



National AIDS Control Organisation
India's Voice against AIDS



सत्यमेव जयते

Government of India

Standard Operating Procedures for Supply Chain Management under National AIDS Control Programme



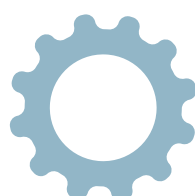


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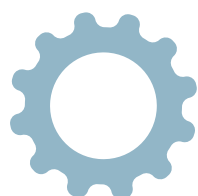


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Dated the 30th September, 2020

Message

India is committed to 'Ending the AIDS' epidemic as a public health threat by 2030 in line with Sustainable Development Goals (SDG). As we move forward, we will continue to ensure that all people living with HIV, and those at risk, receive a comprehensive package of life-saving services for HIV prevention, testing, treatment and care.

Across NACO & SACS, Supply Chain Management (SCM) of HIV/ AIDS commodities involves a series of activities to ensure a continuous supply of products from the point of manufacture to the point of care. The supply chain function provides programme managers with data to help define the products required. The data helps them operate efficiently within the system and plan the availability of the products with efficient deliveries in relation to quality, quantity and time. In terms of supply chain management, a greater integration within the health care system is proposed in the way ahead. Procurement and supply chain management is one of the critical enablers in National AIDS Control Programme (NACP) also and central to ensuring continuous, uninterrupted supply of commodities. The lack of a well-functioning SCM is a threat to the implementation of prevention programme, delivery of HIV testing services, and treatment, care and support for HIV.

This document shall guide our joint efforts in the next coming years to fast-track organisation's capacity to better manage HIV/AIDS supply chain in India. The implementation of these SOPs will be a comprehensive elevation of procurement and supply chain function and needs to be used as a reference at every level to accelerate efforts to end AIDS and help us realise our planned outcomes. The National AIDS Control Organization remains committed to assist all stakeholders with the implementation of this SOP to garner optimal outcomes in each specific setting.

I hope the SOPs for HIV/ AIDS Supply Chain Management will be helpful to all those who are involved in the field of policy, administration, planning, management & research of health services and ensure timely service provision to clients.


(Arti Ahuja)



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Alok Saxena
Joint Secretary



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Message

It gives me immense pleasure to present the Standard Operating Procedures for HIV/AIDS Supply Chain Management. The SOP represent the collaborative effort of National AIDS Control Organization (NACO) employees especially from CST and BS Division and State AIDS Control Societies (SACS) from across the country, working in partnership with Plan India on the SCM Project.

The objective of this Standard Operating Procedures is to improve the management of HIV/AIDS commodities at all levels of the supply chain. The instructions and job aids are designed to guide the work of those managing the supply chain. The SOP seeks to build individual and organizational capacity and capability of all involved in supply chain system management across the country.

The steps outlined in Standard Operating Procedures represent the complete commodity supply chain cycle — from indent to issue. To track the movement of commodities and inform standard inventory control and level management, logistics management information system (LMIS) forms are utilized. These forms capture essential data for decision-making which is used to not only guide standard indenting, but also strategic forecasting and procurement. Further, each step builds on the best practices for storage to prevent damage, wastage, or theft. Finally, at the core of this Standard Operating Procedures is the objective to building the capacity of those involved in supply chain management. By providing SACS personnel with the knowledge and skills needed to understand why and competently apply this SOP, we will be able to ensure a constant and sufficient flow of life-saving commodities to our client.

National AIDS Control Organization (NACO), Ministry of Health Family Welfare (MoHFW), Govt. of India has fully committed itself to provide all support to SACS in strengthening the HIV/AIDS supply chain system across the country. The initiative of this effort is to improve the availability of commodities at each level within the ARTC and ICTCs system and make sure that the supply of commodities continues uninterrupted.

I am sure that these SOPs will go a long way in improving Supply Chain Management of communities in the Country.


(Alok Saxena)

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अपनी एचआईवी अवस्था जानें, निकटतम सरकारी अस्पताल में मुफ्त सलाह व जाँच पाएँ
Know you HIV status, go to the nearest Government Hospital for free Voluntary Counselling and Testing



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Foreword

National AIDS Control Organization envisions to prevent and control HIV infections in order to eliminate AIDS by 2030 and also where every person living with HIV has access to quality care and the support through centers set up in the country to deliver services for the purpose.

To achieve uninterrupted supplies, services and commodities delivery at right time at right place is of utmost importance. The Standard Operating Procedures (SOPs) for Supply Chain Management of HIV/AIDS commodities have been designed considering the changes in approach and strategy adopted for supply chain management of ARV drugs over last few years. The development of the operational procedures has been done after a wide consultative process involving experts and stakeholders from partner organizations.

These SOPs will serve as a guiding tool to all the field staff and service providers to manage the supply chain of HIV/AIDS drugs/kits and other logistics in an effective and efficient manner. Users of the SOPs are encouraged to share the lessons learned during the application of the procedures for possible incorporation into future revisions of the document. Finally, while the SOPs reflect usual practice, there will be circumstances from time to time that may require an adaptive response based on the professional judgement of the field staff and decision makers.

NACO would like to acknowledge the technical support provided by the Plan SCM Project team along with Sub-Recipient partners and officials of CST and other Divisions of NACO and I/c of ART Centres and SACS officers who enriched the contents of the SOPs at the design workshop with their field-based inputs.

I hope that the Standard Operating Procedures for 'Supply Chain Management of ARVs and HIV Testing Kits' will prove to be a valuable tool in facilitating work of all concerned.


(Dr. Naresh Goel)



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Foreword

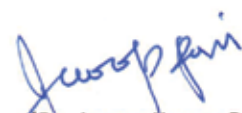
India is a signatory with full commitment towards the global vision to end AIDS as a public health threat by 2030. Scaling up to HIV counselling and testing services, while ensuring privacy and confidentiality, has been as integral component of NACP and remains the gateway to HIV prevention, treatment, care and other support services.

Assessing the supply chain of ARV medicines and HIV test kits is indispensable to improve access and thus provide quality services. The Standard Operating Procedures to ensure effective supply chain management of HIV/AIDS commodities providing specific recommendation and guidance will ensure quality services being delivered to public and private sector, and to move these services to be closer to the community living with HIV/AIDS.

Incomplete and erroneous data records, stock-outs, interrupted reports, inaccurate inventory and wastage rates are indicators for defective supply chain management of HIV/AIDS commodities. It is imperative to improve the storage and distribution capabilities of States/UTs. The new SOPs aim to ensure uniform standardized process implementation in the counselling and testing centers across the country.

It is noteworthy that comprehensive SOPs for supply chain management of HIV testing commodities has come through with the coordinated and concerted efforts of various individuals, teams, organizations and professional bodies to ensure last mile delivery of HIV testing kits under optimal cold chain conditions.

I take this opportunity to acknowledge the contribution made by the technical writing group of Plan SCM Project team, BSD NACO team and the Joint Directors/Deputy Directors/in charge of ICTC in SACS for providing their invaluable support and inputs in developing these Standard Operating Procedures (SOPs) envisioned to further enhance and improve the HIV Counseling and testing services.


(Dr. Anoop Kumar Puri)



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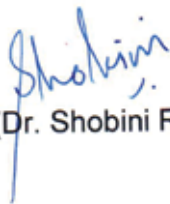
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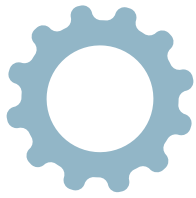
The HIV/AIDS epidemic prevention and control has been a priority in India and across the world over the past decade. In India, especially we have systematically implemented progressive strategies to meet various challenges in controlling the epidemic. As India moves towards the achievement of ultimate goal of “Ending the AIDS”, uninterrupted supply of all the NACP commodities related to prevention, testing and treatment to the end user becomes a common objective for all the divisions of National AIDS Control Organization.

NACO, in a first of its kind initiative in India's public health, decided to streamline NACP Supply Chain through GFATM Supply Chain Management Project. Under the SCM Project, Standard Operating Procedure (SOPs) for Supply Chain Management of National AIDS Control Programme have been developed. I am pleased to convey that the developed SOPs are easy to implement at SACS and facilities level for all commodities under NACP. These SOPs have outlined the detailed instructions on how to perform tasks so that SACS staff completes them correctly and consistently. It has quick references to the role and responsibilities of each person involved in SCM operations at SACS and facility level and would assist them in managing their supplies and avoid stock-outs and overstock. These SOPs will also help to customize strengthening the e-Logistics Management Information System currently used for NACP programmes to standardize the recording and reporting for informed decision.

The implementation of these SOPs at ground level would change the landscape of HIV/AIDS prevention and control in India. It would ensure that the programme officials are able to concentrate more on program implementation and utilize their expertise in providing optimal management for great impact of individual programs under NACP.

I take this opportunity to congratulate Plan International (India Chapter) SCM project team for developing a user friendly and handy manual which will be helpful to one and all in managing the supply chain of NACP commodities and recommend careful reading and frequent reference to this manual for one and all.


(Dr. Shobini Rajan)



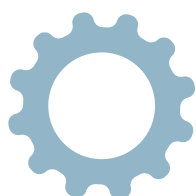
Acknowledgement

This SOP, developed for the HIV/AIDS Supply Chain Management, is dedicated to the people of the country living with HIV/AIDS and to the many individuals from communities, non-governmental organizations (NGOs), National AIDS Control Organisation (NACO), and State AIDS Control Societies (SACS) and other organizations who have consistently worked hard for access to antiretroviral drugs (ARV), HIV Testing Kits and other commodities required to provide HIV/AIDS services.

Sincere thanks go to Dr. Naresh Goel - DDG (CST), Dr. A. K. Puri - DDG (BSD), Dr. Shobini Rajan - ADG (SIM), Ms. Alka Ahuja - DS (Procurement), Dr. Chinmoyee Das - Deputy Director (CST), Dr. S. P. Bhavsar - Deputy Director, (BSD), Dr. Bhawani Singh - Deputy Director (TI), Dr. Maninder Kaur - National Consultant (CST), Dr. Sudha Goel - National Consultant (BSD), Mr. Bijo Abraham - Associate Consultant (CST), former consultants Dr. Manish Bamrotiya - National Consultant (CST), Dr. Suman Singh - Consultant (CST), Dr. Neha Garg - Associate Consultant (CST), Dr. Vishal Yadav - Associate Consultant (BSD) and SACS official from various states for their thorough technical support, reviews and helpful suggestions. Additionally, efforts of all Regional Supply Chain Managers of SCM project and Mr. Vivek Kumar, Project Coordinator (SCM) are well appreciated.

Special thanks to Mr. Tauqueer Ahmad, Deputy Project Director (SCM) for his extensive time to develop the Standard Operating Procedures (SOPs) on the Project. We would also like to thank Ms. Teena Kunwar, Program Manager (SCM) and Ms. Radhika Singh, Project Manager (SCM) for their inputs and review of SOP.

The development of these SOPs would not have been possible without the lessons drawn from various resources like WHO and USAID | DELIVER PROJECT's experience in managing HIV/AIDS supply chains.



Abbreviations

3PL	3 rd Party Logistics
AD	Assistant Director
AIDS	Acquired Immune Deficiency Syndrome
AMC	Average Monthly Consumption
APD	Additional Project Director
ART	Antiretroviral Therapy
ARTC	Antiretroviral Therapy Centre
ARV	Antiretroviral
BC	Bin Card
BSD	Basic Services Division
CAC	Consignee Acceptance Certificate
CMSS	Central Medical Services Society
CoA	Certificate of Analysis
CRC	Consignee Receipt Certificate
CST	Care, Support & Treatment
DD	Deputy Director
DDR	Daily Dispensing Register
DAPCU	District AIDS Prevention and Control Unit
DDG	Deputy Director General
DPM	District Program Manager
DPO	District Program Officer
FEFO	First Expiry First Out
FICTC	Facility Integrated Counselling and Testing Centre
eLMIS	electronics Logistics Management Information System
EOP	Emergency Order Point
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GoI	Government of India
HMIS	Health Management Information System
HIV	Human Immunodeficiency Virus
ICTC	Integrated Counselling and Testing Centre
IEC	Information Education & Communication
IMS	Inventory Management System

IR	Issues and Receive
IT	Information Technology
JD	Joint Director
LAC	Link ART Center
LMIS	Logistics Management Information System
LoA	Letter of Acceptance
M&E	Monitoring & Evaluation
MIS	Management Information System
MO	Medical Officer
MoS	Months of Stock
MoHFW	Ministry of Health and Family Welfare
NACO	National AIDS Control Organisation
NACP	National AIDS Control Programme
NSP	National Strategic Plan
OST	Opioid Substitution Therapy
PD	Project Director
PDCA	Plan Do Check Act
PLHIV	People Living with HIV/AIDS
PM	Program Manager
PO	Purchase Order
PR	Principal Recipient
PQS	Performance, Quality and Safety
QA	Quality Assurance
RACI	Responsible, Accountable, Consulted, Informed
UTES	Rail India Technical and Economic Services
RPR	Rapid Plasma Reagin
RTD	Return, Transfer and Discard
RTI	Reproductive Tract Infection
SACS	State AIDS Control Society
SCM	Supply Chain Management
SCMP	Supply Chain Management Project
SDP	Service Delivery Point
SoH	Stock On Hand
SOP	Standard Operating Procedure
SR	Sub Recipient
STI	Sexually Transmitted Infection
STN	Stock Transfer Note
TRG	Technical Resource Group
WIC	Walk - in - Cooler



- **Average Monthly Consumption:** The average of the quantities dispensed to users or patients in the most recent three months or six months
- **Clients, Patients and Beneficiaries:** The people who receive or use supplies.
- **Commodity / Product / Supplies / Goods:** All items that flow through the logistics system.
- **Continuous review system:** An inventory control system where stock levels are reviewed each time stock is issued. If the stock level is at, or has fallen below, the minimum stock level, enough stock is ordered to bring the levels up to the maximum stock level.
- **Consumption, Dispensed, Dispensed-To-User, Usage Data:** Data on the quantity of goods actually given to or used by clients.
- **Emergency Order Point:** The level of stock that triggers an emergency indent; it can be reached at any point. The EOP must be lower than the minimum level.
- **Forced-Indenting System:** An inventory control system where facilities always restock all commodities to the pre-set maximum level at the end of every review period no matter how much or little is in stock.
- **Inventory Control System:** A stock control system that informs the storekeeper when to indent or issue; how much to indent or issue; and how to maintain an appropriate stock level of all products to avoid shortages and oversupply.
- **Issues Data:** Information about the quantity of goods moved from one storage facility to another (either between levels or within a facility).
- **Lead Time:** Time between when products are ordered and when they are received and available for use.
- **Max Level of Stock:** The level of stock above which inventory levels should not rise, under normal conditions. The max stock level is set as a number of months of stock (for example, the max level may be set at four months of stock).
- **Min Level of Stock:** The lowest level of stock that a facility should have in the store or warehouse. The min stock level is set as a number of months of stock (for example, the min level may be set at two months of stock). If stock reaches the min level, an indent should be placed to replenish inventory.
- **Safety Stock/ Buffer Stock / Cushion Stock:** Quantities held to cover uncertainties in demand and supply. Clients demand has inherent variability and may be compounded by unanticipated demand. Supply uncertainty may include constraints or delays stemming from the supplier, manufacturer or source of supply, as well as transportation lead time variability.
- **Months of Stock:** The number of months of stock indicates how long supplies will last.
- **Pipeline:** The entire chain of physical storage facilities and transportation links through which supplies move from the manufacturer to the user, including port facilities, central warehouse, regional warehouses, district warehouses, all SDPs, and transport vehicles.
- **Pull System:** An indenting system where the supply chain workers who receive the supplies calculate the quantities of supplies required.
- **Push System:** An indenting system where the supply chain workers who issue the supplies calculate the quantities of supplies required.
- **Informed Push System:** A system where the supply chain workers who issue the supplies based on real time information through eLMIS system calculating the quantities based on consumption and current stock on hand.

- **Physical Inventory Count:** A process where actual stock on hand for each commodity is compared with the amount recorded on the stock card.
- **Review Period:** Time between routine assessments where someone examines stock levels to determine if an indent should be placed or an issue of resupply made.
- **Service Delivery Point:** Any facility where clients receive supplies.
- **Shelf Life:** Length of time a product may be stored without affecting the usability and safety of the item.
- **Stock on Hand:** Quantities of usable stock. (Items that are unusable are not considered part of stock on hand. They are considered losses to the system.)
- **Supplies, Commodities, Goods, Products, and Stock:** All items that flow through the supply chain.
- **Visual Inspection:** Process of examining products and their packaging by eye to look for problems in product quality.
- **Cold chain:** The system consisting of people managing a series of storage and transport steps, which all require specialized equipment, procedures, and information, intended to keep products within an acceptable predefined temperature range until they are used, typically +2°C to +8°C
- **Cold chain capacity requirements:** The temperature-controlled space needed at a store or service-delivery point to store or transport products.
- **Cold chain equipment:** Equipment used to store and transport temperature-sensitive products at the proper temperature during each stage of the supply chain.
- **Coolant-pack:** A purposely designed leak-proof container, typically complying with performance, quality and safety (PQS) specification filled with tap water or with another phase-change material.
- **Domestic refrigerator or freezer:** A refrigerator or freezer that is not WHO PQS-prequalified for pharmaceutical storage.
- **Passive container:** A container that maintains a temperature-controlled environment inside an insulated enclosure, generally without thermostatic regulation, using frozen, conditioned, cool, or warm coolant-packs.
- **Primary container:** Vial, ampoule, prefilled device, plastic dispenser, or tube containing vaccine or diluent.
- **Refrigerated vehicle:** A road transport vehicle such as a van, truck or semi-trailer whose isolated, thermostatically controlled cargo compartment is maintained at a temperature different
- **Secondary packaging:** Packaging that holds the primary container(s) (e.g. cartons containing one or more vials or prefilled syringes).
- **Shelf volume:** The aggregated volume of all designated equipment baskets, shelves or pallet bays in a model of cold chain equipment. This volume includes only areas where products can be stored safely.
- **Storage temperature:** The temperature range for product storage as stated by the manufacturer on the primary container label and the package insert and within the regulatory filings for the product.
- **Temperature-controlled:** Maintained at a temperature different from that of the surrounding environment and within precise predefined limits through either active or passive means.
- **Tertiary packaging:** The pack or carton that contains a number of secondary cartons; usually constructed of corrugated fiberboard.
- **Product storage volume:** The maximum volume of product that will be stored at a store or service-delivery point; includes the volume per supply interval as well as the volume of the safety stock.
- **Product volume per supply interval:** The volume of product that is delivered at the beginning of each supply interval, which is based on the annual need and the number of supply intervals per year.
- **Walk-in cold room:** A refrigerated enclosure accessible via at least one door and large enough for a person to enter. It is designed to maintain the parts of the room designated for storage at a temperature between +2°C and +8°C. Used for bulk storage of large volumes usually at national and subnational levels.
- **Water-pack:** A coolant-pack, typically complying with PQS specification PQS/E005/IP01, filled with tap water.

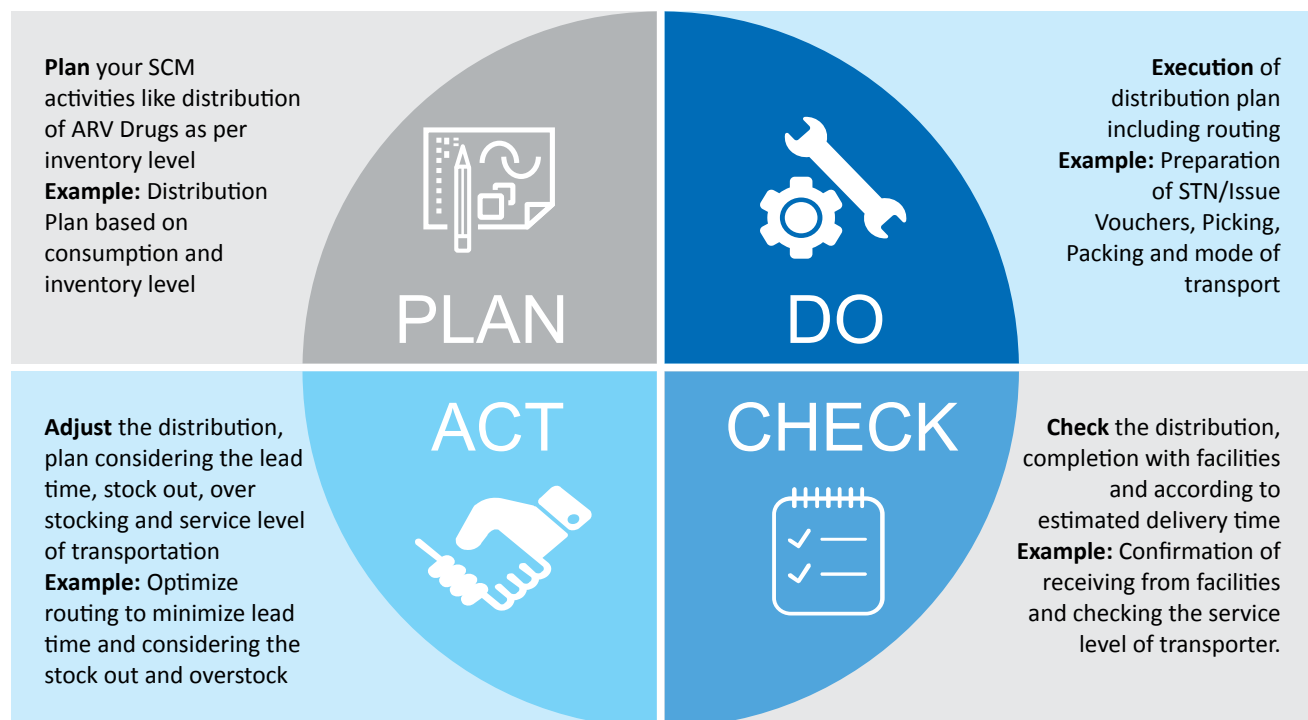


Introduction of “Plan, Do, Check and Act”

All supply chain systems should be managed through the lens of continuous improvement. The environment in which supply chain systems operate is dynamic, as new products are added, health policies are amended, and the systems themselves mature and evolve. Because of this changing landscape, it is important that pharmacists, logisticians and supply chain managers recognize that systems will need to adapt to new environments and circumstances.

After designing and implementation of a supply chain system for ARV drugs, HIV Testing Kits and other commodities under NACP, supply chain managers will need to monitor lead times, stockout frequency, reporting levels, supervision, and other factors to understand how well the system is functioning. In some cases, improvements can be made immediately, such as adding transport resources, providing additional on-the-job training, or increasing supervision. System designers will always find ways to improve the system. Some solutions will be easy, while some will be more extensive, but the goal is to discover ways to ultimately serve the client better to ensure product availability whenever and wherever clients need them. Managers should use all sources of information (reports, word of mouth, and others) to continually improve the system and integrate the changes in the next version of this SOP.

Securing a dependable, regular supply of ARV drugs or HIV tests kits or any other commodities under NACP at service delivery points (facilities) are critical to the success of ART programmes and HIV Testing. Any interruption in the supply chain will prevent diagnosis of new clients or endanger the lives of clients already on ARV treatment because of the risk of discontinuation of treatment or development of drug resistance. Frequent interruptions will compromise the success of the programme.

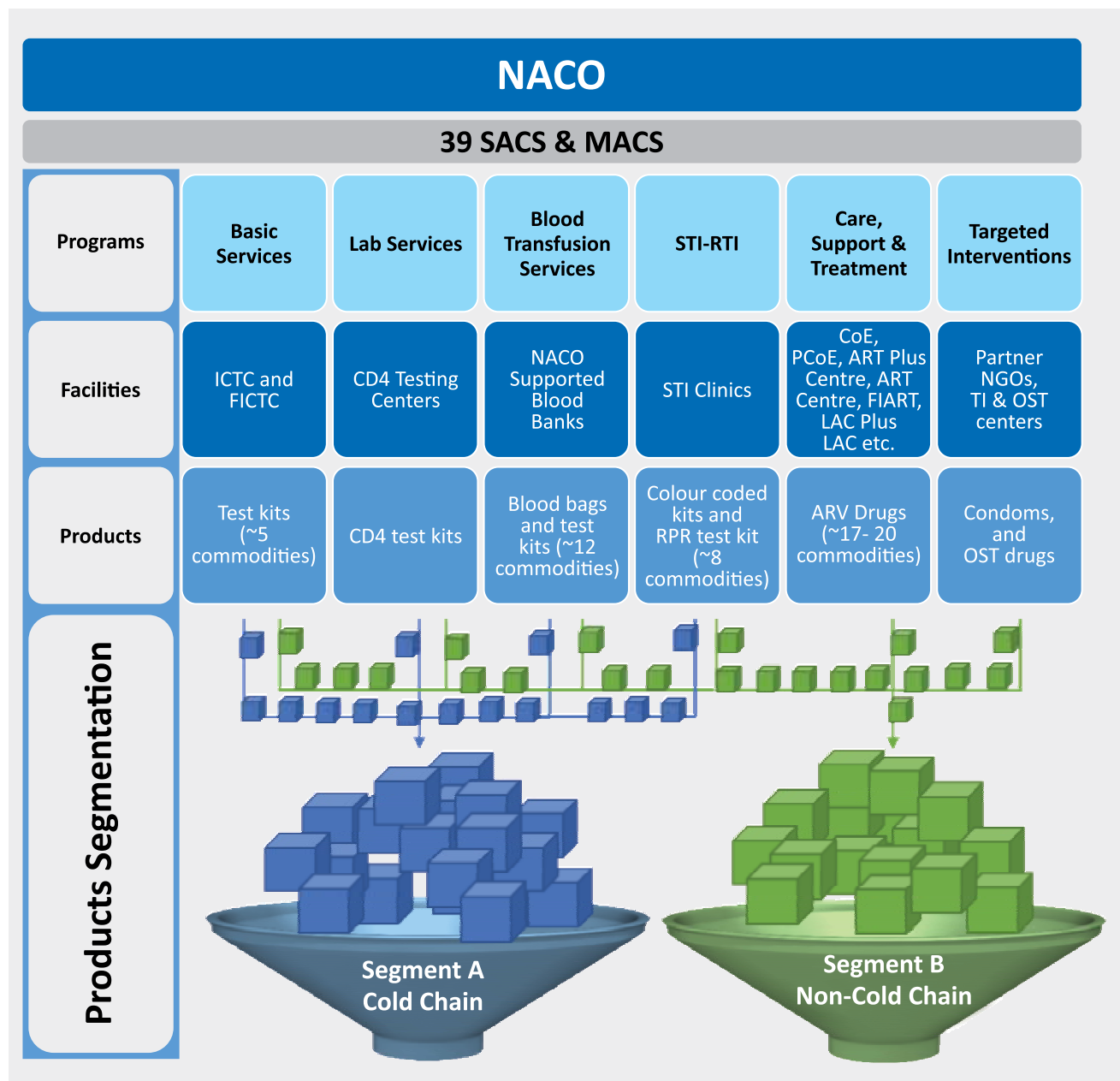




Purpose of Standard Operating Procedures

These **Standard Operating Procedures (SOPs)** are intended to simplify and standardize the work required for the supply chain management of HIV/AIDS essential medicines and commodities including cold chain items.

These SOPs focus on ARV Drugs, HIV Testing Kits and other commodities under NACP but are not limited to these commodities. The step by step process captured for cold chain (HIV Kits) and non-cold chain (ARV Drugs) is applicable to all activities in supply chain for all centrally procured items of NACO. Depending on the type of commodity i.e. cold chain or non-cold chain the SCM personnel may refer to respective sections for SCM operations of commodities other than ARV drugs and HIV Kits.



This SOP for HIV/AIDS essential medicines and commodities will be expected to:

- Enhance the quality of the services provided by the health facilities etc.;
- Promote uniformity in the services provided across the country;
- Eliminate operational errors in HIV/AIDS care delivery services;
- Develop the SCM staff capacity and enhance their skills for better performance.

The document serves as a reference for health providers and managers dispensing and managing HIV/AIDS commodities at all levels within the public health care system, guiding the completion of the following tasks:



This SOP document provides step-by-step instructions on how to carry out each of these processes. Consistent results will occur as long as everyone follows the steps. In this way, the SACS can maintain sufficient commodity supply by managing commodities effectively and preventing overstock and stock-outs.

Overview of Supply Chain Management





Objective of Supply Chain Management

Improving health status requires the implementation of coordinated and evidence-based health care practices. A well-functioning supply chain is one of these essential practices. The goal of robust supply chain system is to ensure that every client has commodity security which increase the trust in the system. Commodity security exists when every client is able to obtain and use quality essential health supplies whenever he or she needs them. A robust and efficient supply chain is critical to ensuring commodity security. Supply chains ensure that the right commodities are selected based on client needs; that appropriate quantities of commodities are forecasted and procured; and that these products, once procured, are distributed to service delivery points across the country. These actions are supported through financing, policies and commitment.

Effective supply chains not only help ensure commodity security, they also help determine the success or failure of any public health programme. Both in business and in the public sector, decision-makers increasingly direct their attention to improving supply chains, because supply chain improvements bring important and quantifiable benefits. Well-functioning supply chains benefit public health programmes by ...

Increasing program impact

Enhancing quality of care

Improving cost effectiveness and efficiency

If a client arrives at a facility to find that the needed commodities are “stocked out”, she or he is less likely to make a return trip for the commodity, which may result in illness or even death. Clients also begin to lose trust in the health system when products are consistently stocked out; this often results in them giving up the use of commodities altogether. When health facilities have a reliable supply of commodities, clients are more likely to use them as prescribed. Thus, supply chain activities facilitate continuous availability of ARV Drugs, HIV Testing Kits and other commodities under NACP so each client can access needed health commodities.



Introduction to Supply Chain Management

Definition of Supply Chain:

A supply chain is the process of moving goods from the point of origin, or manufacturer, to the point of consumption, or a service delivery point. As mentioned, a properly functioning supply chain is a critical part of ensuring access to ARV Drugs, HIV Testing Kits and other commodities under NACP. The goal of HIV/AIDS supply chain is not limited to the “delivery role”; supply chain ensures an environment where quality commodities, ARV Drugs, HIV Testing Kits and other commodities under NACP are easily accessible to every client who needs them.

The Seven Rights of SCM:

For any supply chain to ensure commodity security and serve clients, it must achieve the Seven Rights. This means that in a health commodity supply chain . . .

- The right goods are the health commodities that are needed to serve the clients, in the appropriate preparation, dosage, and packaging.

These goods are available . . .

- In the right quantities to meet the demand without overstocking but avoiding stockouts.
- In the right condition where commodities and their packaging are not damaged, there is sufficient shelf life to ensure they will be used before expiry and maintaining 2-8°C temperature for storage of HIV testing kits.

And these goods are delivered . . .

