time of use, whether vaccine is in useable condition and has not lost its potency and efficacy due to temperature exposure. The VVM progressively changes color with heat exposure, and gives a visual indication when exposure has occurred. The vaccine itself of course, exhibits no visible change with heat exposure.

Note that VVMs are not a substitute for CCMs; they are an additional device to use in conjunction with other monitors.

The benefits of using VVMs include:

- gives confidence for the reuse opened vials of vaccine;
- potential for a large decrease in vaccine wastage;
- gives the health worker a positive indication that he/she is administering potent vaccine.



Vaccine Vial Monitor
(showing no heat exposure)

VVM is the only tool among all time temperature indicators that is available at any time in the process of distribution and at the time a vaccine is administered indicating whether the vaccine has been exposed to a combination of excessive heat over time and whether it is likely to have been damaged. It clearly indicates to health workers whether a vaccine can be used.

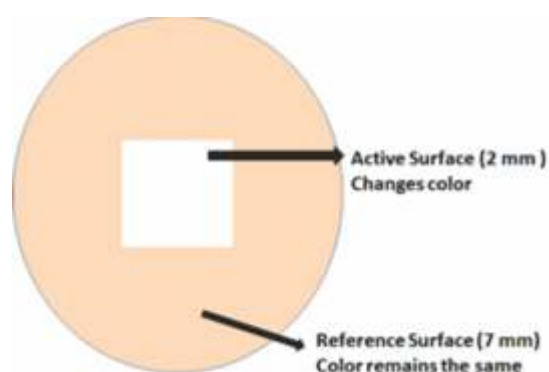
There are four different types of VVMs designed for different types of vaccines depending on their heat stability. Reaction rates are specific to four different models of VVM, relating to four groups of vaccines according to their heat stability at two specific temperature points.

Category (Vaccines)	No. of days to end point at	No. of days to end point at	Time to end point at +5o C
VVM 30: High Stability	30	193	> 4 years
VVM 14: Medium Stability	14	90	> 3 years
VVM 7: Moderate Stability	7	45	> 2 years
VVM 2: Least Stable	2	N/A*	225 days

Table. VVM reaction rates by category of heat stability

How does the VVM work?

The VVM has a heat sensitive square in a circular disk that registers a gradual and progressive color change with exposure to heat. The inner square is initially white, but becomes darker with exposure to heat. All the time the inner square is lighter than the surrounding disk, the vaccine is safe to use. If the inner square becomes of equal color or darker than the surrounding disk, the vaccine must NOT be used.



VVM stages



How to read the VVM:

The only important point is the color of the inner square relative to the outer circle:

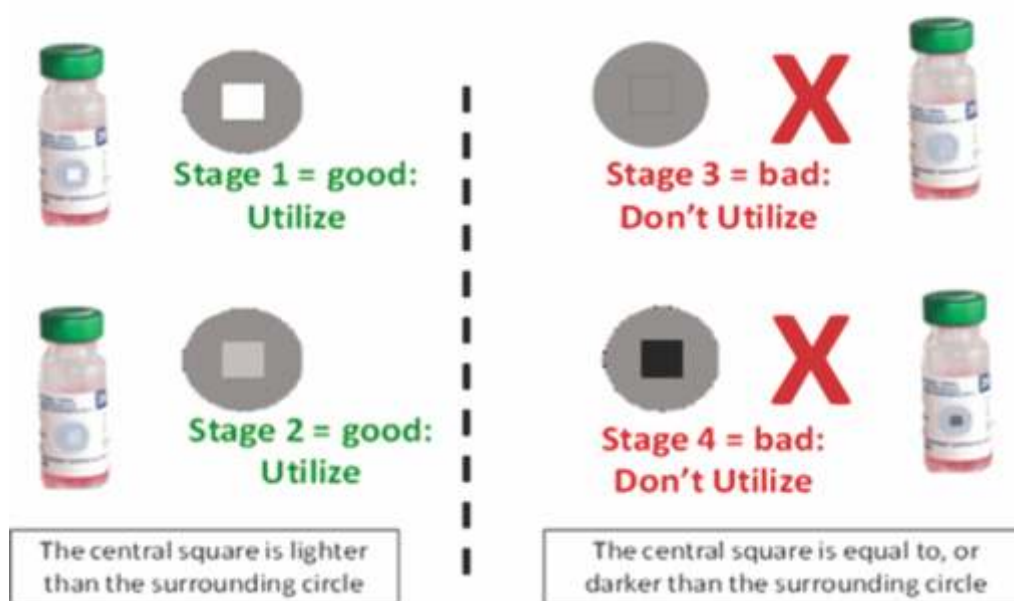
- If the inner square is lighter than the outer circle, the vaccine may be used.
- If the inner square is the same color or darker than the outer circle, the vaccine must not be used.

