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SIERRA LEONE: CAPACITY BUILDING IN SUPPLY CHAIN MANAGEMENT FOR ARV DRUGS

ARV DRUGS LOGISTICS SYSTEM DESIGN NATIONAL HIV/AIDS
SECRETARIAT / MINISTRY OF HEALTH AND SANITATION

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HIV/AIDS SECRETARIAT / MINISTRY OF HEALTH AND
SANITATION**

USAID | DELIVER PROJECT, Task Order 1

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ABSTRACT

April 2007, the National HIV/AIDS Secretariat (NAS) with technical assistance from the USAID | DELIVER PROJECT funded by USAID | West Africa, conducted an assessment of the supply chains for managing ARV drugs and HIV test kits in support of the national response to HIV/AIDS in Sierra Leone. The assessment recommended a design of logistics system.

In January 2008, the National HIV/AIDS Secretariat (NAS) with technical assistance from the USAID | DELIVER PROJECT funded by USAID | West Africa, designed a logistics system for ARV drugs. This report presents the methods used to design the logistics system, the in country pipeline, the inventory control system, the logistics forms that will be used to manage the information by collecting logistics essential data and the implementation plan of the design in Sierra Leone.

USAID | DELIVER PROJECT

John Snow, Inc.

1616 Fort Myer Drive, 11th Floor

Arlington, VA 22209 USA

Phone: 703-528-7474

Fax: 703-528-7480

E-mail: askdeliver@jsi.com

Internet: deliver.jsi.com

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ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ARG	Aids Response Group
HIV	Human Immunodeficiency Virus
KATH	Komfo Anokye Teaching Hospital
LMIS	Logistics Management Information System
MOHS	Ministry of Health
NACP	National HIV/AIDS Control Program
NAS	National HIV/AIDS Secretariat
PHU	Peripheral Health Unit
SDP	Service Delivery Point
SOW	Statement Of Work
UNAIDS	United Nation Programme on HIV/AIDS
UNICEF	United Nations International Children's Emergency Fund
USAID	U.S. Agency for International Development
WHO	World Health Organization

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The ARV Logistics System Review team would like to extend special recognition and thanks to NAS/ MOHS collaborators for providing the team the opportunity to visit their facilities in order to prepare and organize the design workshop.

The team would also like to thank representatives from MOHS, WHO, UNAIDS, UNICEF, and USAID for attending the briefing organized before the workshop.

The authors thank the National HIV/AIDS Secretariat/ Ministry of Health and Sanitation for their support throughout the mission.

The authors would like to acknowledge the outstanding leadership and commitment of Dr. Brima Kargbo, Director of the National HIV/AIDS Secretariat (NAS) and Dr Momodu Sesay, Program Manager NACP in supporting this activity and for the cost-sharing provided. In addition, the caliber, close collaboration, and commitment of the individuals selected by both to participate in the workshop greatly facilitated the process.

The authors would like to express much gratitude and respect for their colleagues, Ms Phyllis Ocran and Mr. Anthony Mensah AWARE/KATH consultants; Mr. Moi-Tenga Sartie, NAS/MOHS M & E Officer and Mr. Kiskama Swarray, M & E ARG/NAS who took an active part in the whole process of reviewing the actual system and designing the new ARV system.

All the organizers and participants that contributed to this special initiative took time from their busy schedule to attend the workshop, interact with the team, provide information, and answer pertinent questions that enabled the team to facilitate the ARV drugs logistics system design; they deserve sincere gratitude for their involvement and participation.

The team hopes that this technical assistance and the ensuing results of the system design will enable NAS/MOHS to strengthen their capacity to manage ARV drugs and to respond to the need for a reliable and consistent supply chain management in Sierra Leone.

EXECUTIVE SUMMARY

The National HIV/AIDS Secretariat (NAS) with technical assistance from the USAID | DELIVER PROJECT funded by USAID | West Africa, designed a logistics system for ARV drugs.

The exercise was done in three main steps: the first week consisted of site visits and meetings with different stakeholders; the second week the system design took place; and in the last week decisions taken during the design were confirmed and preparation of the Standard Operating Procedures Manual for ARV in Sierra Leone began.

The system design was successfully completed with outstanding support from Dr. Brima Kargbo, Acting Director of the National HIV/AIDS Secretariat (NAS), and the participation of 26 participants selected from NAS and MOHS. All levels in the system were represented. AWARE consultants from Ghana contributed as well. Participants set the Inventory Control System and selected the forms for the Logistics Management Information System.

Participants worked in great collaboration, and in working in small groups they came up with many suggestions as a group. By the end of the workshop they were ready to present their suggestions to stakeholders.

Summary of System Design and Recommendations

The system adopted is Forced Ordering version with three levels (central – district – peripheral health unit). Between National and Districts they will use a quarterly Review Period; between Districts and Peripheral Health Unit (PHUs) it is a monthly Review Period.

The system will be “Push” between National and Districts and “Pull” between Districts and PHUs.

The LMIS will have a Feedback Report and Report to Return Products in the system. They designed a report that includes a request and has an issue voucher.

All forms will be pre-printed and the reports that require many copies will be carbonated.

Report summary:

In this document the reader will find:

- NAS / MOHS background information with the list of all its collaborating partners
- The methodology used during the pre-design and the design (tools used and suggestions from the design)
- Recommendations from the design
- The annexes that include many documents used and also it has the design’s evaluation

I. BACKGROUND

USAID | AWARE, through the USAID | DELIVER PROJECT, has been supporting the Government of Sierra Leone's national response to the HIV/AIDS epidemic by strengthening supply chain management of ARV drugs and HIV test kits to support the continued scale-up of HIV and AIDS related prevention, diagnostic and treatment services. As documented in the report from the supply chain assessment conducted in April 2007, the system requires a re-design and strengthening of the current logistics systems for managing ARV drugs and HIV test kits in the country, with an emphasis on building logistics management skills of staff and institutionalizing technical capacity in quantification and procurement planning of ARV drugs and HIV test kits at NAS and the MOHS.

As part of USAID | West Africa continued support to Sierra Leone, the USAID | DELIVER PROJECT has included technical assistance activities in its 2007 workplan to strengthen supply chain management of ARVs to be able to ensure continuous availability of ARV drugs to support expansion of the national ART program in Sierra Leone. The first of these activities includes the design of an inventory control system and a Logistics Management Information System (LMIS) for monitoring and managing the ARV drug supply in the country, together with documentation of Standard Operating Procedures describing the specific logistics management tasks and responsibilities required and how they should be performed.

Purpose of the Technical Assistance:

The overall purpose of this technical assistance was to support the expansion of ART services and enhance the quality of care of the national ART program through the design of a standardized inventory control system and LMIS for ARV drugs and documentation of Standard Operating Procedures. The team of advisors from the USAID | DELIVER PROJECT in collaboration with a team from AWARE/ KATH prepared for and conducted a logistics system design workshop for antiretroviral drugs that clearly outlined the LMIS and inventory control system that will support monitoring and management of the ARV drug supply at MOHS ART sites, and will produce a Standard Operating Procedures Manual which fully documents how the system will be operated.

USAID | DELIVER PROJECT, traveled to Sierra Leone in January and met there the team from AWARE/KATH in order to conduct activities relative to the design and documentation of a logistics system for ARV drugs for the MOHS.

Activities accomplished:

1. Met with relevant NAS, MOHS and other stakeholders to review the SOW and receive guidance for the work to be conducted.
2. Met with relevant supply chain management personnel at all levels of the proposed system (central, district, service delivery point) to discuss system design issues.

3. Reviewed all documentation relevant to the design of the ARV Drug Logistics System, including previous reports and results of previously conducted assessments.
4. Established a small core of supply chain management personnel to serve as the in-country “design team” at NAS/ MOHS
5. Conducted a five-day system design workshop, attended by representative staff responsible for management of ARV drugs from all levels of the logistics system (central, regional/district, service delivery point); the design workshop provided a review of basic logistics principles and practices relevant to design and implementation of the ARV drug logistics system, and established the ARV drug logistics system to include:
 - Identifying facilities and staff who will have a role in the system, along with their specific roles and responsibilities
 - Defining the management tools that will be used to implement the system, including a Logistics Management Information System which includes both data gathering “records” and data/information sharing reports.
 - Defining the inventory control system to be used, including maximum and minimum stock levels and re-supply intervals
 - Developing procedures for ordering, issuing, receiving, and storing ARV drugs for the national program
 - Developing a strategy to ensure monitoring and supervision of the implementation of the system, and a strategy for taking corrective measures in case of system failures
 - Developing and documenting Job Aids for each of the key logistics management activities required to successfully implement, monitor and manage the ARV drug logistics system.
6. Conducted a follow-up system design meeting with a sub-group of the design team to prepare a first draft of the Standard Operating Procedures Manual.
7. Conducted site visits to selected lower level facilities (regional/district, service delivery point) if needed to gather information relevant to the design of the ARV drug logistics system or documentation of the Standard Operating Procedures.
8. Produced a final draft version of the Standard Operating Procedures Manual which will serve as the primary resource document for the design and implementation of the ARV drug logistics system.
9. Conducted pre- and post-visit briefings with local officials, stakeholders, and/or USAID as appropriate to disseminate the results of the ARV drug logistics system design technical assistance.
10. Submitted a draft summary report before departing Sierra Leone.
11. Prepared and submitted a final technical report of the activities conducted under this SOW to include any outstanding policy or technical issues to be addressed, recommendations, and a plan of action for short and medium term implementation of the ARV drug logistics system.

II. METHODOLOGY

The logistics system review and design process encompassed three distinct sets of activities: pre-design, design, and implementation activities.

Pre-Design

In reviewing and designing the ARV drugs logistics system the team of advisors analyzed specific data and information on the health system of Sierra Leone. This helped in understanding the context of the National HIV/AIDS control program and the supply chain management for ARV drugs. The team undertook three types of data gathering activities: document review; key informant interviews; and observations during site visits.

A. Document Review

Prior to the advisors' departure for Sierra Leone, the USAID | DELIVER Team read most of the technical materials developed in-country such as various reporting and recording forms, assessments and MOHS national ART guidelines. The advisors reviewed the HIV/AIDS assessment conducted by USAID | DELIVER PROJECT on ARVs and test kits, and the technical support to Sierra Leone on training of procurement and supply management system for HIV/AIDS medicines and other supplies by WHO consultants. Different forms from different countries including Sierra Leone were analyzed.

The desk research helped the advisors to better understand the ARV logistics. The following table illustrates the functions of these materials and how they contributed to the review and design of the ARV logistics system.

Materials used for Logistics System Review Design

Component	Function	Examples
Assessment Documents	Identify challenges in the system and their implication	<ul style="list-style-type: none"> • WHO: Technical support on training, procurement and supply chain management of HIV/AIDS medicines and other supplies • USAID DELIVER PROJECT: Supply Chain Assessment of ARV drugs and HIV test kits
Guidelines and Protocols	Demonstrated the types of products and the procedures that are being used and how they are being used throughout the health system	<ul style="list-style-type: none"> • Sierra Leone National Antiretroviral Treatment Guidelines • Dispensing Protocols in Sierra Leone

		<ul style="list-style-type: none"> • Guidelines for Antiretroviral Therapy in Ghana
Logistics support tools	<p>Determine forms used for data collection</p> <p>Determine what data collected</p>	<ul style="list-style-type: none"> • Stock card • Registers • Bin Card • Reports

B. Key informant interviews

Another important part of technical review was the interviewing of key informants. The key informant interviews started during the first week of the technical assistance visit. Upon arrival, the design team met with the Dr Brima Kargbo, the director of National HIV/AIDS Secretariat. In this meeting, the team discussed with the director the SOW and confirmed it by briefing him on the schedule for the three weeks.