- To the right place – commodities are delivered to their intended destination.
- At the right time – commodities are delivered when they are needed to maintain appropriate stock levels.
- For the right cost – not only are the most cost-effective commodities delivered, but also the costs associated with their delivery are reasonable and cost-effective.
- To the right client

If SACS supply chains provide reliable supply of commodities, more people are likely to use these services. Clients will feel more confident about health services when they have a constant supply of commodities—it motivates them to seek and use these services. Finally, effective supply chains contribute to improved cost effectiveness and can stretch limited resources. Strengthening and maintaining a supply chain is an investment that pays off in three ways as it:

- Reduces loss of commodities due to overstock, waste, expiry, damage, pilferage, and inefficiency;
- Protects other major health programme investments;
- Maximizes the potential for programme resource recovery.

The Supply Chain Cycle:

Supply chain management includes a number of activities that support the Seven Rights. The Supply Chain Cycle illustrates these activities and their relationship.

The Supply Chain Cycle is circular as each activity i.e. serving clients, product selection, quantification and procurement, and inventory management, depends on and is affected by the other activities

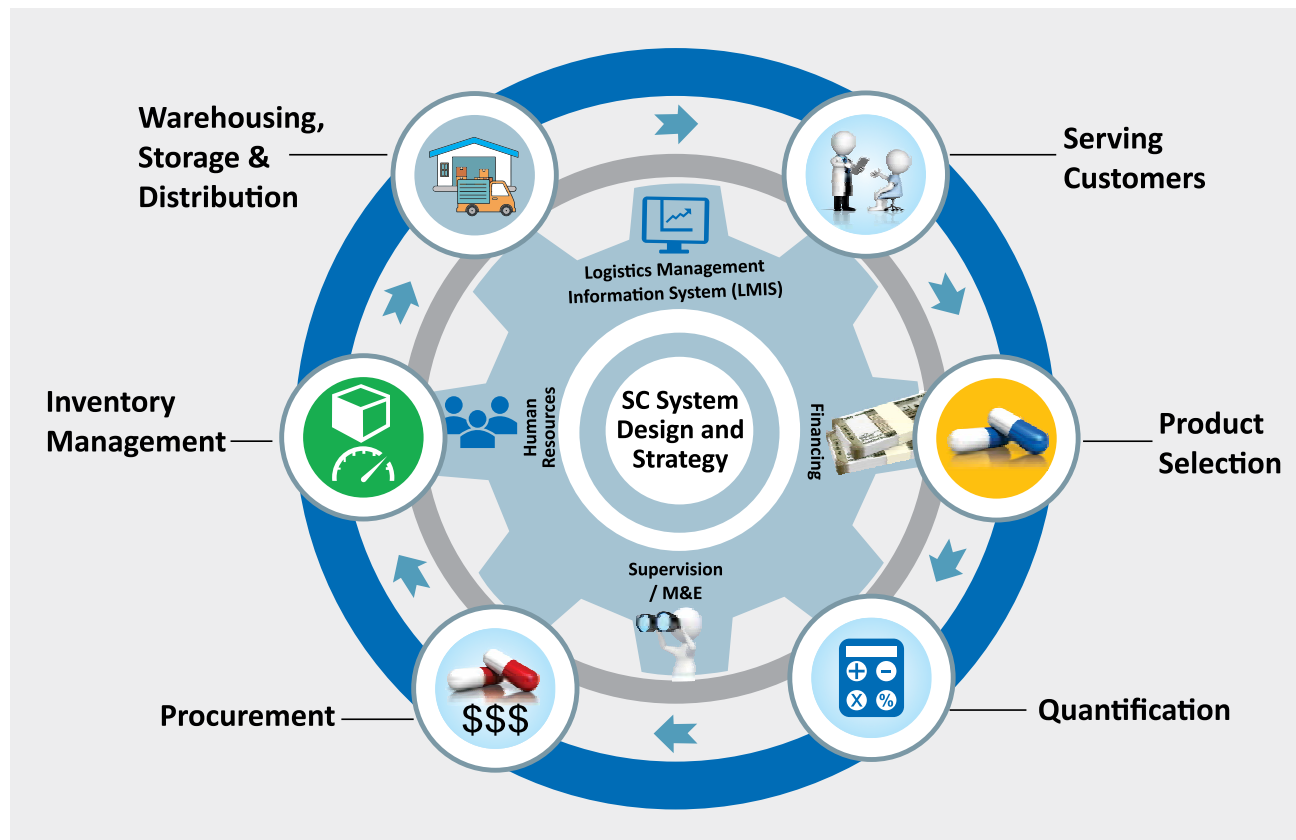


Figure 1: Supply Chain Cycle (Adapted from USAID DELIVER 2011)

Each component of the Supply Chain Cycle is defined as follows:

- **Serving Customers/clients:** whether they are couples, mother or children prescribed/dispense ARV Drugs or any other commodities under NACP, understanding client demands or needs is essential.
- **Product selection:** commodities and other health products (including ARV Drugs, HIV Testing Kits and other commodities under NACP) needed to address health issues must be selected. They are selected based on standard treatment guidelines developed by national formulary and therapeutics committees, pharmaceutical boards, and other government-appointed Technical Resource Groups (TRG).
- **Quantification:** once commodities are selected, the quantities needed in the short and long-term are determined through quantification. Quantification is the process of estimating the quantity and cost of the products required to ensure an uninterrupted supply, determining when the products should be procured and distributed using a supply plan.
- **Procurement:** After a supply plan has been developed as part of the quantification process, products must be procured. Health systems and programmes should be strategic about their procurement activities, which should be carefully researched, planned, and monitored, all the while abiding by the applicable rules and regulations. This will enable the procurement to be carried out in a timely manner, according to an open, fair, and competitive process and to ultimately supply quality-assured products for the best value.

**If there are
No commodities,
then there is
No service!**

- **Inventory management:** Inventory plays a key role in meeting the objectives of the supply chain, and it is the responsibility of the supply chain manager to ensure that inventory policies are in place to support the organization's mission, goals, and objectives related to health. The decision to hold inventory provides organizations with a means to balance supply and demand. A cohesive inventory strategy will define policies that determine which products to hold in inventory, how much inventory to hold, and where to hold them, and ensures that inventory management decisions are documented and applied consistently across the system or programme or facility.
- **Warehousing, Storage and Distribution:** After an item has been procured, its physical management, through various levels of an in-country supply chain, must be carried out in a structured way to ensure that it will be protected from harmful environmental conditions or handling and is available, accessible, and in good condition while posing no risk of injury to workers. To meet these requirements a combination of interventions requiring both physical infrastructure and structured procedures must be maintained. Warehousing also ensures that the stocks are properly received, put-away, and stock maintained and the products are picked and dispatched to service delivery points / facilities
- **Quality monitoring:** This function is applied throughout the entire supply chain cycle across various components. The quality of the commodities themselves and the quality of each supply chain process must be monitored for suitability, effectiveness, and efficiency.

The activities in the center of the supply chain cycle represent the management support functions that inform and impact the other elements around the Supply Chain Cycle.

A **Logistics Management Information System (LMIS)** is shown at the center of the cycle, and we consider it to be the engine which drives the logistics system. The LMIS is a tool for information and communication necessary for decisions which ensure product availability and client service.

Finally, policy and adaptability are key components of the supply chain cycle.

- **Policy:** a supply chain operates within a policy environment. Different policies may affect the whole functioning of the logistics system, or a part of the system.
- **Adaptability:** a supply chain must be designed to be flexible and adapt to constantly changing circumstances and needs, such as changes in demand for a product, or changes in funding policies for logistics activities.

Ultimately, the HIV/AIDS programmes cannot function without a continuous flow of ARV Drugs, HIV Testing Kits and other commodities under NACP. Effective and efficient supply chain management can help to increase the availability of priority health commodities so that people have reliable access to quality health commodities whenever they need them, ensuring that no client is turned away without providing needed commodities. The Supply Chain Cycle encompasses all the operational actions necessary to ensure uninterrupted flow of supplies.



HIV/AIDS Commodities Supply Chain

Commodities Operating Structure

HIV/AIDS essential medicines and commodities supply chain comprises four/five levels. At National Level the commodities are procured through procurement agents i.e. CMSS/RITES receiving fund through annual budget and supported by GFATM. The divisions place indents with the procurement agents CMSS/RITES as per forecasting estimation on established schedule through various lots as noted in the diagram below. Once delivered to CMSS/SACS, commodities flow down from the state to service delivery points, passing through the State Store after delivery from suppliers. ART centers, LACs, ICTCs, FICTCs serve as service delivery points.

Information on commodity issues flow up from each level to the level above, as noted in the diagram below. At each level data is aggregated before moving to the above level. This information is used to determine the quantity of commodities to be issued. When commodities are delivered, the delivery receipt is acknowledged with formal signature.

Feedback reports are generated centrally and distributed to lower levels for supervision and feedback action. The flow process for ARV drugs and HIV Testing Kits is as follows:

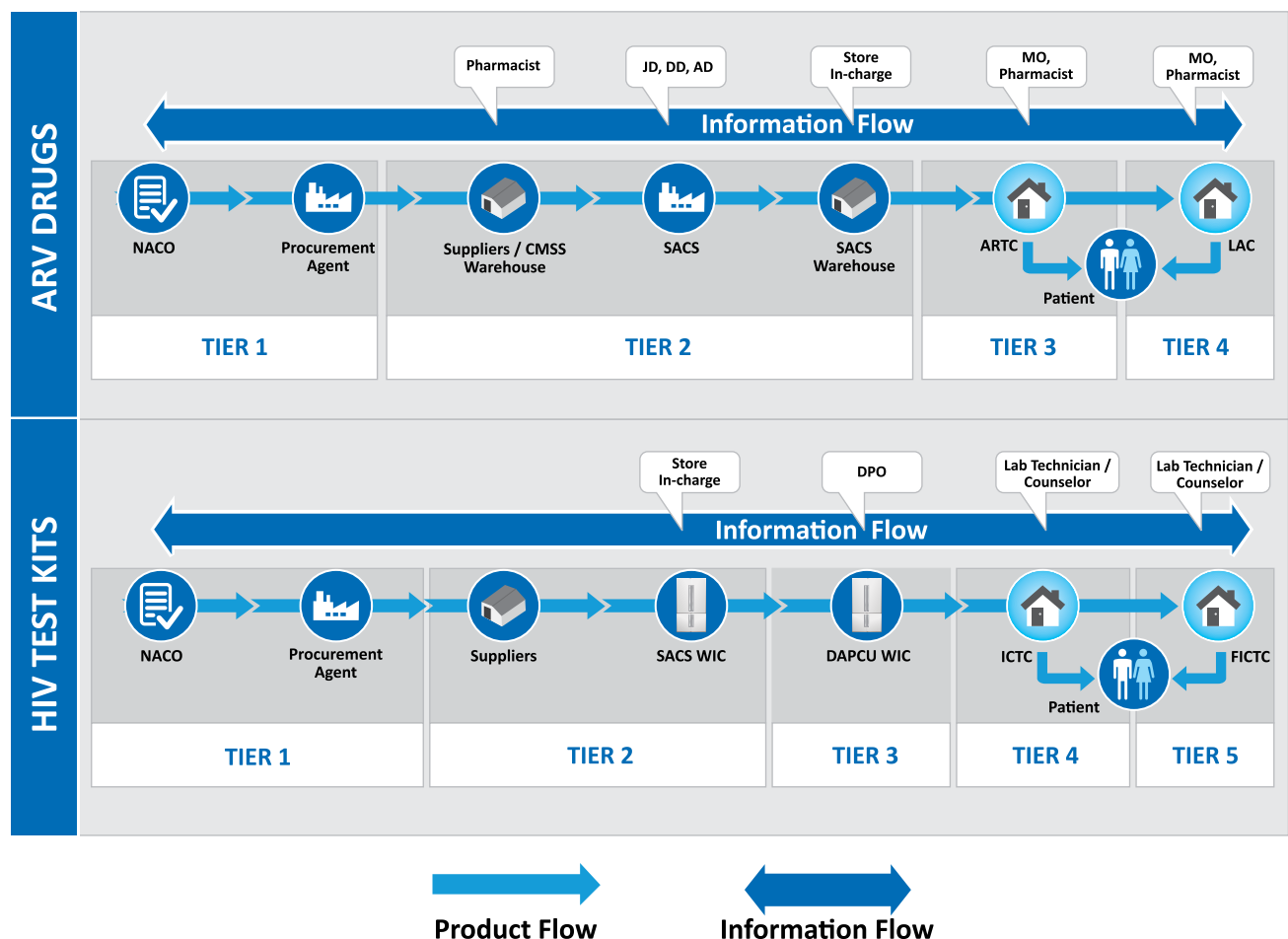


Figure 2: ARV Drugs and HIV Testing Kits:

Roles and Responsibilities: “Responsible, Accountable, Consulted and Informed” (RACI)

At each level in the supply chain, key personnel ensures the effective management of commodities. Every person in an organization must understand their role and to whom they report to. Specifically, they need to know:

- To whom they report
- Their responsibilities and expectations, and
- The level of authority required to make decisions.

RACI has been introduced in this document to clarify roles and responsibilities in cross functional processes. The structure of RACI clearly identifies the individuals or functions that participate in the process, the key activities taking place and primary outcomes. RACI acronym derived from the four potential roles that an individual or function will play relative to a specific activity:

R= Responsible: An ‘R’ designates the person(s) for function(s) responsible for completing a particular activity or step in the process. For example: Store in charge is responsible for receiving and issuing ARV drugs in SACS store.

A= Accountable: An ‘A’ designates the person(s) and function(s) ultimately accountable for ensuring that the activity is completed. For example: JD CST is accountable for receiving and issuing of ARV drugs in SACS store by store in charge;

C= Consulted: A ‘C’ designates the person(s) and function(s) that must be consulted before a decision or activity is finalized. For example: Transporter is consulted for type, mode and capacity of vehicle and routings;

I= Informed: An ‘I’ designates the person(s) and function(s) that must be informed of the results once a step is completed. For example: All ART centers are informed regarding the dispatch of ARV drugs.

The following RACI has been developed to understand the roles and responsibilities of personnel at each tier **(figure 2)** and function to ensure that the tasks are performed step by step. A RACI chart has been developed with clearly articulated roles and responsibilities of all tiers of HIV/AIDS supply chain. The chart helps to ensure that no part of the workload is overlooked.

Activities/ Responsibilities	Responsibility Matrix for ARV Drugs								
	NACO Level				SACS Level			ART/LAC	
	DDG-NACO	DD-NACO	DS, US Procurement	US-Procurement	PD/APD SACS	JD CST/DD/ AD	Store In charge	Nodal Officer/ Medical Officer	pharmacist
Forecasting	A	R	C	C	C	C	C	C	C
Procurement	C	C	A	R	I	I	I	I	I
Indenting	A	R	C	C	A	A	R	A	R
Receiving	I	I	I	I	A	A	R	A	R
Inventory Management	I	I	I	I	A	A	R	A	R
Issue	I	I	I	I	A	A	R	A	R
Legend	R Responsible		A Accountable		C Consulted		I Informed		

Activities/ Responsibilities	Responsibility Matrix for HIV Testing Kits								
	NACO Level				SACS Level			ICTC/FICTC	
	DDG-NACO	DD NACO	DS, US Procurement	US-Procurement	PD/APD SACS	JD BS/DD/ AD	Store In charge	Lab Technician	Counsellor
Forecasting	A	R	C	C	C	C	C	C	C
Procurement	C	C	A	R	I	I	I	I	I
Indenting	A	R	C	C	A	A	R	A	R
Receiving	I	I	I	I	A	A	R	A	R
Inventory Management	I	I	I	I	A	A	R	A	R
Issue	I	I	I	I	A	A	R	A	R
Legend	R Responsible		A Accountable		C Consulted		I Informed		

Figure 3: RACI Matrix

When team members understand and accept the roles, responsibilities and accountabilities that have been designated within the team, communication is clear and effective. Team members can share the right information with the right people in a timely manner. It also means that team members can rely on one another to get and give support.

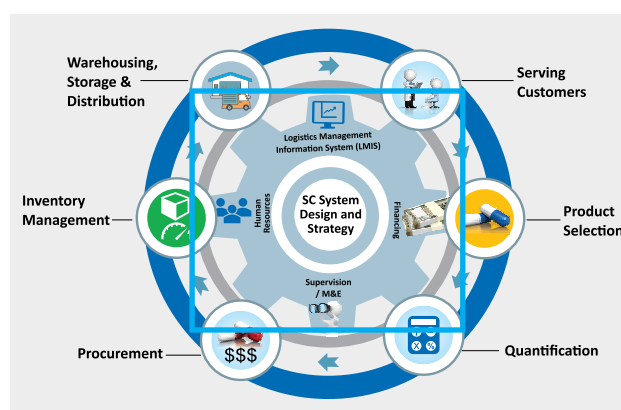


Logistics Management Information System

Overview

Information is the engine that drives the supply chain of NACO and SACS. Supply chain managers - DDG, PD, APD, JD, DD, store incharge and pharmacists, collect information to make decisions; better the information available, better the decisions taken. A logistics management information system (LMIS) is the system of records and reports that the supply chain workers use to collect, organize, and present supply chain data gathered from all levels of the system. Managers analyse gathered LMIS data to make decisions, improve functions, and coordinate future supply chain actions in ways that will ultimately improve client service.

Maintaining accurate data and records is crucial to good supply chain management. At any level of the system, managers should be able to quickly and easily report the stock on hand for any item. In a small warehouse, this may mean walking to the storage area and reading the numbers from a conveniently located stock card. In a large warehouse, this may mean being able to find the bin card quickly, or to look up data in records. The entire transaction should be clear—who placed the indent and when, when the indent was filled and shipped, and when the indent was received.



Logistics Management Information in NACO/SACS

NACO/SACS LMIS and eLMIS collects three essential data items. These data items form the basis of all decisions. They are:

Data Type	Definition	Example
Consumption	Data that describes the quantities of products given to clients/patient for their use. Consumption data can be collected from 2 sources: 1. Dispensed-to-user data which is the quantity of commodities administered to a client. 2. When dispensed-to-user data is not available, issues data can be used to determine consumption. Issues data refers to quantities of products that are sent from upper level facilities to lower level facilities. Note: "Dispensed-to-user" data is preferred over "issues" data. Dispense to user data represents actual commodities given to clients and represents real demand. Issues data is a proxy for "dispensed to user" data. However it does NOT represent actual client consumption, therefore it should be carefully labeled "issues" data if it is used as a proxy for "dispensed to user" data.	▪ If a facility "dispenses to clients" 100 TLE then the "consumption" data is 100. ▪ If a facility "issue" 100 TLE to another facility like ART Centers then the "issue" data is 100 TLE

Stock on Hand	Data that describes the quantities of stock held at a facility.	If a warehouse had 1,000 TLE in storage, then the stock on hand is 1,000 units.
Losses and Adjustment	Data that describes any quantities of stock that leave the pipeline for reasons other than being given to clients: - Losses – these are the quantity of stock removed from stock due to expiry, theft, damage, etc. - Adjustments – quantities of stock issued to or received from other facilities at the same level of the pipeline. Also, adjustments may be operational corrections made to stock-keeping record. NOTE: losses and adjustments <i>MUST</i> be accurately tracked. If they are reported as “consumption” then will falsely elevate consumption levels. This false level will result in excess ordering, future overages and potential expiries, and overall poor use of available budget and procurement processes.	- If a water leak damages a box of oral commodities and they have to be discarded, then the loss is one box of oral commodities. - If a facility has 100 extra TLE and transfers/ relocates the extra TLE to another facility, then the issuing facility has an adjustment of -100 TLE and the receiving facility has an adjustment of +100 TLE.

Each data point is essential to collect and, as such, forms are designed to capture this information.

Essential data (consumption, stock on hand, and losses and adjustments) are captured in different types of records. From a supply chain point of view, only three things can happen to supplies in a pipeline—they can be stored, moved (in transit), or consumed (used). Because we want to monitor products at all times in the pipeline, we need three types of records to track the products and report essential data items. These categories are:

Record Type	Definition	Essential Data Captured and Reported	Example of Record
Stock-keeping	Tracks information about commodities in storage	# stock on hand by product # of losses by product # of adjustments by product	- Bin cards - Stock Register - Inventory control card - Store ledger
Transaction	Tracks information about commodities being moved	Do not need to include any of the essential data items although sometimes it will be combined with a type of report and will include data like current stock on hand or losses and consumption data	- Issue and Receive (IR) vouchers - Packing slips - Waybills
Consumption	Tracks information about commodities that are consumed or used	Consumption data	- Daily Dispensing registers - Dispensing logs - Tick / tally sheets - IMS

NACO/SACS utilizes specific LMIS forms that fall within these categories to collect essential supply chain data. These forms are:

STANDARD OPERATING PROCEDURE – LMIS Forms		
NACO/SACS LMIS collects three essential data items. These data items form the basis of all decisions. They are:		
Form	Description	Facilities Which Use this Form
Indent	Used to place indents for HIV/AIDS essential medicines and commodities	All facilities
Issue and Receive (IR) Form	Used to issue commodities and record receipt. It tracks the movement of commodities – from request to issue and to receipt.	All facilities
Stock Register	Records detailed information about each item. It is updated on an on-going basis, recording issues, transfers, etc.	All facilities
Bin Card	- Records information about a single product by lot number or batch number. - Every item in that lot will have the same expiry date.	Only State Stores
Daily Dispensing Register (DDR)	- Records the quantity of each product received by a client (by name or client number) and by date. - At the end of the DDR, the total quantity dispensed or used is calculated for each product each day and then used for reporting purposes.	All serving facilities (SDPs)
Return /Transfer / Discard (RTD) Form	Records items which are being returned for any reason, or are damaged, or are being transferred/relocated to a different facility.	All facilities
Monthly/Quarterly Stock Report	Records all detailed information known about a commodity in a given location for a given reporting period	At State Level

Each form captures key supply chain data, as noted below. These data items form the basis of all decisions and are used to make supply chain decisions, as also noted below:

Transaction			
Type	Purpose	Data Collected	Decisions Made
Indent Form and Issue and Receive Forms (IR)	To track movement of commodities between facilities	- quantity of product being ordered/ shipped/ received - authorization to issue - proof of issue / receipt - dates of issue / receipt - indent lead time - location of commodity	- Guide receipt and issue quality inspections - Confirm commodity levels at any point in time
Stock-keeping			
Bin Card Stock Register Return/ Transfer/ Discard (RTD) Form	To track where commodity is at in a given facility and at what levels	- commodity on hand - losses/ adjustments - quantity received - quantity issued	- Set commodity levels that we would like to keep in the store and indent to meet demand - Confirm commodity levels at any point in time - Decide how much to indent - Inform FEFO distribution/ where to issue commodity

Consumption			
Daily Dispensing Register/ IMS	To gather data on how many commodities are being dispensed	- commodity on hand - rate of consumption data	- Set commodity levels that we would like to keep in the store and to meet demand - Decide how much to indent - Confirm commodity levels at any point in time

Digital LMIS (eLMIS)

Preparing summary and feedback reports is easier and less time consuming when the LMIS is automated. Digital LMIS applications can automatically populate report elements, especially if the eLMIS is also used for routine inventory control, and for opening balance, receipts, consumption, losses or adjustments that are recorded with every transaction. With the click of a button, the eLMIS can generate a summary report and a requisition order (indent) with suggested replenishment quantities. It also can quickly identify mathematical errors, highlight missed deadlines, list the percentage of expected reports received, and search for data averages, highs, and low.



Figure 4: IMS Dashboard

Types of LMIS Reports

An LMIS also includes reports which are used to communicate supply chain management information (including the three essential data items) from one level of the system to another. Reports move information up and down through the level of supply chain and provide decision-makers at various levels the right information, at the right time, in the right place, in the right quantity, of the right quality, and the right cost.

Data Use: for Forecasting and Procurement

To provide quality HIV/AIDS essential medicines and commodities, it must be well-supplied in the right quantities at the right time in the right place. Quantification is a process that estimates the *quantities and costs and delivery sources and specifications* of these essential commodities. It links information on services and commodities from the facility level with programme policies and plans at the national level and makes sure that each facility has the HIV/AIDS essential medicines and commodities it needs to serve the clients.

Data must be collected from indent to quantify how much commodities are needed and what it will cost to get those commodities. This data comes from LMIS reports which collect data at every level and every facility. This means that **EVERY** supply chain worker at **EVERY** facility plays an important role in ensuring commodities are available all the time. Data collected on LMIS reports and then shared using LMIS records is essential to making decisions; the better information we have, the better decisions we can make.

7 Quantification

Overview

Quantification is the process of estimating the quantities and costs of the products required for a specific health programme (or service), and determining when the products should be delivered to ensure an uninterrupted supply for the programme.

Quantification is a critical supply chain management activity that links information on services and commodities from the facility level with programme policies and plans at the national level to estimate the quantities and costs of the commodities required for a HIV/AIDS health programme.

Quantification is important for informing supply chain decisions on product selection, financing, procurement, and delivery. The results of a quantification exercise help programme managers:

- Identify the funding needs and gaps for procurement of the required commodities
- Leverage the sources, amounts, and timing of funding commitments to maximize the use of available resources
- Advocate for additional resources, when needed
- Develop a supply plan to coordinate procurements and shipment delivery schedules to ensure a continuous supply of commodities to all facility across the country

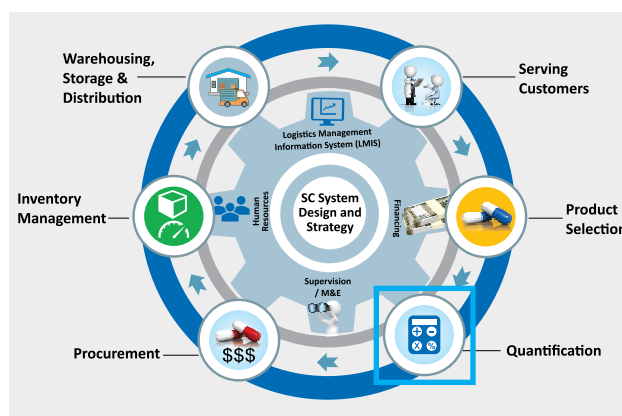
The quantification process is not a one-time, annual exercise but an iterative process of reviewing and updating the quantification data and assumptions, and recalculating the total commodity requirements and costs to reflect actual service delivery and consumption as well as changes in programme policies and plans. The results of a quantification exercise should be reviewed every six months, and more frequently for rapidly growing or changing programmes.

Quantification is not a one-time annual exercise but an iterative process which includes reviews and updates required year-round.

The right people need to be involved in each step of the quantification process, from data collection and analysis to presenting final results to the NACO/SACS and other relevant authorities. The following personnel are usually involved in a quantification exercise: SCM managers, policymakers, programme managers, technical experts, procurement officers, warehouse managers and service providers. Quantification of health commodities follows a step-by-step approach and is consist of two components:

- **Forecasting:** this process estimates the quantity of each commodity that will be dispensed or used during a defined time period (e.g. one year). This is currently done by NACO at the national level which is approved by TRG.
- **Supply planning:** this process coordinates procurements and delivery schedules of shipment to ensure a continuous supply of commodities.

To properly forecast how much of each commodity will be required, data is needed.





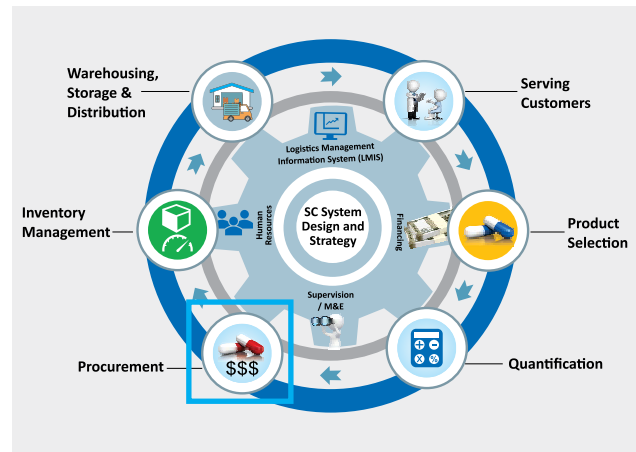
Procurement

Overview

Once commodities are quantified and approved for indenting, they must be procured. However, the procurement is a critical part of the supply chain cycle (see figure below) because it ensures that:

- Correct products are procured
- Products are of good quality
- Value for cost is maximized
- Supply of products is reliable and meets the demand
- Procurement process follows the rules and regulations of the government

Only effective and rigorous procurement policies, processes, and procedures can ensure a reliable flow of commodities into the supply chain, and can effectively respond to any contextual or operational changes in the supply chain.



The procurement function is affected by preceding elements of the supply chain cycle and the regulatory context. Factors include the characteristics of the products, registration, quality and importation requirements, procurement rules and regulations, and quantification requirements. These directly flow into the procurement activities, and need to be reflected in the tender documents.

Specific Procurement Challenges

Given the scope, high profile, and value of the purchases, the nature of the commodities, the number of stakeholders and the strict nature of public procurement procedures, challenges often arise during the procurement process. While a wide range of issues can affect procurement, the most common and critical procurement challenges revolve around the following:

Lengthy Procurement Process and Extensive Lead Time:

Each step of the process requires a certain amount of time to complete. While some steps can be done in parallel and will vary in the time required, some are often fixed for a set period, and may require validation or concurrence of one or several stakeholder(s).

Product Quality Assurance:

Counterfeit and substandard products are in the marketplace, creating significant product quality risks for the supply system. To address this risk, public sector procurement processes and national regulatory agencies must implement appropriate quality assurance measures to ensure that only good quality products enter the supply system. Procurement addresses this responsibility through the technical specifications, issued in the tender document, which identify key product quality requirements, such as product certification requirements, pharmacopeia standards (when applicable), labeling and packaging requirements, shelf life requirements, etc.

Transparency, Equity, and Integrity throughout the Procurement Process:

The procurement unit must support an open procurement process by consistently applying relevant procurement regulations and procedures, and international best procurement practices that promote transparency and accountability.

Projections and Estimates:

Cost projections and lead time estimates are often difficult to make. The procurement unit should be aware of the main market trends, although it cannot readily gather information specific to a tender prior to the publishing of the tender document and receipt of the bids.

Developing the Procurement Strategy

Procurement activities should be conducted in the context of the overall NACO health programme strategy:

Procurement is one piece of the Supply Chain Cycle with many challenges and stakeholders. To best align procurement activities with the overall NACO health programme goals and supply chain strategy, the procurement unit should be aware of the following:

- Program information: goals, targets, timelines, stakeholders
- Importance of the programme of NACO and its clients
- How procurement activities align operationally with other elements of the Supply Chain Cycle

Note: For more information, please refer to Procurement Manual of NACO (<http://naco.gov.in/sites/default/files/Procurement%20Manual%20for%20National%20AIDS%20Control%20Programme%20%28NACP-III%29.pdf>)



Inventory Management

Overview

Once commodities are quantified and procured, they must be managed. Storekeepers and supply chain managers at each level monitor stock levels to determine when and how much of a commodity is needed where. The worst thing that can happen in a health facility is to have a stockout (i.e. you run out of stock). The best way to avoid a stock out in a health facility is to establish an inventory control system.