A simple glance at the monitor will be enough to show whether the vaccine can be used or not. Since freeze-dried vaccines must be discarded within six hours or at the end of the session whichever comes first, VVM can only be referred until the time of reconstitution.

The point to focus on is the colour of the inner square relative to the colour of the outer circle:

- Rule 1: If the inner square is lighter than the outer circle, the vaccine may be used.
- Rule 2: If the inner square is the same colour as, or darker than, the outer circle, the vaccine must not be used.

Vaccine Vial Monitor



Times recorded for a VVM attached to a vial of OPV

Constant temperature, day and night	Time for VVM to reach "discard point"
At room temperature: +25°C	8 days
At room temperature: +20°C	20 days
In a refrigerator: +4°C	180 days
In a freezer: -20 C	over 2 years

Questions and Answers on VVMs

- Q: If the VVM has not reached "discard point", can the vaccine still be used if it has passed its expiry date?
- A: NO.
- Q: If vials have a VVM, do they still need to be kept in the cold chain?
- A: YES.
- Q: Should other monitors, such as the Freeze Watch or CCM still be used?
- A: YES.
- Q: If the information provided by a CCM differs from the information of the VVM, which reading is the more accurate?
- A: THE VVM, FOR THE INDIVIDUAL VIAL.
- Q: Is there a limit to the number of times a vial can be taken for outreach (or used in NIDs)?
- A: NO, not as long as the VVM is still a safe color and the expiry date has not passed.
- Q: Will vaccine with partially darkened VVM be handled differently?
- A: YES, Vaccine with darker VVMs must be selected for distribution first. The VVM enables the health worker/storekeeper to pick out vaccines for use on the basis of most exposed vials rather than "first in, first out".

How does information from a VVM relate to that given by a CCM?

- The CCM indicates when temperature limits of the cold chain have been passed.

- The VVM takes the monitoring procedure one step further and shows the impact of any such temperature changes on each individual vial of vaccine.
- The CCM monitors “the vaccine's journey”, while the VVM shows how each “vaccine passenger” has fared.

Thermometers

Every piece of cold chain equipment must be fitted with a thermometer to measure the internal temperature at any given moment. If the refrigerator, freezer or cold box is not fitted with a thermometer, there is no way of telling if the vaccine is being stored at the right temperature and is maintaining its potency.

- A. Alcohol or mercury thermometer: Shows precise temperatures in the immediate area of the sensing bulb. This is the recommended type for use with refrigerators or freezers.
- B. Dial thermometer: shows the current temperature; a max/min version also shows the maximum and minimum temperatures since the previous resetting of the hands.



Temperature record sheets

- The person in charge of the cold chain equipment should read and note the temperature on the temperature record sheet twice daily: in the morning and in the afternoon. In case of any malfunctions inform the supervisor. Each refrigerator/freezer must have its own temperature record sheet.
- In refrigerators/freezers use a recommended type of thermometer placed in the middle part of the main compartment of the refrigerator or freezer.
- In ice lined refrigerators it is preferable to have two thermometers; one placed near the bottom, and one near the lid. (Record both temperatures)
- In cold rooms and freezer rooms both a recording thermometer and an alcohol or mercury thermometer should be used. The thermometer and the sensors of the recording thermometer must not be placed in the airflow from the evaporator.

Vaccine Shake Test

This test is designed to determine whether adsorbed vaccines (DPT, DT, Td, TT or hepatitis B) have been frozen. After freezing, the vaccine is no longer a uniform cloudy liquid, but tends to form flakes. Sedimentation occurs faster in a vaccine vial which has been frozen than in a vaccine vial from the same manufacturer which was never frozen.

The shake test is most easily demonstrated using a vaccine vial that you personally froze and do not intend to use for immunization. This vial can be used as a “frozen control sample” to be compared with suspect vaccines. If the control vial shows much faster sedimentation than in the vial being tested, the vaccine in question is probably potent and may be used. If, however, the sedimentation rate is similar and contains flakes, the vial under test should not be used. It is important that the shake test is done using both "tested" and "control" vaccine vials produced by the same manufacturer.