Then the team met with NAS personnel. During the meeting NAS briefed the team on the current supply chain management situation of HIV/AIDS supplies in Sierra Leone, and the team shared the overall strategy for the design of the logistics system. The team also met several key stakeholders including representatives from UNAIDS, WHO and UNICEF. The team took this opportunity to discuss the national policies in Sierra Leone as they relate to health and HIV/AIDS control, and also key logistics functions such as storage, distribution, etc.

Interviews with key informants took place for gleaning as much information as possible about the HIV/AIDS program of the country and the supply chain for ARVs as well. These interviews provided opportunities to fill in the gaps, confirming assumptions, and clarifying issues about the current HIV/AIDS program and logistics system in Sierra Leone. The information obtained through key informant interviews was used throughout the review and design process to guide discussions and decisions. Additionally, key informant interviews provided a unique opportunity for us to ask key stakeholders and users of the system how they think the new logistics system should work and what considerations should be made throughout the process. Valuable insights came from these conversations.

Prior to each interview, the purpose of the interview as well as the specific questions to be asked were carefully mapped out. These structured questions ensured that the interviews were comprehensive enough, and yet did not require excessive time. Not only is it very costly and inconvenient to have to re-interview people, one may not get the opportunity to re-interview the informants when critical questions have not been answered completely, a situation that can seriously affect the success of the overall design.

Note: The design workshop that followed in the second week of the STTA is in itself an extension of the interview process. Participants in the workshop were regarded as repositories of data that would inform the logistics system review and design process. Therefore, the principles used in interviewing key informants were also used throughout the design workshop.

C. Site Visits

The third component of the system review process and data gathering was visiting a sample of sites within the health system for which the logistics system design was intended. The sites that were visited provided the team with a rare opportunity to get a picture of the logistics system operations on the ground. It also allowed the team to observe how the policies and procedures were being practiced, including the use of the records and reports that the team analyzed during the document review and during key informant interviews.

The team used three criteria for choosing the sites visited:

- Level of logistics operations (Central – District – Health Center (PHU))
- Type of institution (Government institution, Private)
- Geography (Urban – rural))

People and facilities visited

	Name	Title	Number of Years	Facility
1	Dr Suliaman Conteh	Medical Officer in Charge	2 years	Connaught Hospital
2	Emmanuela Anderson	Adherence Counsellor	3 ½ years	Connaught Hospital
3	Agnes Matia	Adherence Counsellor	4 months	Connaught Hospital
4	Bockarie Mansaray	Data Manager	1 ½ years	Lakka Warehouse
5	Abdul Karim Kargbo	Stores Manager	2 years	Lakka Warehouse
6	Dr Victor Matt-Lebby	District Medical Officer	1 year	Port Loko District
7	Samah Sesay	Counsellor	3 years	Port Loko
8	Nancy Ballie	Nurse	3 years	Port Loko
9	Francis Kamara	Dispenser	2 years	Port Loko
10	Sheku Umarr Koroma	CHO	4 years 7 months	Lunsar CHC
11	Fatmata Kamara	MCH Aide	13 years	Lunsar CHC
12	Ruby Dandas	MCH Aide	1 year	Lunsar CHC
13	Joseph Bangura	Dispenser	5 years	Bimkolo CHC
14	Angela Conteh	SECHN	4 years	BImkolo CHC
15	Alfred Alie	Vaccinator	6 years	Bimkolo CHC
16	Dr Adikali Kamara	Medical Superintendent	6 years	Makeni Hospital
17	Sister Hannah Koroma	Counsellor	21 years	Makeni Hospital
18	Mark Seisay	Counsellor	3 years	Makeni Hospital

Site visits are an important component of the logistics system design process in that it helps thread together separate thoughts and data that have been collected throughout the technical review process. The team used these visits to gather new information and fill in the gaps

identified during interviews. As with the key informant interviews, before going to visit a site specific questions were listed with the objective of gaining confirmation of practices and procedures found during the technical review. The team gained an understanding of when and how information moves through the system, and who is responsible for the management of logistics activities at each level of the health system, among other things.

Upon completion of the document review, key informant interviews and site visits, the team was able to map out the supply chain that included all the levels involved in the management of ARV drugs. This map included the storage and distribution of products through the health system, and also the flow of information between the levels. Finally, there was a good understanding of how logistics activities are supervised throughout the health system.

The table below shows how questions were used to identify characteristics of the Health System.

Questions to identify the characteristics of the Health System	
When choosing an Inventory Control System:	
1.	How many supply chains will be managed by the logistics system?
2.	How many products are managed by the supply chains in the health system?
3.	What is the storage capacity at each level/facility within the health system?
4.	Are there any special storage requirements (e.g. cold chain) that would affect storage capacity at each level/facility within the health system?
5.	What is the shortest shelf-life of any of the products managed in the supply chains being considered?
When choosing a Push vs. a Pull system:	
6.	Is there money in the budget allocated for logistics activities?
7.	What is the cost of collection or distribution (transport)? Is there money allocated in the budget for this activity?
When choosing an Inventory Control System or a Push vs. a Pull system:	
8.	Is the staff that will be using the system trained in logistics activities? If not, is there money in the budget allocated for training?
9.	Is there adequate staff to carry out the management of the supply chain throughout the system? What level of supervision is available?
10.	Is this a new system or a system that has had traditionally poor reporting?
11.	How many levels are in the health system?
12.	What is the existing administrative structure?

The team visited the following sites:

Freetown: Central Medical Stores at New England (where NAS keeps drugs that need cold chain), Central Warehouse at Lakka (NAS) and Connaught Hospital

Districts: Port Loko District Hospital and Makeni Government Hospital (Bombali District)

PHUs: Lunsar Primary Health Center in Port Loko District and Binkolo Community Health Center in Bombali District.

Privates: Saint John of God Catholic Hospital at Lunsar in Port Loko District

See ANNEX-C for key findings from the review of documents, key informant interviews and site visits, all of which took place before the design workshop in the second week.

Design

The design phase of the process consisted of three main activities: workshop planning, conducting the workshop, and finalization of recommendations for the newly designed logistics system. This phase provides participants with a unique opportunity to take a “hands-on” approach to system design. The pre-design preparations had been completed from a relative distance by the advisors. The design component of the process however, is the phase in which participants within the health system were actually engaged (along with the advisors) in constructing an appropriate logistics system for Sierra Leone.

A. Workshop Planning

The first step in the design phase is allocating the resources and planning the activities needed to complete the facilitation of the design workshop. Workshop planning took place concurrently during the pre-design phase.

Workshop planning consisted of three main planning activities: resource allocation, curriculum development, and design process development. When allocating resources to the task, the team carefully considered the human resources, the time, and financial resources that were necessary to complete the workshop. Perhaps the most critical to the success of the design was identifying the appropriate people to participate in the design workshop. If key stakeholders and users of the system representing all levels are not actively participating in the design process, the final design is at risk of being fatally flawed due to lack of information. NAS/MOHS director Dr. Brima Kargbo and NACP Program Manager Dr. Momodu Sesay identified the participants for the design workshop.

During the time of allocating resources the team developed a teaching curriculum for the design workshop. Curriculum development entails determining what general logistics principles should be covered in the teaching portion of the design workshop and creating a teaching guide for the facilitators of the workshop. The following topics were introduced:

- Introduction to the Workshop
- Overview on Logistics
- Overview on Logistics Management Information Systems
- Overview on Inventory Control Systems

See ANNEX F for the workshop schedule.

The team outlined the processes which it developed for participants to review the ARV drugs logistics system. The processes that would allow the participants to be most engaged in the design review workshop were selected. These included orientation to logistics principles, small group discussions, presentation to the larger group, presentation of system to representatives of the Ministry of Health and Sanitation (MOHS). These are the processes that encourage participation, and subsequently these yield the most appropriate design.

B. Design Workshop

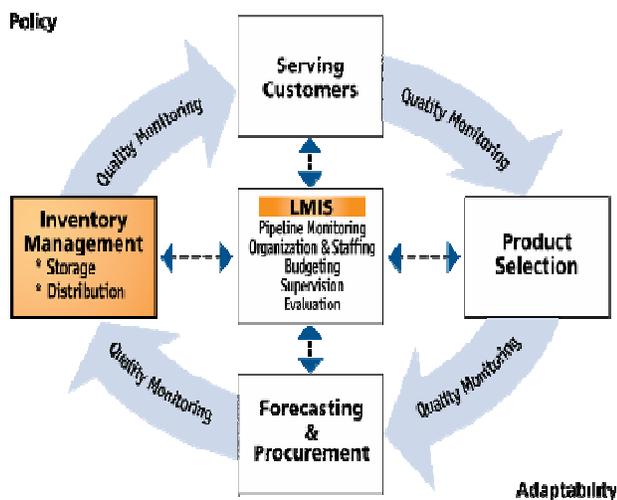
The second step in the design phase of the process was to conduct of the Logistics System Design Workshop. A conceptual pattern for the ARV drugs logistics system evolved during the pre-design phase, which was shared with the participants of the workshop in order to inform the design review process, and to share the findings from the Pre-Design phase.

The actual facilitation of the design review workshop was organized under three distinct parts: teaching, designing, and processing.

- Teaching

In order for participants to successfully review the ARV logistics system in Sierra Leone, it was deemed useful to cover principles of general logistics and specific design principles that are critical to the process. In the beginning of the design workshop the advisors reviewed the key concepts of health logistics from the curriculum developed during workshop planning, making adjustments as needed, giving due consideration to the level of experience that the participants brought to the workshop. The advisors consistently assessed the participants' level of understanding and engagement, and adjusted workshop activities accordingly. For example, particular attention was given to “storage and distribution” because it was observed during the site visits that they were a challenge for the country.

The major concepts of logistics that the participants learned was based on the logistics cycle approach that is depicted in the diagram below:



Once each of the critical logistics principles was covered the advisors were confident that the participants had gained a sufficient base knowledge in logistics, and that they would be able to start the design of the ARV drugs logistics system.

- **Designing**

Designing process began with small group work. The participants were divided into four groups and each group was given a set of specific tasks, and was expected to produce specific outcomes. The group process was planned in a manner such that each group would yield distinct design facets that could then be incorporated into a comprehensive model for the ARV drugs logistics system.

The groups' tasks are listed below (see the group's compositions and outcomes in the Annex G):

GROUP: 1

Theme: Stock management – Inventory Control System

To ensure the best distribution system, the group explored all structures in the system and their implications.

Stock Management consisted of determining the Inventory Control System:

1. Review Period
2. Lead time
3. Max –Min levels
4. Emergency Order Point

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to do the following tasks.

- Determine what type of inventory control system might be appropriate and whether a push or pull system is more appropriate.
- Set the parameters of the inventory control system at each level.
 - a. Determine the lead time
 - b. What will be the longest lead time to get ARVs? Can this be shortened by eliminating intermediate storage facilities?
 - c. What safety stock should be kept on hand at the facility level?
 - d. Set the Review Period
 - i. How often should the service delivery points order or receive ARVs?
 - ii. Take into account key factors such as shelf life of products, capacity for storage, cost of distribution, demand fluctuations, level of training/burden on personnel, budget, pipeline (levels in the system), reliability of distribution, etc.)
 - e. Based on the above set the Minimum
 - f. Set the Maximum
 - g. Set the Emergency Order Point
 - h. Check the length of the Pipeline as a result of the Max-Min levels determined. Is this too long? Can it be shortened? Is the system designed feasible?
 - i. Who should write the report? Who should receive the report
 - j. What date the report should be sent to higher level?
 - k. Describe clearly the role of each key person involved in the writing of the report.