An automobile fuel gauge is an example of a simple inventory control system. It informs a driver of the stock level of fuel and indicates when more fuel should be “refilled”. A supply chain inventory control system is like a fuel gauge also in that it informs the storekeeper, who is like a driver:

- when to indent or issue
- how much to indent or issue
- how to maintain an appropriate stock level of all products to avoid shortages and oversupply.

While driving, you monitor your fuel consumption from time to time and decide when to purchase more fuel. By assessing the fuel level of the tank, you can calculate when to refuel and how much, depending on your destination (and perhaps your budget). Drivers often use the red warning area as an indicator of when to buy more fuel. In other cases, drivers replenish the tank on a specific day of the week, regardless of the level, adding enough fuel to reach full. In deciding on an approach, drivers are choosing a form of inventory control.

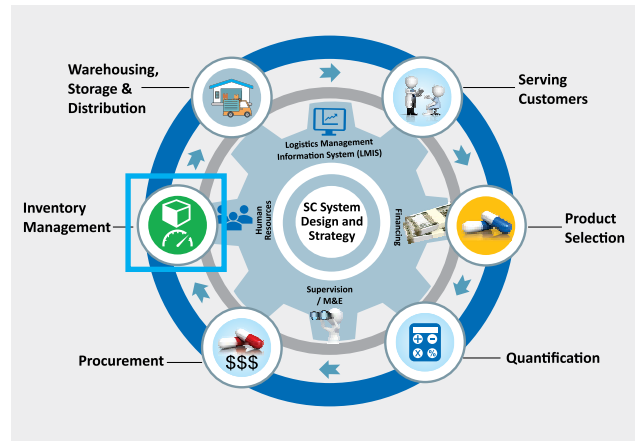
These same principles apply to HIV/AIDS essential medicines and commodities supply chains.

Max and Min Levels

Inventory control systems can be designed in a variety of ways. Public sector health commodity supply chains commonly use a max-min inventory control system. Much like the fuel gauge in an automobile, a max-min inventory control system is designed to ensure that the quantities in stock fall within an established range where stock levels should always remain between a minimum and maximum level.

- Max level of stock is the level of stock above which inventory levels should not rise, under normal conditions. The max stock level is set as a number of months of stock (for example, the max level may be set at four months of stock). This number represents the number of months of stock that a facility should have in the store in order to serve clients during a given period.
- Min level of stock is the lowest level of stock that a facility should have in the store or warehouse. Ideally a facility never reaches this Min level, but if it does an order should be placed immediately
- Emergency Order Point (EOP) – this is the level of stock that triggers an immediate emergency order. It can be reached at any point and must be lower than the min level of stock.

Max and min levels are expressed in terms of “months of stock”. When you assess stock status, time is an



essential factor. For example, a stock level of 100 TLE tablets may be sufficient to supply a small health facility i.e. ARTC for one month or longer; however, in a large hospital or warehouse, a stock level of 100 tablets may only be enough for a week or even a few days, making the supply drastically understocked. It is important, therefore, to know how long supplies will last.

In supply chain management, your job is to turn data and numbers into information that can be used to make decisions. In this case, you need to use data to determine if you have enough stock to last until the next order is received and available for dispensing or issuing.

A system should have max and min levels high enough to avoid stockouts, yet low enough to not risk oversupply which would lead to increased risk of expiry or damage. It is possible, and actually likely, that the stock balance will, at times, go below the min; but, ideally, it should never go below the emergency point. Thus min levels are set high enough to ensure that the facility never completely runs out of stock. At the same time, max levels are set low enough to ensure that space in the storeroom is adequate and that the stock does not expire before it can be used.

Ultimately, the goal is to avoid stockouts of essential health products. Moreover, the system should ensure that emergency indents are rarely placed, because such indents are time-consuming and, generally, expensive to fill.

Please find SACS maximum levels of stock and emergency order points by facility in the “Standard Operating Procedure” section of this Guide (Table 5 at Page No. 56-57)

Forced Indenting System

SACS utilises a type of max-min indenting system called “forced indenting”. With a forced-indenting system, a maximum level of stock is set. This level represents the months of stock that a facility should have in the store in order to serve clients during a given period. At the end of a pre-established review, or indenting period (e.g. 1 time a month, quarterly, bi-annually) a stock assessment takes place. Supply levels are compared to the max level and the supply chain manager determines the difference between what is currently in stock and what the max level is. An indent is placed for the difference. The emergency order point is the absolute minimum level that stock may reach. It is based on the amount of stock needed to meet demand during the longest lead time needed to receive an emergency order. An emergency indent is placed if the stock level for any item falls below the emergency order point before the end of the review period.

Please find SACS indenting schedule in the “Standard Operating Procedure” section of this Guide (Table 7 at Page No. 57)



Assessing Stock Status

Overview

Once the maximum and minimum stock levels are established, inventory is managed to make sure that it stays within those levels and that there is enough stock to meet client needs. Assessing stock status is a supply chain management function regularly completed to monitor stock levels and make decisions related to resupply and manage inventory.

Stock at all levels within the system is assessed at regular intervals, or review periods. By reviewing stock status supply chain managers can determine if a facility is understocked, overstocked, or adequately stocked. It is the supply chain manager's job to turn data and numbers gained through assessing stock status into information that can be used to make decisions. She or he uses this data to determine if there is enough stock to last until the next indent is received and available for dispensing or issuing.

The purpose of assessing stock status is to determine how long supplies will last.

When assessing stock status with the purpose of creating an indent, all commodities within the SACS HIV/AIDS essential medicines and commodity supply chain are re-stocked to the pre-established maximum level – no matter how much or little is in stock.

Stock Assessment

Stock status is usually expressed in months of stock. When reviewing stock status, supply chain managers need to determine how many months of stock are present in a facility. Months of stock on hand is the number of months HIV/AIDS essential medicines and commodities will last based on the present consumption rate. By indicating stock status in months, supply chain managers are able to determine how long supplies will last. For example, three months of stock means that your stock will last three months, as long as consumption remains at the current rate.

To assess stock status, two data elements are required:

- Stock on hand – the quantities of usable stock. (Items that are unusable are not considered as part of stock on hand. They are considered in losses to the system.)
- Average monthly consumption – the quantity of commodity used on average over a given period of time that is representative of normal consumption rates. It is calculated using the most recent dispensed-to-user data, usually over the last three or six months.

Remember: assessing stock status will tell us how many months of stock are on hand. To use these data elements to determine months of stock on hand, a simple formula is used:

How much stock we have

÷

How much stock we used
during a defined period
(e.g. for the last 3 months)

=

How long the Stock will last

Another way of defining this formula is the:

Amount we have is the same as...

Amount we use is the same as...

How long the stock we have on hand will last is the same as...

Stock on Hand

Average Monthly Consumption

Months of Stock

$$\text{Stock on Hand} \div \text{Average Monthly Consumption (e.g. for the last 3 months)} = \text{Months of Stock}$$

EXAMPLE:

Suppose you were asked to assess the stock status of a supply of TLE in a ARTC and you found 100 tablets. With this information, could you tell if the clinic has.

Too many tablets?

Or too little?

Or just enough?

No, you could not because you do not know how many tablets are used monthly.

You do not want to know, “How many tablets does the clinic have?” but instead, “How long will the clinic’s supply of tablets last?” If you know that the clinic dispenses about 25 tablets every month during regular months, you can use the following simple formula to determine that the TLE supply will last about four months—

$$\begin{array}{ccc} \text{Stock on Hand} & \div & \text{Average Monthly Consumption (e.g. for the last 3 months)} \\ \hline 100 \text{ tabs} & \div & 25 \text{ tabs dispensed monthly} \\ \hline & & = 4 \text{ Months of Stock} \end{array}$$

Based on your assessment, you may find that you need to place an indent or, in some cases, even an emergency indent. However, if from the assessment you see that you do not need to place an indent because you have sufficient supply to meet demand, you can return to your other duties confident that your supplies will last until your next indent. This analysis process is assessing stock status!

Please find SACS schedule for stock assessment in the “Standard Operating Procedure” section of this Guide (Table 6 at Page No. 57)



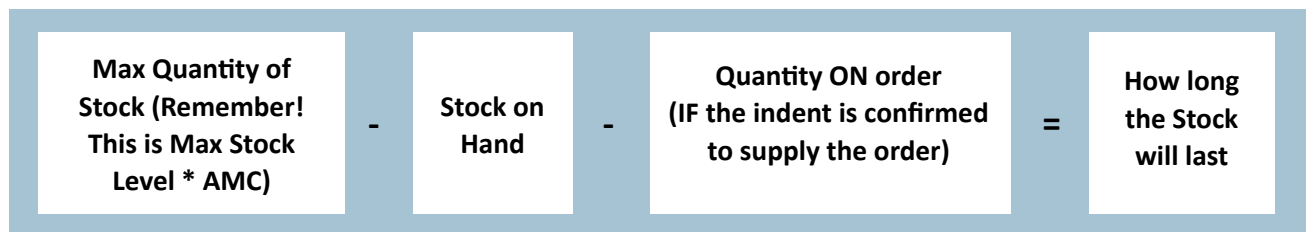
Calculating an Indent Quantity

Overview

In order to determine how much to indent, supply chain managers need to assess stock levels and figure out how much of each HIV/AIDS essential medicines and commodity is available at a facility and how long these stocks will last. Once they do this, they can compare their stock levels to the established maximum level of stock (remember – maximum stock levels are the **highest** level of stock that a facility should keep on hand to prevent stockouts). The difference between what a facility's max level of stock is and what they actually have is the indent amount.

Formula for Calculating Quantity to Indent

For every facility and every commodity types, the formula for calculating the indent, or issue quantity, is the same.



To calculate the Quantity to Order, follow these steps:

HIV/AIDS Essential Medicines and Commodity Order Process

Step

1. Verify “max stock level”.

Max quantity is the maximum amount of stock a facility should have at any given time. This number is set by the NACO/SACS:

- **State = 18 months of stock**
- **ARTC = 6 months of stock**
- **LAC= 3 months of stock**

2. Turn “max stock level” into an actual number of commodities:

You must convert max quantities into the actual quantities of product needed. A supply chain manager cannot, for example, send an indent to the central warehouse for two months of stock of an item. The central warehouse would not know what two months of stock means. The supply chain manager must convert months of stock into an actual quantity of stock by using this formula:



3. Determine “stock on hand”.

Stock on hand is the amount of stock a facility has in its storage, ready for issue. It can be found by:

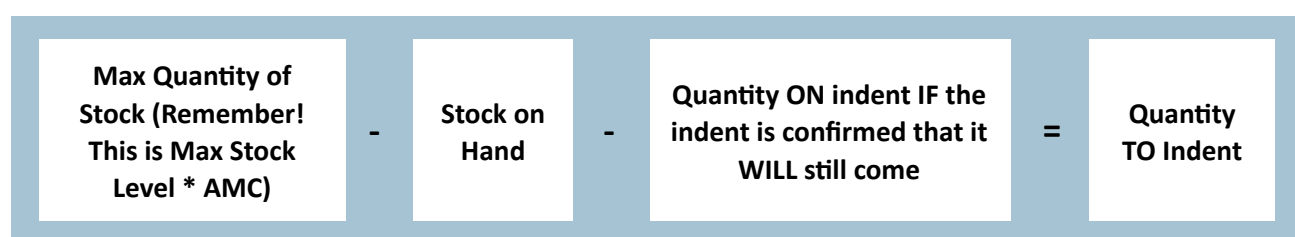
- Checking the stock card
- Conducting a physical inventory

4. Verify “quantity ON order”.

Quantity on indent is the quantity of commodities that you have previously ordered but have not yet arrived. You subtract this amount so that you do not indent too much:

- If you made an indent in a past month but it has not arrived and you KNOW it will arrive, subtract that amount.
- If you made an indent in a past month but it will NOT arrive, then do not subtract it.

5. Use the formula and determine your “quantity TO indent”.



Example 1:

Calculating an Indent for **ARV DRUGS**:

1. You work at a State warehouse. The max quantity of stock for ZLN, set by the NACO, is 18 months of ZLN.
 - *Max stock level = 18 months of ZLN*
2. Your state issues an average of 300 ZLN each month. So using the formula in this step:
 - $18 * 300 = 5400$ ZLN is max number of ZLN that you should have
3. You look on your stock card and you currently have 500 tablets of ZLN in your store. You also count the number of ZLN tablets and verify that you really do have 500 ZLN tablets in your store.
 - *Stock on Hand = 500 ZLN*
4. You look at last month's Indent and issues and receiving Form and find that you placed an indent for 300 ZLN. You have not yet received that Indent Form so you call the issuer to verify if that indent of 300 ZLN is still coming. They say, "Yes, it is still coming."
 - *Quantity on Order = 300*
5. **Based on the information we know:**
 - Max Quantity of Stock = 5400
 - Stock on Hand = 500
 - Quantity on Order = 300

6. As per the formula above the calculation will be as follows:

$$5400 - 500 - 300 = 4600$$

You should place an indent for 4600 tablets of ZLN.

Example 2:

Calculating an Indent for HIV Test Kits

Suppose you are a service delivery point (facilities) and you are asked to place this month's indent for HIV testing Kits. What do you do to complete the indent?

You know that Service Delivery Points (facility) have an established max level for HIV Testing Kits of: 2 months of stock.

You check your stock card and conduct a physical inventory to see how much stock you have right now. You find that you have 25 HIV Tests in storage and ready for use

Then, you look in your records and find that this facility's average monthly consumption (using the last 3 months data) for HIV Testing Kits is: 30 tests per month.

Finally, you look in your records and find that you have an indent already placed from last month for 10 HIV Testing Kits which has not yet arrived. You call the State store (WIC) and they tell you that they cancelled the last indent and it will NOT be coming. **How much should you indent?**

Answer:

Using this formula:

Based on your assessment, you may find that you need to place an indent or, in some cases, even an emergency indent. However, if from the assessment you see that you do not need to place an indent because you have sufficient supply to meet demand, you can return to your other duties confident that your supplies will last until your next indent. This analysis process is assessing stock status!

Max Quantity of Stock (Remember! This is Max Stock Level * AMC)	-	Stock on Hand	-	Quantity ON indent IF the indent is confirmed that it WILL still come	=	Quantity TO Indent
(2 months max stock level * 30 tests /month)	-	25 tests on hand	-	0 (since the last indent is not coming)	=	35 tests should be ordered

Push Versus Pull Indenting

Placing indents is a routine activity in supply chain management. In most supply chains, an indent is placed for new supplies every month, or every quarter, from a SDP (facility) to a higher level. The two most common ways for indenting are to either "pull" or "push" an indent:

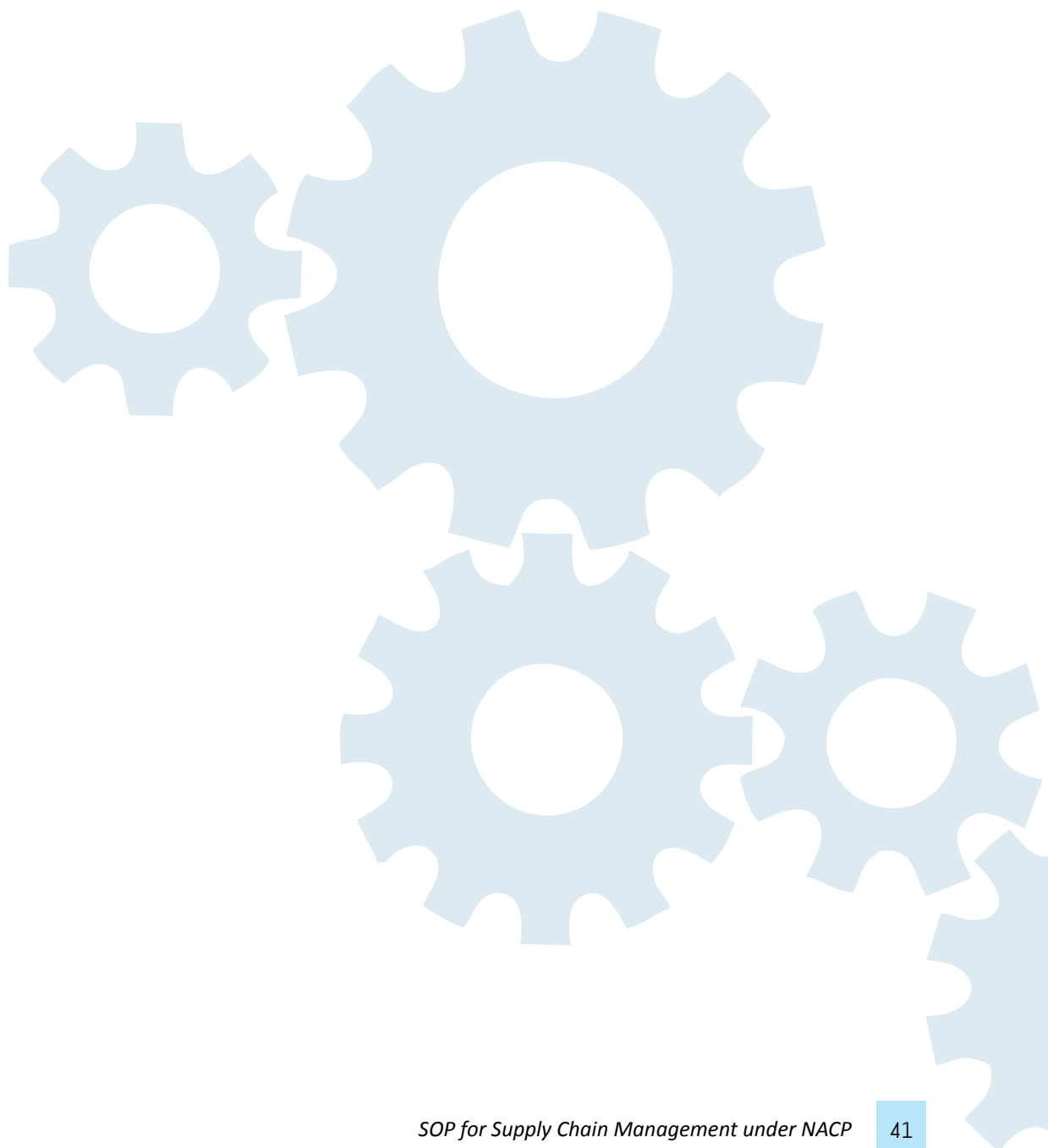
- With a pull system, the quantity to be resupplied to a facility is calculated by the person at that same facility who is placing the indent.

- With a push system, the quantity to be re-supplied is determined by the person who fills the indent at a higher level than the facility requesting a refill.

Regardless of which type of system (push or pull), the formula for determining how much to indent is the same.

When deciding whether to have a level of facilities “push” indents or “pull” indents, note that a system can have one level (e.g. National level) be “push” and another level (e.g. SACS) be “pull”. However, it is recommended that facilities at the same level should not be both push and pull. All facilities at a level should use the same indenting system and either all be push or all be pull.

Please find SACS indenting schedule in the “Standard Operating Procedure” section of this Guide (Table 7 at Page No. 57)



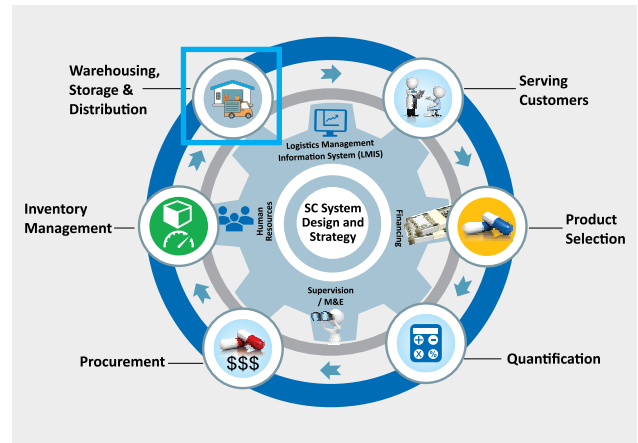
12

Warehouse and Storage

Overview

Warehouse is a facility for storage and safe keeping of HIV/AIDS essential medicines and commodities to avoid damage, expiry, and theft. Proper storage procedures help to ensure that storage facilities protect the shelf life of products, issue only high-quality products, and that there is little or no waste due to damaged or expired products. If proper storage procedures are followed, clients can be assured that they have received a high-quality product.

Because products are stored at every facility in the pipeline almost everyone working in the supply chain is responsible for product storage.



Designing the Storage Facility

Capacity/space: Storage facilities must have the space for both storage and handling. Ideally, space should be evenly divided between the two. New products and packaging innovations, as well as an increase in products related to the prevention and treatment of diseases like HIV/AIDS have increased the volume of products and medical consumables that flow through warehouses. When designing a new facility, do not underestimate the storage requirements.

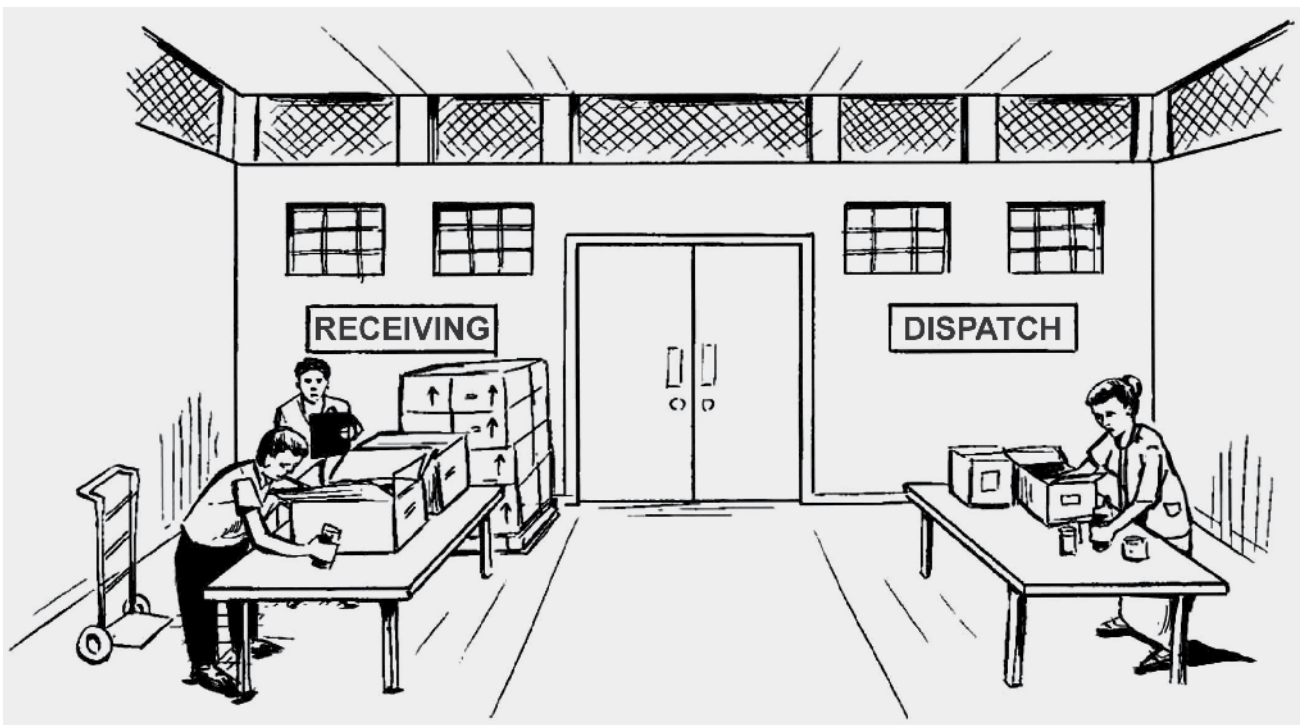


Figure 5: Warehouse layout for receiving and dispatch

Plan the store with staging areas for preparing shipments (issuing) and unloading deliveries (receiving). Separate the receiving and shipping areas to avoid confusion and to enhance efficiency and security. (This is more practical for bigger size warehouse)

If a facility will be repackaging products, plan a separate clean preparation area to conduct the repackaging. Try to locate the area close to the issuing area.

Warehouse and Storage Activities

Regardless of storage facility size - from a small health center to a SACS warehouse - the main operational activities for storage are very similar. These activities are:

- **Receiving and inspecting incoming commodities** – commodities being unloaded are visually inspected for quality and quantities ordered and are verified against the packaging slip or shipping invoice to ensure accuracy.
- **Putting away** – once commodities are unloaded, they are “put away”. This includes moving products from the unloading dock, or receiving area, after they are released for storage, and assigning them to their designated storage area (rack, shelf, floor, etc.).
- **Picking and packaging**– to fill shipping, or indent, requests (or picking lists), products must be located, pulled from inventory, and prepared for shipment.
- **Transport** – once products are prepared for shipment, recording and reporting documents are prepared and then cargo is loaded for transport. To avoid damage during transit, products are arranged and secured within the vehicle using pre-set requirements and conditions for adequate loading and transport.

How complex these activities become will vary based on the volume of products to be managed and storage facility size.

Receiving and Arranging Commodities:

When you receive HIV/AIDS commodities in warehouse and Walk in Cooler (WIC) -

- Ensure there is sufficient storage space;
- Prepare and clean the areas used for receiving and storing the products;
- Inspect packages for damaged or expired products.

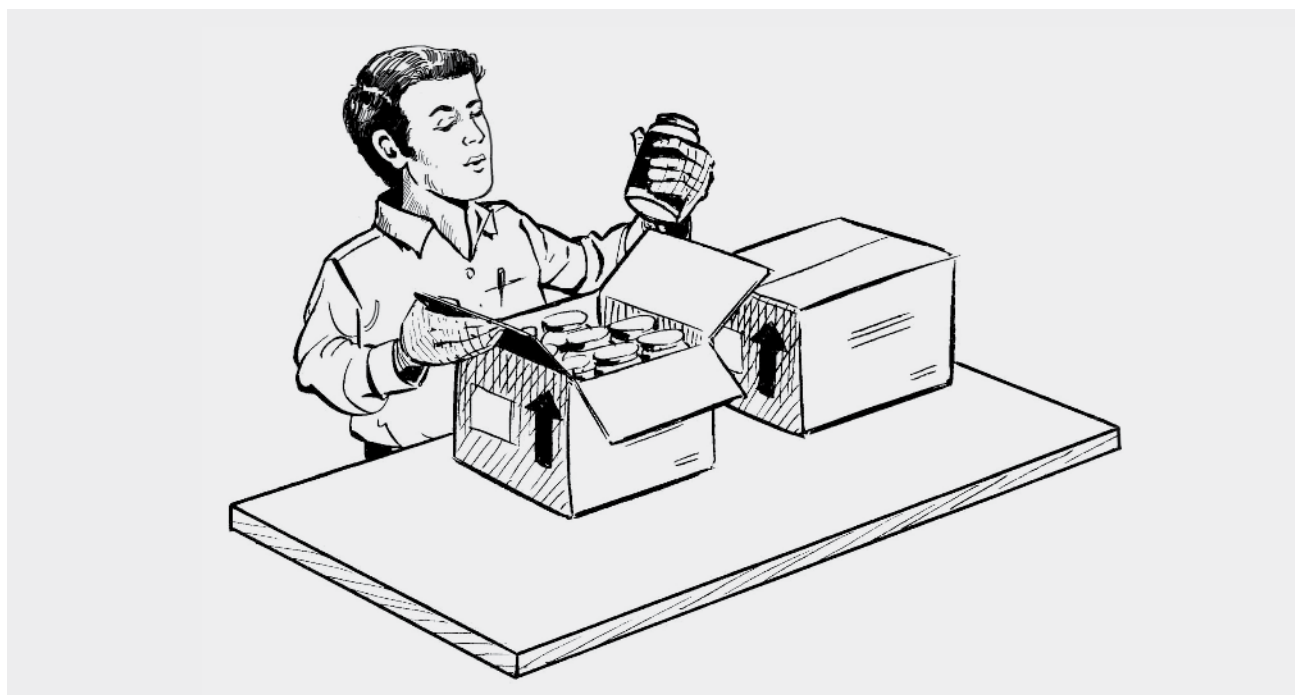


Figure 6: Visual Inspection

Arranging Commodities

Arrange the storeroom, Walk in Cooler (WIC) and shelves as follows:

If using pallets and shelves, stack cartons on pallets and shelves as shown in picture:

- at least 10 cm (4 inches) off the floor
- at least 30 cm (1 foot) away from the walls and other stacks
- no more than 2.5 m (8 feet) high (general rule).
- Arrange shelves and racks in lines with a passageway not less than 90 cm wide.
- Avoid placing shelves only around the edge of the room, which wastes a lot of space.
- Place the shelves 90 cm from the walls of the storeroom to ensure they are accessible from both sides. Ideally, use adjustable shelves

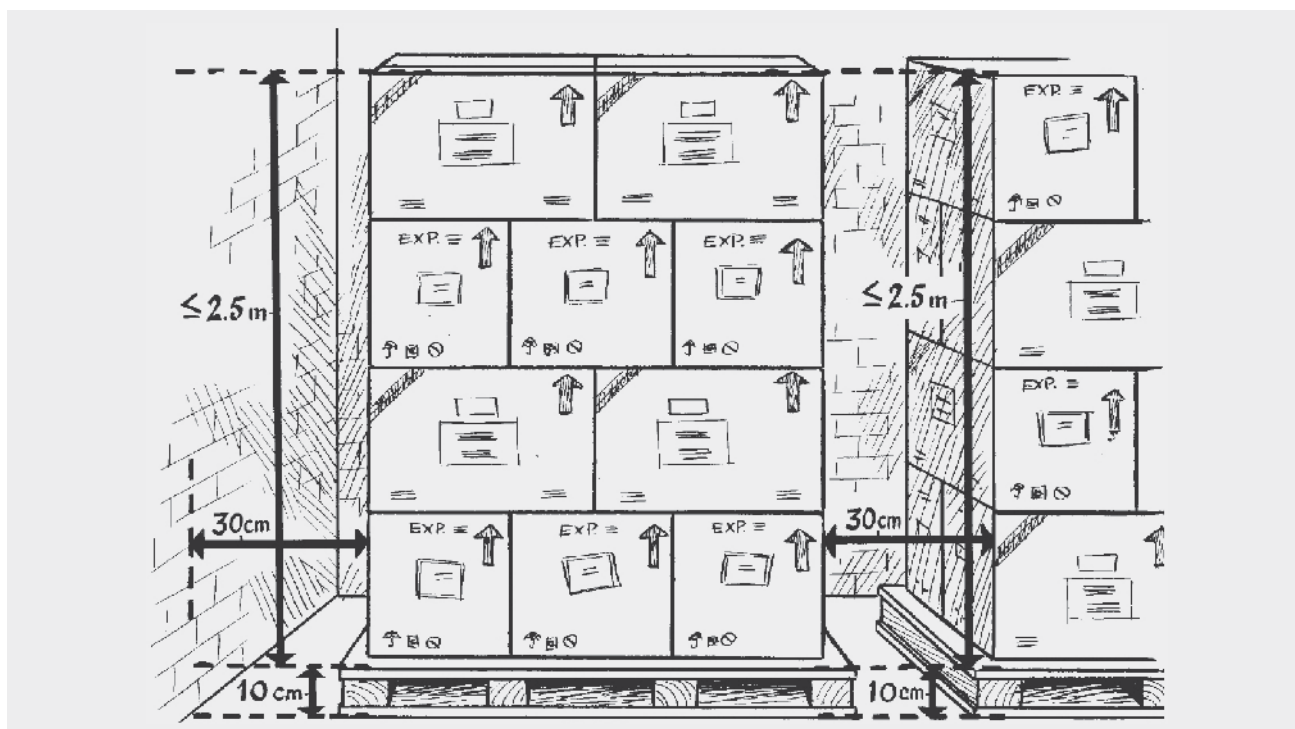


Figure 7: Example of Pallets for stacking

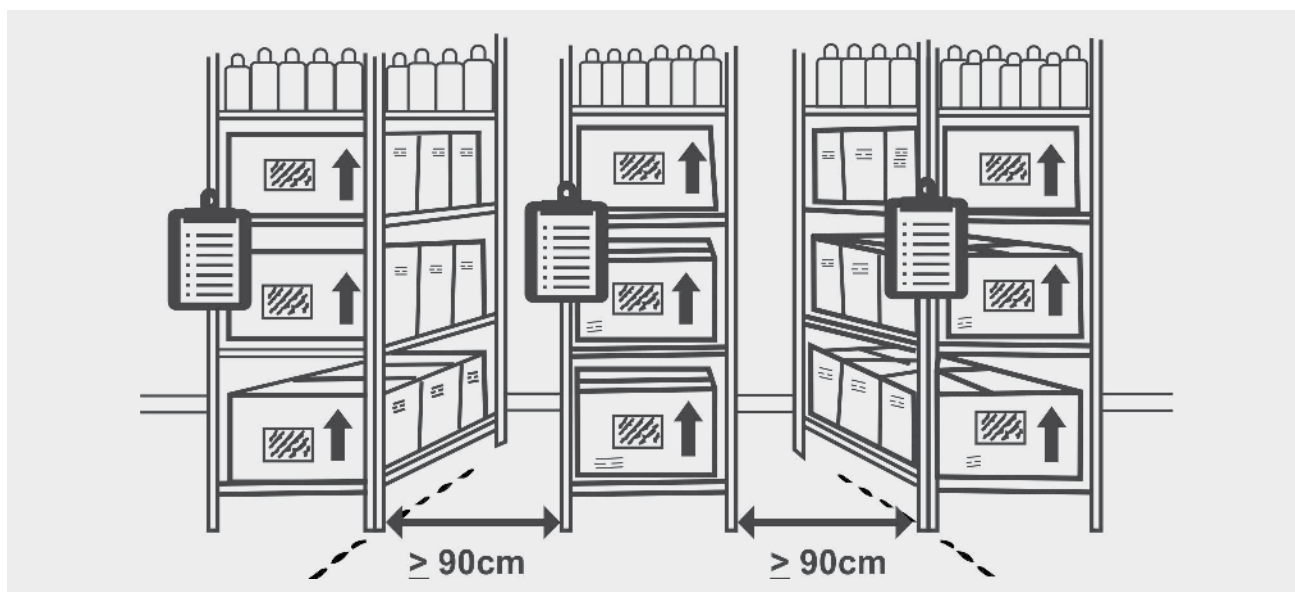


Figure 8: Example of shelves

For all storage:

- Follow the manufacturer or shipper's directions when stacking, and follow labels/markings for storage
- Place liquid products on the lower shelves or on bottom of stacks.
- Store products that require cold storage in appropriate temperature controlled zones.
- Store high security/high value products in appropriate security zones.
- Separate damaged or expired products in quarantine area from the usable stock without delay and dispose of using established disposal procedures.
- Always store all commodities in a manner that facilitates FEFO principle for stock management.
- Arrange cartons so that the arrows point up and identification labels, expiry dates, and manufacturing dates are visible. If this is not possible, write the product name and expiry date clearly on the visible side.