Test procedure:

- Take both vials; shake vigorously for 10-15 seconds.
- Leave vials at rest for 5-10 minutes.
- View vials against the light.
- Compare with Figure: Vaccine Shake Test

Frozen Test Vials

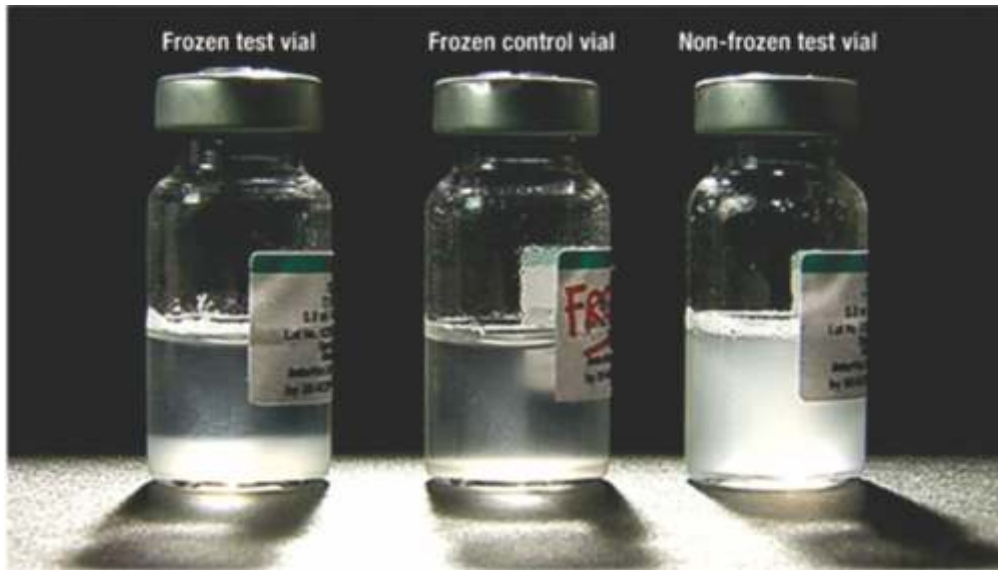
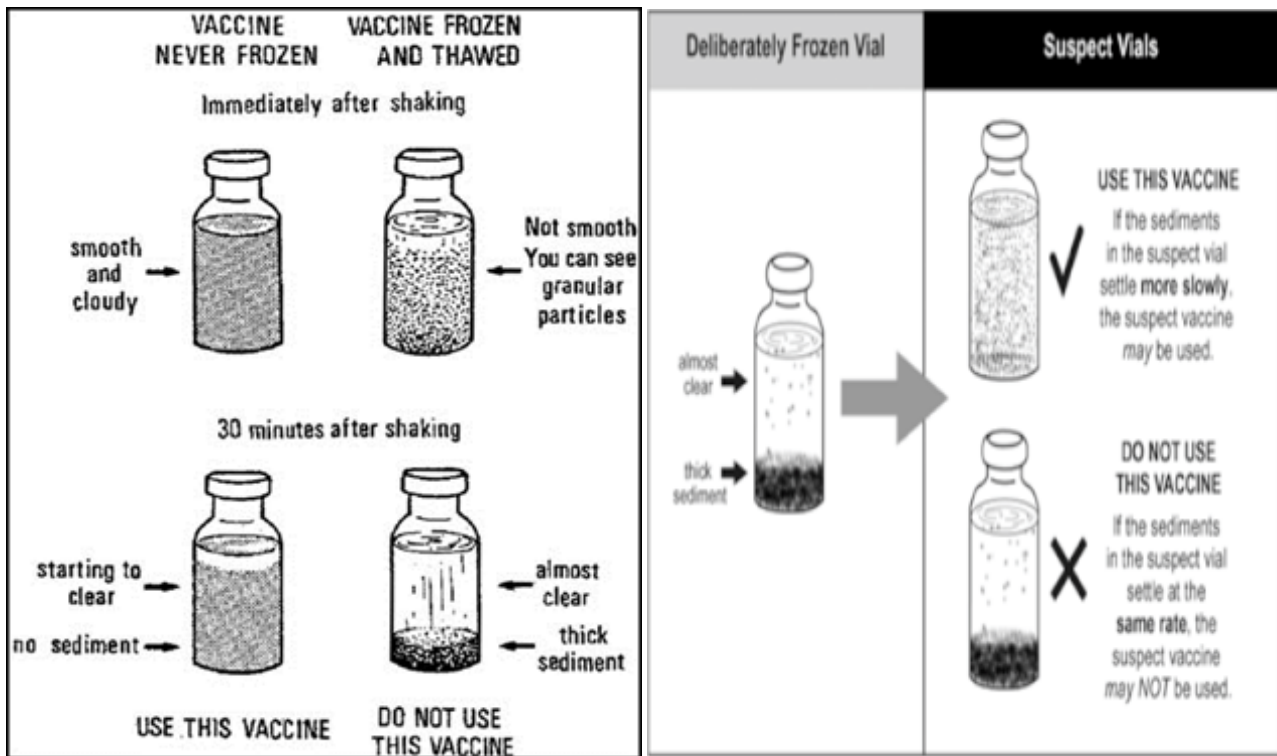