TABLE OF REFERENCE (for decision)

Level	Review Period	Lead Time	Buffer Stock	Maximum Stock	Minimum Stock	Emergency Order Point

The group would also:

* Decide per level the type of system most suitable: « requisition » or « allocation »

GROUP 2

Theme: Logistics Management Information System (LMIS)

The LMIS is essential to the functioning of any logistics system. Without logistics data the decision, distribution system, and Inventory Control are not based on program objectives, and these would not follow the “six rights” of logistics (see the SOP for the “six rights”).

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to do the following tasks.

- What records are required to capture the essential data items? Do they already exist?
 - a. Review the existing forms and make recommendations by designing new forms if necessary.
 - b. What additional data is required on these forms apart from the three essential data items? (e.g. number of patients on ART, patients by regimen, number of new patients, number of patients switching)
 - c. Should any of the records or reports be pre-printed? Should they have carbon or carbonless copies?
- Review and produce summary reports.
- Design feedback report(s).
- How should data flow up the system? Who is responsible for recording and reporting essential data at each level?
- Who reviews the orders?
- Are approvals required for ARV orders? Who should provide approval?

GROUP 3

Theme: Storage and Distribution

Storage and distribution is very important in logistics. If the products are not kept in good condition they will lose their potency and will not be effective when taken by the user. Also even if the products are well kept if they don't reach the end users then they are worthless to the users. So a logistics system is ineffective if the storage and distribution of commodities is inadequate and should therefore draw the designer's attention.

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to do the following tasks.

- Come up with practical solutions on storage.
- How can the distribution system be improved

- Make a list of people involved in ARV in Sierra Leone at each level. Describe their roles and responsibilities

GROUP 4

Theme: Capacity Building

A logistics system needs people to make it function. In order to enable people to perform their duties, they need to know their roles and responsibilities. The personnel need to be technically sound and knowledgeable. They need to know what is required of them, the tools that can help them technically, and these tools should be available to them.

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to respond to the following questions.

- Should a Training of Trainers be organized? If yes,
 - a. Who should be trained as a trainer?
 - b. When should this training take place?
- Who should be trained in the system? Consider each level.
- Is it important to have a National Quantification Team? If yes,
 - a. How would the team function?
 - b. What are the activities that the team should conduct?
 - c. What type of reports should the team send to MOH and to the donors?
- Suggest an implementation plan for the logistics activities.
- Develop a plan of action.

THE STAKEHOLDER SYSTEM VALIDATION MEETING

Although holding a validation meeting is not a necessary step in the design process, it is highly recommended because of the many benefits it can yield. Coordinating a meeting of stakeholders is intended to bring all decision makers in one room to debrief them on the work that has been done and the current status of the health system as it pertains to logistics, and to explain to them the process in which participants have been engaged when designing the new logistics system.

The stakeholder meeting provided another vehicle through which commitment and buy-in was gained. The more transparent the design process is the more likely stakeholders are to support the process and see the design through its implementation. Also, if there are any issues, the stakeholder meeting provides a forum in which these can be raised and resolved. In the stakeholder system validation meeting, participants were given an opportunity to justify the logistics system they designed.

In Sierra Leone this validation was done by Dr. Brima Kargbo, NAS Director and Dr. Momodu Seisay, NACP Program Manager. Participants made the presentation and Dr Brima and Dr Sesay asked questions to clarify the design. On January 23, 2008 the system was presented by the advisors to the officials at the MOHS. See ANNEX I

III. RECOMMENDATIONS

This section briefly describes the technical recommendations for improving the ARV drugs logistics system.

A. Logistics Management Information System (LMIS)

It was observed that all the three relevant records are in the system. Facilities have a stock keeping record, a transaction record and a consumption record, but even though all data is being collected, it is not moving up the system, and thus not utilized for decision making.

For this reason the group suggested the use of a “Report, Request and Issues Form,” which is a tool for reporting all the three logistics data, and is also useful for tying the report to the request for ARV drugs. Use of this form would create a driving force for the ART sites to report consistently to the central warehouse situated in NAS.

The participants suggested to introduce the use of a feedback report for supervision from the central level and to inform positive actions to improve the system. See in the annex for forms suggested by participants. See ANNEX G

B. Inventory Control System (ICS)

In the absence of a standardized inventory control system for ARV drugs, supplies are managed by individual patient requirements instead of thorough monitoring and management of ARV drug consumption and stock levels. Consequently, given the relatively small number of patients on ART, even a minimal disruption of predicted consumption (patients’ loss of drugs supplied, unexpected treatment failure, unexpected increase in number of patients eligible for ART etc.) can create a stock imbalance.

Without established maximum and minimum stock levels and routine monitoring of consumption and stock on hand, it would be difficult to maintain stock levels, which would both avoid overstocking and expiry, and also ensure an uninterrupted supply of quality products in the future as ART services expand in the country. A standardized inventory control system is also needed to be able to correctly calculate order quantities for procurement, to plan shipment schedules, and to determine the correct quantities of ARV drugs to be distributed to each of the districts.

A maximum/minimum inventory control system for monitoring and managing ARV drugs was recommended by the design workshop participants.

The system is currently using “Pull” and “Push” at the same time within the same level. Some health facilities place requests, while others don’t. For some health facilities the district decides the quantity to supply, but for others it doesn’t.

In the Design Workshop, it was decided that the Pull system would be established between Districts and ART Sites and Push system between NAS and Districts.

The system is set up for ordering with an Emergency Order Point. See Participants' suggestions on the inventory control system.

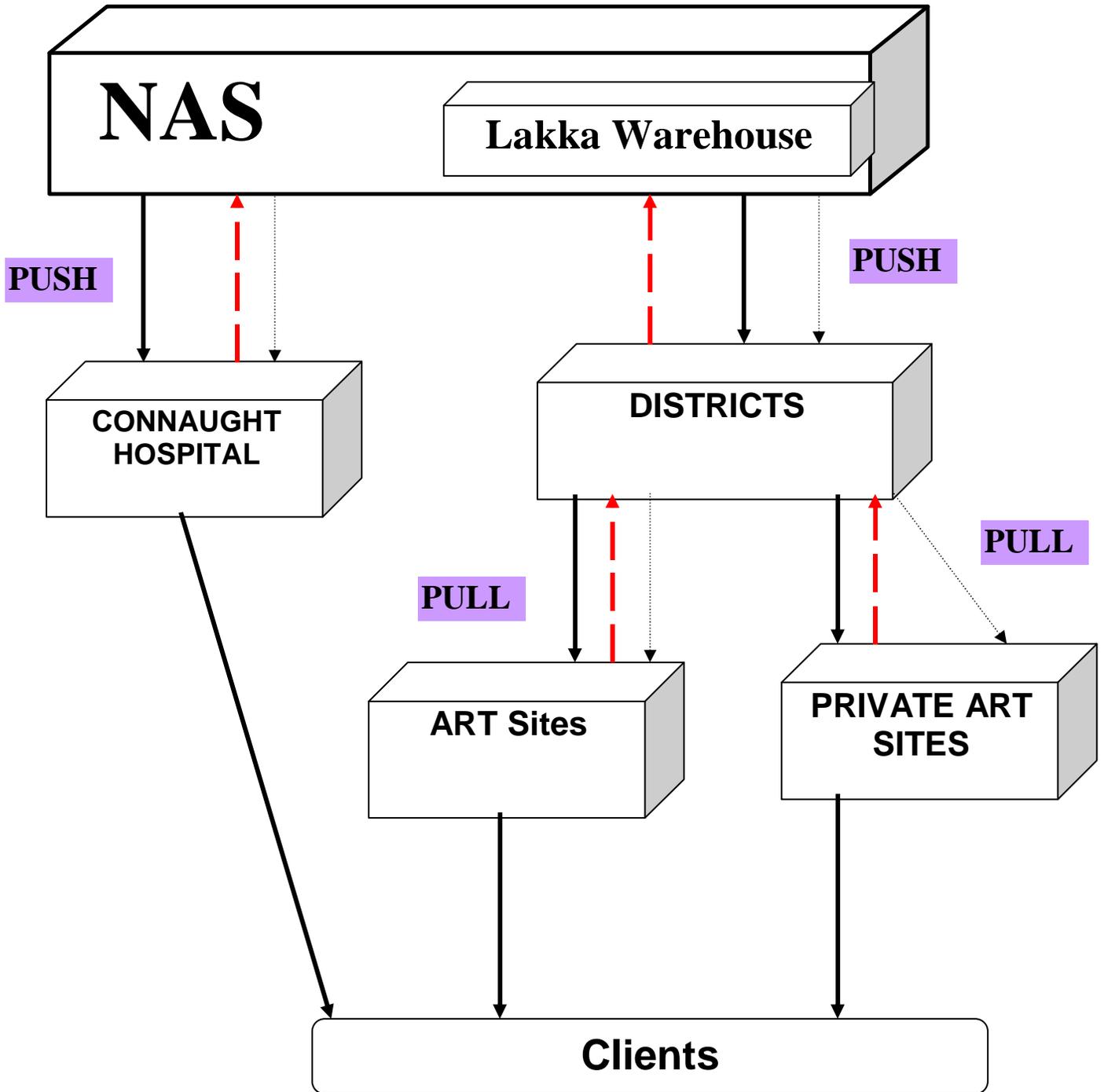
FINAL DECISION TABLE OF REFERENCE

Level	Review Period	Lead Time	Buffer Stock	Maximum Stock	Minimum Stock	Emergency Order Point
Central	3 months	5 months	2 months	10 months	7 months	3 months
District	3 months	0.5 month	2 months	5 months	2 months	0.5 month
PHU	1 month	0.5 month	0.5 month	2 months	1 month	1 week

C. Other

In order to improve the national quantification for ARV drugs participants recommend that a National Quantification Team should be put in place. The country should develop criteria of who should be the member of the National Quantification Team, what would be their mandate and how often they should meet. Then, the country should have a National Quantification Validation Team. This team should review the data after the quantification exercise and make sure that money is available to fill up the pipeline.

DESIGN PIPELINE



IV. NEXT STEPS

It will be critical for NAS to implement the recommendations from this technical assistance visit within the next six months. This will enable it to:

- ensure an uninterrupted supply of ARV drugs for the national program in the short and medium terms,
- institutionalize technical capacity in forecasting, quantification, supply planning, and inventory management of ARV drugs, and
- ultimately be able to achieve long-term sustainability and success of the national program.

A second technical assistance visit is recommended to consolidate the deliverables that have been achieved during this recent visit. The technical assistance activities for the next visit will include:

- follow-up on implementation of the recommendations from the first technical assistance visit,
- finalize the Standard Operating Procedures Manual,
- develop training curriculum for the newly designed system, and
- conduct TOT and monitor the roll-out of trainings.

The table below summarizes the key follow-on activities that should be undertaken as next steps for further improving the ARV drugs logistics system in Sierra Leone.