Figure 9: Example for marking the boxes in warehouse

Stock Rotation and FEFO Principle

First Expiry, First Out, often abbreviated by the acronym FEFO. This term is used in logistics and inventory management to describe a way of dealing with product with a limited shelf life such as pharmaceutical drugs or products with a specified expiry date. The product with the first expiry will be the first to be distributed or removed from stock. This is a simple, highly effective inventory management method that prioritizes the handling and moving of date sensitive inventory.

Usually First-In, First-Out (FIFO), a common practice, works well in most cases, but managing by expiry date (FEFO) ensures that the earliest expiry products leave the warehouse/facility first. It is advisable to confirm that FEFO is being followed every time physical inventory assessment is done. The First expiry, first out logic is a type of stock rotation that enables supply chain operations managers to optimize the distribution process and minimize the waste generation.

When issuing HIV/AIDS commodities, it is important to follow the FEFO policy.



Figure 10: Physical Count and stock rotating

Following FEFO minimizes wastage from product expiry.

- Always issue products that will expire first, ensuring they are not too close to or past their expiration date. The shelf life remaining must be sufficient for the product to be used before the expiry date.
- To facilitate FEFO, place products that will expire first, in front of products with a later expiry date.
- Write expiry dates on stock cards, so stocks can be sent to facilities at least 3 months before they expire.

Remember, the order in which you received products is not necessarily the order in which they will expire. Products you received most recently may expire sooner than the products you received earlier. So, it is extremely important to always check the expiry dates and to make sure the dates are visible while the products are in storage.

Storage Condition

Storage conditions will affect the quality of the HIV/AIDS essential medicines and commodities being stored. Stores that are too hot, stacks of cartons that are too high, and other poor storage conditions can cause damage to HIV/AIDS essential medicines and commodities or cause a reduction in shelf life. A well-organized storeroom will also simplify a facility's work; needed supplies are quickly found without waste of time.

Each commodity has a shelf life which is specified by the manufacturer. When the commodity reaches the end of its shelf life, it has expired and should not be distributed to clients.

Shelf life is the length of time a product may be stored without affecting the usability and safety of the item. To maximize shelf life and ensure products are readily available for distribution, facilities should adhere to accepted best policies and procedures when storing HIV/AIDS essential medicines and commodities. Complete storage guidelines can be found in Guidelines for the Storage of Essential Medicines and Other Health Commodities. Further, each commodity has specific

Shelf life is the length of time a product may be stored without affecting the usability and safety of the item.

guidelines which should be followed to maintain its integrity. This information is usually printed on the product carton and boxes by the manufacturer and it should be exactly adhered to.

In supply chains, warehousing/storage costs can sometimes account for the largest percentage of overall logistics costs. It is vital that this function is managed effectively and efficiently. The shelf life of the products is dependent on good storage practices. The following are some of the key example of good storage practices.

Storage Guidelines:

- Clean and disinfect storeroom regularly
- Store supplies in a dry, well-lit and well-ventilated storeroom, out of direct sunlight
- Secure the storeroom from water penetration
- Ensure that fire safety equipment is available and accessible, and that personnel are trained to use it
- Store commodities away from electric motors and fluorescent lights
- Maintain cold storage, including a cold chain, for products that require it
- Keep high value products/commodities in a locked place
- Store flammable products separately using appropriate safety precautions
- Stack cartons at least 10 cm (4 in) off the floor, 30 cm (1 ft) away from the walls and other stacks, and no more than 2.5 m (8 ft) high
- Store ARV Drugs, HIV Testing Kits and other commodities supplies separately, away from insecticides, old files, chemicals, office supplies and other materials
- Arrange cartons so that arrows point up, and ensure that identification labels, expiry dates, and manufacturing dates are visible
- Store supplies in a manner accessible by FEFO, counting and general management
- Separate and dispose off damaged or expired products without delay.

Physical Inventory

Stock-on-hand information is recorded in stock keeping records. But in indent to know if the information recorded on the stock card is correct, supply chain workers should conduct a physical inventory count. Physical inventory is management process used to compare actual stock on hand for each commodity with the amount recorded on the stock card. A physical inventory count enables supply chain workers to confirm how much stock is available for use and whether forms are being completed correctly.

A physical inventory count is used to compare actual stock on hand for each commodity with the amount recorded on the stock card.

For quality assurance, a physical inventory count is also an opportunity to visually inspect products for potential damage.

Large warehouses should conduct a physical inventory count at least once a year. For smaller warehouses, a physical inventory can be conducted more often. At the clinic level, for example, you may want to conduct a physical inventory count as often as once a month and at the same time that you complete your monthly report. If you find that the stock keeping records do not match the actual stock, conduct a physical inventory count more often and take steps to improve recordkeeping.

When you conduct a physical inventory count, remember, when boxes are sealed and the rules of proper storage are followed, only one box or carton is opened at a time. A physical inventory count, therefore, can be a quick, routine exercise, especially if you follow good storage practices.

Please find SACS physical inventory schedule in the “Standard Operating Procedure” section of this Guide (Table 2 at Page No. 55)

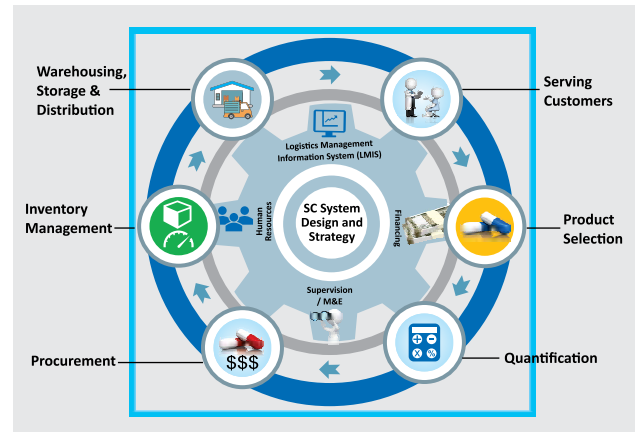


Quality Assurance

Overview

Quality assurance is the process of determining if a commodity meets specifications and international standards for quality. Although laboratory testing is one way to assure the quality of medicines and related medical supplies, routine visual inspection is usually more feasible, and cost effective, at the service level. Routine visual inspection is a warehouse management process where products and their packaging are examined by eye to look for problems in product quality.

A commodity should not be distributed if its quality is not as per standards. Questionable commodities should be sent to the nearest authorized testing laboratory for analysis and all like commodities held in quarantine until the results of the testing are received.



Visual Inspection

In a perfect pipeline, all products would be stored under ideal temperature and humidity conditions, and according to proper storage guidelines. In the real world, the quality of storage conditions may vary widely from place to place. Storekeepers can best verify quality by visually checking the condition of all products in their facility on a regular schedule through routine visual inspection.

Visual inspection is the process of examining products and their packaging by eye to look for problems in product quality.

A visual inspection should be completed each time products are handled, including:

- Receiving products from the manufacturer (usually at the Regional/state level)
- Receiving supplies from a warehouse or health facility
- Conducting a physical inventory count
- Dispensing products to a client
- Issuing products from one level to another
- Receiving complaints from lower levels or clients
- Products are about to expire
- Products show signs of damage
- Products have been kept under improper storage conditions.

During a visual inspection, check for the following kinds of damage:

- Physical damage – check for damage to the physical integrity of a commodity, usually due to crushing, tearing, rubbing, or ripping, like signs include: tears, perforations, water or oil or broken or crumbled tablets, broken bottles.
- Chemical damage – check for damage or deterioration of the chemical integrity of a commodity, usually due to exposure to light, heat, humidity, or moisture.

- Manufacturing defects – check for incomplete supply, missing or illegible identification information.
- Labeling defects – make sure that products are labeled with the date of manufacture or expiration, lot number and manufacturer's name.

If a problem with a commodity is discovered, a sample of all packages should be checked to ensure that they do not have the same problem.

Damaged commodities should be removed from inventory and destroyed according to established health care waste management policies and procedures; the balance of the commodity can normally be distributed as usual if it's an issue with the packaging. If it is a chemically-caused damage, then all like commodities from the same lot should also be destroyed.

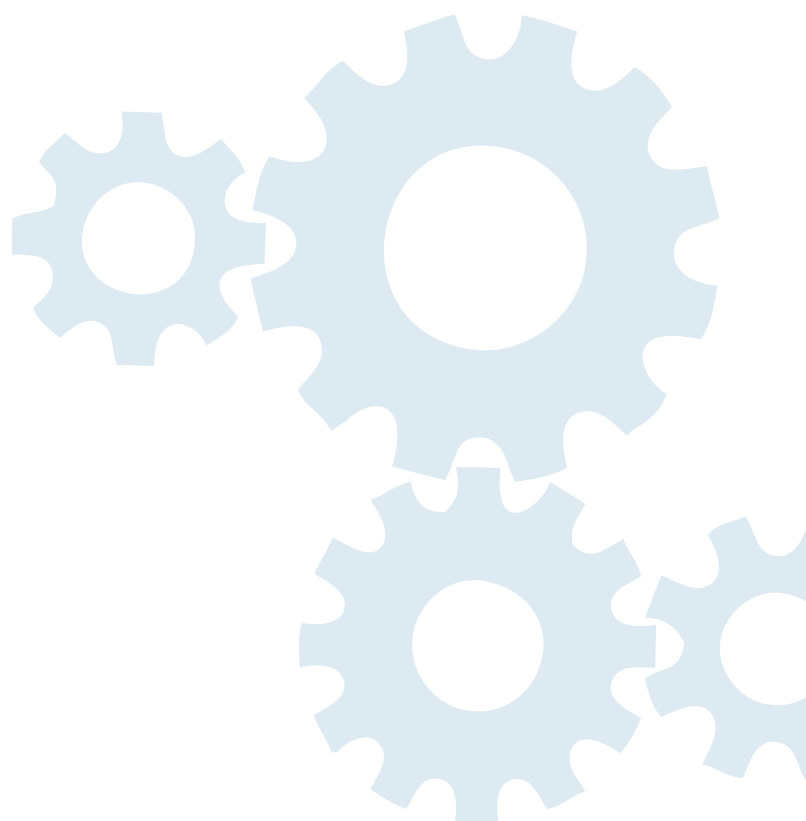
HIV/AIDS essential medicines and commodities Signs of Damage

Each HIV/AIDS essential medicine and commodity contains unique chemical properties and is packaged specifically to protect the quality. When inspecting these commodities, they will display warning signs which indicate damage or loss of integrity. Damaged products should be refused upon delivery and/or not issued or dispensed if already in stock.

For a comprehensive description of storage procedures, consult:

- Guidelines for the Storage of Essential Medicines and Other Health Commodities John Snow, Inc./DELIVER. 2003. https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/guidstoesse_pock_0.pdf
- Guidelines for Warehousing Health Commodities John Snow, Inc. / DELIVER. 2003. https://publications.jsi.com/JSIInternet/Inc/Common/download_pub.cfm?id=16917&lid=3

Please find physical inspection components in the “Standard Operating Procedure” section of this Guide (Table 3 at Page No. 56)

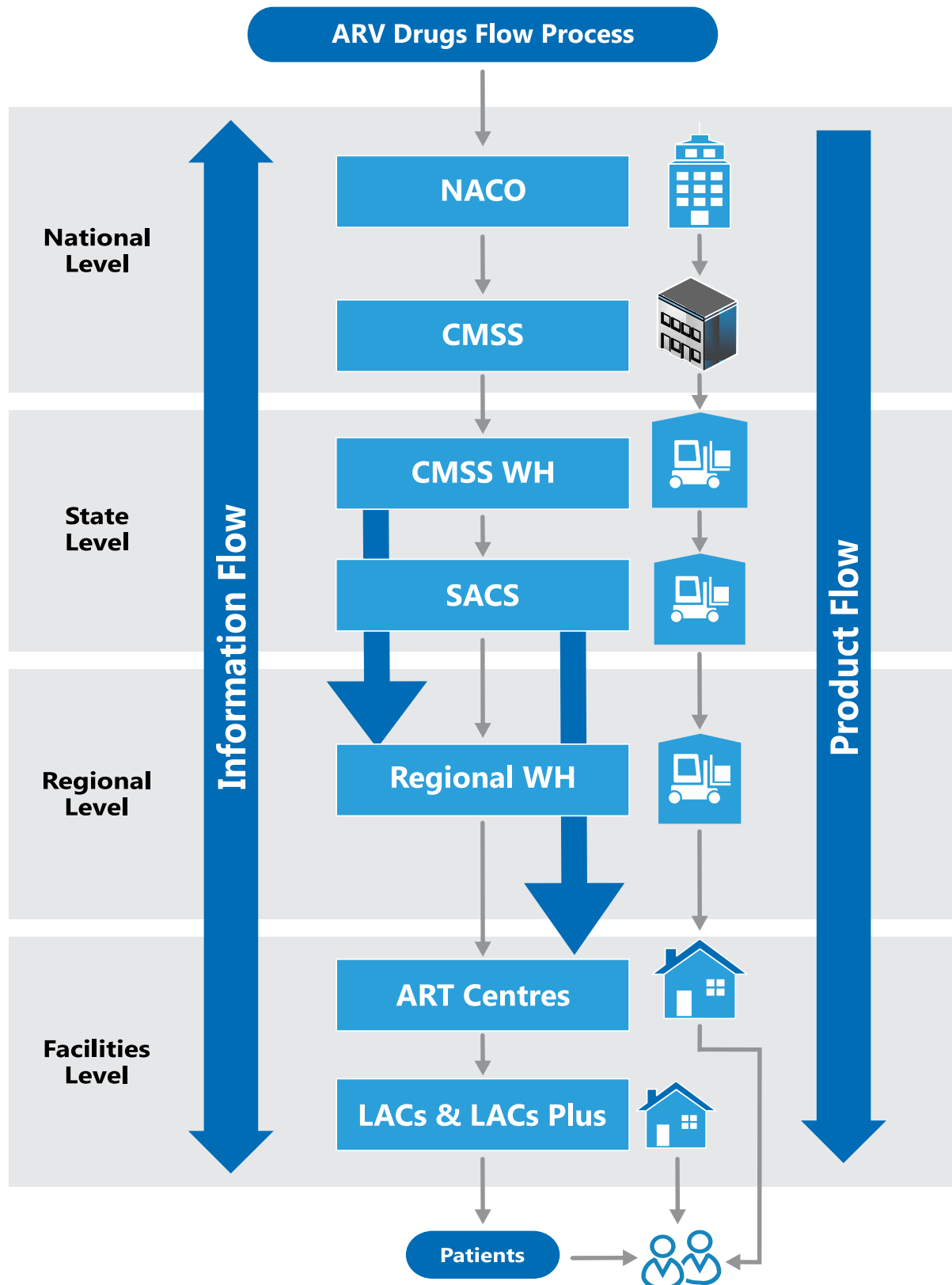


**Standard Operating Procedures for
ARV Drugs and Other
Commodities**





ARV Drugs and Other Commodities Flow Process





Standard Operating Procedures

Commodity management consists of six fundamental processes that take place in every facility at each level within the supply chain:

- 1 Forecast and Procure commodities
- 2 Monitor Commodity Conditions and Levels
- 3 Indent Commodities
- 4 Receive and Store Commodities
- 5 Issue Commodities
- 6 Distribute Commodities

This SOP document provides step-by-step instructions on how to carry out each of these processes. Consistent results will occur as long as everyone follows the steps. In this way, the SACS can maintain sufficient commodity supply by managing commodities effectively and preventing overstock and stock-outs.

Each SOP is comprised of the following parts:

- **Overview:** Lists all reference information needed to know when the SOP was authorized and who is in charge of it;
- **Purpose:** Outlines briefly the objective of this specific SOP;
- **Scope:** Describes which facilities must follow this SOP;
- **Responsible Persons:** Lists the people who are responsible for implementing the SOP (**Please refer Table 1.0 on Page No. 55**);
- **Forms / Records:** Lists the LMIS forms which are required to complete this SOP;
- **Procedure:** Lists each step that must be completed to ensure that the SOP is fully completed;
- **Effectiveness Criteria / Criteria for Completion:** this is a checklist that is used after a SOP has been completed to ensure that the SOP was completed fully and accurately;
- **References:** Lists any existing laws, policies, or regulations that impact the implementation of this SOP;
- **Revision History:** SOPs are dynamic and evolving documents. As systems evolve, the SOP should also. Revisions are made and tracked using this section.



Standard Operating Procedures Reference Tables

The following tables note key policy decisions which are used to guide day-to-day supply chain operations. Each is referenced, where applicable, in individual SOPs which follow.

TABLES	COMPONENTS
TABLE 1	Responsible Persons
TABLE 2	Physical Inventory Schedule
TABLE 3	Quality Assurance
TABLE 4	Removal and Return of Damaged and/or Expired Commodities and/or Return of Near-Expired Commodities
TABLE 5	Maximum Inventory Levels (Not to Be Exceeded) and Emergency Order Point
TABLE 6	Commodity Level Assessment
TABLE 7	Indent Schedule

TABLE 1.0 – Responsible Persons

The following people are responsible for this SOP:

Level	Person Who Completes Task	Person Who Reviews the Task	Person Who Approves Task
SACS Store	Pharmacist/Store Keeper	Store In charge/Deputy Director	JD CST
Regional Store	Store-In-Charge/ Pharmacist	District Program Officer (DPO)	District Program Officer (DPO)
ART Centers	Pharmacist	Medical Officer	Nodal Officer
LAC	Staff Nurse	Medical Officer	Medical Officer

TABLE 2.0 – Physical Inventory Schedule

Each facility conducts a physical inventory as per the SACS determined schedule which is as follows:

Facility Level	Physical Inventory Conducted:	Report to:
SACS Store	▪ Half yearly	▪ PD
Regional Store	▪ Quarterly	▪ Store In-Charge – SACS
ART Centers	▪ Quarterly	▪ JD – CST
LAC	▪ Monthly	▪ Medical Officer, ARTC

TABLE 3.0 – Quality Assurance

Each facility should verify the following aspects of each commodity upon receipt. If anything does not pass inspection, then they should be returned:

Physical Inspection Component What is Checked:	
1. Physical damage	Verify the physical integrity of a commodity: • Ensure no crushing, tearing, rubbing, or ripping • Look for signs like: tears, perforations, water or oil or broken or crumbled tablets, broken bottles
2. Chemical damage	Verify the chemical integrity of a commodity: • Ensure no change in color or consistency or smell
3. Manufacturing defects	Verify labeling is as required in the purchase order: • Ensure labeling is correct, batch no. and expiry date are stamped

TABLE 4.0 - Removal and Return of Damaged and/or Expired Commodities & Return/Re-distribution of Near-Expiry Commodities

Essential medicines and commodities are monitored on a regular basis. When damaged, near expiry, or expired commodities are found, each level responds as established in the table below:

Level	If damaged then...	If near-expired or excess then...	If expired then...
SACS	▪ Dispose as per Govt. norms	▪ Redistribute as per need to facilities	▪ Dispose as per Govt. norms
Regional Store	▪ Dispose as per Govt. norms	▪ Redistribute within facilities; if not needed, then return to SACS	▪ Dispose as per Govt. norms
ART Centers	▪ Dispose as per Govt. norms	▪ Inform SACS and relocate to assigned facilities	▪ Dispose as per Govt. norms and inform to SACS
LAC Centers	▪ Dispose as per Govt. norms	▪ Return to ART Store for redistribution	▪ Dispose as per Govt. norms

TABLE 5.0 – Maximum – Minimum (Forced) Inventory Control System

Facility inventory levels should never exceed SACS-established maximum levels. When indenting, ensure that a facility reach to max level of stock on hand....

Inventory Levels – ARV Drugs

Step	Formula	State/CMSS Level	ARTC	LAC
1. Lead Time for Placing and Filling Orders	<i>Set by NACO</i>	9 months	1 month	1 month
2. Review Period Between Routine Stock Assessments	<i>Set by NACO</i>	6 months	3 months	1month
3. Safety Stock/ Buffer Stock	<i>Safety $\geq \frac{1}{2}$ Review</i>	3 months of stock	1.5 months of stock (rounded up to 2 months)	0.5 month of stock (rounded up to 1 month)

Step	Formula	State/CMSS Level	ARTC	LAC
4. Min Level of Stock	$Min = Lead + Safety\ Stock$	12 months of stock	3 months of stock	2 month of stock
5. Max Level of Stock	$Max = Min + Review$	18 months of stock	6 months of stock	3 months of stock
6. Emergency Order Point	$Emergency\ Order\ Point = Longest\ Lead\ Time\ for\ Emergency\ Shipment$	3months	1 months	1 month

Note: All facilities place an emergency order if their stock levels reach quantities that will only last for 2 weeks.

TABLE 6.0 – Commodity Level Assessment

Facilities assess stock levels every time an indent is placed. If excess stock or too little stock is identified, the issuing facility is notified as stated in the following table.

In the event that the stock level is found to be zero, or stocked out for ARV Drugs:

- States place emergency orders to CMSS/NACO.
- ART/LAC place emergency order to SACS
- SACS issues a purchase orders to suppliers based on approvals from NACO.

Level	If excess stock is found (above “max”)...	If too little stock is found (below “Min.”)...
SACS	▪ Redistribute as per need	▪ Place emergency order from procurement agent/supplier under intimation to NACO after taking approval from NACO
ART Centres	▪ Return to SACS Store for redistribution	▪ Notify SACS Store
LAC Centres	▪ Redistribute within catchment area; if not needed, then return to ART for redistribution	▪ Notify ART

TABLE 7.0 – Indent Schedule

SACS employs a pull system below the state stores. Each service level (e.g. Service Delivery Point, regional store, State) places indent at specific time periods. These indent intervals are as follows for

Level	Indent Frequency:	Indent is Sent to:
NACO	▪ Annually	▪ To Procurement Agents
SACS	▪ Biannually	▪ To CMSS
ART	▪ Quarterly	▪ To SACS Store
LAC	▪ Monthly	▪ To ART

Note: SACS submit purchase orders to local suppliers only when faced with an emergency stock out based on approvals from respective division of NACO. A percentage of their budget is allocated for these types of emergency orders.



Forecast and Procure Commodities

PURPOSE

The purpose of forecasting is to accurately estimate the quantity of the selected products needed over the annual plan period by the entire state.

SCOPE

The scope of this process is focused on NACO with inter-linkages to SACS. It is also limited to ARV drugs and other commodities

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- *Forecasting Tool (Excel based)*
- *Forecasting Output (Excel sheet), Summary Report*
- *Indent Form*

Other Forms/Records referred to in this procedure

- Purchase Order/ LoA
- Rate Contracts

PROCEDURE

This procedure comprises of two steps:

1. **Forecasting of ARV drugs and Other Commodities**
2. **Procurement of ARV Drugs and Other Commodities**

Sub-steps are noted as follows:

1. Forecasting of ARV Drugs and Other Commodities

1.1 NACO Level (CST and Procurement Division)

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Collect all input data required for the forecasting tool (excel based)	Forecasting Tool, Forecasting Output and Summary Report
1.1.2	Incorporate all changes such as those related to new products, treatment guideline changes, target population etc.	
1.1.3	Collate and clean inputs data and generate the forecasting output in the tool.	
1.1.4	Analyze and extract output data of forecasting tool as a group and fine-tune if required.	

1.1.5	Invite forecasting committee members (TRG) to present output data and conduct group discussion on method, assumptions considered and rationale used.	
1.1.6	Aggregate all inputs/suggestions from experts and share minutes of the meeting with details of forecasting exercise and conclusions	
1.1.7	Share over e-mail with higher officials the final output and summary of feedback and approval	
1.1.8	Kick start procurement planning using the forecasting output as the input for indenting.	
1.1.9	Process an annual indent for approval and submit to the Procurement Division of NACO	Indent Form

2. Procurement of ARV Drugs and Other Commodities

2.1 NACO Level (Procurement Division, CST Division and SACS)

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Assessment of the Indent submitted by programme divisions considering the following: (Refer to Page no. 57 Table 7)	Procurement Manual for National AIDS Control Programme
2.1.1.1	Current stock available at national level and expected stock position at time of sending the indent	
2.1.1.2	Budget availability and sources	
2.1.1.3	Check procurement cycle and mode of procurement.	
2.1.1.4	Projected time scale for distribution, list of consignees, delivery schedules, storage capacity at all levels etc.	
2.1.2	Submit finalized demand to empaneled procurement agent along with key details like technical specifications, consignee list, delivery schedule etc.	Indent Form
2.1.3	Follow up and oversight of all sub-activities with procurement agent like Tendering (Preparation, Advert, Issue, Bid Opening, Evaluation, Award of Contract), Pre-dispatch inspection & QA, notifications of delivery to consignee, receipt of consignment, resolution of any dispute etc.	Bid documents, NOA, PO and Delivery
2.1.4	Process payment to procurement agent against the submitted documents	

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

- Annual quantity is determined for ARV Drugs and Other Commodities
- The final determined quantity is approved and validated by all divisions
- Procured and supplied all determined quantity to SACS warehouse

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations

1. Procurement Manual for National AIDS Control Programme (NACP III)- Oct 2007



Monitoring Commodity Conditions and Levels

PURPOSE

Monitoring commodity levels is the supply chain process in which supply chain managers ensure that inventory levels are sufficient to meet the facility requirements. This means maintaining an accurate inventory count. Proper and accurate inventory count management is crucial to indenting, dispensing, and accounting. Without accurate inventory counts, none of these functions can be performed properly which can result in delayed deliveries, stock outs, and product wastage.

SCOPE

This SOP applies to all facilities which store and dispense commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- Stock Register/ IMS
- Bin Card
- RTD Form
- Indent Form
- Issue and Receive Form

Other Forms/Records Referred to in this Procedure

- Applicable storage guidelines as per manufacturer requirements
- Applicable destruction guidelines as per manufacturer requirements

Note: ONLY SACS Stores and Regional Stores use Bin Cards. A Bin Card is not required at other facilities because inventory levels are such that a Stock Register is sufficient for monitoring inventory.

