5: Logistics

An effective logistics programme ensures the availability of the right good or service in the right quantity in the right condition delivered to the right place at the right time for the right cost.

"In humanitarian organizations the terms 'supply chain' and 'logistics' are both used to describe the process of getting aid, in the form of goods, to the beneficiaries. The term logistics is also used in some organizations to describe the function and department that is responsible for managing the process."[a]

This chapter of the toolkit focuses on the vital area of logistics planning and implementation. It provides details of experience in planning, coordinating and implementing the logistics aspects of large-scale mass LLIN distributions, with information, resources and tools for the variety of logistics roles required at all levels and stages of a mass campaign. It also serves as a valuable reference for operational planners in order to appreciate the scale of the logistics efforts. It should be kept in mind that the principles outlined in this chapter for mass distribution of LLINs, as well as the tools for supply chain management, can also be applied to routine delivery of LLINs.

The first step in a logical process leading to a successful distribution campaign is a thoroughly researched country plan of action. It should be emphasized that this plan must include the logistics aspects. The logistics role is critical to any LLIN scale-up campaign.

Assuming that the campaign action plan is in place, this chapter is laid out in a sequence useful for the actual planning and implementation of logistics activities in support of a mass LLIN distribution campaign. The sequence follows a logical process, each step building on the earlier ones:

- macro-logistics (top-down planning) (5.1)
- international procurement of LLINs (see Chapter 4)
- logistics plan of action (activities to be undertaken) (5.2)
- micro-logistics (bottom-up planning) (5.3)
- international and in-country procurement (acquiring LLINs, transport, storage, personnel, markers, etc.) (5.4) See also Chapters 3 and 4
- budget (detailed estimates and costings) (5.5)
- supervision and monitoring (checking that the plan is working) (5.6)
- tracking and accountability (recording the movement of nets throughout the supply chain, and assessing the level of transparency and accountability achieved in the management and distribution of LLINs) (5.7)

Sierra Leone. Doug Mole, IFRC

The tools provided in the Appendices and on the Resources CD are simple examples that are meant to be adapted to each country context. This toolkit is a living document and the information will continue to evolve as the experience of universal coverage campaigns grows and new ideas are implemented.

Common to all campaigns, however, are the important tools of coordination, communication and training for successful implementation of the logistics operation.

The logistics role is critical. Bearing in mind the fact that no two campaigns are the same, the experiences of different countries undertaking such campaigns have demonstrated that it is highly effective to have in-country planning teams think through the elements that are most important for them in their own country context. This type of approach will allow for each country's unique situation to be incorporated within the logistics planning environment.

Having and maintaining a collaborative, interactive environment that respects the specific roles and responsibilities of each partner throughout a campaign, particularly the leadership of the MoH, is critical. The scale of logistics for LLIN distribution campaigns can be daunting. When a campaign is well-planned and well-coordinated, however, it can contribute substantially to efforts to reduce malaria morbidity and mortality in a country. By furthering and enhancing the efficiency and effectiveness of campaign logistics, the MoH (or NMCP) and partner organizations will be better able to achieve results on the ground and provide a quality service to beneficiaries.

5.1 Macro-logistics: the macro-planning process

Macro-logistics gives the big picture view of what will be needed in logistical terms to achieve the objectives of the mass distribution campaign. See Resource item R5-1 on the Resources CD for a sample macro-logistics plan from Liberia. Normally the logistics sub-committee (see Appendix 2C at the end of Chapter 2 for terms of reference) is responsible for logistics planning and support for the campaign. Members of this committee will form the central logistics team (CLT).

Macro level logistics activities might include:

- coordinate logistics sub-committee, ensuring representation from the MoH (or NMCP) and all stakeholders and confirm organizations forming the CLT
- use official macro-quantification numbers from MoH to commence logistics planning
- develop general logistics plan for preliminary country guideline document
- develop logistics timeline chart for all activities (see Appendix 5A. An Excel version of the timeline is included on the Resources CD as item R5-2, together with a more detailed timeline, R5-3)
- arrange for a written letter to grant exemption from specific taxes (such as value added tax) via official channels
- arrange for customs duty exemptions and clearances of shipment (if not part of procurement agreement)
- confirm and arrange quality assurance/quality control procedures, if required by country and where not part of the procurement tender and contract
- develop macro positioning plan at central level
- develop final detailed logistics plan of action (LPoA) for campaign
- develop warehousing physical security measures and, using the call for tender process, contract suitable secure central warehousing and insurance
- using the call for tender process, contract transport companies and develop macro level transport plan to district levels
- develop logistics training and implementation guide for cascade logistics training to districts
- develop plan for field missions to facilitate training and for supervision and monitoring