FOLLOW-UP ACTIONS NEEDED

Action	Person(s) Responsible	Estimated completion date	Location of Work
Finalization of the SOP	USAID DELIVER PROJECT - NAS/MOHS – AWARE/KATH	February 2008	Washington/Sierra Leone/ Ghana
Curriculum Development	USAID DELIVER PROJECT	March 2008	Washington
TOT participants selection	NAS	March 2008	Sierra Leone
Materials printed	NAS/MOHS	March 2008	Sierra Leone
TOT	USAID DELIVER PROJECT – AWARE/KATH	March 2008	Sierra Leone
Roll out training	NAS/MOHS – AWARE/KATH	April- May 2008	Sierra Leone

Establishment of a Quantification team	NAS/MOHS	April 2008	Sierra Leone
Training on quantification methods	To be determined	June	Sierra Leone
Training on formative supervision	NAS/Monitoring and supervision team	September 2008	Sierra Leone

Strategies for implementing the next steps

- Printing of forms and Standard Operating Procedures Manual by NAS/MOHS.
- Distribution should be undertaken by NAS/MOHS just as soon as people are trained in the system.
- Reinforcement of capacity (Training, Supervision). A total of 20 people will be trained as trainers; then they will train others.
- A training module will be developed by USAID | DELIVER PROJECT.
- Feedback report: NAS should develop a system that will assess all stock status and it will be shared with all sites every three months.

V. ANNEXES

- Annex A: Critical Steps in Designing an Inventory Control System
- Annex B: Assessment Tool Questionnaire
- Annex C: Key Findings in the System
- Annex D: List of Key Persons Interviewed
- Annex E: Goal and Objectives of the Design Workshop
- Annex F: ARV Logistics System Review Workshop Schedule
- Annex G: Group's Names, Tasks and Outcome
- Annex H: List of Workshop Participants
- Annex I: Attendees at MOHS System Validation Meeting
- Annex J: Participants Presentations to Officials
- Annex K: Design Workshop Evaluation

ANNEX A: Critical Steps in Designing an Inventory Control System

- 1 Determine what type of inventory control system might be appropriate, and consider the appropriateness of Push and Pull system
2. Set the parameters of the inventory control system at each level
 - a. Determine the lead time
 - b. What will be the longest lead time to get ARVs? Can this be shortened by eliminating intermediate storage facilities?
 - c. What safety stock should be kept on hand at the facility level?
 - d. Set the Review Period
 - i. How often should the service delivery points order or receive ARVs?
 - ii. Take into account key factors such as shelf life of products, capacity for storage, cost of distribution, demand fluctuations, level of training/burden on personnel, budget, pipeline (levels in the system), reliability of distribution, etc.
 - e. Based on the above, set the Minimum
 - f. Set the Maximum
 - g. Set the Emergency Order Point
 - h. Check the length of the Pipeline after determining the Max-Min levels. Is this too long? Can it be shortened? Is the system design feasible?

ANNEX B: Assessment Tool

QUESTIONNAIRE

1. Date _____ 2. Interviewer(s) _____			
3. Central _____ 4. District _____ 5. Health Center _____			
6. Type of structure: a) Place where service is done b) Health Center/ District Warehouse c) Central Warehouse			
7. Name of the structure: _____			
8. Start of Interview _____		9. End of Interview _____	
10. Names of people met:			
	<u>Name</u>	<u>Title</u>	<u>Number of Years</u>
a)	_____	_____	_____ years/months
b)	_____	_____	_____ years/months
c)	_____	_____	_____ years/months
d)	_____	_____	_____ years/months
e)	_____	_____	_____ years/months
f)	_____	_____	_____ years/months
g)	_____	_____	_____ years/months

No	Question (and instructions)	Response
11.	Note the category and number of staff by category <i>(Use numbers only, no names)</i>	Category # of staff 1. _____ _____ 2. _____ _____ 3. _____ _____ 4. _____ _____ 5. _____ _____
12.	Have you ever been trained in logistics** (which product), and when? **Logistics tasks include ordering, reception, stocks management, and supervision.	Category Date of last training 1. _____ _____ 2. _____ _____ 3. _____ _____ 4. _____ _____ 5. _____ _____ 6. _____ _____ 7. _____ _____ 8. _____ _____
13.	What were the parts of the training? <i>(Ex. LMIS, transportation, storage, how to fill out the forms and reports, storage conditions, etc.)</i>	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____
Which forms do you use for logistics?		
Please circle		Comments
14.	How do you use the information filled out on the forms? a) Calculation of consumption b) Evaluation of needs c) Report to higher level d) Order from higher level e) Other ; please explain	
15.	At what frequency do you send reports to the higher level? a) Monthly b) Quarterly c) Biquarterly d) Annually e) Other ; please specify	Comments
16.	At what frequency should you send them? f) Monthly g) Quarterly h) Biquarterly i) Annually a) Other, please specify	

<p>17. Who determines the quantity to reorder for this institution?</p> <p>a) Is it the institution itself (requisition)?</p> <p>b) Is it the institution at the higher level (allocation)?</p> <p>c) Other, please explain</p>	
<p>18. How is the quantity to reorder calculated?</p> <p>a) A formula</p> <p>b) By the higher level (Go to Q 22)</p> <p>c) Other (Go to Q20)</p>	
<p>19. Which formula? (If formula used, go to Q21)</p>	
<p>20. If it's another formula, say which. (Briefly describe what is done. If anything can be done, say it).</p>	
<p>21. Which data are used to calculate the quantity to reorder?</p> <p>Note everything that concerns the institution:</p> <p>a) Stock at the start of period</p> <p>b) Stock at the end of period</p> <p>c) Received quantity</p> <p>d) Distributed quantity</p> <p>e) Losses and adjustments</p> <p>f) Other, please specify</p>	
<p>a)</p>	
<p>22. How does your order reach you?</p> <p>a) The institution goes to look for it</p> <p>b) The higher level brings it</p> <p>c) Other, please</p>	
<p>23. When did you receive or organize your last supervision visit?</p> <p>a) During the preceding month</p> <p>b) During the last 3 months</p> <p>c) During the last 6 months</p> <p>d) Other (explain)</p> <p>e) Never(If never or N/A go to Q27)</p> <p>f) Question doesn't apply</p>	
<p>24. Who was the supervisor?</p>	

25. What did you do during the supervision visit ?Mark everything that applies:

- a) Revise the level of stocks
- b) Revise les stock forms against the physical inventory
- c) Expired products were separated from the others
- d) Controlled the LMIS
- e) Unorganized training
- f) Other, please explain

27. TABLE OF STOCKOUTS

- Note whether there was a product stockout in the last 6 months in Column 3 and at the time of the visit in Column 4.
- Note the date (right or estimated) of the stockout in Column 5, and the date of stockout end in **column 6**.
- Check Column 7 if the stockout date was removed from the stock forms, or check Column 8 if the stockout date is an estimation.
- Note in **Column 9** the list number at the bottom of the table that corresponds to the reason of the stockout.

◆ **Note: It is possible to use more than one line per product if, for example, there was more than one stockout in the last 6 months.**

Products	Form of available stock (O/N)	Sstockout in the last 6 months (O/N)	Stock at the time of the visit (O/N)	Date of the start of the stockout	Date of the end of stockout	Source of information		Reason of stockout
						Form of the stock	Knowledge of the informant	
1	2	3	4	5	6	7	8	9

Id

1= Unable to collect the product

2= Higher level didn't send right quantity

3= Increased consumption

4 = Didn't order right quantity on time

5= Other reasons

28. Storing conditions

To check Yes if all products and boxes are in the described conditions.

		Yes	No	Comments
1.	Products to be distributed are placed in such a way that identification forms and expiry/manufacture dates are well visible.			
2.	Products are stocked in a way to help make sure that first expired-first out for the deduction and distribution.			
3.	Boxes and products are not in a bad shape because of a bad storage. If the boxes are open, the products are not wet or spoiled by heat (broken pills). Condoms are stored far away from fluorescent lights.			
4.	Damaged or expired products are separated from other products and no longer appear on the inventory.			
5.	Products are not exposed to direct sunlight at all times during the day and during all seasons.			
6.	Boxes and products are protected against water and humidity.			
7.	Storage area is free from insects and all small worms.			
8.	Storage area is locked, but is accessible during work hours, and access is limited to authorized personnel only.			
9.				
10.	Dangerous trash, (like syringes) is correctly managed and isn't accessible to non-medical personnel.			
11.	The roof is in good shape and can protect the warehouse from light and water at all time.			
12.	The warehouse is well maintained (clean, nothing on the ground, strong shelves, boxes in order, etc.)			
13.	Available space and is large enough for existing products and may receive new products programmed in the near future.			

These additional standards may apply to any rather large warehouse where boxes must be placed over each other.

No.	Description	Yes	No	Comments
14.	Products are placed at least at 10 cm from the ground.			

15.	Products are placed at least at 30 cm from walls and from other stacks.			
16.	Stacks of products don't go beyond 2,5 m high.			
17.	Fire control materials are available and accessible.			
18.	Products are stocked away from insecticides and chemical products.			

28.	What can you do to improve products availability?		
29.	A part from "more staff" and "better salary" what kind of help do you need for a better logistics management?		
30.	Ask the interviewees if they have questions to ask you.		

Logistics System Design Questions

1. How many products are being managed in the system?
2. What is the storage capacity at each level/facility?
3. Is there money in the budget allocated for logistics activities?
4. Is the staff that will be using the system trained in logistics activities? If yes, who should be trained (number of people per facility)
5. Is there adequate staff to carry out the management of commodities throughout the system? At what level the supervision is available?
6. What records are required to record essential data items? Do they already exist? Review the existing forms and make recommendation by designing new forms. Does a target based-inventory control make sense?
7. What reports are required to get essential data up to the central medical stores and program managers?
8. Does a combined report and order form make sense? How should the order form look like? Who reviews the orders and who fills them? Who packs the orders? How are the orders transported to the facilities? What transaction records are required? (How would you like to link the re-supplying the facilities to reporting?)
9. How should data flow up the system? Who is responsible for recording and reporting essential data at each level?
10. What additional data is required on the reports (number of patients on ART? By regimens? Number of new patients?)
11. Are approvals required? Who provides the approvals? Should the approval be maintained?
12. Is the current method of collection or distribution (transport) reliable? How are orders accounted for during transport and receipts?
13. What is the cost of collection or distribution (transport)? Is there money allocated in the budget for this activity?
14. How many levels are in the overall system?
15. What is the shortest shelf life of any of the products being managed in the system?
16. Please properly define roles and responsibilities (describe the process, identify the person responsible for each of the steps) for all logistics activities

ANNEX C: Key Findings in the System

1. FINDINGS FROM THE FIRST WEEK

The findings below are based on the visits the USAID | DELIVER PROJECT advisors, AWARE/KATH consultants and ARG/MOHS/NAS M&E Officers undertook to review first hand the logistics activities at the Central Warehouse Lakka, Connaught Hospital, Bimkolo, Makeni and Missionary Hospital. The visitors used a set of pre-printed questionnaires to help structure the key informant interviews.