Figure 34: Vaccine Shake Test



Note:

(A) Vaccine was not frozen - use this vaccine. (B) (Control) vaccine was frozen and thawed - do not use this vaccine. If the vial being tested looks the same as (B), do not use it!!

BREAKDOWNS AND EMERGENCIES

Any interruption to the normal functioning of cold chain equipment must be considered an emergency. The vaccine is in danger, and unless action is taken QUICKLY there is a risk of damage or complete loss of the vaccine stock. Emergencies in the cold chain occur mainly due to technical faults in the refrigerator, or to power failures, but whatever the cause, they can seriously disrupt planned immunization activities. The risks can be minimized however, if emergencies are anticipated and backup plans prepared in advance.

TECHNICAL FAULTS IN THE REFRIGERATOR

There are a number of possible faults which may occur in the refrigerator, some simple and easily corrected by the user but others more complex and requiring the attention of a technician. The following checklists will help you to identify the main problem when a cold chain problem occurs, and give guidance on how the problem may be resolved. This should help to minimize the risks to the vaccine stocks.

How do you know what kind of technical fault exists in the refrigerator?

There are 4 main symptoms of a fault:

- the refrigerator will not start, and there is no cooling at all; or
- the vaccine storage temperature is too high (above +8 degrees C); or
- the vaccine storage temperature is too low (below 0 degrees C); or
- the refrigerator is working, but is making excessive noise.

For each of these 4 main symptoms, the following CHECKLISTS will help you to understand more exactly what is wrong, and what to do. There is one checklist for each main symptom.

How to use the checklists:

Step 1 - decide which of the 4 main symptoms best describes the fault.

Step 2 - turn to the appropriate checklist and read the first "CHECK" question in the left column.

Answer the question with Yes or No. The arrows on the checklist show you what to do next:

- if you answered Yes, this was not the fault, and you must proceed down the "CHECK" column to the next question.
- If you answered No, you have identified a fault. Follow the arrow across to the "DO" column, which tells you how to correct the fault found.

Step 3 - continue in this manner, beginning at the first question and continuing to the last.

However, before passing on to the next question MAKE SURE that no fault exists in the function you are checking. It is easy to overlook simple details when you are trying to solve a cold chain failure as quickly as possible.

Step 4 - for each question, follow strictly the sequence of actions recommended. Do not jump from one check to another, as this leads to wrong fault diagnosis.

Step 5 - If you reach the last question with all YES answers and the refrigerator is still not working properly, you may have missed some important detail. Therefore, go back to the first question and REPEAT all again, this time making QUITE SURE that no fault exists in each of the functions you are checking.

Step 6 - If after repeating all questions on the checklist no fault has been identified, protect the vaccine AS QUICKLY AS POSSIBLE by:

- transferring the vaccines to a refrigerator at 0 to +8° C or to a cold box;
- call a cold chain technician to examine the faulty refrigerator.

CHECKLIST 1:

The refrigerator will not start & there is no cooling at all

CHECK	DO
1. Is the refrigerator plugged in? YES	If NO Plug refrigerator in.
2. Is thermostat set in operative position? YES	If NO : Set thermostat in operative position.
3. Do other electrical appliances work if connected to the refrigerator's socket? YES	If NO Correct plug fault.
4. Has plug been fitted correctly? YES	If NO : Check wiring and socket; if possible, plug refrigerator in at another socket.
5. Is there a 'click' when thermostat is set in operative position? YES	If NO Check thermostat.
6. Call in mechanic ; refrigerator in serious trouble.	