PROCEDURE

This procedure is comprised of 2 steps:

1. Assess commodity conditions.
2. Verify commodity levels.

Sub-steps are noted as follows:

1. Assess Commodity Conditions

1.1 SACS Store/Regional Store/ART/LAC

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Monitor commodity conditions on schedule. (Refer to Page No. 43 Figure 6)	--
1.1.2	Evaluate commodity conditions. (Refer to Page No. 43 Figure 6)	--
1.1.3	Stack all cartons neatly. Make sure partially filled cartons are clearly visible	--
1.1.4	Ensure all products are organized according to "First Expiry, First Out" (FEFO). (Refer to stock rotation chapter on Page No. 45)	--
1.1.5	Check that expiry dates are clearly marked (e.g., with large, dark numbers) on each box and/or carton.	--
1.1.6	Visually inspect commodities to ensure that there is no damage or near expiry (less than 90 days) or expired. If damaged, near expiry or expired commodities are found:	
	1.1.6.1 Separate them into a quarantine area.	IMS/ Stock Register
	1.1.6.2 Write Damaged, Near Expiry, or Expired on the box.	Bin Card (for SACS/ Regional Stores only) RTD Form
	1.1.6.3 Record the quantity of expired or damaged stock as a loss on the appropriate Stock Register / Bin Card and subtract the quantity from the Balance column.	
	1.1.6.3 Address damage, near expiry, or expiry using RTD Form (Refer to Page No. 56 Table 4)	
	1.1.6.4 Dispose damaged / expired commodities.	
	1.1.6.5 Redistribute near expiry commodities to facilities who can issue/ dispense before expiry date.	

2. Verify commodity levels

2.1 SACS Store/Regional Store

Steps	Instruction /Activities		LMIS Tools Used
2.1.1	Monitor commodity levels on schedule. (Refer to Page No. 57 Table 6)		--
2.1.2	Count stock:		--
	2.1.2.1	Count unopened/complete cartons first. Multiply the number of cartons by the number of units in the carton.	--
	2.1.2.2	Count the boxes inside the open cartons.	
	2.1.2.3	If an open carton contains unopened boxes, count the boxes and multiply by the number of units in a box. This will give you the total number of the units in the unopened boxes.	
	2.1.2.4	Count all individual units that are in open boxes.	
2.1.3	Evaluate commodity levels against max - min level or EOP. (Refer to Page No. 56-57 Table 5)		Stock Register /IMS
	2.1.3.1	Add up the total units and this is the actual quantity of stock on hand.	Bin Card (for SACS and Regional Stores only) Indent and IR Forms
	2.1.3.2	Subtract the calculated Stock Balance as recorded in Stock Register/ Bin Card from the Actual Quantity on Hand.	
	2.1.3.3	If your result is zero, your Stock Register/ Bin Card match the number of units of the commodities in the store.	
	2.1.3.4	If your result is a negative quantity you have suffered a loss of the commodity. Adjust the same in stock register/bin card	
2.1.4	Create a line item on Stock Register/ Bin Card labeled "Physical Count" and write the quantity counted.		Stock Register /IMS Bin Card (for SACS and Regional Stores only)
2.1.5	Compare amount of commodity to recommended "max" quantity.		Stock Register /IMS
	2.1.5.1	Multiply your average monthly consumption by maximum months of stock. This is the recommended "max" quantity.	Bin Card (for SACS and Regional Stores only) IR Form, RTD Form and Indent
	2.1.5.2	Compare your stock on hand to the recommended "max" quantity. (Refer to Page No. 56-57 Table 5) If more than max, then...	
	2.1.5.3	Write Excess on the cartons which are excess.	
	2.1.5.4	Stack excess inventory separately from usable stocks. Redistribute using RTD Form. (Refer to Page No. 56 Table 4)	
	2.1.5.5	Record the quantity redistributed as a negative "adjustment" in Stock Register / Bin Card as follows with a dash that looks like this: "-". (Refer to Page No. 56-57 Table 5) If at or below min level, then...	
	2.1.5.6	Place emergency indent using Indent Form.	

2.2 Dispensing facilities (ART, LAC)

Steps	Instruction /Activities	LMIS Tools Used
2.2.1	Once a week, transfer quantities issued as recorded in Daily Dispensing Register into Stock Register.	DDR/ IMS (Dispensing Module) Stock Register
2.2.2	Monitor commodity levels on schedule. (Refer to Page No. 55 Table 2)	--
2.2.3	Count the stock	--
2.2.2.1	Count unopened/complete cartons first. Multiply the number of cartons by the number of units in the carton.	
2.2.2.2	Count the boxes inside the open cartons.	
2.2.2.3	If an open carton contains unopened boxes, count the boxes and multiply by the number of units in a box. This will give you the total number of the units in the open boxes.	
2.2.2.4	Count all individual units that are in open boxes.	
2.2.3	Evaluate commodity levels against max level or EOP. (Refer to Page No. 56-57 Table 5)	Stock Register and IMS
2.2.3.1	Add up the total units and this is the actual quantity of stock on hand.	
2.2.3.2	Subtract the calculated Stock Balance as recorded in Stock Register from the Actual Quantity on Hand.	
2.2.3.3	If your result is zero, your Stock Register match the number of units of the commodities in the store.	
2.2.3.4	If your result is a negative quantity you have suffered a loss of the commodity then adjust the same in stock register / IMS	
2.2.3.5	If your result is a positive quantity, you have more units of the commodity in stock than you had recorded on the Stock Register.	
2.2.4	Create a line item on Stock Register labeled "Physical Count" and write the quantity counted.	Stock Register and IMS
2.1.5	Compare amount of commodity to recommended "max" quantity.	Stock Register /IMS Indent Form IR Form RTD Form
2.2.5.1	Multiply your average monthly consumption by maximum months of stock. This is the recommended "max" quantity.	
2.2.5.2	Compare your stock on hand to the recommended "max" quantity. (Refer to Page No. 56-57 Table 5) If more than max, then...	
2.2.5.3	Write Excess on the cartons which are excess.	
2.2.5.4	Stack excess inventory separately from usable stocks. Redistribute using RTD Form. (Refer to Page No. 56 Table 4)	
2.2.5.5	Record the quantity redistributed as a negative "adjustment" in Stock Register as follows with a dash that looks like this: "-". (Refer to Page No. 56-57 Table 5) If at or below min level then...	
2.2.5.6	Place emergency indent using Indent Form.	

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

For commodity monitoring:

- Commodity conditions are monitored as per the established schedule and all items are stored according to proper storage guidelines.
- Quantity of commodities on hand has been counted and recorded on the Stock Register and Bin Card.
- Losses /Adjustments have been calculated and recorded on the Stock Register and Bin Card, if applicable, and properly accounted. For more information **refer Page No. 56 Table 4**

For removal of damaged / expired or excess commodities:

- Damaged, expired or excess commodities are separated from usable stock.
- Damaged or expired stock is disposed as per Govt. norms and if destroyed, as per manufacturer recommendation (LAC return damaged or expired stock to ART Center facility).
- Excess commodities are returned to issuing facilities.
- Stock Registers and Bin Cards have been updated as per the movement of damaged, expired or excess commodities.
- RTD Form has been completed to accompany moving commodities

For indenting emergency commodities:

- Indent Form has been completed to request an emergency order

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations





Indent Commodities

PURPOSE

Indenting is the process to request product quantity to replenish the stock level. All commodities are re-stocked to the pre-set maximum level – no matter how much or little is in stock.

SCOPE

This SOP applies to all facilities which indent commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name
• Stock Register • Bin Card • RTD Form • Indent Form • IR Form
Other Forms/Records Referred to in this Procedure
• Purchase Order/ Letter of Acceptance (LOA) • Rate Contracts

PROCEDURE

This procedure comprises of two steps:

1. **Determining the quantity to indent.**
2. **Submitting the indent to issuing store/Procurement Agent.**

Sub-steps are noted as follows:

1. Determine quantity to indent

1.1 NACO Level

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Process indent quantities from forecasting tools (Refer to Page No. 57 Table 7)	Indent Form, Forecasting Tool
1.1.2	Prepare the indent form for submission and approval with necessary details.	Indent Form

1.2 SACS Store

Steps	Instruction /Activities	LMIS Tools Used
1.2.1	Aggregate indented quantities from Regional Store/ ARTC and DAPCU/ICTCs. (Refer to Page No. 57 Table 7)	Indent Form/ Forecasting Tool

1.3 Regional Store, ART and LAC

Steps	Instruction /Activities		LMIS Tools Used
1.3.1	Prepare to indent commodities. (Refer to Page No. 57 Table 7)		Stock Register / IMS
1.3.2	Day prior to scheduled indent, conduct physical inventory count to verify commodity levels.		--
1.3.3	Note discrepancies, if any, between Stock Register /IMS / Bin Card and physical inventory in Stock Register.		Stock Register/IMS Bin Card (for SACS and Regional stores only)
1.3.4	Compute average monthly consumption using last 3 months of consumption unless directed otherwise.		Stock Register / IMS
	1.3.4.1	1. For products in full supply: - Review issues data in Stock Register/IMS for own facility to get consumption data.	Stock Register/IMS Daily Dispensing Register/IMS Indent Form
	1.3.4.2	2. For products that have been stocked out at any point in the last 3 months: - Aggregate average monthly consumption from Indent and Issues/Receive Forms for all requesting facilities: • SACS aggregates Regional Stores and ART indents and Issue/Receive Forms • Regional Store aggregates ART (if regional store available) • ART aggregates LAC Indent and Issue/Receive Forms	
	1.3.4.3	3. For products that are stocked out at both indenting and requesting facilities: - Review issues data in Stock Register/IMS for own facility for the most recent period during which the product was available.	
1.3.5	Calculate how much of each commodity is required for levels to be brought up to max levels using the Indent Form.		Stock Register / IMS Indent Form/ Daily Dispensing Register
1.3.6	Prepare the indent for submission and sign the form with necessary details.		Indent Form

2. Submit indent to issuing store / Procurement Agent;

2.1 NACO Level

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Requesting Division submits Indent Form to Procurement Division of NACO (Refer to Page No. 57 Table 7)	Indent Form
2.1.2	Procurement Division submits approved indent to Procurement Agents of NACO	--

2.2 SACS Store, Regional Store, ART, LAC

Steps	Instruction /Activities	LMIS Tools Used
2.2.1	Submit Indent Form to issuing facilities (Refer to Page No. 57 Table 7)	Indent Form

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

- Commodity levels are assessed.
- Order quantities are calculated.
- Indent Form is completed.
- Indent Form is approved and submitted.

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulation



Receive and Store Commodities

PURPOSE

Receiving is the supply chain process of acknowledging, inspecting, and logging received commodities into inventory.

Errors in receiving have a ripple effect. If an indent/issues/packaging list are improperly filled or commodities are counted incorrectly, then inventory levels will be inaccurate which can result in overstock or stockouts. Similarly, if commodities are put away incorrectly, then there is risk of losing product due to expiry or staff will waste time looking for product at the time of issue.

SCOPE

This SOP applies to all facilities which receive and store commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- Stock Register/IMS
- Bin Card
- Indent Form
- Issue and Receive Form (IR Form)

Other Forms/Records Referred to in this Procedure

- Invoice
- Packing List
- Certificate of Analysis (CoA)
- Consignee Receipt Certificate (CRC)
- Consignee Acceptance Certificate (CAC)
- Goods Receipt Note (GRN)

Note: ONLY SACS Store and Regional Stores uses Bin Cards. A Bin Card is not required at other facilities because inventory levels are such that a Stock Register is sufficient for monitoring inventory.

PROCEDURE

This procedure comprises of two steps:

1. **Receive commodities which includes inspecting and recording receipts.**
2. **Store (Put away) commodities.**

Sub-steps are noted as follows:

1. Receive commodities which includes inspecting and recording receipt:

1.1 SACS Store and Regional Store

Steps	Instruction /Activities		LMIS Tools Used
1.1.1	As per the Purchase Order/NOA, warehouse receives the goods along with consignment documents.		Email/IMS / NACO
1.1.2	Check completeness of following documents:		Purchase Order (in case of local procurement) Invoice Packing List Delivery Note
	1.1.2.1	- Two copies of original invoice signed by authorized signatory - Packing List/Transport receipt/Delivery Note	
	1.1.2.2	If any discrepancy is found, report the same to NACO/Procurement Agent. In case of mismatch between PO, shipment details, and invoice; do not accept commodities until written confirmation is provided to resolve the discrepancy.	
1.1.3	Verify quantities issued are the same as recorded on the Purchase Order/ Invoice/packaging list/COA		Purchase Order (In case of local procurement) Invoice Packing List Delivery Note
	1.1.3.1	If quantities are NOT the same as Purchase Order/invoice/packaging list, do not accept commodities until written confirmation from issuer is provided that quantity delivered is less than noted on the Purchase Order/ invoice/ packaging list/delivery note.	
1.1.4	Inspect commodities for physical, chemical or manufacturing defects. (Refer to Page No. 58 Table 3)		
	1.1.4.1	If damage is found, reject commodities and return to supplier for replacement	--
	1.1.4.2	If no damage is found, accept order and generate Goods Received Note (GRN) and provide all documents to Procurement Agent/NACO	--
1.1.5	Endorse the supplier/CMSS document i.e. Issue Slip cum Acknowledgment Receipt/Transport Receipt/Delivery Note		Purchase Order (in case of local purchase), Invoice, Issue Slip cum Acknowledgment Receipt, Transport Receipt/Delivery Note
	1.1.5.1	Receiver files copies of all signed forms (as noted in column to the right).	
	1.1.5.2	Supplier/Procurement Agent receives copy of forms.	
1.1.6	If documents are found in order and quantities and quality of commodities are correct, accept the goods in receiving area of warehouse		--
1.1.7	Complete all entry of received commodities in IMS		IMS and Stock Register

1.2 ART and LAC

Steps	Instruction /Activities	LMIS Tools Used
1.2.1	Receive mail/IMS notification from SACS Store that commodities are ready for dispatch. (Refer to Page No. 57 Table 6)	Stock Register / IMS
1.2.2	Receive commodities at issuing facility.	--
1.2.3	Verify quantities issued are the same as recorded on the IR Form:	IR Form/IMS, STN
1.2.3.1	If quantities are NOT the same as IR Form, do not accept commodities until written confirmation from issuer is provided that quantity delivered is less than noted on the IR Form/STN.	
1.2.4	Conduct preliminary physical inspection for quality of shipment. (Remember – a package can be damaged but the commodity can still be usable.) (Refer to Page No. 56 Table 3)	
1.2.4.1	If quality problem or damage is found, notify issuer. Quarantine goods till issues are resolved.	--
1.2.5	Sign IR/STN Form to confirm receipt: - Issuing facility signs, stamps and keep original - Receiving facility signs and stamps 1 copy and return to transporter of shipment - Receiving facility keeps 1 copy for files.	Indent Form/ Issue and Receive Form / IMS/STN Form
1.2.6	Receive the commodities in stock register/ IMS	Stock Register / IMS

2. Store (Put away) commodities:

2.1 SACS Store and Regional Stores

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Put away commodities according to “FEFO” (First Expiry, First Out) to prevent expiry; and place older products above the newer ones.	--
2.1.2	Store the goods on pallets and shelves (Refer to Page No. 45 Figure 9)	--
2.1.3	Record receipt in Stock Register/IMS, Bin Card.	Stock Register/ IMS Bin Card

2.2 ART, LAC

Steps	Instruction /Activities	LMIS Tools Used
2.2.1	Verify quantities issued are the same as recorded on the IR/STNs Form: (Refer to Page No. 57 Table 7)	Indent Form , IR Form, STN
	2.2.1.1 If quantities are the same as IR Form, accept commodities.	IR Form/ IMS STN
	2.2.1.2 If quantities are NOT the same as IR Form, do not accept commodities until written confirmation from issuer says that quantity delivered is less than noted on the IR Form.	
2.2.2	Conduct final physical inspection for quality. (Refer to Page No. 56 Table 3)	
	2.2.2.1 Check for physical, chemical, or manufacturing defects.	--
	2.2.2.2 Verify expiry date. If the expiry date is less than 90 days away, then return the commodities to the source of supply to prevent any dispensing of expired commodities by mistake.	--
	2.2.2.3 Verify batch numbers.	
	2.2.2.4 If quality problem or damage is found, notify SACS Quarantine goods till issues are resolved.	--
2.2.3	Record commodity information on the Stock Register/IMS.	Stock Register/ IMS
2.2.4	Put away commodities: • If the label only states the date of production, calculate the expiry date and add the period of storage on the shelf. • Write down the date of expiry on the cardboard box in large bold numbers or letters.	--
2.2.5	Store commodities according to “FEFO” (“First Expiry, First Out”) to prevent expiry	--

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

- Commodities are received.
- Damaged or expired stock has been separated from usable stock.
- Stock Registers/IMS and Bin Cards have been updated.
- RTD Form has been completed (if necessary).
- Commodities are put away.

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations



Issue and Dispense Commodities

PURPOSE

Issuing is the supply chain process of receiving and fulfilling indents. For service delivery points, dispensing is the supply chain process of issuing commodities to clients.

SCOPE

This SOP applies to all facilities which issue and dispense commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- *Indent Form*
- *Stock Register*
- *Bin Card*
- *IR Form*
- *IMS Dispensing*
- *Daily Dispense Register (DDR)*

Other Forms/Records Referred to in this Procedure

- **N/A**

Note: ONLY SACS Store and Regional Stores uses Bin Cards. A Bin Card is not required at other facilities because inventory levels are such that a Stock Register is sufficient for monitoring inventory.

PROCEDURE

This procedure comprises of two steps:

1. **Receive and review indent.**
2. **Issue commodities according to the indent.**

For service delivery points:

3. **Dispense to clients.**

Sub-steps are noted as follows:

1. Receive and review indent:

1.1 SACS Store, Regional Store and ART

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Receive Indent Form from reporting facility. (Refer to Page No. 57 Table 7)	Indent Form
1.1.2	Review Indent Form to confirm calculations. Correct if needed. • If corrections are made, notify indenting facility.	Indent Form

2. Issue commodities according to the indent between facilities:

2.1 SACS Store, Regional Store and ART

Steps	Instruction /Activities		LMIS Tools Used
2.1.1	Aggregate all indents from the requesting facilities for distribution planning		Indent Form
2.1.2	Check stock availability in the Stock Register/IMS to finalize the quantity to be issued:		Indent Form Stock Register/ IMS
2.1.3	2.1.2.1	If product is available in enough quantity, fulfill the Indent Form request.	
	2.1.2.2	If product is not available in enough quantity, ration the indented quantity.	
	2.1.2.3	If product is not available, find the substitute product, if possible.	
	2.1.2.4	If substitution is not possible and demand is urgent, inform to NACO/ SACS to support on relocation from other states /facilities	
	2.1.2.5	If substitution is not possible and demand is not urgent, wait till product becomes available through Procurement Agent/SACS	
2.1.3	Develop the distribution plan for approval		Distribution Plan
	Call or email indenting facilities to update on approved distribution plan		
2.1.4	Complete IR/STN Form as per approved distribution plan		IR/STN Forms
2.1.5	Select the available product to be issued by FEFO ("First Expiry First Out").		IR/STN Forms
2.1.6	Prepare shipment of commodities, as per IR/STN Form		IR/STN Forms
2.1.7	Notify receiving facility that indent is ready to be shipped.		IR/STN Forms
2.1.8	Record the issued quantity in Stock Register/ IMS/ Bin Card.		Stock Register / IMS

3. Dispensing:

3.1 ART and LAC

Steps	Instruction /Activities		LMIS Tools Used
3.1.1	Dispense the drugs to the client as prescribed in patient treatment record by SMO/MO (White Card and Green Book)		Patient Treatment Record
	Check stock availability in the Stock Register / IMS to finalize the quantity to be issued:		IMS/ Stock Register
	3.1.1.1	If drugs is available in enough quantity, fulfill the prescription.	
	3.1.1.2	In case of TLE/ZLN follow MMD policy for those who are eligible for MMD	

3.1.1.3	If product is not available in enough quantity, ration the prescribed quantity.	
3.1.1.4	If product is not available, find the substitute product, if possible.	
3.1.1.5	If substitution is not possible and demand is urgent, initiate the local purchase or inform to SACS for emergency relocation	
3.1.1.6	If substitution is not possible and demand is not urgent, wait till product becomes available through SACS /Regional store	
3.1.2	Select the drugs to be issued by FEFO (First Expiry First Out).	
3.1.3	Dispense the drugs to patient	
3.1.4	Counsel the patient on possible drug toxicities and report the same, if significant	
3.1.5	Record dispensed commodities in IMS/ Daily Dispensing Register	IMS / DDR
3.1.6	Record total quantity issued in the IMS /Drug Dispensing Register in Stock Register at the end of the day For more information on IMS Dispensing module please watch video available on YouTube: https://www.youtube.com/watch?v=Y1aSHSLOdpk&feature=youtu.be)	IMS/DDR/ Stock Register
3.1.7	Patient collects drugs from dispensing counter and real time entry of the drugs dispensed to patient is recorded in IMS	IMS

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

Effectiveness Criteria / Criteria for Issue Completion:

- Indent Form is complete and accurate.
- Indent quantities are validated.
- Distribution Plan is approved.
- Issue quantity is picked.
- Issues quantity is ready for packaging and shipping.

Effectiveness Criteria / Criteria for Dispensing Completion:

- Client is counselled.
- Commodity is dispensed.
- Daily Dispensing Register is updated.
- Stock Register/IMS are updated.

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations



Distribute Commodities (Packaging and Transportation)

PURPOSE

Distribution is the supply chain process after issuing of commodities against the indents. Key steps in the distribution process include:

1. Packaging of commodities.
2. Distribution of commodities according to the indent and issue.

SCOPE

This SOP applies to all facilities which are charged with distribution of commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- *Indent Form*
- *IR Form*
- *STN from IMS*

Other Forms/Records Referred to in this Procedure

- *Distribution Plan*
- *Route Plan*
- *Dockets*

PROCEDURE

This procedure comprises of two steps:

4. *Packaging of commodities*
5. *Distribution of commodities according to the indent and issue.*

Sub-steps are noted as follows:

1. Packaging of commodities:

1.1 SACS Store, Regional Store and ART

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Aggregate all issue quantity as per approved distribution plan for ARV drugs	IR/STN Form
1.1.2	Prepare for packaging 24 hours in advance from the date of loading • Arrange sufficient packaging material • Pack all loose items in carton box, Mark the boxes with facility name; in case of loose item mark drug name and quantity	IR/STN Form
1.1.3	Arrange the boxes in separate lots on staging area of the warehouse/store for loading in the vehicle	IR /STN Form

2. Distribution of commodities according to the indent and Issue:

2.1 SACS Store, Regional Store and ART

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Select an appropriate transportation model based on the volume of the total boxes to be distributed: - Dedicated vehicle: For ARV drugs and other commodities - Full truck load (FTL): For high volume shipment - Courier mode: for emergency relocation	IR/STN Forms Distribution and Route Plan (Not LMIS Part)
2.1.2	Develop route plan based on distribution list in consultation with transporter	
2.1.3	Share route plan for distribution with the transporter	
2.1.4	Handover IR/STN form in triplicate: - Transporter issues docket against IR/STN - Transporter provides one copy of docket to the consignor File the documents at your location	IR/STN Form , Docket
2.1.5	Handover the stocks to the transporter on the agreed date and time	Docket (Transport document)
2.1.6	Track the shipment until signed and stamped proof of delivery (POD) is received	PODs (Docket and IR/STN)
2.1.7	Allow facilities Store to verify correctness of issue and visually inspect commodities.	Docket, IR/STNs
	2.1.7.1 If any errors are found, immediately inform to issuing facilities	
	2.1.7.2 Sign IR/STN Form to confirm receiving of commodities: Keep 1 copy at receiving facilities	
	2.1.7.3 Return signed and stamped copy to transporter	
2.1.8	Record any variances during the transportation and claim to transport or insurance company as necessary.	Stock Register/IMS

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For this SOP to be completed accurately and completely, the following criteria must be met:

Effectiveness Criteria / Criteria for Distribution Completion:

- Packing of drugs and Kits completed as per instruction
- Distribution planned and products moved to facilities
- IR/STN Form signed handed over to transporter
- Receiving facility upon receipt of commodities to acknowledge receipt on :
 - o IR/STN and transport dockets
 - o One copy remains with receiving facilities
 - o One copy signed and stamped and returned to issuer for their record

REFERENCES

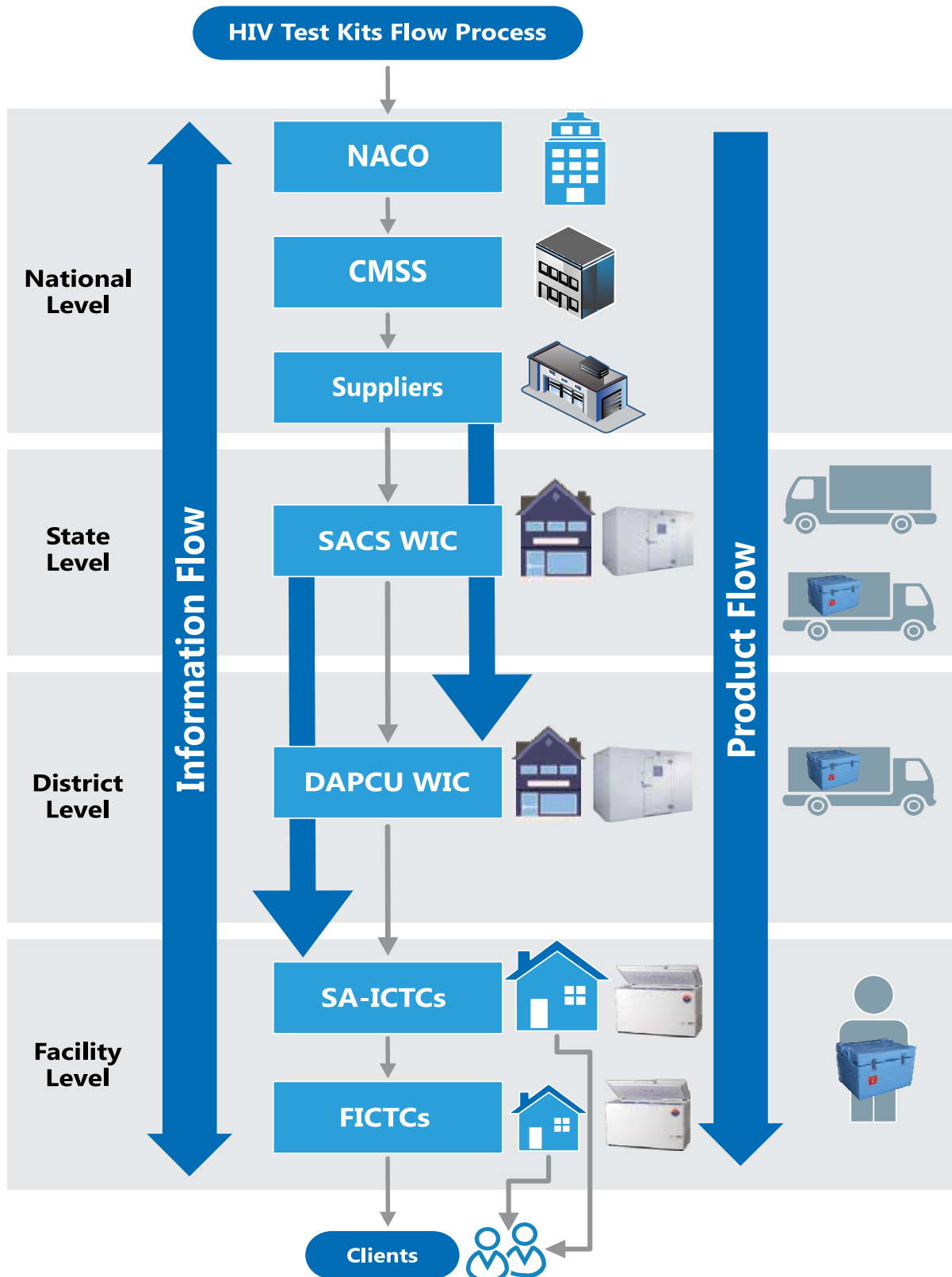
A. NOTE ALL APPLICABLE Reference policies / laws / regulations

**Standard Operating Procedures
for HIV Test Kits and Other
Cold Chain Commodities**





SOP for HIV Test Kits Flow Process





Standard Operating Procedures

Commodity management consists of six fundamental processes that take place in every facility at each level within the supply chain:

- 1 Forecast and Procure commodities
- 2 Monitor Commodity Conditions and Levels
- 3 Indent Commodities
- 4 Receive and Store Commodities
- 5 Issue Commodities
- 6 Distribute Commodities

This SOP document provides step-by-step instructions on how to carry out each of these processes. Consistent results will occur as long as everyone follows the steps. In this way, the SACS can maintain sufficient commodity supply by managing commodities effectively and preventing overstock and stock-outs.

Each SOP is comprised of the following parts:

- **Overview:** Lists all reference information needed to know when the SOP was authorized and who is in charge of it;
- **Purpose:** Outlines briefly the objective of this specific SOP;
- **Scope:** Describes which facilities must follow this SOP;
- **Responsible Persons:** Lists the people who are responsible for implementing the SOP (Please refer Table 1.0 on Page No. 81);
- **Forms / Records:** Lists the LMIS forms which are required to complete these SOPs;
- **Procedure:** Lists each step that must be completed to ensure that the SOP is fully completed;
- **Effectiveness Criteria / Criteria for Completion:** this is a checklist that is used after a SOP has been completed to ensure that the SOP was completed fully and accurately;
- **References:** Lists any existing laws, policies, or regulations that impact the implementation of these SOPs;
- **Revision History:** SOPs are dynamic and evolving documents. As systems evolve, the SOP should also. Revisions are made and tracked using this section.



Standard Operating Procedures Reference Tables

The following tables note key policy decisions which are used to guide day-to-day supply chain operations. Each is referenced, where applicable, in individual SOP which follow.