LMIS

Strengths	Weaknesses
Some districts the dispensers and counsellors meet monthly to prepare report	The term “requisition” is often used when really it is a “report” they are referring to
Every facility compiles a report monthly	SDPs do not report actual stock on hand it is assumed
Stock cards are being used in some places	SDPs do not always keep a copy of the reports they send
	No fixed means to move the report to the higher level
	Quantities based on # of patients, not consumption
	Units in recording is not consistent sometimes tablets, sometimes bottles
	Information is not being collected for decision making
	No fixed date in the month for reporting

Distribution

Strengths	Weaknesses
Lakka delivers commodities to the districts	No fixed date in the month for commodities to arrive at the facility
SDPs pick from districts	

Stock Management

Strengths	Weaknesses
Physical inventory conducted at the end of every month (includes dispensing area)	Some stock outs at the central level –3TC pin 2007 and EFV 200mg is now out of stock (breaking 600mg) - it took three months to replace.
Few stock outs at SDPs	Sometimes SDP level requests are made according to when it is needed not per fixed period

	No fixed ordering period
	Quantity requested between levels based on patients numbers
	Quantification based on population
	Inventory Control is none existent

Storage

Strengths	Weaknesses
Expired commodities are separated from in date commodities	Storage - lack of shelves, inadequate space
Commodities are not exposed to sunlight and protected from water and humidity	No clear procedures for movement of expired stock from place where it expired to the place of destruction
Storage area free from insects and worms	Stock not displayed to allow FEFO in some facilities
Storage area's are locked with restricted access	Often boxes are stored on the floor and against the wall
Commodities are not stored with insecticides and chemical products	There is inadequate storage space across all levels
Dedicated area for ARV drugs	No fire control materials
	Product in transit at NAS office – not a storage facility

Staffing and Supervision:

Strengths	Weaknesses
Supervision every 3 months from NAS to districts	Lack of involvement by District Medical Officer in stock management of commodities
Dedicated staff to ARV	Understaffed
Staff keep professional confidentiality at SDP level	Inconsistency in who and where the ARV drugs are stored at district level

Training:

Strengths	Weaknesses
Some have been trained	Those who have been trained but have not been put into practice

More Comments

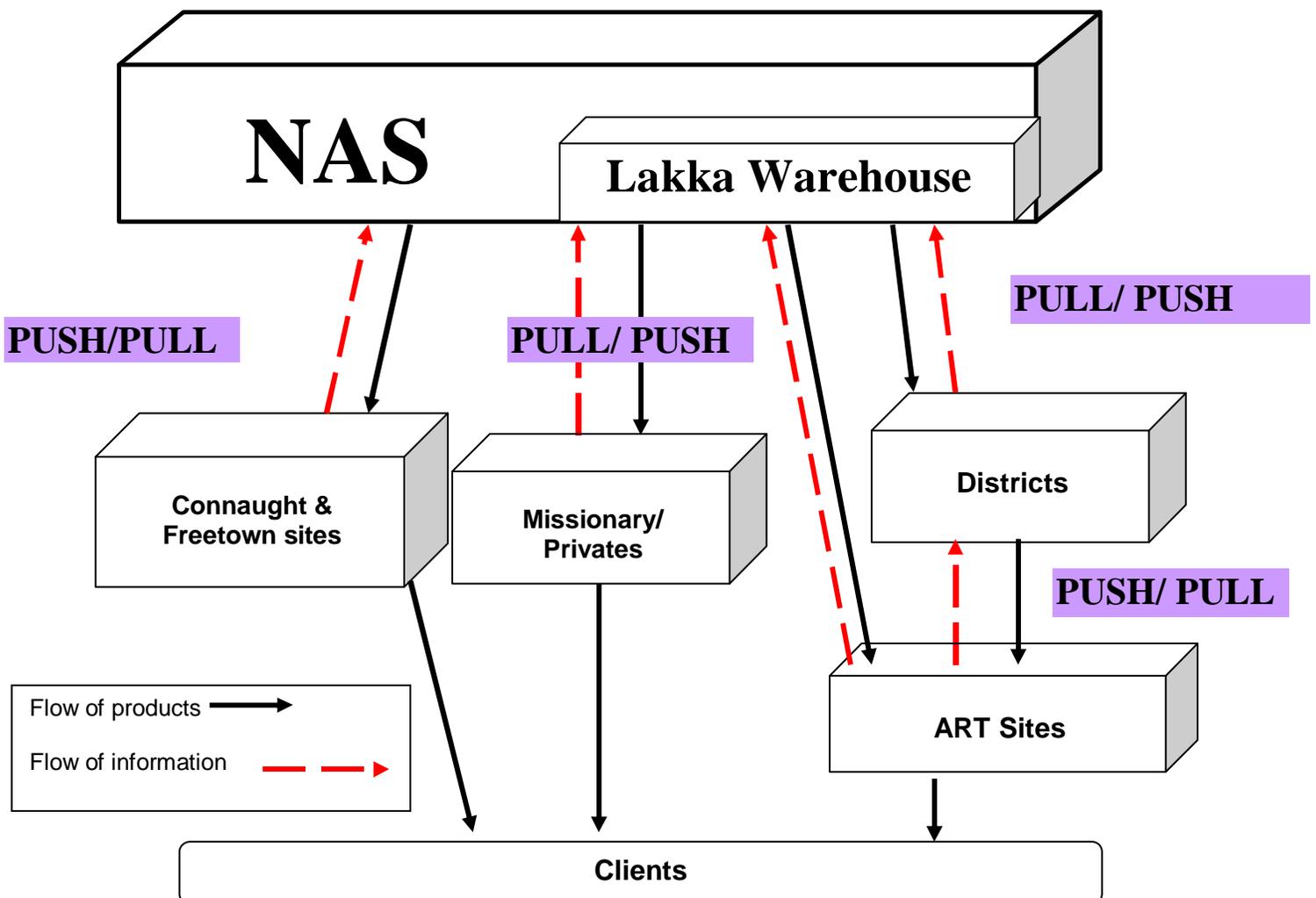
Inventory Control System (ICS)

- The ICS Max-Min system is not in place
- The distribution system follows Pull and Push system at the same level, and time to time rationing of drugs is taking place. The combination of all three distributions is practiced at the same level.

Supervision

Supportive supervision will strengthen the system more because the supervision is already regularly organized.

ACTUAL DISTRIBUTION/ ORDER / RE-SUPPLY



LIST OF KEY PERSONS INTERVIEWED

Person(s)	Titles	Organization/Affiliation
Victor Kamara	Senior M&E Officer	NAS
John B Baimba	Programme Officer	NAS
Kemoh S Mansaray	Programme Officer	NAS
Kiskama F Swarray	M&E officer GF	NAS
Moi Tenga Sartie	M&E Officer, ARG/MOHS	NAS
Sr Mary Hossinatu Kanu	PMTCT Coordinator	NAS
Abdul Karim Kargbo	Store Manager – Lakka	NAS
Bockarie Mansaray	Data Manager	NAS
Marx Kanu	Admin / Finance Coordinator	NAS
Abdul RM Fofanah	Health Administrator	NAS
Joseph C Kobba	M&E Officer GF	NAS
Umu Nabieu	M&E Officer GF	NAS

Informants: Organization and people met

- MOH, we visited Dr Kizito Daoh, Deputy Director General of Medical Service
- WHO, we talked to Dr Kalo Akpaka and Dr Louisa Ganda
- UNICEF, we discussed with Macoura Oulare, Project Office for HIV/AIDS
- UNAID, we met Mulunesh Tennagashaw and Muhamed Turay

Stakeholders' briefing meeting

No	Name	Title	Organization	Email
1	James Ponga Moriba	Nutritionist	MOHS	j.moriba@yahoo.com
2	Mohammed Turay	M&E Officer	UNAIDS	turaym@unaid.org
3	Dr Louisa Gunda	Health Professional Officer – HIV/AIDS, TB & Malaria	WHO	gundal@afro.who.int
4	Moi-Tenga Sartie	M&E Officer	NAS	Moi_tenga@yahoo.com
5	Munda Charles	Community Health Officer	Freetown	charshopice@yahoo.com
6	Victor S Kamara	Senior M&E Officer	NAS – GF	Vctr_kamara@yahoo.com
7	Val Younge	Procurement Specialist	NAS	valyounge@yahoo.com
8	Senesire Margao	Acting VCCT Coordinator	NAS	Smargao2000@yahoo.com
9	Dr Suliaman	ART	ARG/NAS/MOHS	Conteh472@yahoo.com

	Conteh	Coordinator		
10	John B Baimba	Program Officer	NAS – GF	baimbajon@yahoo.com
11	James P Komeh	Head of Hosp Dept	Pharmacy Board of SL	kompjames@yahoo.com
12	JB Moiwo	Senior Pharmacist	CMS	jaybeen@yahoo.com
13	Kemah Mansaray	Program Officer	NAS-GF	Issmoms75@yahoo.com
14	Wilshire Johnson	Head of Dept PBSL	Pharmacy Board of SL	Infopharm_pbsl@yahoo.com
15	Boi Jeneh Jalloh	Program Specialist	USAID	bjalloh@usaid.gov
16	Kiskama F Swarray	M&E Officer	ARG/NAS	Kiskay2007@yahoo.co.uk
17	Bockarie Mansay	Data Manager	ARG/NAS – Lakka	
18	Marx Kamu	Admin / Finance	NAS-GF	

Debriefing

USAID:

- Christine Shecker, ccheckler@usaid.gov
- Boi Jneeh Jalloh, Program Specialist, bjalloh@usaid.gov
- Lt Col. Leslie Bryant, US Army and Air Attache. US Embassy (+232-76-602-378, BryantLM@stae.gov)
- Adeola Danner, Department of Defense HIV/AIDS

ANNEX E: Goal and Objectives of the Design Workshop

GOAL: To design the logistics system for ARV drugs.

OBJECTIVES:

After completing all the sessions, the workshop participants will be able to:

- 1- Understand and use basic logistics concepts needed for designing an inventory control system and an LMIS
- 2- Map the current ARV Logistics System(s) and the flow of ARVs from the sources to the Clients. Show on the map(s) how the commodities flow through the current system(s) as well as how information flows
- 3- Identify and record strengths and weaknesses in the current flow of the commodities as well as in the flow of information
- 4- Develop/ Review the LMIS system for ARV (including the development of data collection supports and reporting systems)
- 5- Develop an inventory control system to manage ARV drugs (the levels of the system to be involved, the frequency of ordering, the ideal max-min months of stock at each level, the overall length of the pipeline, how order quantities should be determined)
- 6- Clearly define roles and responsibilities in managing the supply chain of ARV drugs
- 7- Develop a realistic training implementation plan to train the new system. (Determine the correct people to invite to training and develop an outline of activities)

ANNEX F: ARV Logistics System Design Workshop Schedule
FREETOWN, FABS, JANUARY 18 – 22, 2008
Design Workshop Schedule

Logistics System Design Workshop for ARV Drugs				
Day 1	Day 2	Day 3	Day 4	Day 5
8:30 – 10:30	8:30 – 10:00 Framing: 15 minutes	8:30 – 10:00 Framing: 15 minutes	8:30 – 10:30 Framing: 15 minutes	8:45 – 10:30 Framing: 15 minutes
Introduction to the design: Ice breaker; Expectations; Goal; Objectives; Schedule; Norms	Inventory Control System	Design Session:; Groups, Expectations, Process & Outcomes	Group Activity	Summary of the workshop Implementation Plan Strategies
10:00 – 10:15	10:00 – 10:15	10:00 – 10:15	10:15 – 10:30	10:00 – 10:15
Break	Break	Break	Break	Break
10:15 – 12:00	10:15 – 12:00	10:15 – 12:00	10:30 – 12:00	10:15 – 12:00
Introduction to logistics	Inventory Control System	Group Activity	Summary of Group Activity	Final Presentation to Key Representatives
13:00 – 14:00	13:00 – 14:00	13:00 – 14:00	13:00 – 14:00	13:00 – 14:00
Lunch	Lunch	Lunch	Lunch	Lunch with Key Representatives
14:00 – 15:30	14:00 – 15:30	14:00 – 15:30	14:00 – 15:30	14:00 – 16:30
Introduction to LMIS (3 essential data)	Inventory Control System (Assessing stock status)	Group Activity	Summary of Group Activity	
15:30 – 15:45	15:30 – 15:45	15:30 – 15:45	15:30 – 15:45	16:30 – 17:00
Break	Break	Break	Break	
15:45 – 16:30	15:45 – 16:30	15:45 – 17:00	15:45 – 17:00	
LMIS (3 types of records)	Participants present their system + Trainers present findings	Group Activity	Summary of Group Activity	
16:30 – 17:00	16:30 – 17:00			
Feedback	Daily Evaluation	Take Group Pulse	Finalization of Recommendations	

ANNEX G: The Groups with Their Compositions, Tasks and Outcomes

Group: 1

Group Members:

Komeh James, Kiskama, Muhamed Monsaray, Bockarie, Alusine, Manjo and Abdul Karim Kargbo

Theme:

Stock management – Inventory Control System

To ensure the best distribution system, the group explored all structures in the system and their implications.