CHECKLIST 2:

The vaccine storage temperature is too high (above +8 degrees C)

CHECK	DO
1) Is control set at correct temperature? YES	If NO: Set thermostat control at cooler temperature.
2) Are evaporator walls free from snow layer? YES	If NO: Turn off refrigerator and defrost.
3) Is refrigerator door tightly closed? YES	If NO: Check seal, adjust hinges and lock.
4) Is air circulating freely inside and outside refrigerator? YES	If NO: Install and load refrigerator properly.
5) Is condenser clean? YES	If NO: Clean condenser using brush or vacuum .

6. Is thermostat working properly? YES	If NO: Close circuit without using thermostat.
7. Call in mechanic.	

CHECKLIST 3:

The vaccine storage temperature is too low (below 0 degrees C)

CHECK	DO
1. Has thermostat control been set at correct temperature? YES	If NO: Set thermostat control at warmer temperature.
2. Call in mechanic	

CHECKLIST 4:

The refrigerator is working, but is making excessive noise

CHECK	DO
1. Are there any foreign noises?	If YES : Shake refrigerator carefully. If it is insecure, stand it evenly, using wooden blocks. If noise continues, check metal parts on back of the cabinet; if trouble persists, call a mechanic.

PLAN FOR COLD CHAIN EMERGENCIES

Emergencies are sure to happen from time to time, however well you manage the program, so prepare for these emergencies BEFORE they happen. An emergency plan to ensure maintenance of the cold chain should be prepared for each vaccine storage point and for vaccines during transportation. The plan should be prepared by the person responsible for the store or transport arrangements, and agreed with his or her supervisor.

The plan should include:

- What to do to protect the vaccines?
- How to correct the faults most quickly?

Important points to remember during any cold chain emergency:

- Keep all refrigerators, freezers and cold boxes CLOSED as far as possible. Only open when absolutely essential, and work as quickly as possible.
- Vaccines can be stored in domestic refrigerators without power for approximately 2 hours (the more water containers at the bottom, the longer), provided that the doors are kept closed.
- Vaccines in freezers are normally safe for up to 24 hours or until any icepacks or ice has melted.
- Vaccines in ice-lined refrigerators or freezers will be safe for much longer, and depending on which model is used, can be protected for up to 48 hours.
- If a power failure lasts longer than 2 hours, vaccine should be TRANSFERRED from domestic refrigerators to a cold box with adequate icepacks. Upon resumption of power supply, do not return vaccines to the refrigerator until proper storage temperatures are restored (i.e., 0 to + 8° C). Remember that some vaccines are much more sensitive to heat than others (see Section 3.4); give them priority when making alternative storage arrangements in an emergency.

Sample Plan of Emergency Measures

A. General

Objectives of an Immunization Program Emergency Plan

- 1) To keep vaccines safe.
- 2) To keep immunization activities going.

Principles

- 1) Be prepared for "emergencies."
- 2) If one happens, know what to do and who should do it.
- 3) Always have at least two people who know what to do and when.
- 4) Improve future preparedness by learning from experience.

POSSIBLE " EMERGENCIES "	QUESTIONS / ISSUES
* Electricity power cut - for short length of time - for a long length of time	* What type of refrigerator/freezer? * How many hours protection can each type give? * When and where to move vaccines? * Need and availability of icepacks/cold boxes?
* Refrigerator breakdown - minor repairs needed - serious repairs needed	* Location of other vaccine storage equipment? * Checklist for initial diagnosis? (See Section 2.6.1)
* Delay in vaccine arrival	* Reserve stocks? - at the facility? - at higher level? - elsewhere in the area? * Planned rescheduling of immunization?

* Transport breakdown	* How long is "cold life" of boxes? * Alternative refrigerator storage or ice supply along the route?
* Loss of vaccine potency (cold chain failure)	* Reserve stocks at higher level? * Temperature records/monitor cards to help investigation?
* Epidemic - sudden need for control immunization	* Reserve stocks at the facility or higher level of vaccine? - of syringes & needles? * Sufficient refrigerator capacity, cold boxes and icepacks? * Transport and fuel available?
* AEFI	* Investigation forms? * Procedures for handling suspect vaccine?