Tables	Components
TABLE 1	<i>Responsible Persons</i>
TABLE 2	<i>Physical Inventory Schedule</i>
TABLE 3	<i>Quality Assurance</i>
TABLE 4	<i>Removal and Return of Damaged and/or Expired Commodities and/or Return of Near-Expired Commodities</i>
TABLE 5	<i>Maximum Inventory Levels (Not to Be Exceeded) and Emergency Order Point</i>
TABLE 6	<i>Commodity Level Assessment</i>
TABLE 7	<i>Indent Schedule</i>

TABLE 1.0 – Responsible Persons

The following people are responsible for this SOP:

Level	Person Who Completes Task	Person Who Reviews the Task	Person Who Approves Task
SACS WIC	Pharmacist/Store Keeper	Store In charge/Deputy Director	JD BSD
DAPCU WIC	District Supervisor (DS)	District Program Officer (DPO)	District Program Officer (DPO)
SA- ICTCs	Lab Technician / Counsellor	Medical Officer	Medical Officer
FICTCs	Lab Technician / Counsellor	Medical Officer	Medical Officer

TABLE 2.0 – Physical Inventory Schedule

Each facility conducts a physical inventory as per the SACS determined schedule which is as follows:

Facility Level	Physical Inventory Conducted:	Report to:
SACS WIC	Half yearly	PD
DAPCU WIC	Quarterly	Store In-Charge – SACS
SA-ICTCs	Quarterly	JD - BSD
FICTCs	Monthly	Medical Officer, SA- ICTC

TABLE 3.0 – Quality Assurance

Each facility should verify the following aspects of each commodity upon receipt. If anything does not pass inspection, then they should be returned:

Physical Inspection Component	What is Checked:
1. Physical damage	Verify the physical integrity of a commodity: • Ensure no crushing, tearing, rubbing, or ripping • Look for signs like: tears, perforations, water or oil or broken or crumbled tests or broken bottles • Verify that temperature was maintained during the transportation • Check the HEATmarker indicator on the kits
2. Chemical damage	Verify the chemical integrity of a commodity: • Ensure no change in color or consistency or smell
3. Manufacturing defects	Verify labeling is as required in the purchase order: • Ensure labeling is correct, batch no. and expiry date are stamped

TABLE 4.0 – HIV TESTING KITS – Removal and Return of Damaged and/or Expired Commodities and Re-distribution of Near-Expiry Commodities

Essential medicines and commodities are monitored on a regular basis. When damaged, near expiry, or expired commodities are found, each level responds as established in the table below:

Level	If damaged then...	If near-expired or excess then...	If expired then...
SACS - WIC	▪ Dispose as per Govt. norms	▪ Redistribute as per need to facilities	▪ Dispose as per Govt. norms
DAPCU - WIC	▪ Dispose as per Govt. norms	▪ Redistribute within facilities; if not needed, then return to SACS	▪ Dispose as per Govt. norms
SA-ICTCs	▪ Return to SACS WIC	▪ Return to SACS WIC for redistribution	▪ Return to SACS/WICs
FICTCs	▪ Return to ICTC	▪ Return to ICTCs for redistribution	▪ Return to SA- ICTCs

TABLE 5.0 – Maximum – Minimum (Forced) Inventory Control System

Facility inventory levels should never exceed SACS-established maximum levels. When indenting, ensure that a facility reach to max level of **stock on hand**....

Inventory Levels – HIV Test Kits

Step	Formula	State Level	DAPCU	SA-ICTC	FICTC
1. Lead Time for Placing and Filling Orders	Set by NACO	9 months	1 month	0.5 month	0.5 month
2. Review Period Between Routine Stock Assessments	Set by NACO	3 months	1 month	1 month	1 month
3. Safety Stock/ Buffer Stock	Safety $\geq \frac{1}{2}$ Review	1.5 months of stock (rounded up to 2 months)	0.5 month of stock (rounded up to 1 month)	0.5 month of stock (rounded up to 1 month)	0.5 month of stock (rounded up to 1 month)
4. Min Level of Stock	Min = Lead + Safety	11 months of stock	2 months of stock	1 month of stock	1 month of stock

Step	Formula	State Level	DAPCU	SA-ICTC	FICTC
5. Max Level of Stock	Max = Min + Review	14 months of stock	3 months of stock	2 months of stock	2 months of stock
6. Emergency Order Point	Emergency Order Point = Longest Lead Time for Emergency Shipment	3 month	1 month	1 month	1 month
Note: All facilities place an emergency order if their stock levels reach quantities that will only last for 2 weeks.					

TABLE 6.0 – Commodity Level Assessment

Facilities assess stock levels every time an indent has to be placed. If excess stock or too little stock is identified, the issuing facility is notified as stated in the following table.

In the event that the stock level is found to be zero, or stocked out for HIV Testing kits:

- States place emergency orders to suppliers after taking approval from NACO
- DAPCUs place emergency orders to SACS
- ICTCs place emergency order to DAPCU/SACS
- SACS issues a purchase order to suppliers based on approvals from NACO.

Level	If excess stock is found (above “Max.”)...	If too little stock is found (below “Min.”)...
SACS	▪ Redistribute as per need	▪ Place emergency order from CMSS/NACO/Suppliers
DAPCU	▪ Return to SACS Store for redistribution	▪ Notify SACS Store
SA-ICTC	▪ Redistribute within catchment area; if not needed, then return to DAPCU/SACS for redistribution	▪ Notify DAPCU/SACS (in non-DAPCU districts)
FICTC	▪ Redistribute within catchment area; if not needed, then return to SA- ICTC for redistribution	▪ Notify SA-ICTC

TABLE 7.0 – Indent Schedule

SACS employs a pull system below the state stores. Each service level (e.g. Service Delivery Point, DAPCU, State) places indent at specific time periods. These indent intervals are as follows:

Level	Indent Frequency:	Indent is Sent to:
NACO	▪ Annually	▪ To Procurement Agents
SACS	▪ Annually	▪ To NACO
DAPCU	▪ Quarterly	▪ To SACS Store
SA-ICTC	▪ Quarterly	▪ To DAPCU/SACS (in non-DAPCU districts)
FICTC	▪ Monthly	▪ To SA-ICTC

Note: SACS submit purchase orders to local suppliers only when faced with an emergency stock out based on approvals from respective division of NACO. A percentage of their budget is allocated for these types of emergency orders.



Forecast and Procure Commodities

PURPOSE

The purpose of forecasting is to accurately estimate the quantity of the selected products needed over the annual plan period by the entire state.

SCOPE

The scope of this process is focused on NACO with inter-linkages to SACS. It is also limited to HIV Kits

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- *Forecasting Tool (Excel based)*
- *Forecasting Output (Excel sheet), Summary Report*
- *Indent Form*

Other Forms/Records referred to in this procedure

- *Purchase Order/ LoA*
- *Rate Contracts*

PROCEDURE

This procedure comprises of two steps:

1. **Forecasting of HIV Testing Kits;**
2. **Procurement of HIV Testing Kits**

Sub-steps are noted as follows:

1. Forecasting of HIV Test Kits

1.1 NACO Level (BSD and Procurement Division)

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Collect all input data required for the forecasting tool (excel based)	Forecasting Tool, Forecasting Output and Summary Report
1.1.2	Incorporate all changes such as those related to new products, testing guideline changes, target population etc.	
1.1.3	Collate and clean input data and generate the forecasting output in the tool.	
1.1.4	Analyze and extract output data of forecasting tool as a group and fine-tune if required.	
1.1.5	Invite forecasting committee members (TRG) to present output data and conduct group discussion on method, assumptions considered and rationale used.	

1.1.6	Aggregate all inputs/suggestions from experts and share minutes of the meeting with details of forecasting exercise and conclusions	
1.1.7	Share over e-mail with higher officials the final output and summary of feedback and approval	
1.1.8	Kick start procurement planning using the forecasting output as the input for indenting.	
1.1.9	Process an annual indent for approval and submit to the Procurement Division of NACO	Indent Form

2. Procurement of HIV Testing Kits

2.1 NACO Level (Procurement Division, BS Division and SACS)

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Assessment of the Indent submitted by programme divisions considering the following: (Refer to Page No. 83 Table 7)	Procurement Manual for National AIDS Control Programme
	2.1.1.1 Current stock available at national level and expected stock position at time of sending the indent	
	2.1.1.2 Budget availability and sources	
	2.1.1.3 Check procurement cycle and mode of procurement.	
	2.1.1.4 Projected time scale for distribution, list of consignees, delivery schedules, storage capacity at all levels etc.	Indent Form
2.1.2	Submit finalized demand to empaneled procurement agent along with key details like technical specifications, consignee list, delivery schedule etc.	
2.1.3	Follow up and oversight of all sub-activities with procurement agent like Tendering (Preparation, Advert, Issue, Bid Opening, Evaluation, Award of Contract), Pre-dispatch inspection & QA, notifications of delivery to consignee, receipt of consignment, resolution of any dispute etc.	Bid documents, NOA, PO and Delivery
2.1.4	Process payment to procurement agent against the submitted documents	

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

- Annual quantity is determined for HIV Testing Kits
- The final determined quantity is approved and validated by all divisions
- Procured and supplied all determined quantity to SACS - WIC

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations

1. Procurement Manual for National AIDS Control Programme (NACP III)- Oct 2007



Monitoring Commodity Conditions and Levels

PURPOSE

Monitoring commodity levels is the supply chain process in which supply chain managers ensure that inventory levels are sufficient to meet the facility requirements. This means maintaining an accurate inventory count. Proper and accurate inventory count management is crucial to indenting, dispensing, and accounting. Without accurate inventory counts, none of these functions can be performed properly which can result in delayed deliveries, stock outs, and product wastage.

SCOPE

This SOP applies to all facilities which store and dispense commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- *Stock Register/ IMS*
- *Bin Card*
- *RTD Form*
- *Indent Form*
- *Issue and Receive Form*

Other Forms/Records Referred to in this Procedure

- *Applicable storage guidelines as per manufacturer requirements*
- *Applicable destruction guidelines as per manufacturer requirements*

Note: ONLY SACS Stores and Regional Stores use Bin Cards. A Bin Card is not required at other facilities because inventory levels are such that a Stock Register is sufficient for monitoring inventory.

PROCEDURE

This procedure is comprised of 2 steps:

1. *Assess commodity conditions.*
2. *Verify commodity levels.*

Sub-steps are noted as follows:

1. Assess Commodity Conditions

1.1 SACS Store/ DAPCU/ICTC/FICTC

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Monitor commodity conditions on schedule. (Refer to Page No. 43 Figure 6)	--
1.1.2	Evaluate commodity conditions. (Refer to Page No. 43 Figure 6)	--
1.1.3	Stack all kits neatly.	--

1.1.4	Ensure all products are organized according to “First Expiry, First Out” (FEFO). (Refer to stock rotation chapter on Page No. 45)	--
1.1.5	Check that expiry dates are clearly marked (e.g., with large, dark numbers) on each kit.	--
1.1.6	Visually inspect commodities to ensure that there is no damage or near expiry (less than 90 days) or expired.	IMS/ Stock Register Bin Card (for SACS/ Regional Stores only) RTD Form
1.1.6.1	Separate them into a quarantine area.	
1.1.6.2	Write Damaged, Near Expiry, or Expired on the box.	
1.1.6.3	Record the quantity of expired or damaged stock as a loss on the appropriate Stock Register / Bin Card and subtract the quantity from the Balance column.	
1.1.6.3	Address damage, near expiry, or expiry using RTD Form (Refer to Page No. 82 Table 4)	
1.1.6.4	Dispose damaged / expired commodities.	
1.1.6.5	Redistribute near expiry commodities to facilities who can issue/ dispense before expiry date.	

2. Verify commodity levels

2.1 SACS and DAPCU WIC

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Monitor commodity levels on schedule (Refer to Page No. 81 Table 2)	--
	Count stock:	--
2.1.2	2.1.2.1 Count unopened kits first. Multiply the number of kits by the number of tests in the kit.	--
	2.1.2.2 Kits should be issued as a whole box.	
2.1.3	Evaluate commodity levels against max - min level or EOP. (Refer to Page No. 82-83 Table 5)	Stock Register / IMS Bin Card (for SACS and DAPCU WIC only) Indent and IR Forms
	2.1.3.1 Add up the total units and this is the actual quantity of stock on hand.	
	2.1.3.2 Subtract the calculated Stock Balance as recorded in Stock Register/ Bin Card from the Actual Quantity on Hand.	
	2.1.3.3 If your result is zero, your Stock Register/ Bin Card match the number of units of the commodities in the store.	
	2.1.3.4 If your result is a negative quantity you have suffered a loss of the commodity. Adjust the same in stock register/Bin Card	
2.1.4	Create a line item on Stock Register/ Bin Card labeled “Physical Count” and write the quantity counted.	Stock Register / IMS Bin Card (for SACS and DAPCU WIC only)
2.1.5	Compare amount of commodity to recommended “max” quantity.	Stock Register / IMS Bin Card (for SACS and DAPCU WIC only) IR Form, RTD Form, Indent
	2.1.5.1 Multiply your average monthly consumption by maximum months of stock. This is the recommended “max” quantity.	
	2.1.5.2 Compare your stock on hand to the recommended “max” quantity. (Refer to Page No. 82-83 Table 5) If more than max, then...	
	2.1.5.3 Write Excess on the kits which are excess.	
	2.1.5.4 Stack excess inventory separately from usable stocks. Redistribute using RTD Form. (Refer to Page No. 83 Table 6)	

2.1.5.5	Record the quantity redistributed as a negative “adjustment” in Stock Register / Bin Card as follows with a dash that looks like this: “-”. (Refer to Page No. 82-83 Table 5) If at or below min level, then...	
2.1.5.6	Place emergency indent using Indent Form.	

2.2 Testing facilities (ICTC and FICTC)

Steps	Instruction /Activities	LMIS Tools Used
2.2.1	Once a week, transfer quantities issued as recorded in Laboratory Register into Stock Register.	Laboratory Register/ IMS (Dispensing Module), Stock Register
2.2.2	Monitor commodity levels on schedule. (Refer to Page No. 81 Table 2)	--
	Count the stock	--
2.2.2.1	Count unopened/complete kits first. Multiply the number of kits by the number of test in the kit.	--
2.2.2.2	Count the tests inside the open kits.	
2.2.2.3	This will give you the total number of the tests in the facility.	
	Evaluate commodity levels against max level or EOP. (Refer to Page No. 82-83 Table 5)	Stock Register and IMS
2.2.3.1	Add up the total tests and this is the actual quantity of stock on hand.	
2.2.3.2	Subtract the calculated Stock Balance as recorded in Stock Register from the Actual Quantity on Hand.	
2.2.3.3	If your result is zero, your Stock Register match the number of units of the commodities in storage.	
2.2.3.4	If your result is a negative quantity you have suffered a loss of the commodity then adjust the same in stock register / IMS	
2.2.3.5	If your result is a positive quantity, you have more units of the commodity in stock than you had recorded on the Stock Register.	
2.2.4	Create a line item on Stock Register labeled “Physical Count” and write the quantity counted.	Stock Register and IMS
2.2.5	Compare amount of commodity to recommended “max” quantity.	Stock Register / IMS Indent Form IR Form RTD Form
	2.2.5.1 Multiply your average monthly consumption by maximum months of stock. This is the recommended “max” quantity.	
	2.2.5.2 Compare your stock on hand to the recommended “max” quantity. (Refer to Page No. 82-83 Table 5) If more than max, then...	
	2.2.5.3 Write Excess on the kits which are excess.	
	2.2.5.4 Stack excess inventory separately from usable stocks. Redistribute using RTD Form. (Refer to Page No. 83 Table 6)	
	2.2.5.5 Record the quantity redistributed as a negative “adjustment” in Stock Register as follows with a dash that looks like this: “-”. (Refer to Page No. 82-83 Table 5) If at or below min level then...	
2.2.5.6	Place emergency indent using Indent Form.	

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

For commodity monitoring:

- Commodity conditions are monitored as per the established schedule and all items are stored according to proper storage guidelines.
- Quantity of commodities on hand has been counted and recorded on the Stock Register.
- Losses /Adjustments have been calculated and recorded on the Stock Register, if applicable, and properly accounted. For more information **Refer Page No. 82 Table 4**

For removal of damaged / expired or excess commodities:

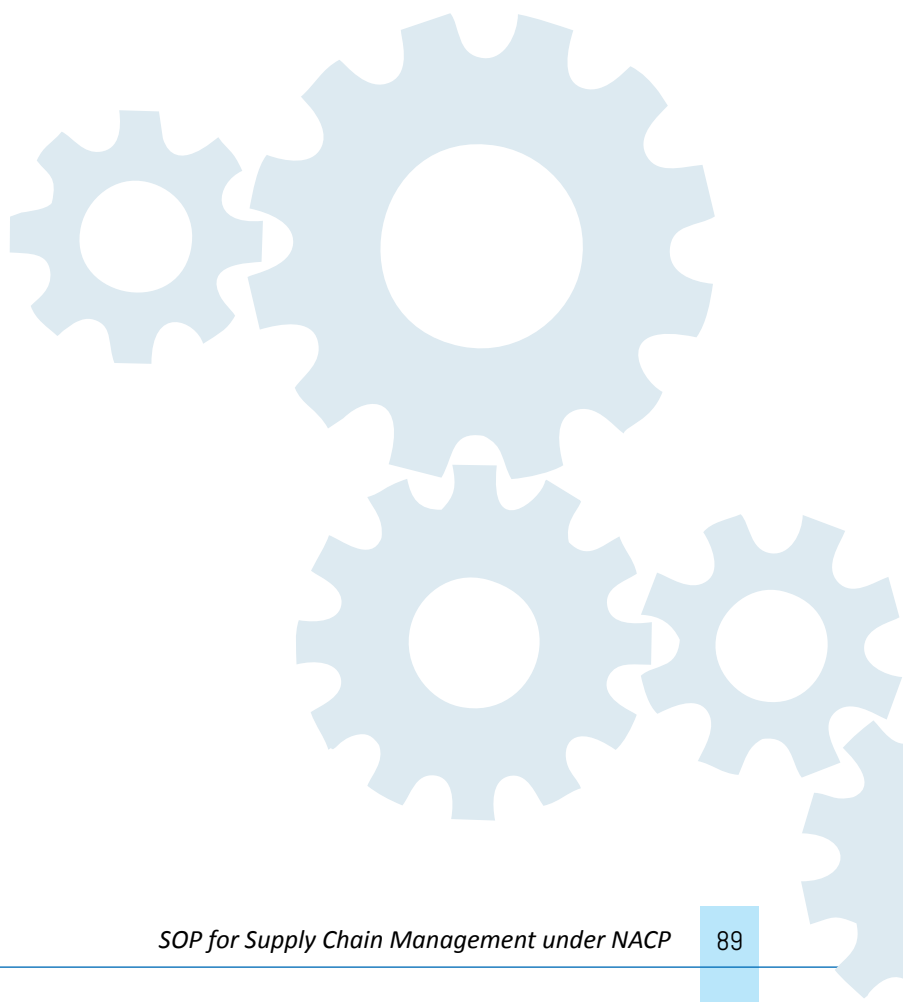
- Damaged, expired or excess commodities are separated from usable stock.
- Damaged or expired stock is disposed as per norms specified by state government and if destroyed, as per manufacturer requirements (FICTC return damaged or expired stock to ICTC facility).
- Excess commodities are returned to issuing facilities.
- Stock Registers has been updated as per the movement of damaged, expired or excess commodities.
- RTD Form has been completed to accompany moving commodities

For indenting emergency commodities:

- Indent Form has been completed to request an emergency order

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations





Indent Commodities

PURPOSE

Indenting is the process to request product quantity to replenish the stock level. All commodities are re-stocked to the pre-set maximum level – no matter how much or little is in stock.

SCOPE

This SOP applies to all facilities which indent commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- Stock Register
- Bin Card
- RTD Form
- Indent Form
- IR Form

Other Forms/Records Referred to in this Procedure

- Purchase Order/ Letter of Acceptance (LOA)
- Rate Contracts

PROCEDURE

This procedure comprises of two steps:

- 1. Determining the quantity to indent.**
- 2. Submitting the indent to issuing store/Procurement Agent.**

Sub-steps are noted as follows:

1. Determine quantity to indent

1.1 NACO Level

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Process indent quantities from forecasting tools (Refer to Page No. 83 Table 7)	Indent Form, Forecasting Tool
1.1.2	Prepare the indent form for submission and approval with necessary details.	Indent Form

1.2 SACS WIC

Steps	Instruction /Activities	LMIS Tools Used
1.2.1	Aggregate indented quantities from DAPCU and SA- ICTCs. (Refer to Page No. 83 Table 7)	Indent Form/ Forecasting Tool

1.3 DAPCU, SA-ICTC and FICTC

Steps	Instruction /Activities	LMIS Tools Used
1.3.1	Prepare to indent products. (Refer to Page No. 83 Table 7)	Stock Register / IMS
1.3.2	Day prior to scheduled indent, conduct physical inventory count to verify commodity levels.	--
1.3.3	Note discrepancies, if any, between Stock Register /IMS / Bin Card and physical inventory in Stock Register.	Stock Register/ IMS Bin Card (for DAPCU WIC only)
1.3.4	Compute average monthly consumption using last 3 months of consumption unless directed otherwise.	Stock Register / IMS
1.3.4.1	1. For product in full supply: - Review issues data in Stock Register/IMS for own facility to get consumption data.	
1.3.4.2	2. For products that have been stocked out at any point in the last 3 months: - Aggregate average monthly consumption from Indent and Issues/Receive Forms for all requesting facilities: - SACS aggregates DAPCU/ SA-ICTC Indent and Issue/Receive Forms - DAPCU Store aggregates SA-ICTCs Indent and Issue/Receive Forms (wherever DAPCU exists) - For non-DAPCU districts, SA-ICTCs will send directly to SACS or WICs within the State - SA-ICTC aggregate FICTCs indent and Issue/Receive Forms	Stock Register/ IMS Laboratory Register /IMS Indent Form
1.3.4.3	3. For products that are stocked out at both indenting and requesting facilities: - Review issues data in Stock Register/IMS for own facility for the most recent period during which the product was available.	
1.3.5	Calculate how much of each commodity is required for levels to be brought up to max levels using the Indent Form.	Stock Register / IMS Indent Form/ Laboratory Register
1.3.6	Prepare the indent for submission and sign the form with necessary details.	Indent Form

2.Submit indent to issuing store / Procurement Agent;

2.1 NACO Level

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Requesting Division submits Indent Form to Procurement Division of NACO (Refer to Page No. 83 Table 7)	Indent Form
2.1.2	Procurement Division submits approved indent to Procurement Agents of NACO	--

2.2 SACS, DAPCU WIC, SA-ICTCs and FICTCs

Steps	Instruction /Activities	LMIS Tolls Used
2.2.1	Submit Indent Form to issuing facilities (Refer to Page No. 83 Table 7)	Indent Form

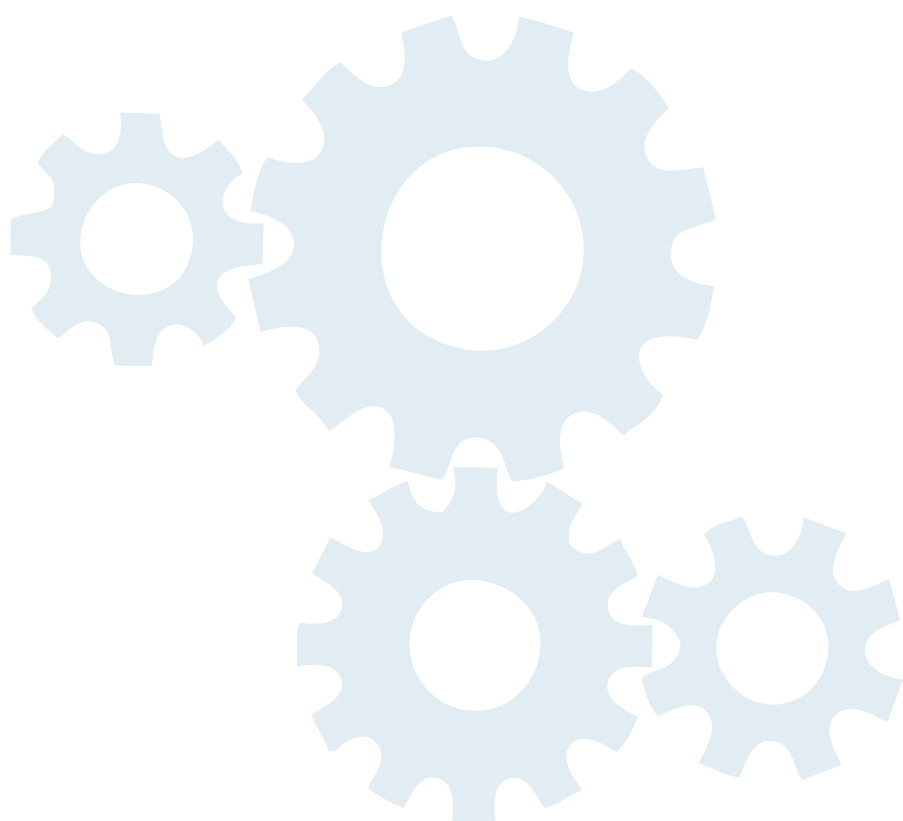
EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

- Commodity levels are assessed.
- Order quantities are calculated.
- Indent Form is completed.
- Indent Form is approved and submitted.

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulation





Receive and Store Commodities

PURPOSE

Receiving is the supply chain process of acknowledging, inspecting, and logging received commodities into inventory. Errors in receiving have a ripple effect. If an indent/issues/packaging list are improperly filled or commodities are counted incorrectly when received, then inventory levels will be inaccurate which can result in overstock or stock-out. Similarly, if commodities are put away incorrectly, then there is risk of losing product due to expiry or staff will waste time looking for product at the time of issue.

SCOPE

This SOP applies to all facilities which receive and store commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- *Stock Register/IMS*
- *Bin Card*
- *Indent Form*
- *Issue and Receive Form (IR Form)*

Other Forms/Records Referred to in this Procedure

- Invoice
- Packing List
- Certificate of Analysis (CoA)
- Consignee Receipt Certificate (CRC)
- Consignee Acceptance Certificate (CAC)
- Goods Receipt Note (GRN)

Note: ONLY SACS Store and Regional Stores uses Bin Cards. A Bin Card is not required at other facilities because inventory levels are such that a Stock Register is sufficient for monitoring inventory.

PROCEDURE

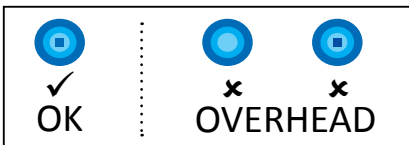
This procedure comprises of two steps:

1. **Receive commodities which includes inspecting and recording receipts.**
2. **Store (Put away) commodities.**

Sub-steps are noted as follows:

1. Receive commodities which includes inspecting and recording receipt:

1.1 SACS WIC and DAPCU WIC

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	As per the Purchase Order/NOA, warehouse receives the goods along with consignment documents.	Email/IMS / NACO
	Check completeness of following documents:	Purchase Order (in case of local procurement)
1.1.2.1	- Two copies of original invoice signed by authorized signatory - Packing List/Transport receipt/Delivery Note	Invoice
1.1.2	1.1.2.2 If any discrepancy is found, report the same to NACO/Procurement Agent. In case of mismatch between PO, shipment details, and invoice; do not accept commodities until written confirmation is provided to resolve the discrepancy.	Packing List Delivery Note
1.1.3	Verify quantities issued are the same as recorded on the Purchase Order/ Invoice/packaging list/COA	Purchase Order (In case of local procurement)
	1.1.3.1 If quantities are NOT the same as Purchase Order/invoice/packaging list, do not accept commodities until written confirmation from issuer is provided that quantity delivered is less than noted on the Purchase Order/ invoice/ packaging list/delivery note.	Invoice Packing List Delivery Note
1.1.4	Inspect commodities for physical, chemical or manufacturing defects. (Refer to Page No. 81 Table 3)	
	1.1.4.1 If damage is found, reject commodities and return to supplier for replacement For HIV Testing Kits: check the HEAT marker indicator before accepting shipment.	--
		
	1.1.4.2 If no damage is found, accept order and generate Goods Received Note (GRN) and provide all documents to Procurement Agent/NACO	--
1.1.5	Endorse the supplier/CMSS document i.e. Issue Slip cum Acknowledgment Receipt/Transport Receipt/Delivery Note	Purchase Order (in case of local purchase), Invoice, Issue Slip cum
	1.1.5.1 Receiver files copies of all signed forms (as noted in column to the right).	Acknowledgment Receipt, Transport Receipt/Delivery Note
	1.1.5.2 Supplier/Procurement Agent receives copy of forms.	
1.1.6	If documents are found in order and quantities and quality of commodities are correct, accept the goods in WIC.	--
1.1.7	Complete all entry of received commodities in IMS	IMS and Stock Register

1.2 SA-ICTC and FICTC

Steps	Instruction /Activities	LMIS Tools Used
1.2.1	Receive mail/IMS notification from SACS WIC / DAPCU WIC that commodities are ready for dispatch. (Refer to Page No. 83 Table 6)	Stock Register / IMS
1.2.2	Receive commodities at issuing facility.	--
1.2.3	Verify quantities issued are the same as recorded on the IR Form:	IR Form/IMS, STN
1.2.3.1	If quantities are NOT the same as IR Form, do not accept commodities until written confirmation from issuer is provided that quantity delivered is less than noted on the IR Form/STN.	
1.2.4	Conduct preliminary physical inspection for quality of shipment. (Remember – a package can be damaged but the commodity can still be usable.) (Refer to Page No. 81 Table 3)	
1.2.4.1	If quality problem or damage is found, notify issuer. Quarantine goods till issues are resolved.	--
1.2.5	Sign IR/STN Form to confirm receipt: – Issuing facility signs, stamps and keep original – Receiving facility signs and stamps 1 copy and return to transporter of shipment – Receiving facility keeps 1 copy for files.	Indent Form/ Issue and Receive Form /IMS/STN Form
1.2.6	Receive the commodities in stock register/ IMS	Stock Register / IMS

2. Store (Put away) commodities:

2.1 SACS WIC and DAPCU WIC

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Put away commodities according to “FEFO” (First Expiry, First Out) to prevent expiry; and place older products above the newer ones.	--
2.1.2	Store the goods on pallets, shelves and in WIC. (Refer to Page No. 45 Figure 9)	--
2.1.3	Record receipt in Stock Register/IMS, Bin Card.	Stock Register/ IMS Bin Card

2.2 SA-ICTC, FICTCs

Steps	Instruction /Activities	LMIS Tools Used
2.2.1	Verify quantities issued are the same as recorded on the IR/STNs Form: (Refer to Page No. 83 Table 7)	Indent Form, IR Form, STN
2.2.1.1	Receive commodities at issuing facility.	IR Form/ IMS STN
2.2.1.2	If quantities are NOT the same as IR Form, do not accept commodities until written confirmation from issuer says that quantity delivered is less than noted on the IR Form.	
2.2.2	Conduct final physical inspection for quality. (Refer to Page No. 81 Table 3)	
2.2.2.1	Check for physical, chemical, or manufacturing defects.	--
2.2.2.2	Verify expiry date. If the expiry date is less than 90 days away, then return the commodities to the source of supply to prevent any dispensing of expired commodities by mistake.	--
2.2.2.3	Verify batch numbers.	