Stock Management consisted of determining the Inventory Control System:

5. Review Period
6. Lead time
7. Max –Min levels
8. Emergency Order Point

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to do the following tasks.

- Determine what type of inventory control system might be appropriate and whether a push or pull system is more appropriate.
- Set the parameters of the inventory control system at each level.
 - i. Determine the lead time
 - j. What will be the longest lead time to get ARVs? Can this be shortened by eliminating intermediate storage facilities?
 - k. What safety stock should be kept on hand at the facility level?
 - l. Set the Review Period
 - i. How often should the service delivery points order or receive ARVs?
 - ii. Take into account key factors such as shelf life of products, capacity for storage, cost of distribution, demand fluctuations, level of training/burden on personnel, budget, pipeline (levels in the system), reliability of distribution, etc.)
 - m. Based on the above set the Minimum
 - n. Set the Maximum
 - o. Set the Emergency Order Point
 - p. Check the length of the Pipeline as a result of the Max-Min levels determined. Is this too long? Can it be shortened? Is the system designed feasible?
 - q. Who should write the report? Who should receive the report
 - r. What date the report should be sent to higher level?
 - s. Describe clearly the role of each key person person involved in the writing of the report.

TABLE OF REFERENCE (for decision)

Level	Review Period	Lead Time	Buffer Stock	Maximum Stock	Minimum Stock	Emergency Order Point

The group would also:

* Decide per level the type of system most suitable : « requisition » or « allocation »

Group Work Outcome: The following were the small group outcomes which mainly included the design of an Inventory Control System and the roles and responsibilities of different levels in implementing the Inventory Control System.

1. Appropriate type of Inventory Control System is **FORCED ORDERING.**
 - **PUSH SYSTEM** between National Level and District.
 - **PULL SYSTEM** between District Level and PHU.
2. a) **Lead time**
 - Manufacturing to National is **3 months.**
 - National to District is **10 days.**
 - District to PHU is **3 days.**
- b) i) **Longest lead time to get ARVs**
 - Manufacturer to National is **6 months.**
 - National to District is **14 days.**
 - District to PHU is **5 days.**
- b) ii) **Three level system**
- c) **Safety Stock** at
 - National is **TWO MONTHS.**
 - District **2 (TWO) WEEKS**
 - PHU is **2 (TWO) WEEKS.**
- d) **Review Period:**
 - Manufacturer - National is **QUARTERLY.**
 - National – District is **QUARTERLY.**
 - District is **MONTHLY**
 - PHU is **MONTHLY**
- e) **Minimum:**
 - National is **5 (FIVE) MONTHS.**
 - District is **2 (TWO) MONTHS.**
 - PHU is **1 (ONE) MONTH.**
- f) **Maximum:**
 - National is **(TEN) MONTHS.**
 - District is **(FIVE) MONTHS.**
 - PHU is **2 (TWO) MONTHS.**
- g) **Emergency Order Point** is:
 - National is **3 (THREE) MONTHS.**

- District is 2 (**TWO**) MONTHS.
- h) Length of Pipeline is:**
- 17 (**SEVENTEEN**) MONTHS.
- i) i) Who should write the report?**
- PHU- In-charge.
 - District – HIV Counsellor.
 - National – M&E and Stores Manager.
- i) ii) Who should receive the report?**
- PHU to District – HIV Counsellor.
 - District to National – ART Coordinator
 - National – Team Leader/Manager.
- j) What date the report should be sent to higher level?**
- PHU to District – 5th of other month
 - District to National – 8th of other month
 - National to Team Leader/Manager- 15th of other month
- k) Roles of each key Person involved in writing the Report.**
- In-charge of the Health Centre:**
- Review the stock level at the PHU
 - Receives stock from District HIV Counsellor for dispensing to clients
 - Returns expired drugs to HIV Counsellor for the purpose of destruction
 - Write report and submit to District HIV Counsellor
- District HIV Counsellor:**
- Reviews the district stock level
 - Receives stock from district store and supply to PHUs
 - Collects all PHU reports and summaries
 - Bi-monthly supervision of the PHUs
 - Collects all expired and deteriorated drugs from PHUs and inform the Regional Pharmacy Board's Office and NAS
 - Write report in consultation with the district storekeeper and submit to ART coordinator and copy the DMO
 - Send bi-monthly feedback to PHU in-charge
- ART Coordinator:**
- Receive all district ART reports, crosscheck, verify, sign and submit to M&E
 - Conduct quarterly supervision of the districts
 - Write quarterly report and submit to Team Leader/Manager, copy M&E
 - Send quarterly feedback to District HIV Counsellors
- National M&E Officers:**
- Review the district and national stock levels
 - Receive stock records from National Storekeeper quarterly
 - Write quarterly report and submit to Team Leader/Manager
 - Conduct quarterly supervision of the districts
 - Send quarterly feedback to ART Coordinator and District HIV Counsellors
- National Store Manager:**
- Receives stock from NAS and distributes to the district and other health facilities
 - Writes monthly report and submits to Team Leader/Manager, copy M&E

- Conducts quarterly supervision of the districts
- Reviews the district and national stock levels
- Send quarterly feedback to the district HIV counselors and copy the DMO
- Advises Team Leader/Manager with regards to purchase of drugs

District Storeskeeper:

- Receives stock from national storekeeper, informs the DMO and the HIV counsellor
- Issues stock as and when requested by the HIV counselor on requisition
- Provides information to HIV counselor for report writing

GROUP 2

Group Members:

Willshire Johnson, Konah, Sylestes Samba, Munde, Richard, Victor and Samuel F. A. Lahai

Theme: Logistics Management Information System (LMIS)

The LMIS is essential to the functioning of any logistics system. Without logistics data the decision, distribution system, and Inventory Control are not based on program objectives, and these would not follow the “six rights” of logistics (see the SOP for the “six rights”).

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to do the following tasks.

- What records are required to capture the essential data items? Do they already exist?
 - d. Review the existing forms and make recommendations by designing new forms if necessary.
 - e. What additional data is required on these forms apart from the three essential data items? (e.g. number of patients on ART, patients by regimen, number of new patients, number of patients switching)
 - f. Should any of the records or reports be pre-printed? Should they have carbon or carbonless copies?
- Review and produce summary reports.
- Design feedback report(s).
- How should data flow up the system? Who is responsible for recording and reporting essential data at each level?
- Who reviews the orders?
- Are approvals required for ARV orders? Who should provide approval?

Group Work Outcome:

1. Types of records that are required to capture essential data items

- **Stock keeping records: Inventory Control Card and Bin Card**
The Max- Stock Level and EOP should do be added on the cards.
- **Transaction records:**

- Stores issue Vouchers,
- Requisition note
- Store receipt voucher

-Comments: -All three to be fused into one Requisition, Issue and Receipt voucher developed in duplicates.

-A new form called “Report for Returning Products” to be adapted.

- **Consumption records-**

There is no formal dispensing register so the group adopted -ARV Patient Register.

2. Review /production of summary reports:

- The following summary report forms are recommended:
 - LMIS report and request for ARVs.
 - Monthly summary reports for ART patients

3. Design Feedback Report: (Central – District Level)

- Month of stock available at District levels
- Performance of Districts (# screened, # positive, # on treatment, # dropped out etc).
- % reporting- coverage
- Timeliness of reporting

(District – SDPs)

- Month of stock available at SDP levels
- Performance of SDP (# screened, # positive, # on treatment, # dropped out etc).
- % reporting- coverage
- Timeliness of reporting

(SDP to community)- update at meetings

Data Flow: - From the SDPs.

- To Districts
- To Central(NAS) and to other stake Holders

5. Who reviews the order?

- **For ARVs the - The SDPs requests.**
 - The District Focal person authorizes**
 - The Team leader (ARG) approves orders**

- All the reports should be pre-printed and distributed to facilities.
- Feedback report is a necessity.

Following are the samples of the forms that the group examined.

Reference No



Health Sector Response / Ministry of Health and Sanitation Report, Request and Issue Voucher for ARV Drugs (RR&IV)



Reporting Period: From _____ to _____ Emergency Order Maximum Stock Level: * Months

Facility: _____ District: _____ EOP Stock Level: ** Months

* For PHUs insert 2; for Districts insert 5 ** For PHUs insert 0.25; for Districts insert 0.5

Product	Basic Unit	Opening Balance	Quantity Received	Losses/ Adjustments	Quantity Dispensed	Closing Balance	Estimated Quantity for New Patients	Total Estimated Consumption	Maximum Stock Quantity	Quantity Needed	Quantity Issued	Quantity Received
		A	B	C	D	$E = \frac{[(A+B) + (-C)]}{D}$	F	$G = D + F$	$H = \frac{G \times 3}{5}$	$I = H - E$	J	K
ADULT FIXED DOSE COMBINATIONS												
Stavudine/Lamivudine/Nevirapine 30/150/200 mg	Tab											
Stavudine/Lamivudine/Nevirapine 40/150/200 mg	Tab											
Zidovudine/Lamivudine/Nevirapine 300/150/200mg	Tab											
Zidovudine/Lamivudine 300/150 mg	Tab											
SINGLE DRUG FORMULATIONS												
Abacavir 300mg	Tab											
Didanosine 200mg	Tab											
Efavirenz 600 mg	Tab											
Indinavir 400mg	Cap											
Lamivudine 150 mg	Tab											
Nevirapine 200 mg	Tab											
Stavudine 30 mg	Cap											
Stavudine 40 mg	Cap											
Tenofovir 300mg	Tab											
Zidovudine 300 mg	Tab											
Lopinavir/Ritonovir 133.3mg/33.3mg	Cap											
Ritonavir 100mg	Cap											
Efavirenz 200 mg	Cap											

**HEALTH SECTOR RESPONSE GROUP (ARG/MOHS)
MONTHLY DATA COLLECTION/SUMMARY FORM - CLINICAL CARE FORM / ART**

NAME OF ART SITE:..... DISTRICT:.....
MONTH/YEAR:..... NAME OF REPORTING OFFICER:.....