B. Specific aspects of emergency plan for polio NIDs

Each location which stores vaccines, but particularly provincial and District should have its own written emergency plan.

Each local plan should include the following information:

- 1 How many hours each type of refrigerator or freezer can keep a safe temperature if electricity fails, assuming it is not opened meanwhile. This will vary according to the season of the year, of course, but guideline figures for the hottest season are as follows:

Regional:	Large horizontal refrigerator (MK 302)* (* assuming that full set of water packs installed inside)	48 hours
	Large horizontal freezer (HF 5506)	20 hours
	Medium horizontal freezer (SB 300)	20 hours
	District / Health Facility: Vertical household refrigerator	2-3 hours

A cool and well ventilated room for the equipment is best.

- 2 Who keeps a spare key for the vaccine store room, and is responsible in case the designated cold chain person is absent?
- 3 The location of the nearest suitable refrigerators/freezers to be used if vaccines have to be moved, and the name and telephone number of the contact person if it is in another building or institution.
- 4 The number and type of cold boxes to be kept available in case vaccines have to be moved, and the minimum number of frozen icepacks always to be available to put in the cold box (es).

Note:

Cold Chain Monitor Cards stored with the vaccine, must be moved with the vaccine if the vaccine is moved to another refrigerator or freezer or to a cold box, even if temporarily, and the top part of the card filled in accordingly.

- 5 The length of time that a cold box can keep vaccines at a safe temperature (below +10 degrees C) without changing ice or icepacks and without opening it (the "cold life" of the box.) This also depends on outside temperature and of course on the number of frozen icepacks and the thickness of the insulated wall of the box. Guideline figures for the hottest time of year are as follows:
 - Large red cold box ("Igloo" 20 liters vaccine capacity):
 - with maximum number of frozen icepacks (30) : 84 hours
 - Small red cold box ("Igloo 4.5 liters vaccine capacity):
 - with maximum number of frozen icepacks (9) : 50 hours
 - Local (Russian) cold bag: (4 liters vaccine capacity)
 - cold life not tested
- 6 The location of a reserve drum/container of gasoline in case urgently needed.

MONTHLY CARE OF VACCINE STORAGE UNITS

A small amount of regular maintenance is necessary to help ensure that vaccine refrigerators and freezers work properly. Follow the three steps below to keep household-style refrigerators and freezers clean.

CLEAN THE INSIDE OF THE STORAGE UNITS

Cleaning the inside of the refrigerator and freezer will help prevent the growth of bacteria and fungus. Do not remove the vaccine from the unit to clean it. Just move the trays of vaccine as you clean. Do Not Unplug the Unit.

- a. Clean any spills.
- b. Wipe the inside of the compartment and the shelves with disinfectant or antibacterial wipes. Let it dry.
- c. Put the trays of vaccine back where they were.

CHECK THE DOOR SEALS

Refrigerators and freezers have flexible door seals that prevent cold air from escaping when doors are closed. If the seal does not seal completely, cold air escapes. This can cause temperatures to fluctuate in the unit. Do Not Unplug the Unit.

- d. Examine the seals.
 1. They should not be torn or brittle.
 2. When the unit is closed, there should be no gaps between the seals and the body of the unit.
- b. Verify that the vaccine storage unit door is sealing properly:
 1. Place a thin paper strip between the door seal and frame
 2. Close the door
 3. Pull the paper strip. If it moves easily or falls away by itself, the door and rubber-like seal need to be adjusted.
 4. Check all the way around the door; pay particular attention to the corners.
- c. Alert your supervisor if you suspect a problem with the seals.

3. CLEAN THE COILS

Examine and clean refrigerator coils of dust and dirt build-up to prevent affecting the efficiency of the unit. This process should only take a few minutes; therefore, it is not necessary to transfer the vaccine to another storage unit as long as the doors remain tightly closed for duration of the cleaning.

- a) Unplug the unit. Use a soft brush, cloth or vacuum cleaner with an attachment hose to remove dust from coils.
- b) After cleaning, plug in the unit and document that the power is restored and the temperature is maintained. Avoid cleaning right before the weekend as accidental damage to coils could cause problems that might not be detected.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Clean*												
Seals*												
Coils*												



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