	2.2.2.4	If quality problem or damage is found, notify SACS Quarantine goods till issues are resolved.	--
2.2.3	Record commodity information on the Stock Register/IMS.		Stock Register/IMS
2.2.4	Put away commodities: • If the label only states the date of production, calculate the expiry date and add the period of storage on the shelf. • Write down the date of expiry on the cardboard box in large bold numbers or letters.		--
2.2.5	Store commodities according to "FEFO" ("First Expiry, First Out") to prevent expiry		--
2.2.6	All HIV Testing Kits must be kept between +2°C and +8°C during storage at the SACS/DAPCU/ICTC/FICTC level		
2.2.7	Monitor the temperature of WIC/ILR throughout the supply chain management: Effective monitoring and record-keeping achieves the following objectives: a. verify that HIV Testing Kits storage temperatures are within the acceptable ranges of +2°C to +8°C in cold rooms and ILR b. detection of out-of-range storage temperatures so that corrective action can be taken; c. detection of out-of-range transport temperatures so that corrective action can be taken		Temperature recording sheet

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

- Commodities are received.
- Damaged or expired stock has been separated from usable stock.
- Stock Registers/IMS and Bin Cards have been updated.
- RTD Form has been completed (if necessary).
- Commodities are put away.

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations



Issue and Dispense Commodities

PURPOSE

Issuing is the supply chain process of receiving and fulfilling indents. For service delivery points, dispensing is the supply chain process of issuing commodities to clients.

SCOPE

This SOP applies to all facilities which issue and dispense commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- Indent Form
- Stock Register
- Bin Card
- IR Form
- IMS Dispensing
- Daily Dispense Register (DDR)

Other Forms/Records Referred to in this Procedure

- N/A

Note: ONLY SACS Store and Regional Stores uses Bin Cards. A Bin Card is not required at other facilities because inventory levels are such that a Stock Register is sufficient for monitoring inventory.

PROCEDURE

This procedure comprises of two steps:

1. **Receive and review indent.**
2. **Issue commodities according to the indent.**

For service delivery points:

1. **Dispense to clients.**

Sub-steps are noted as follows:

1. Receive and review indent:

1.1 SACS WIC, DAPCU WIC, ICTC and FICTC

Steps	Instruction /Activities	LMIS Tools Used
1.1.1	Receive Indent Form from reporting facility. (Refer to Page No. 83 Table 7.0)	Indent Form
1.1.2	Review Indent Form to confirm calculations. Correct if needed. • If corrections are made, notify indenting facility.	Indent Form

2. Issue commodities according to the indent between facilities:

2.1 SACS WIC, DACPU WIC, ICTC and FICTC

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Aggregate all indents from the requesting facilities for distribution planning	Indent Form
2.1.2	Check stock availability in the Stock Register/IMS to finalize the quantity to be issued:	Indent Form Stock Register/ IMS
	2.1.2.1 If product is available in enough quantity, fulfill the Indent Form request.	
	2.1.2.2 If product is not available in enough quantity, ration the indented quantity.	
	2.1.2.3 If product is not available, find the substitute product, if possible.	
	2.1.2.4 If substitution is not possible and demand is urgent, inform to NACO/ SACS to support on relocation from other states /facilities	
	2.1.2.5 If substitution is not possible and demand is not urgent, wait till product becomes available through Procurement Agent/SACS	
2.1.3	Develop the distribution plan for approval	Distribution Plan
	Call or email indenting facilities to update on approved distribution plan	
2.1.4	Complete IR/STN Form as per approved distribution plan	IR/STN Forms
2.1.5	Select the available product to be issued by FEFO ("First Expiry First Out").	IR/STN Forms
2.1.6	Prepare shipment of commodities, as per IR/STN Form	IR/STN Forms
2.1.7	Notify receiving facility that indent is ready to be shipped.	IR/STN Forms
2.1.8	Record the issued quantity in Stock Register/ IMS/ Bin Card.	Stock Register / IMS

3. Dispensing:

3.1 SA-ICTC and FICTC

Steps	Instruction /Activities	LMIS Tools Used
3.2.1	Check stock availability in the Stock Register / IMS to finalize the quantity to be used:	IMS/ Stock Register
	3.2.1.1 If HIV test kits are available in enough quantity, fulfill the prescription.	
	3.2.1.2 If HIV test kits is not available, find the substitute product, if possible.	
	3.2.1.3 If substitution is not possible and demand is urgent, inform SACS/ DAPCU WIC for emergency relocation	
	3.2.1.4 If substitution is not possible and demand is not urgent, wait till product is available at SACS /DAPCU	
3.2.2	Select the HIV test kits to be used by FEFO (First Expiry First Out).	--
3.2.3	Use the test for patient	--
3.2.4	Record used test in IMS/Lab Register at SA-ICTC	IMS /LR
3.2.5	Record total used test quantity in the IMS / LR and update the Stock Register at the end of the day	IMS /Stock Register

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For the SOP to be completed accurately and completely, the following criteria must be met:

Effectiveness Criteria / Criteria for *Issue* Completion:

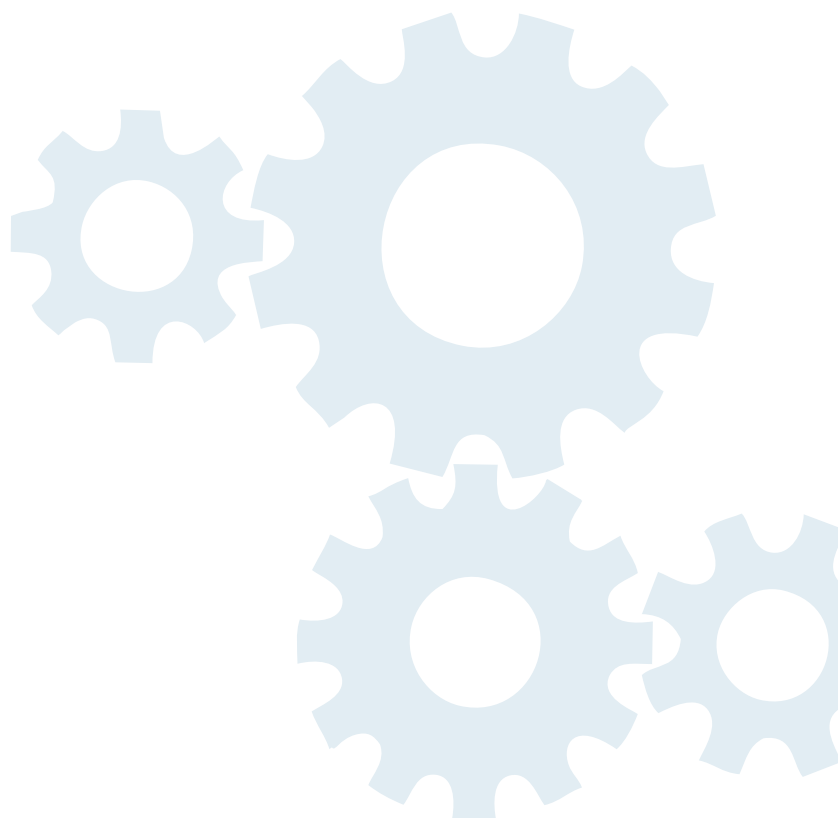
- Indent Form is complete and accurate.
- Indent quantities are validated.
- Distribution Plan is approved.
- Issue quantity is picked.
- Issues quantity is ready for packaging and shipping.

Effectiveness Criteria / Criteria for Dispensing Completion:

- Client is counselled.
- Commodity is dispensed.
- Daily Dispensing Register is updated.
- Stock Register/IMS are updated.

REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations





Distribute Commodities (Packaging and Transportation)

Distribution of commodities to all facilities

PURPOSE

Distribution is the supply chain process after issuing of commodities against the indents.

SCOPE

This SOP applies to all facilities which are charged with distribution of commodities.

LMIS RESOURCES

These LMIS resources are required to successfully complete this SOP:

Record/Form Name

- Indent Form
- IR Form
- STN from IMS

Other Forms/Records Referred to in this Procedure

- Distribution Plan
- Route Plan
- Dockets

PROCEDURE

This procedure comprises two steps:

1. **Packaging of commodities (including cold chain).**
2. **Distribution of commodities according to the indent and issue.**

Sub-steps are noted as follows:

1. Packaging of commodities:

1.2 SACS-WIC, DAPCU-WIC and ICTC (Cold Chain)

Steps	Instruction /Activities	LMIS Tools
1.2.1	Aggregate all issue quantity as per approved distribution plan for kits	IR and STN
1.2.2	While packaging of HIV test kits for transportation consider the following to maintain the temperature at +2°C to +8°C during transit. Ensure that the HEATmarker indicator is intact before packing for transportation.	--

1.2.3	Use an insulated and temperature-monitored cold box for transportation of Kits	--
		
1.2.4	Use enough refrigerated ice packs to maintain the cold chain at +2°C to +8°C	
		
	Use temperature logger in cold chain box to monitor the temperature while in transit	
		
1.2.2	Instruction for filling and checking the Ice Packs:	
1.2.2.1	If new empty water packs: Fill each pack with clean water, up to the fill line. Do not over-fill; leave a little air space at the top. Fix the cap on tightly.	
1.2.2.2	Do not refill water packs unless they have leaked. If there is a leak, top up the water and make sure the cap is fixed securely.	
1.2.2.3	Before use, hold each pack upside down and squeeze it to make sure it does not leak. If the pack is found damaged, discard it and replace with a new pack	
1.2.3	Instruction to freeze Ice Packs (It takes 24 hours or more to fully freeze ice packs):	--
1.2.3.1	Put the ice-packs upright in the freezer compartment of the refrigerator/deep freezer and close the door.	--
1.2.3.2	Leave ice-packs in the freezer for at least 24 hours to freeze solid. After 24 hours they should be ready to use.	--
1.2.3.3	After each delivery put the melted ice-packs back in the freezer as soon as possible.	--

1.2.4	Instruction to condition ice-packs (Frozen ice packs are not suitable for immediate use):		--
	1.2.4.1	Conditioned fully frozen ice-packs: - Left at room temperature for a short time (it may take over 30 minutes if the room is cold) - Allow frozen ice-packs to sit at room temperature until the ice begins to melt and water starts to form - Check to see if each ice-pack has been conditioned properly by shaking it and listening for the sound of water moving inside	
1.2.5	Instruction to pack the cold chain boxes:		--
	1.2.5.1	The ice pack should be placed as shown in the picture 	--
	1.2.5.2	The digital temperature logger should be placed after placing the HIV Testing Kits	--
	1.2.5.3	Close the box immediately after placing the ice pack, testing kits and temperature logger	--
	1.2.5.4	Reset the temperature logger every time you pack the cold chain box with kits	--
1.2.6	Pack all kits in cold chain boxes per facility		IR and STN
1.2.7	Mark the cold chain boxes with facility's name		IR and STN

2. Distribution of commodities according to the indent and Issue:

2.1 SACS WIC, DACPU WIC, ICTC and FICTC

Steps	Instruction /Activities	LMIS Tools Used
2.1.1	Select an appropriate transportation model based on the volume of the total boxes to be distributed: - Dedicated vehicle: for HIV Testing Kits - Full truck load (FTL): For high volume shipment - Reefer vehicle: for high volume transfer of HIV Testing Kits between facilities	IR/STN Forms Distribution and Route Plan (Not LMIS Part)
2.1.2	Develop route plan based on distribution list in consultation with transporter	
2.1.3	Share route plan for distribution with the transporter	
2.1.4	Handover IR/STN form in triplicate: - Transporter issues docket against IR/STN - Transporter provides one copy of docket to the consignor File the documents at your location	IR/STN Form , Docket

2.1.5	Handover the stocks to the transporter on the agreed date and time	Docket (Transport document)
2.1.6	Track the shipment until signed and stamped proof of delivery (POD) is received	PODs (Docket and IR/STN)
2.1.7	Allow facilities to verify correctness of issue and visually inspect commodities.	Docket, IR/STNs
2.1.7.1	If any errors are found, immediately inform to issuing facilities	
2.1.7.2	Sign IR/STN Form to confirm receiving of commodities: Keep 1 copy at receiving facilities	
2.1.7.3	Return signed and stamped copy to transporter	
2.1.8	Record any variances during the transportation and claim to transport or insurance company as necessary.	Stock Register/IMS

EFFECTIVENESS CRITERIA / CRITERIA FOR COMPLETION

For this SOP to be completed accurately and completely, the following criteria must be met:

Effectiveness Criteria / Criteria for Distribution Completion:

- Packing of Kits completed as per instruction
- Distribution planned and products moved to facilities
- IR/STN Form signed handed over to transporter
- Receiving facility upon receipt of commodities to acknowledge receipt on :
 - IR/STN and transport dockets
 - One copy remains with receiving facilities
 - One copy signed and stamped and returned to issuer for their record

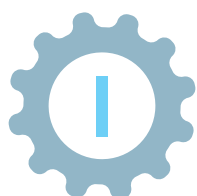
REFERENCES

A. NOTE ALL APPLICABLE Reference policies / laws / regulations



Annexures





Cold Chain Management of HIV/RPR Kits

INTRODUCTION

This module describes how to calculate HIV test volumes and evaluate the cold chain capacity requirements. To ensure that sufficient cold chain capacity is available where and when it is needed, it is important to:

- Recognize the impact of kit presentations and packaging on storage volumes;
- Know how to translate HIV kit needs into annual volumes and storage volumes;
- Estimate the net storage capacity provided by all models of cold chain equipment;
- Identify and quantify cold chain capacity gaps; and
- Explore the range of solutions that can potentially address capacity gaps.

Availability of sufficient cold chain capacity is crucial to the optimal performance of HIV/AIDs programme. This module demonstrates how to calculate the volume of HIV test kits that must be stored and transported. This volume is compared with the net storage capacities of existing cold chain equipment to identify where a cold chain capacity gap exists today, or when a cold chain capacity gap is anticipated in the future. When a cold chain capacity gap is identified, the next step is to identify and evaluate potential solutions. Potential solutions may include procurement of new equipment, but may also include the use of alternative presentations, implementing equipment repair, changing the frequency of deliveries, or modifying the structure of the current cold chain.

OBJECTIVES

The objectives of this module are to demonstrate how to:

- a) Estimate the packed volume of HIV test kits delivered by the NACO
- b) Estimate a storage volume for each HIV test kit based on annual needs and the supply chain structure
- c) Aggregate the storage volumes of all the HIV test kits in the national AIDS control program to determine the cold chain capacity requirements
- d) Estimate the net storage capacity of cold chain equipment
- f) Estimate transport storage capacity requirement

CALCULATING TEST KITS VOLUME

1. Calculating packed volume of HIV test kits

Step 1: Measure the dimensions of secondary carton

Measure three dimensions of the carton: length (L), width (W) and height (H), illustrated in Figure 1.

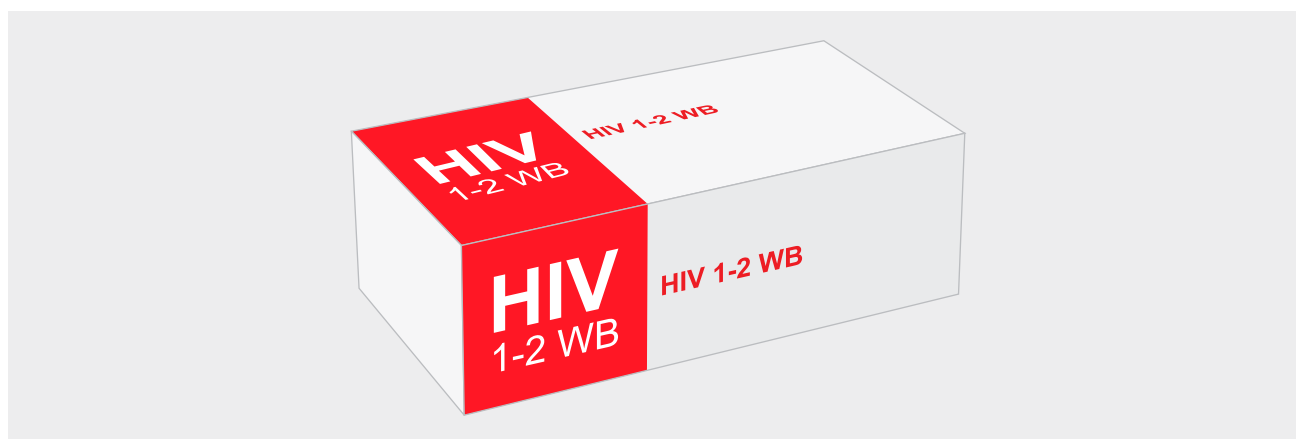


Figure 1: Secondary packaging of WBFPT

The current dimensions of HIV test kits supplied by NACO are as follows:

Table 1.0: Dimension of kits

Name of Kit	Kit Dimension (cm ³)		
	Length (L)	Width (W)	Height (H)
HIV(Rapid) 1 st Antigen (HIV1)	11.50	9.50	12.50
HIV(Rapid) 2 nd Antigen (HIV2)	18.00	12.00	7.00
HIV(Rapid) 3 rd Antigen (HIV3)	16.00	8.00	8.00
Whole Blood Finger Prick (WBFPT)	24.00	14.00	8.00

Step 2 : Calculate the volume of secondary carton using the following formula:

Volume (cm³) = length x width x height

Table 2.0: Volume of Secondary Cartons

Name of Test	Volume of Kit (cm ³)
HIV(Rapid) 1 st Antigen	1365.63
HIV(Rapid) 2 nd Antigen	1512.00
HIV(Rapid) 3 rd Antigen	1024.00
Whole Blood Finger Prick	2688.00

Step 3 : Count the total number of tests in the secondary carton

Table 3.0: Total Test in secondary packing

Name of Kit	No. of Tests/kit
HIV(Rapid) 1 st Antigen	48
HIV(Rapid) 2 nd Antigen	30
HIV(Rapid) 3 rd Antigen	20
Whole Blood Finger Prick	50

2. Estimating kit storage volume

Step 1: Determine the annual volume based on the annual need

The annual need is measured as the number of tests of each type that must be delivered to a SACS or district Walk-in-cooler or service delivery point to test the intended target population, and will include additional tests that must be delivered to a service-delivery point to accommodate unavoidable wastage.

$$\text{Annual Need (No. of Tests)} \div \text{No. of tests/kit} \times \text{Volume of kit (cm}^3\text{)} = \text{Annual Volume (cm}^3\text{)}$$

Thus, if the annual need of HIV tests is as given in table below, the annual volume required for each kit will be as follows:

Table 4.0: Annual needs calculation

Kits	Annual Need (No. of Tests)	÷	No. of tests/kit	X	Volume of kit (cm ³)	=	Annual Kit Volume (cm ³)
HIV(Rapid) 1 st	120000	÷	48	X	1365.63	=	3414075
HIV(Rapid) 2 nd	20000	÷	30	X	1512.00	=	1008000
HIV(Rapid) 3 rd	20000	÷	20	X	1024.00	=	1024000
WBFP	400000	÷	50	X	2688.00	=	21504000

Step 2: Determine the volume per supply interval

$$\text{Annual kit volume} \div \text{Number of supply intervals each year} = \text{Test volume per supply interval}$$

The HIV test kits are supplied every quarter i.e. four times in a year.

Based on annual volumes calculated in Step 1, the volume per supply interval will be as follows:

Table 5.0: Supply planning with intervals

Kits	Annual kit Volume (cm ³)	÷	Number of supply intervals each year	=	Kit volume per supply interval (cm ³)
HIV(Rapid) 1 st	3414075	÷	4	=	853519
HIV(Rapid) 2 nd	1008000	÷	4	=	252000
HIV(Rapid) 3 rd	1024000	÷	4	=	256000
WBFP	21504000	÷	4	=	5376000

Step 3: Calculate the volume of the safety stock

$$\text{Safety stock (No. of Tests)} \div \text{No. of tests/kit} \times \text{Volume of kit (cm}^3\text{)} = \text{Volume of safety stock (cm}^3\text{)}$$

The safety stock for HIV test kits have been defined as 2 months at state level. Thus based on the annual needs defined in Step 1, the volume of safety stock of each kit will be determined as follows:

Table 6.0: Safety Stock calculation

Kits	Safety stock (No. of tests)	÷	No. of tests/kit	X	Volume of kit (cm ³)	=	Volume of safety stock (cm ³)
HIV(Rapid) 1 st	5000	÷	48	X	1365.63	=	142253
HIV(Rapid) 2 nd	833	÷	30	X	1512.00	=	41983
HIV(Rapid) 3 rd	833	÷	20	X	1024.00	=	42650
WBFP	16667	÷	50	X	2688.00	=	896018

Step 4: Add the volume of the safety stock to the volume per supply interval

$$\text{Kit volume per supply interval} + \text{Volume of safety stock} = \text{Kit Storage Volume}$$

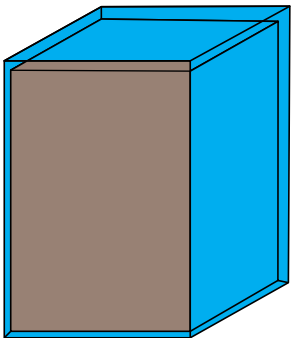
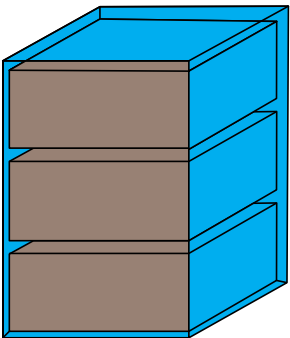
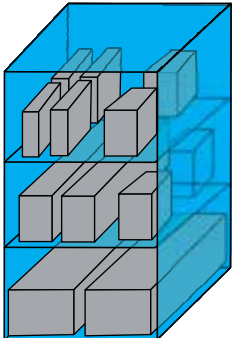
In above example, the final storage volume of kits for each supply interval will be as follows:

Table 7.0: Final storage volume

Kits	Kit volume per supply interval (cm ³)	+	Volume of safety stock (cm ³)	=	Storage Volume (cm ³)
HIV(Rapid) 1 st	853519	+	142253	=	995772
HIV(Rapid) 2 nd	252000	+	41983	=	293983
HIV(Rapid) 3 rd	256000	+	42650	=	298650
WBFP	5376000	+	896018	=	6272018
Total					7860423

CALCULATING COLD CHAIN STORAGE CAPACITY

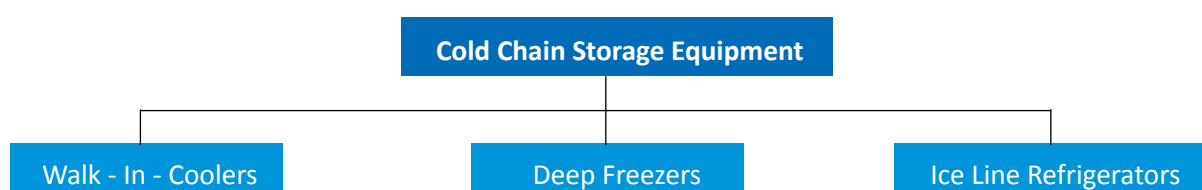
The key terms used to describe storage space inside cold chain equipment are as follows:

Gross Volume	Shelf Volume	Net Storage Capacity
The measured volume of the airspace inside the internal compartment of a model of cold chain equipment with the door or lid shut. 	The aggregated volume of all designated equipment i.e. baskets, shelves or pallet bays in a model of cold chain equipment. This volume includes only areas where kits can be stored safely. 	The estimated volume available for storing kits and associated supplies inside a model of cold chain equipment, taking into account packing efficiencies and airspace requirements. 

Note that while gross volume and shelf volume can be measured, net storage capacity is an approximate value used for planning purposes in order not to overestimate the total volume available for storage. Shelf volume is only relevant for walk-in cold rooms and not for vaccine carriers and cold boxes, which have no shelves or inner storage divisions.

Utilization factor

The utilization factor accounts for the fact that it is not usually possible to use 100% of available storage capacity due to the impact of handling practices, packaging dimensions and other practicalities. It is defined as a number less than one that is multiplied by the shelf volume of walk-in cold rooms or by the gross volume of refrigerators, freezers, vaccine carriers and cold boxes in order to estimate the usable net storage capacity of those equipment. In this document, WHO recommended utilization factor of 0.67 has been used for walk-in cold rooms as well as all other equipment.



1. Calculating net storage capacity of a Walk-in-cooler

Step 1: Measure the shelving unit dimensions in centimetres (cm)

Table 8.0: Example of Dimensions of Shelves

Shelves	Dimensions (cm)
Shelf length (l)	150
Shelf width (w)	50
Cold room stacking height (h)	210
Number of shelves (n)	5
Shelf thickness (t)	2
Floor to bottom shelf (b)	5

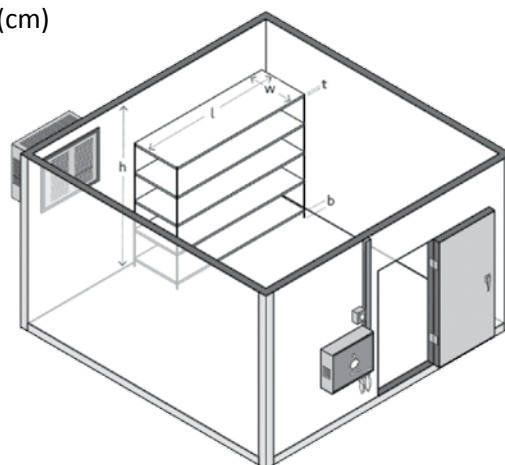


Figure 2: Walk-In Cooler

Step 2: Calculate the volume of shelves in cm³

Width x length x (height – [distance from floor to bottom shelf + number of shelves x thickness of each shelf])

As per dimensions mentioned in Table 8 the volume of shelves will be as follows:

$$50 \times 150 \times (210 - [5 + (5 \times 2)]) = 1462500 \text{ cm}^3$$

Step 3: Calculate total shelf volume

SUM (shelf unit volumes) i.e. add the volume of each shelf in the WIC to obtain the total shelf volume of WIC. If a WIC has 10 shelving units of dimensions as per Table 8, then total shelf volume will be = 10 shelving units x 1462500 cm³ = 14625000 cm³

Step 4: Calculate net storage capacity

$$\text{Shelf volume} \times \text{utilization factor} = 14625000 \text{ cm}^3 \times 0.67 = 9798750 \text{ cm}^3$$

This storage capacity is adequate enough to accommodate the kits with requirement of storage volume of **7860423 cm³** calculated in Table 7: Final storage volume. Thus, the Walk-in-cooler with shelves of dimensions as per Table 8, can accommodate the following no. of HIV test:

Table 9.0: Calculation of no. of tests that can be stored in Walk-in Cooler

Kits	Storage Volume (cm ³)	÷	Volume of kit (cm ³)	=	No. of kits	X	No. of tests/kit	=	No. of tests
HIV(Rapid) 1 st	995772	÷	1365.63	=	729	X	48	=	34992
HIV(Rapid) 2 nd	293983	÷	1512.00	=	194	X	30	=	5820
HIV(Rapid) 3 rd	298650	÷	1024.00	=	292	X	20	=	5840
WBFP	6272018	÷	2688.00	=	2333	X	50	=	116650
Total	7860423				3548				163302

2. Calculating net storage capacity of Ice Lined Refrigerators (ILR) and Deep Freezers

Net storage capacity for ILRs and deep freezers =
Gross volume (cm³) X Utilization Factor

Thus, net storage capacity of a 500 Litres ILR/ Deep freezer = 500 L X 1000 X 0.67=335000cm³

As per consumption of kits, this net storage capacity will be divided between the kits. To calculate this, consumption percentage of each kit needs to be deduced as follows:

(AMC of each tests ÷ total of AMC of all types of tests)X100

If percentage consumption of each tests is as per Table 10, then the net storage capacity of **335000cm³** can store the following no. of kits:



Figure 3: Iced Lined Refrigerator

Table 10: Calculation of no. of tests that can be stored in ILR

Kits	% Kits consumption at facility	Net storage volume divided as per kit consumption (cm ³)	Approximate no. of kits that ILR can store
HIV(Rapid) 1 st	21%	68836	50
HIV(Rapid) 2 nd	5%	18356	12
HIV(Rapid) 3 rd	8%	27534	27
WBFP	66%	220274	82
Total	100%	335000	171

- Gross volume is usually reported by the manufacturer for a given model of cold chain equipment.
- If gross volume is not available, it can be measured by multiplying the height, length and width of the internal refrigerated space as if the lid were closed.

Domestic Refrigerators

Domestic refrigerators are not recommended for storage of test kits and should be replaced with WHO approved equipment as soon as possible. When measuring the gross volume of a domestic refrigerator, do not include the vegetable storage or door areas. These areas should be loaded with water-filled coolant-packs or water bottles or otherwise be made off limits to test kits storage. The freezer compartments in domestic-style refrigerators are suitable only for preparing and storing frozen ice-packs.

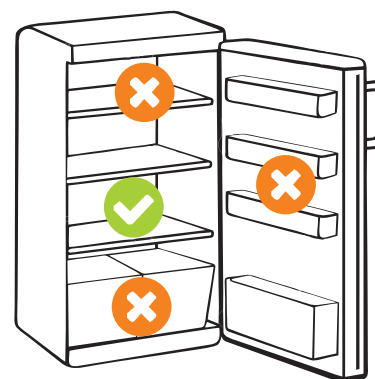
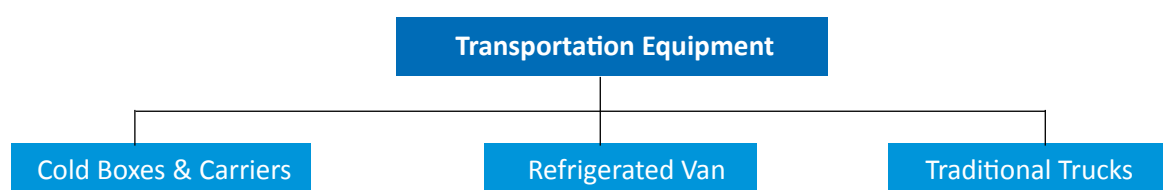


Figure 4: Domestic Refrigerator

CALCULATING COLD CHAIN TRANSPORTATION CAPACITY

To determine the available capacity for transport of test kits, it is necessary to understand how to determine net storage capacity in passive containers, refrigerated vehicles and traditional trucks



1. Calculating net storage capacity of Cold boxes and carriers

Use the following procedure to calculate the net storage capacity of cold boxes and carriers:

Step 1: Load the cold box or carrier with the number of frozen coolant-packs designated by the manufacturer.

Step 2: Measure in centimetres the minimum internal dimensions of the storage compartment, taken between the bulging internal faces of the frozen coolant-packs. When measuring the height, consider that the height will be limited by the bottom of the lid when it is in place.

Step 3: Multiply the minimum internal dimensions (length, width and height) to calculate the gross volume in cm³.

Step 4: WHO recommends multiplying the gross volume by a utilization factor of 0.67 in order to estimate net storage capacity.

2. Calculating net storage capacity of Refrigerated vehicles

In most cases, the manufacturer of each vehicle will provide a gross volume for its equipment. Calculate net storage capacity by multiplying the gross volume by the standard utilization factor of 0.67.