Clinical Care/ART Indicators		MALE				FEMALE				TOTAL
		<15	15-24	25-49	>49	<15	15-24	25-49	>49	
ENROLLMENT	STAGING	STAGE I								
		STAGE II								
		STAGE III								
		STAGE IV								
		TOTAL								
	ENTRY POINTS	DIAGNOSTIC TESTING								
		WALK IN								
		PMTCT								
		OLD PATIENTS								
		OTHER								
		TRANSFER IN								
		TRANSFER OUT								
	TOTAL									
	# Started OI prophylaxis									
ART	# of new clients started on ARVs									
	# of ART clients with new adverse clinical event									
	# of ART clients with new adverse drug reaction									
	# of clients with change of regimen due to: drug toxicity									
	# of clients who stopped treatment due to: treatment failure									
	# of ART clients who stopped treatment due to: death									
	# of ART clients who stopped treatment due to: adverse clinical status/event									
	# of ART clients who stopped treatment due to: loss to follow-up									
ART SUMMARY	Treatment Regimen		Total Number of Patients on ART Previous Month		New Patients on ART Current Month		No. of shifts during the month		Total number of patient on regimen at the end of the month	
			A	B	C	D	E=(A+B+C)-D			
	ADULT First Line Regimens									
	d4T 30mg / 3TC 150mg / NVP 200mg									
	d4T 40mg / 3TC 150mg / NVP 200mg									
d4T 30mg + 3TC 150mg + EFV 600mg										

d4T 40mg + 3TC 150mg + EFV 600mg						
AZT 300mg / 3TC 150mg + NVP 200mg						
AZT 300mg / 3TC 150mg + EFV 600mg						
ADULT First Line Alternate Regimens						
AZT 300mg + 3TC 150mg + ABC 300mg						
ADULT Second Line Regimens						
ABC 300mg + ddl 200mg + IDV 400mg + r 100mg						
ABC 300mg + ddl 200mg + LPV/r 133.3/33.3mg						
TDF 300mg + ddl 200mg + IDV 400mg + r 100mg						
TDF 300mg + ddl 200mg + LPV/r 133.3mg/33.3mg						
PAEDIATRIC First Line Regimen						
d4T / 3TC / NVP 6mg/30mg/50mg						
d4T / 3TC / NVP 12mg/60mg/100mg						
AZT 10mg/ml + 3TC 10mg/ml + NVP 10mg/ml						
PMTCT						
Mother NVP 200mg						
Infant NVP 10mg/ml (2mg/kg)						
OTHER Regimens						

Report for Returning Products

Sent to: _____

Facility returning products: _____

Product Description	Quantity Returned	Expiry Date	Reason for Return

Name of person returning the products: _____ Date: _____ 20__

Signature of person returning the products: _____

Carrier

I CERTIFY THAT the above quantities for return were received by me except where explained below.

Name of Carrier _____ Date _____ 20__

Carrier's Signature _____

Comments: _____

Receiving Facility

I CERTIFY THAT the above quantities for return were received by me except where explained below.

Receiver's Name: _____ Date _____ 20__

Receiver's Signature _____

Comments: _____

GROUP 3

Group Members:

Moi-Tenga, Moiwo, Michael, Alhaji, Koyama and Bockarie Sesay worked on the following task:

Theme: Storage and Distribution

The storage is very important in logistics. If the products are not kept in good condition they will lose their potency and might not be very useful to the users. Also even though that the products are well kept if they don't reach the end users then it is bad. So the distribution should draw the designer's attention.

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to do the following tasks.

- Come up with practical solutions on storage.
- How can the distribution system be improved
- Make a list of people involved in ARV in Sierra Leone at each level. Describe their roles and responsibilities

Group Work Outcome:

A) EXISTING PROBLEMS (STORAGE)

NATIONAL -LAKKA STORE

1. Inadequate space (some items are kept elsewhere)
2. Inadequate cooling
3. Inadequate shelves
4. No cooling transport facility for transiting
5. Store is under staff
6. Road condition not very good

DISTRICT - DISTRICT/HOSPITAL STORE

1. Inappropriate infrastructure
2. Inadequate shelves
3. Inadequate space

PHUs

1. Inappropriate infrastructure
2. Inadequate shelves
3. Inadequate space

B) PRACTICAL SOLUTIONS

NAS

- Improve on the existing structure at LAKKA to accommodate required facilities for a National warehouse (e.g. cold room, etc)
- Recruit/Train adequate staff for the management of LAKKA Warehouse
- Provide cooling vehicles/Boxes for transportation
- Enhance linkage/collaboration between NAS and MOHS staff (e.g. CMS)

DISTRICT/PHU- (MOHS/Local Council)

- Enhance linkage/collaboration between NAS and MOHS staff (e.g. DMS)
- Provide adequate training for the staff of the District medical Stores
- Improve on the existing storage facilities at both district and PHU

C) PEOPLE INVOLVE IN ARV IN SA. LEONE AND THEIR ROLES/RESPONSIBILITIES

1. DIRECTORATE/MANAGEMENT:

- Involve in procurement of ARV
- Decision making pertaining to distribution of ARV
- Approval of requisitions for ARV

2. STORE MANAGER:

- Receive from port, store and issue to district and health facilities
- Report to Team Leader on receipts and issue

3. DATA MANAGER

- Enter all data and raise the red flag to announce the red flag.

GROUP 4

Group members:

Garoma Kena, Ephrah Ebrahim, Tariku Mahmmmed and Nega Melaku

Theme: Capacity Building

A logistics system needs people to make it function. In order to enable people to perform their duties, they need to know their roles and responsibilities. The personnel need to be technically sound and knowledgeable. They need to know what is required of them, the tools that can help them technically, and these tools should be available to them.

Instructions for the group:

The group was instructed to select a facilitator and reporter, and to respond to the following questions.

- Should a Training of Trainers be organized? If yes,
 - c. Who should be trained as a trainer?
 - d. When should this training take place?
- Who should be trained in the system? Consider each level.
- Is it important to have a National Quantification Team? If yes,
 - a. How would the team function?
 - c. What are the activities that the team should conduct?
 - c. What type of reports should the team send to MOH and to the donors?
- Suggest an implementation plan for the logistics activities.
- Develop a plan of action.

Group Work Outcome:

IMPLEMENTATION PLAN

FOLLOW-UP ACTIONS NEEDED

Action	Person(s) Responsible	Estimated completion date	Location of Work
SOP	USAID DELIVER PROJECT - NAS/MOHS – AWARE/ KATH	February 2008	Washington/Sierra Leone/ Ghana
Curriculum development of TOT and training manuals	USAID DELIVER PROJECT	March 2008	Washington
Print out of materials(SOP, forms, Training manuals)	NAS/MOHS	March 2008	Sierra Leone
TOT	USAID DELIVER PROJECT - AWARE/KATH	March 2008	Sierra Leone
Roll out training	NAS/MOHS – AWARE/KATH	April- May 2008	Sierra Leone
Establishment of a Quantification team	NAS/MOHS	April 2008	Sierra Leone
Training on quantification methods	To be determined	June 2008	Sierra Leone
Training on formative supervision	NAS/M&E team	September 2008	Sierra Leone

TOT

- Number of people to be trained as trainers is 20.
- Selection criteria:
 - 1- Good mathematical background
 - 2- High level of dedication
 - 3- Good communication skills/experienced in facilitating training workshops
 - 4- Available for 2 months in order to roll-out the system
- Suggested sites for training: the training should be residential in any of the following sites; 5/10 Hotel, Lakka resource centre in Freetown or Pastoral center in Kenema.

ANNEX H: Design Participants

	Name	Institution/ Organization	Designation	Telephone	E-mail/ Contact Address
1	Dr Sulaiman Conteh	ART Coordinator	Medical Director	+232-33-80-59-07 +232-30-75-01-25	conteh472@yahoo.com
2	Michael S Sesay	National HIV/AIDS Sec.	Procurement Assist.	+232-33-32-03-20	mikesam06@yahoo.com
3	Sylvester Samba	VCCT, Kono	Counselor	+232-76-53-80-99	-
4	Bockarie Mansaray	NAS Warehouse	Data Manager	+232-76-94-75-09	-
5	Muhamed Mansaray	CMS/MOHS/GOSL	Pharmacist	+232-77-28-54-54	meddmans71@yahoo.com
6	Konah Sesay	District Med. Store	Storekeeper	+232-76-70-75-71	-
7	Moi-Tenga Sartie	ARG/ MOHS -NAS	M&E Officer	+232-33-31-09-52	moi_tenga@yahoo.com
8	Senesie Murgao	ARG/ MOHS -NAS	Ag. VCCT	+232-33-47-59-04	smargao@yahoo.com
9	Alhaji Koler	Dispenser Bo	Storekeeper	+232-76-67-80-26	
10	Samuel F.A. Lahai	Government Hospital	District Pharm. Tech.	+232-76-90-96-87	
11	Munde M'Bayo	NAS	IT Manager	+232-33-59-23-48	mundesa@yahoo.com
12	Kiskama F. Swarray	ARG/MOHS - NAS	M & E Assistant		
13	Wiltshire Johnson	Pharmacy Board	Pharmacist	+232-76-60-20-31	Infopharm_pbsl@yhoo.com
14	James P. Komeh	Pharmacy Board	Pharmacist	+232-76-65-10-14	Kompjames@yahoo.com
15	Aminata Sheriff	VCCT Bonthe	Counselor	+232-76-69-65-86	-
16	Victor Kamara	NAS	M & E	+232-33-36-69-91	victor_kamara@yahoo.com
17	J. B. Moiwo	C.M.S.	Pharmacist	+232-76-61-64-60	-
18	Koyama Saffe	NAS/ MOHS Bo	Counselor	+232-76-75-75-72	-
19	Richard Kaimbay	MOHS -Mayamba	M & E Officer	+232-33-87-26-42	-
20	Alusine Kamara	VCCT Kambia	Counselor	+232-76-92-02-65	-
21	Lamin Bangura	ARG/ NAS	M & E Officer	+232-33-84-47-76	laminbangs2007@yahoo.com
22	Bockarie Sesay	VCCT Magburak	Counselor	+232-76-71-92-62	adabock4120@yahoo.com
23	Manjo A. Lamin	VCCT Kailih	Counselor	+232-76-92-67-70	-
24	Alex M. Lebbie	Port Loko Hospital	Storekeeper	+232-76-78-10-83	-
25	Abdul K. Kargbo	NAS Warehouse	Store Manager	+232-76-94-75-09	
26	Esther N'Gaoja	VCCT Koinadugu	Counselor		

ANNEX I: MOHS Briefing Meeting

JANUARY 23, 2008

- Dr. A. C. Wilka , Chief Medical Officer
- Dr. A. L. Seisay, Director of Disease Prevention and Control
- Dr. Brima Kargbo, Director NAS
- Dr. Momodu Seisay ARG Team Leader
- Mr. J. B. Moiwo, Pharmacist
- Dr. PAT Roberts, Director PHC
- Mr. BSR Tusay, Director of Drugs and Medical Supplies
- Mr. J. A. Kamaza, PRO
- Mr. Moi-Tenga, M&E NAS

**ANNEX J: Participants Presentation
TO NAS DIRECTOR and NACP PROGRAM MANAGER**



ARV LOGISTICS SYSTEM DESIGN

Freetown, FABS, January 18,2008



Sierra Leone Districts





Historical Development of HIV/AIDS Epidemic and Response in Sierra Leone

- 1987 – first case was diagnosed in the country.
- 2002 Sierra Leone HIV/AIDS Response Project (SHARP) was officially opened.
- 2006 – 5 year National Strategic Plan (2006 – 2010)
 - Had a monitoring and Evaluation Plan
- 1st December 2006 Partnership Forum Launched.



HIV/AIDS SITUATION

National Prevalence 1.5% (Sero-survey 2005)

- Adult (15 and above) living with HIV: 35,000
- Adult (15 and above) new HIV infections: 4,800
- Adult (15 and above) deaths due to AIDS: 3,000
- Children (0 – 14) living with HIV: 3,000
- Children (0 – 14) new HIV infections: 1,100
- Children (0 – 14) deaths due to AIDS: 860



Prevention of Mother-To-Child Transmission (PMTCT)

- Number of PMTCT sites established: 162
(at least 10 PHUs in each of the 14 districts and 22 sites at the district level)
- Number of women enrolled in PMTCT: 63,580
- Proportion of pregnant women tested positive and received NVP: 502/1134 (44.26%)
- Infants of HIV +ve pregnant women received ARV prophylaxis: 236/1134 (20.81%)

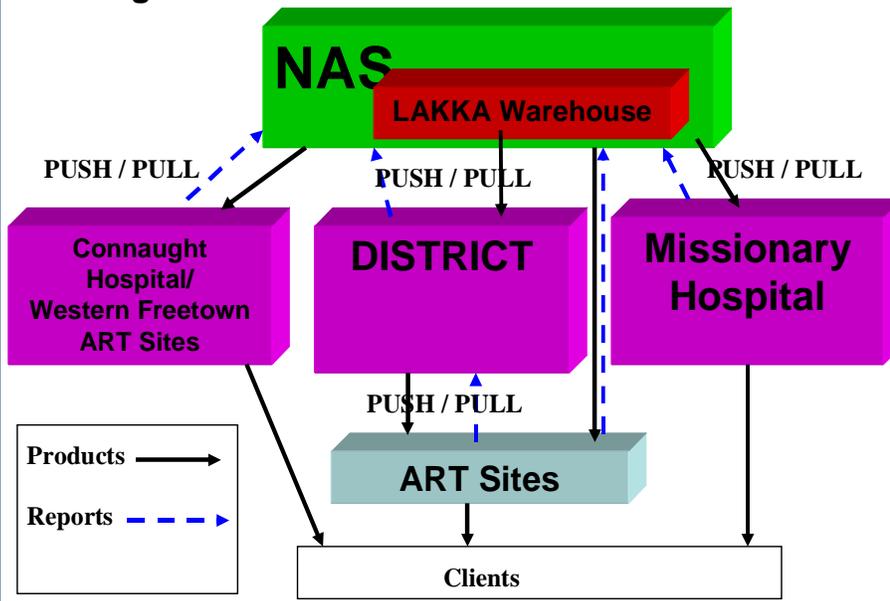


Antiretroviral Treatment (ART)

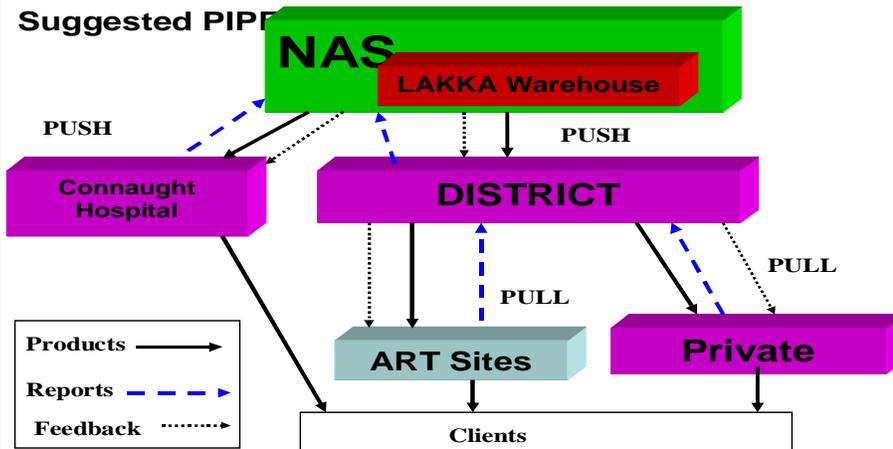
- Number of ART sites in the country: 80
(16 districts and 64 PHUs site)
- Cumulative number of people who received ARVs: 2,088
- Number of laboratories with CD4 counter: 4
(Connaught, Bo, Makeni and Kenema)



Existing PIPELINE



Suggested PIPELINE





Inventory control system

Levels	Review Period (Months)	Lead Time (Months)	Buffer Stock (Months)	Max (Months)	Min (Months)	EOP (Months)
Central	3	5	2	10	7	3
Dist.	3	0.5	2	5	2	0.5
ART sites	1	0.5	0.5	2	1	1 week
Total				17	10	



Actual Situation on LMIS

- Existence of forms (stock cards, consumption record, transaction record, monthly report)
- Essential data not moving from the SDP
- No fixed means, no fixed date to move the report to the higher level
- Unit of recording not consistent (tablet/capsule – bottle)
- Some SDPs do not keep a copy of the monthly report
- No feedback report in place



Suggestion

- Stockkeeping Record: add “Quantity on Order”
- Consumption Record: introduce a register – Daily Activity Register
- Transaction Record: introduce “Return of Products”
- REPORTS:
 - Summary Report: Report, Request and Issue combined
 - Feedback Report: between NAS and Districts
between Districts and PHUs



LOGISTICS DATA

- CONSUMPTION from the Daily Activity Register
- STOCK ON HAND from the Inventory Control Card
- Losses/ Adjustments from the Inventory Control Card



REPORTS

- ART sites: fill the report, calculate the quantity needed
- Districts: issue to ART sites & Privates
Fill report part for the whole District and send to NAS
- NAS: Calculate the quantity to issue to Districts & Connaught and issue to them



SEE FORMS



ACTUAL SITUATION of STORAGE

- **NATIONAL- (LAKKA STORE)**
- Inadequate space
- Inadequate cooling
- Inadequate shelves
- No cooling transport facility for transiting
- Store is under staffed
- Road condition not very good
- **DISTRICT - DISTRICT/HOSPITAL STORE**
- Inappropriate infrastructure
- Inadequate shelves
- Inadequate space
- Wastage of certain products (e.g. NVP syrup)



SUGGESTIONS

NAS

- Improve on the existing structure at LAKKA to accommodate required facilities for a National warehouse (e.g. cold room, etc)
- Provide cooling vehicles / boxes for transportation
- Recruit and Train adequate staff for the management of LAKKA Warehouse
- Provide appropriate/adequate training for staff at all levels
- Enhance linkage/collaboration between NAS and MOHS staff (e.g. CMS)
- Identify/hire facility to assist in REBOTTLING of certain products in single-dose containers (e.g. NVP syrup)
- Assist on improvement of existing stores at PHU level



SUGGESTIONS (Continuous)

- **MOHS/ Local Council**
 - Enhance linkage/collaboration between NAS and MOHS staff (e.g. DMS)
 - Provide adequate training for the staff of the District medical Stores
 - Build shelves where needed on the existing storage facilities at both district and PHU



NEXT STEPS



ACTIONS NEEDED

Action	Person(s) Responsible	Estimated completion date	Location of Work
SOP	USAID DELIVER PROJECT - NAS/MOHS-AWARE/KATH	February 2008	Washington/Sierra Leone/Ghana
Developing a TOT curriculum and training manuals	USAID DELIVER PROJECT	March 2008	Washington
Print out of materials (SOP, forms, Training manuals)	NAS/MOHS	March 2008	Sierra Leone
TOT	USAID DELIVER PROJECT- AWARE/KATH	March 2008	Sierra Leone
Roll out training	NAS- MOHS - AWARE- KATH	April- May 2008	Sierra Leone
Establishment of a Quantification team	NAS/MOHS	April 2008	Sierra Leone
Training on quantification methods	To be determined	June 2008	Sierra Leone
Training on formative supervision	NAS/Monitoring and supervision team	September 2008	Sierra Leone ²¹



TOT

- Number of people to be trained as trainers is 20

Selection criteria:

- Good mathematical background
- High level of dedication
- Good communication skills/experienced in facilitating training workshops
- Availability for the roll out (2 months)
 - Suggested sites for training: the training should be residential in any of the following sites; Lakka resource centre, Hotel 5/10 at Kissy, Freetown or Pastoral center, Kenema.



TOT Participants

DISTRICT	Total no. of Health facilities	No. of participants from each health facility	Total participants
W/Area	3	At least 1	8
Kambia	1	1	1
Port Loko	1	1	1
Bombali	1	1	1
Koinadugu	1	1	1
Tonkolili	1	1	1
Kenema	1	1	1
Kailahun	1	1	1
Pujehun	1	1	1
Bonthe	1	1	1
Bo	1	1	1
Moyamba	1	1	1
Kono	1	1	1
Total	15		20



Name of district	Total no. of Health facilities	No. of participants from each health facility	Total participants
Western Area	29	2	62
Kambia	11	2	26
Port Loko	13	2	30
Bombali	10	2	24
Koinaduu	10	2	24
Tonkolili	9	2	22
Kenema	14	2	32
Kailahun	11	2	26
Pujehun	10	2	24
Bonthe	10	2	24
Bo	13	2	30
Moyamba	10	2	24
Kono	14	2	32
Total	164		332

Four (4) extra participants have been added to each district participants

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CHALLENGES

- Transportation
- Human resource
- Storage capacity

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RECOMMENDATIONS

- **To constitute quantification team**
- **To train quantification team**
- **To appoint a logistics coordinator**
- **To mobilize resources for printing of forms and training manuals in order to implement next steps**
- **To mobilize funds for roll out training just after TOT**
- **To evaluate and review the system after 1 year**
- **To inquire NVP Syrup for PMTCT from Boehringer Ingelheim (South Africa)**

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ANNEX K: Design Workshop Evaluation

At the end of the Design Workshop the participants provided their comments to evaluate the workshop. Their comments are listed below.

- A job well done. The facilitations were really smart and patient. Please continue to help us to put our system in place. We learnt a lot and we are going to start our job description at once. The food and venue was in place. God bless and thank you.
- Good presentation – good suggestion.
- I feel empowered but a bit tired.
- Very educating and challenging.
- A well throughout and timely intervention. Solidly implemented and very much appreciated.
- I am feeling good o know that I contributed to develop a national system.
- The training /workshop have been very educative. The facilitation was excellent and such I will go back with experience in LMIS. There has been a system set in place.
- Perfect job design on ARV done, but time very exhausting we needed more time to avoid lengthy hours of sitting.
- Facilitators did an excellent contribution to health. Trainees participated actively. Site selection for training is encouraging but exposed to outside attraction.
- Facilitators' presentations were very good. New concepts were learnt concerning Logistics Management Information system.
- I gained a lot.
- I feel great to be part of this learning.
- Everything is very educative and interesting.
- Objectives of the training were achieved. Participants were good and facilitators excellent. Work well done.
- Thank you very much for increasing our knowledge in LMIS.
- We learnt a lot.
- Logical and systematic designing.
- Training sessions were educative, participatory and flexible atmosphere.
- Your pattern of imparting is very wonderful. Powerful teamwork. If the team is happy you can tell that you have achieved. Thank you all. FIRE
- Resourceful facilitators. Basic concepts were well presented. Our expectations are met.
- I am personally grateful to you. I learnt a lot. Thank you
- Facilitators' presentations were excellent.
- Every session was facilitated well and I learnt more.

VI. REFERENCES

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For more information, please visit deliver.jsi.com.

USAID | DELIVER PROJECT

John Snow, Inc.

1616 Fort Myer Drive, 11th Floor

Arlington, VA 22209 USA

Phone: 703-528-7474

Fax: 703-528-7480

Email: askdeliver@jsi.com

Internet: deliver.jsi.com