3. Calculating net storage capacity of Traditional trucks and vans

To calculate net storage capacity of non-refrigerated trucks or vans used to transport cold boxes, it is necessary to know both the external dimensions of the cold boxes and the internal dimensions of the cargo area of the vehicles.

Step 1: Measure internal dimensions of truck bed

Table 11: Example of dimensions of truck

Truck bed length (cm)	410
Truck bed width (cm)	171
Truck body height (cm)	173

Step 2: Measure external dimensions of passive container

Table 12: Example of dimensions of cold box

Container length (cm) + 1 cm	49.6 + 1	50.6
Container width (cm) + 1 cm	25.2 + 1	26.2
Container height (cm) + 1 cm	49.9 + 1	50.9

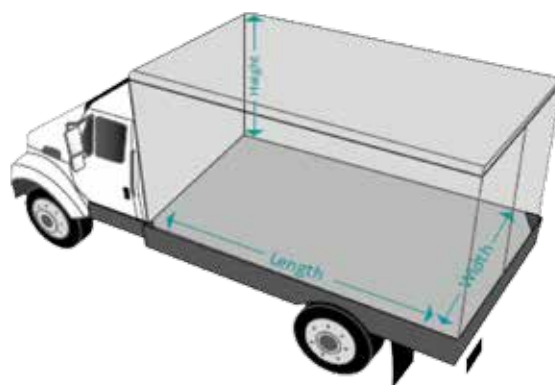


Figure 5: Traditional Truck

At least 1 cm must be maintained for clearance between cold boxes

Step 3: Determine maximum layers, considering external height of cold boxes and internal height of truck bed.

- Internal height of truck bed is 173 cm
- External height of container is 50.9cm
- Maximum number of layers= $173 \div 50.9 = 3$ layers

Step 4: Determine maximum number of containers per layer, considering external length and width of cold boxes and internal length and width of truck bed.

- Internal length of truck bed and external length of cold boxes = $410\text{cm} \div 50.6\text{cm} = 8$ boxes
- Internal width of truck bed and external width of cold boxes = $171\text{cm} \div 26.2 = 6$ boxes

- Calculated containers per layer= 8 x 6 = 48 boxes

Step 5: Calculate maximum number of containers

- Maximum number of containers per load = 48 boxes x 3 layers =144boxes

Step 6: Calculate maximum net storage capacity by multiplying maximum number of containers by net storage capacity of each container. In this example, cold box of net storage capacity of 15500cm³ are used.

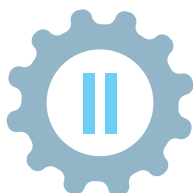
- Maximum net storage capacity = 144 boxes x 15500cm³=2232000cm³

If percentage consumption of each tests is as per Table 12, then the net storage capacity of 2232000cm³ can store the following no. of kits:

Table 13: Calculation of no. of tests accommodated in cold boxes in traditional trucks

Kits	% Kits consumption at facility	Net storage volume divided as per kit consumption	Approx no. of kits that a truck with cold boxes can store
HIV(Rapid) 1 st	21%	458630	336
HIV(Rapid) 2 nd	5%	122301	81
HIV(Rapid) 3 rd	8%	183452	179
WBFP	66%	1467616	546
Total	100%	2232000	1142

With vehicles, it is also important to aggregate the weight of the cold boxes to determine if the maximum weight of the load is within limits. If not, then the number of cold boxes must be reduced, bringing the weight within limit and reducing the total net storage capacity of the vehicle.



INDENT FORM

DISTRICT:

REFERENCE NO.:

MAXIMUM MONTH OF STOCK LEVEL:

to:

(DD/MM/YY)

1

MAXIMUM MONTHS OF STOCK LEVEL: _____

MINIMUM MONTHS OF STOCK LEVEL: _____

INDENT PREPARED BY: _____
 (FULL NAME, DESIGNATION)
INDENT APPROVED BY: _____
 (FULL NAME, DESIGNATION)

 SIGNATURE

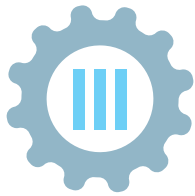
 DATE

Indent Form Job Aid

Indent Form Job Aid	
Purpose	Tracks the movement of information and commodities between higher level and lower level – from request to issue and to receipt. It is used to: - Place indents - Issue commodities against an indent - Record receipt
Facilities Where Used	All facilities
Used to Make These Decisions	- Determine how much to indent and issue - Confirm commodity levels at any point in time
Using the following instructions, fill in each field in the overview section:	
How to Complete “Part 1” section—	
1. Facility Name	Note the name of the facility who is making the indent
2. District	Note the name of the district where this facility is located
3. Date Prepared	Note the date that the indent is prepared on (use the following pattern: MONTH / DATE / YEAR (e.g. DD / MM / YYYY))
4. Reference No.	This number is a unique identifier used to track Indent from start to finish.
5. Reporting Period	Note the reporting period during which this indent is being placed
Using the following instructions, fill in each field in the tracking section:—	
How to Complete “Part 2” Section—	
THE INDENTER COMPLETES THESE FIELDS	
6. S. No.	Number each line (e.g. the first line is #1)
7. Product	Note the name of the product being indented
8. Unit of Measure	Note the unit of measure for the product being indented
9. Opening Balance....	Look in the Stock Register and find the opening balance for the reporting period for the commodity being indented. Record this number. This is “A”.
10. Quantity Received...	Look in the Stock Register and find the quantity received for the commodity being indented during this reporting period. Record this number. This is “B”.
11. Quantity Consumed...	Look in the Stock Register and find the quantity consumed for the commodity being indented during this reporting period. Record this number. This is “C”.
12. Physical Count	Record the number of commodities noted during the Physical Count. This is “D”.
13. Losses	If any losses are noted in the Stock Register, Bin Card, and/or found during physical count, record this number as a negative number. This is “E”.
14. Adjustments	If any adjustments are noted in the Stock Register, Bin Card, and/or found during physical count, record this number as a negative OR positive number depending on if it's an adjustment INTO the facility (which would be positive) or OUT of the facility which would be negative). This is “F”.
15. Closing Balance/ Stock on Hand	Determine your closing balance (this is “G”). Check the accuracy of the balance after recording your physical count by: - Add Opening Balance (“A”) and “Quantity Received (“B”) - Subtract Quantity Consumed (“C”) - IF any, subtract losses or negative adjustments (“E”) - IF any, add positive adjustments (“F”)
16. Days Out of Stock	If the commodity was out of stock for any days, note the number of days. This is “H”.

17. <i>Average Monthly Consumption (AMC)</i>	Following the SOP, compute the average monthly consumption for the commodity being indented. This number is key as it will be used to ensure that enough commodities are indented to cover future anticipated consumption. This is “I”.
18. <i>Max Months of Stock (MOS) Quantity</i>	Multiply the max stock level as determined by the SOP by the AMC. This will tell you the absolute most quantity you should indent to meet demand. This is “J”
19. <i>Quantity on Order</i>	Look at past indents and determine if any commodities have been ordered but not yet received. If there are any commodities on order, note this amount. (We do this to prevent double ordering!) This is “K”.
20. <i>Quantity Requested</i>	Determine indent quantity (L) by: • Find “max stock quantity” (“J”) • Subtract “closing balance” (“G”) • Subtract “quantity on indent” (“K”)
21. <i>Signatures (bottom of form)</i>	When indent is prepared and approved, it needs to be signed and dated: • The person preparing the indent should sign with name and designation and signature and record the date of preparation • The person who approves the indent should sign with name and designation and signature and record the date of approval





Issue and Receive Form



सत्यमेव जयते



Issues and Receive (IR) Form

FROM FACILITY
NAME/ADDRESS: _____

DISTRICT: _____

TO FACILITY
NAME/ADDRESS: _____

FORM NO: (pre-printed number) _____

DATE FORM
PREPARED: _____

CONTACT
DETAILS _____

(MONTH, DATE, YEAR)

S. No.	Product	UoM*	Indent Quantity (Ref No.)	Batch No.	Expiry Date	Issue Quantity	No. Boxes	Received Quantity	Remarks
1									
2									
3									
4									
5									
6									

Issues by: _____ Signature: _____ Date: _____
(FULL NAME, DESIGNATION)

Transported by: _____ Signature: _____ Date: _____
(FULL NAME, DESIGNATION)

Received by: _____ Signature: _____ Date: _____
(FULL NAME, DESIGNATION)

- Unit of Measure

Issue and Receive Form Job Aid

Issue and Receive Form Job Aid	
Purpose	Tracks the movement of information and commodities between higher level and lower level – from issue to receipt. It is used to: • Issue commodities against an indent • Record receipt
Facilities Where Used	All facilities
Used to Make These Decisions	• Issue commodities as per the approved indent • Confirm commodity levels at any point in time
<i>Using the following instructions, fill in each field in the overview section:</i>	
<i>How to Complete “Part 1” section—</i>	
1. <i>From Facility Name/Address</i>	Note the name and address of the facility who is issuing
2. <i>District</i>	Note the name of the district where this issuing facility is located
3. <i>To Facility Name/Address</i>	Note the name and address of the facility who is receiving
4. <i>Form No.</i>	pre-printed number
5. <i>Date Form Prepared</i>	Note the date that the indent is prepared on (use the following pattern: MONTH / DATE / YEAR (e.g. MM / DD / YYYY))
6. <i>Contact Details</i>	Note the contact details of receiver e.g. Pharmacist
<i>Using the following instructions, fill in each field in the tracking section:</i>	
<i>How to Complete “Part 2” Section—</i>	
THE ISSUER COMPLETES THESE FIELDS	
7. <i>S. No.</i>	Number each line (e.g. the first line is #1)
8. <i>Product</i>	Note the name of the product being issued
9. <i>UOM*</i>	Note the unit of measure for the product being issued
10. <i>Indent Quantity (Ref.no.)</i>	Note the Indent Form number
11. <i>Batch no</i>	Note the batch number of product
12. <i>Expiry Date</i>	Note the expiry date of the products
13. <i>Issue quantity</i>	Note the quantity issued
14. <i>No. boxes</i>	Note the total number of boxes
15. <i>Received Quantity</i>	Note the total quantity received by receiving facility
16. <i>Remarks</i>	Note any important information for issuing facility
17. <i>Signatures (bottom of form)</i>	When Issues / Receive Form is prepared and completed, it needs to be signed and dated: • The person who issues the product g should sign with name and designation and record the date of preparation of IR Form • The person transporting the commodities should sign with name and designation and record the date of delivery • The person who receives the issue should sign with name and designation and record the date of receipt



Bin Card



BIN CARD

FACILITY NAME: _____	DISTRICT: _____
BIN CARD NO.: (pre-printed number) _____	STOCK REGISTER NO.: _____
PRODUCT: _____ (PRODUCT NAME, DOSAGE FORM, STRENGTH)	UNIT OF MEASURE: _____
LOCATION: _____	BATCH NO.: _____
	EXPIRY DATE: _____ (MONTH, YEAR)

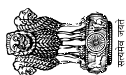
Date (DD/MM/YY)	Indent Form Reference No.	Quantity			Balance	Signature	Remarks
		Received	Issued	Losses and Adjustments			
	<i>Balance Brought Forward</i>						
	<i>Balance Carried Forward</i>						

Bin Card Job Aid

Bin Card Job Aid	
Purpose	Records information about a single product by lot number or batch number: • Every item recorded on a Bin Card, in that lot, will have the same expiry date. • Tracks where a commodity is in a given facility and at what quantity levels.
Facilities Where Used	SACS and Regional Warehouse
Used to Make These Decisions	• Set commodity levels that we would like to keep in the store in indent to meet demand • Confirm commodity levels at any point in time • Decide how much to indent • Inform FEFO distribution/ where to issue commodity
<i>Using the following instructions, fill in each field in the overview section:</i>	
<i>How to Complete "Part 1" section—</i>	
1. Facility Name	Note the name of the facility where this Bin Card is being used
2. District	Note the name of the district where this Bin Card is being used
3. Bin Card No.	This number is pre-printed and used as an accounting method to track a particular batch
4. Stock Register No.	Note the page number of the Stock Register where this same commodity is being tracked
5. Product:	Note the product being recorded on this Bin Card and record the following: • Product Name • Dosage Form • Strength
6. Unit of Measure	Note the unit of measure for the particular commodity
7. Batch No.	Note the batch number for this particular commodity
8. Location	Note the shelving location in the store or warehouse (if not applicable, skip)
9. Expiry Date	Note the Expiry Date for the particular commodity in this format: MONTH / YEAR (e.g. MM/ YY)
<i>Using the following instructions, fill in each field in the tracking section:</i>	
<i>How to Complete "Part 2" Section—</i>	
10. Balance Brought Forward	When a new Bin Card is being started, find the closing balance from the previous Bin Card which is now full. That closing balance from the full Bin Card now becomes the opening balance on this new Bin Card.
11. Date	Note the date that the commodity is being received, issued, or adjusted/loss noted
12. IR Form Ref No.	Note the IR Form reference number on which the commodity is being moved so that both forms can be connected and the movement of the commodity can be traced
13. Received	If a commodity is received into the store and it is the same batch/lot number, record the quantity being received (remember only one batch/lot is recorded per Bin Card)
14. Issued	When a commodity is issued, record the quantity being issued
15. Losses & Adjustments	When a commodity loss or adjustment is being noted, record the quantity that was lost or being adjusted. • A loss can be due to any reason including damages, expiry or pilferages • An adjustment is when commodity is received from a facility, or moved to a different facility but this adjustment must be from the SAME batch or lot. If it is a different batch/lot then a new Bin Card must be started.
16. Balance	Once commodities are received, issued, or losses/adjustments are noted, calculate the new balance by either: • Adding receipts and/or inbound adjustments • Subtracting issues and/or losses and/or outbound adjustments
17. Signature	All receipts, issues, and/or losses/adjustments should be noted with a signature of the person who received, issued, or recorded loss/adjustment
18. Remarks	Explain all losses and adjustments and any other if needed. If needed, note any relevant remarks or clarifying details.



Stock Register



STOCK REGISTER



PRODUCT:

(PRODUCT NAME, DOSAGE FORM, STARTING)

PRODUCT
CODE:

UNIT OF
MEASURE:

MAXIMUM MONTHS OF STOCK LEVEL: _____

MINIMUM MONTH OF STOCK LEVEL: _____

S.NO.	TRANSACTION DATE (DD/MM/YY)	RECEIVED FROM/ ISSUED TO	INDENT & RECEIPT FORM REF. NO. (IR/STN)	BATCH NO.	EXPIRY DATE (MM/YY)	QUANTITY RECEIVED (+)	QUANTITY ISSUED (-)	LOSS OR ADJUSTMENT (+ OR -)	BALANCE	REMARKS	NAME/SIGNATURE
BALANCE BROUGHT FORWARD											
BALANCE CARRIED FORWARD											

PAGE NO.:

Stock Register Job Aid

Stock Register Job Aid	
Purpose	Records all detailed information known about a commodity in a given location. - Records information about all the lots or batches of a single product. - It may be a summary of many bin cards for a particular product in facilities where bin cards are being used.
Facilities Where Used	All facilities
Used to Make These Decisions	- Confirm commodity levels at any point in time - Decide how much to indent - Inform FEFO distribution / where to issue commodity
<i>Using the following instructions, fill in each field in the overview section:</i>	
How to Complete "Part 1" section—	
1. Facility Name	Note the name of the facility where this Stock Register is being used
2. District	Note the name of the district where this Stock Register is being used
3. Product:	Note the product being recorded on this Stock Register and record the following: - Product Name - Dosage Form - Strength
4. Item Code	Note the item code for the commodity being recorded on this form
5. Unit of Measure	Note the unit of measure for the particular commodity
<i>Using the following instructions, fill in each field in the tracking section:</i>	
How to Complete "Part 2" Section—	
6. Balance Brought Forward	When a new Stock Register is being started, find the closing balance from the previous Stock Register which is now full. That closing balance from the old now becomes the opening balance on this new Stock Register.
7. S. No.	Number each line (e.g. the first line is #1)
8. Transaction Date	Note the date that the commodity is being received or issued from the store in the following format: DAY / MONTH / YEAR (e.g. DD/ MM / YY)
9. Received from / Issued To	Note the facility who is: - Issuing the stock to this store OR - Receiving the stock FROM this store
10. Order / IR Form Reference No.	Note the reference number for the Purchase Order or IR Form on which the product was issued
11. Batch No.	Note the batch number for the product being received or issued
12. Expiry Date	Note the Expiry Date for the particular commodity in this format: MONTH / YEAR (e.g. MM / YYYY)
13. Quantity Received (+)	Note the quantity of the commodity being received
14. Quantity Issued (-)	Note the quantity of the commodity being issued
15. Loss / Adjustment	If applicable, note any losses or adjustments: - Record losses as a negative number (e.g. expiries, damages etc.) - Record adjustments INTO the facility as a positive number (transfer -in) - Record adjustments OUT of the facility as a negative number (transfer-out)
16. Balance	Determine your closing balance by: - Take Opening Balance and either add the receipt or subtract the issue - If applicable, add adjustments - If applicable, subtract losses or negative adjustments
17. Remarks	Where needed, make remarks about receipts or issues or losses or adjustments
18. Balance Carried Forward	When the page is filled in, note the closing balance. This balance is carried forward and is the opening balance on the next page.



VI RTD Form



Return, Transfer and Discard (RTD) Form

FROM FACILITY
NAME: _____

DISTRICT: _____

TO FACILITY
NAME: _____

FORM NO: (pre-printed number) _____

DATE FORM
PREPARED: _____

(MONTH, DATE, YEAR)

S. No.	Product	Unit of Measure	Batch No.	Quantity	Expiry Date	IR Form Reference No.	Reason for Transfer/Discard
1							
2							
3							
4							
5							
6							

Return/Transfer/
Discard Prepared by: _____ Signature: _____ Date: _____
(FULL NAME, DESIGNATION)

Return/Transfer/
Discard Approved by: _____ Signature: _____ Date: _____
(FULL NAME, DESIGNATION)

Return/Transfer/
Discard Accepted by: _____ Signature: _____ Date: _____
(FULL NAME, DESIGNATION)

RTD Form Job Aid

Return / Transfer/ Discard (RTD) Form Job Aid	
Purpose	Tracks the return, discard, transfer or discard of commodities: • If commodities are being returned for any reason, note commodities being returned • If damaged, dispose as per State Government policy - note commodities being disposed at facility or being returned to issuing facility for safe disposal • If commodities are being transferred from one facility or another for any reason, note commodities being transferred
Facilities Where Used	All facilities
Used to Make These Decisions	• Confirm commodity levels at any point in time • Decide how much to indent • Inform FEFO distribution/ where to issue commodity
<i>Using the following instructions, fill in each field in the overview section:</i>	
How to Complete "Overview" section—	
1. From Facility Name	Note the name of the facility who is initiating the return, transfer, or discard
2. District	Note the name of the district of the facility who is initiating the return, transfer or discard
3. To Facility Name	Note the name of the facility who is receiving the return, transfer or discard
4. Form No.	This number is pre-printed and used as an accounting method to track a return, transfer
5. Date Form Prepared	Note the date that the form is prepared on (use the following pattern:DATE / MONTH / YEAR)
<i>Using the following instructions, fill in each field in the overview section:</i>	
How to Complete "Form" section—	
6. S. No.	Number each line (e.g. the first line is #1)
7. Product	Note the name of the product being returned, transferred or discarded
8. Unit of Measure	Note the unit of measure for the product being returned, transferred, or discarded
9. Quantity	Note the quantity of product being returned, transferred , or discarded
10. Expiry Date	Note the expiry date of product being returned, transferred, or discarded
11. IR Form Reference No.	Note the reference number for the original IR Form on which the product was originally issued
12. Reason for return/ transfer/discard	Note the reason for the return, transfer or discard
13. Other comments or reasons for return/ transfer/discard:	Note any additional comments or information for a return, transfer or discard, as needed.
THE ISSUER COMPLETES THESE FIELDS:	
14. Signatures (bottom of form)	When return/discard/ transfer form is prepared and approved, it needs to be signed and dated: • The person preparing the return/ transfer/ discard should sign with name and designation and signature and record the date of preparation • The person who approves the return/ transfer/ discard should sign with name and designation and signature and record the date of approval
THE RECEIVER COMPLETES THESE FIELDS:	
15. Signatures (bottom of form)	When return/ transfer/ discard is accepted, it needs to be signed and dated: • The person accepting the return/ transfer /discard should sign with name and designation and signature and record the date of acceptance



Goods Receipt Note (GRN)



GOODS RECEIPT NOTE (GRN)

INDENT NO.	GRN NO.	GRN DATE

DOCUMENTATION DELIVERED WITH GOODS		DETAILS
☐	Waybill No. (AWB No.) /Docket No.	
☐	Supplier Tax Invoice No.	
☐	Supplier Packing List	
☐	(Other)	
DESCRIPTION OF INDENT STATUS		DETAILS
☐	Complete Order	
☐	Part shipment with the balance pending	
☐	Final shipment completing the Order	
☐	Part shipment with balance from PO cancelled	

PLEASE COMPLETE ONE GRN PER DELIVERY							
Line No.	Item Code	Item Description	UoM	Qty. on PO/NOA	Qty. Received	Discrepancy	Comments (damaged/ Incorrect items)
1.							
2.							
3.							
4.							
5.							

SUPPLIER

Name: _____
 Company/Organization: _____
 Position: _____
 Date: _____
 Transport Details: _____
 Signature: _____

STAFF RECEIVING GOODS

Name: _____
 Company/Organization: _____
 Position: _____
 Date: _____
 Transport Details: _____
 Signature: _____

Goods Receipt Note Job Aid	
Purpose	Goods Received Note is the record of goods received by the store in-charge/ pharmacist. After receiving the goods, stock ledger is updated mentioning the GRN number along with the date of receipt.
Facilities Where Used	SACS and Regional level stores
Used to Make These Decisions	- Make a physical survey regarding the number of packs, physical conditions etc. - Open the packs, mark them and make physical verification of the quantity received. This verification to be made with the challan and the indent - If any disputed or short materials found, then inform to the supplier/ procurement agent/ NACO
Using the following instructions, fill in each field in the 'DOCUMENTATION DELIVERED WITH GOODS' section:	
16. Way Bill No. (AWB)/ Docket No.	Enter the docket details, AWB number received along with the consignment
17. Supplier Tax Invoice No.	Enter the unique Tax Invoice No. (from supplier) or Issue -cum-acknowledgement No. (from procurement agent)
18. Packing List	Check and Enter whether items supplied is in accordance with the Packing List items
19. Other	Mention any other additional documents like Batch Quality Certificate etc. along with the consignment
Using the following instructions, fill in each field in the 'DESCRIPTION IN INDENT STATUS' section:	
1. Complete Order	Tick when the entire quantity indented has been received in one time
2. Part shipment with the balance pending	Tick when only a part quantity has been received and mention the balance quantity pending for delivery
3. Final shipment completing the Order	Tick when the last lot scheduled against the indented quantity has been received
4. Part shipment with balance from PO cancelled	Tick when the part lot or supply against the indented quantity has been received and mention the quantity that has been cancelled for supply
Using the following instructions, fill in each field in the overview section:	
How to Complete "Form" section—	
1. Product Code	Enter the unique Item or Product Code in short
2. Product Description	Describe the product/commodity mentioning the correct name, dosage, if applicable
3. Unit of Measurement (UoM)	Mention the unit in which this product is counted or measured
4. Quantity on PO/LOA	Mention the quantity which is written on the AWB/docket/Invoice/PO/LOA
20. Quantity Received	Physically count the quantity received and mention the quantity
21. Discrepancy	Subtract the Quantity received from the Quantity on PO/LOA and mention the units. In case the result is zero, then mention it as 'Nil' discrepancy
22. Comments (damaged / incorrect items)	In case of positive or negative number, mention the quantity and comments along with
THE SUPPLIER COMPLETES THESE FIELDS:	
23. Signatures (bottom of form)	When GRN is prepared and approved, it needs to be signed and dated: The person delivering the consignment should sign with name, company, designation and signature, transport details and record the date of preparation
THE RECEIVER/STAFF RECEIVING COMPLETES THESE FIELDS:	
24. Signatures (bottom of form)	When GRN is prepared and approved, it needs to be signed and dated: The person accepting the GRN should sign with name, designation and signature and record the date of acceptance



DAILY DISPENSING REGISTER (DDR)

Note: Separate page should be maintained for each day

DDR PAGE NO.::

DATE:

		No. of Tablets Dispensed (The drugs should be issued in tablets)	Patient Signature/ Thumb Impression
		TLE	
		ZLN	
		ZL	
		TL	
		EFV	
		NVP	
		AL	
		ATVR	
		LPVR	
		RAL	
		RTV	
		DRV	
		OTHERS	
		OTHERS	
		OTHERS	
		OTHERS	
		OTHERS	
		OTHERS	
		OTHERS	
		OTHERS	
		OTHERS	
		Next Visit Date	
		Remarks/Pill Count/ Advance Event of Drugs	
		Patient Signature/ Thumb Impression	
		SUBTOTAL QUANTITY DISPENSED (PAGE)	



PREPARED BY: _____
DESIGNATION: _____
SIGNATURE: _____
DATE: _____

DDR Form Job Aid

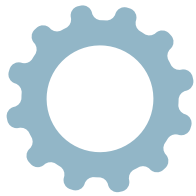
Daily Dispensing Register (DDR) Job Aid	
<i>Purpose</i>	Gathers data on how many commodities are being dispensed at a particular facility. - Records the quantity of each product received by a customer (by name or client number) and by date. - At the last section of the DDR, the total quantity dispensed or used is calculated for each product and then used for reporting purposes.
<i>Facilities Where Used</i>	Service Delivery Point, e.g., ART, LAC, SA-ICTC, FICTC
<i>Used to Make These Decisions</i>	- Set commodity levels that we would like to keep in the store to meet demand - Decide how much to indent - Confirm commodity levels at any point in time
<i>Using the following instructions, fill in each field in the overview section:</i>	
<i>How to Complete "Part 1" section—</i>	
1. <i>Facility Name</i>	Note the name of the facility where this Daily Dispensing Register is being used
2. <i>District</i>	Note the name of the district where this Daily Dispensing Register is being used
3. <i>Daily Dispensing Register Reference No.</i>	This number is pre-printed and used as an accounting method to track a particular register
<i>Using the following instructions, fill in each field in the tracking section:</i>	
<i>How to Complete "Part 2" Section—</i>	
4. <i>Date</i>	Note the date when a commodity is issued to a patient
5. <i>Patient Name</i>	Note the name of the patient to whom the commodity is being issued
6. <i>Quantity Issued</i>	Find the commodity that is being issued to the client and record the quantity of that commodity being issued
<i>At the bottom of each page:</i>	
7. <i>Subtotal Quantity Dispensed (page)</i>	When a page is filled up, add up the total for how many commodities have been issued and note the total in the bottom row
<i>At the end of the month:</i>	
8. <i>Total Quantity Dispensed (All pages to date this month)</i>	At the end of the month, add up the total for each of the different commodities issued in that month and note the total in the bottom row on the last page



SOP for Supply Chain Management under NACP

Monthly/Quarterly Stock Report (MSP/QSP) Job Aid

Monthly/ Quarterly Stock Report Job Aid	
Purpose	Records all detailed information known about a commodity in a given location for a given reporting period at State level - Records information about all the lots or batches of a single product. - Records information on all inventory transaction of a single product. .
Facilities Where Used	All Facilities
Used to Make These Decisions	- Confirm commodity levels at any point in time - Decide how much to indent - Informed FEFO distribution / when to issue commodity
<i>Using the following instructions, fill in each field in the overview section:</i>	
How to Complete “Part 1” section—	
1. Facility Name	Note the name of the facility where this Monthly/Quarterly Stock Report is being used
2. SACS	Note the name of the SACS where this Monthly/Quarterly Stock Report is being used
3. Date Prepared	Note the date on which the stock report is being prepared
4. Reference No.	Note the reference number for record on this form
5. Reporting Period	Note the reporting period for which the stock information is being used
6. Maximum Months of Stock Level	Note the maximum months of stock level maintained at the facility
7. Minimum Months of Stock Level	Note the minimum months of stock level maintained at the facility
<i>Using the following instructions, fill in each field in the tracking section:</i>	
How to Complete “Part 2” Section—	
8. S. No.	Number each line (e.g. the first line is #1)
9. Products/ Commodities	Note the product/commodities being recorded on this Monthly/Quarterly Stock Report
10. Unit of Measure	Note the unit of measure for the particular product/commodity
11. Batch No.	Note the batch number for the product/commodity being received or issued
12. Expiry Date	Note the Expiry Date for the particular product/commodity in this format: MONTH / YEAR (e.g. MM / YYYY)
13. Manufacturer	Note the name of the manufacturer of the particular batch
14. Initial Stock	Note the initial or the opening stock on the first day of the reporting period
15. Receiving	Note the quantity of the commodity received during the reporting period
16. Issue	Note the quantity of the commodity issued during the reporting period
17. Transfer	Note the quantity of the commodity transferred to other facility during the reporting period
18. Loss / Adjustment	If applicable, note quantity of any losses or adjustments during the reporting period: - Record losses as a negative number (e.g. expiries, damages etc.) - Record adjustments INTO the facility as a positive number (transfer -in) - Record adjustments OUT of the facility as a negative number (transfer-out)
19. Stock on Hand at SACS and Regional Level	Determine the final Stock on Hand or closing balance on the last day of the reporting period by: - Take Opening Balance and either add the receipt or subtract the issue or transfers - If applicable, add adjustments - If applicable, subtract losses or negative adjustments
20. Stock on Hand of Facilities at lower tier	Add and note the total quantity of stock available at all facilities at the lower tier, as reported on the last day of the given period
21. Final Stock on Hand	Add the available stock quantity at SACS/Districts/Facility and stock on hand of the facilities at lower tier to arrive at final stock on hand available for the reporting period
22. Report Sign-Off	Note the name, designation, signature and date of the person preparing and approving the monthly or quarterly stock report.



References

1. *USAID | DELIVER PROJECT, Task Order 1. 2011. The Logistics Handbook: A Practical Guide for the Supply Chain Management of Health Commodities. Arlington, Va.: USAID | DELIVER PROJECT, Task Order 1.*
2. *Guidelines for the Storage of Essential Medicines and Other Health Commodities John Snow, Inc./DELIVER. 2003.*
3. *Strategic Supply Chain Management, Second Edition, The Five Disciplines for top performance | Shoshanah Gohen & Joseph Roussel*
4. *USAID | DELIVER PROJECT, Task Order 4. 2014. Guidelines for Warehousing Health Commodities. Arlington, Va.: USAID | DELIVER PROJECT, Task Order 4. Second edition (First edition 2005)*
5. *How to calculate vaccine volumes and cold chain capacity requirements. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.*