The starting point of macro level logistics is the macro-quantification (MQ) numbers, normally provided by MoH and/or NMCP. Estimations vary based on the size of the population, the target group and the strategy chosen. The MQ will provide quantities of LLINs required and their technical

Updated.
See Brief 3: Risk mitigation planning

specifications, taking account of the targeted population numbers broken down into district or equivalent. The success of the campaign depends on obtaining the most recent and complete statistics possible from the outset of the planning period. Figures should be to the lowest level available through census data or projections. See Chapter 3 for more information on macro-quantification.

Once quantities of LLINs required have been determined, planning of the whole logistics strategy can begin. The procurement of LLINs is such a major task that it has its own separate chapter in this toolkit (Chapter 4), but it is part of the logistics operation and does require major input from the logistics professionals to ensure that all the activities that comprise the supply chain, including procurement, storage and transport, broken down into numbers of LLINs to be distributed to the different level delivery sites, will fit with the campaign distribution schedule in the overall country plan.

LLIN delivery methodologies

The purpose of logistics in LLIN distribution is essentially about getting the LLINs down the supply chain, from the supplier (top of the chain) to the end user (bottom of the chain). There is no one formula that can be applied successfully to all campaigns. The choice of an in-country logistics strategy depends on many factors such as geography, infrastructure, storage capacity, site accessibility and security and the type and quality of transport available. LLINs are generally shipped in either 20-foot (6.06 metre) or 40-foot (12.19 metre) containers containing approximately 20,000 or 40,000 nets, depending on the specifications of LLIN bales.

With modal (container) shipping, the key unit is the container and the key decision is where that container should be shipped. The chosen strategy needs to reflect a combination of factors and considerations that are specific to each country. Taking these factors and considerations into account will lead to a logistics strategy that is centralized or decentralized.

A centralized strategy is characterized by two distinct phases:

1. bringing LLINs into the country and storing them in a central location
2. distributing within the country from that central location

A decentralized strategy is characterized by two distinct activities:

1. bringing LLINs into the country and delivering them to lowest accessible storage point (generally two or more storage locations)
2. transporting to district/village sites/ distribution points within the country from these different storage locations to pre-positioning sites (PPS) as determined by the programme planning strategy

Delivery strategies

Centralized	Decentralized
Description	
One main warehouse location	Two or more warehouses in different locations
Strengths	
Security, central LLIN controls	Security, LLIN control, smaller storage area needed, shorter supply chain transport distances to distribution sites
Limitations	
Long transport distances, large storage area needed	More warehouse staff needed

In general, a centralized strategy may mean more control and greater security for the nets, but does require good coordination and organization, as well as adequate space for warehousing the LLINs.

At the other extreme, a decentralized strategy involves shipping containers of LLINs to the lowest point in the supply chain before the container needs to be opened for local distribution. Once the opportunities and constraints are understood, and a decentralized strategy selected, quantities and target locations for shipments of containers need to

Updated.
See Brief 4: Net delivery systems

COUNTRY CASE STUDY

In Ghana, for the May 2010 door-to-door mass distribution and hang-up campaign to cover the Northern Region, the 600,000 nets were centralized at the Central Medical Store for a number of reasons:

1. The Central Medical Store in the capital, Accra, is secure and well-managed.
2. Time was needed after the arrival of the nets to undertake a very thorough micro-planning and micro-quantification operation before nets were transported to the districts and sub-districts.
3. Transport to the intermediate and community level storage points used trucks belonging to the Central Medical Stores. Managers needed to see quantities and plan an efficient system to move all the nets to the 20 district medical stores in one month.

Northern Region is Ghana's largest region. It lies approximately 800 kilometres from the Central Medical Store. With three trucks, it took a little more than one month to get nets to all districts. Transport from district to sub-district stores and to PPS was done mainly with smaller pick-up trucks. Some vehicles had to spend a day waiting for a boat, the only means by which nets could be transported to some sub-districts and communities. In some situations, donkeys and motorbikes had to be used to transport nets. It took approximately a week to get all the nets to the 96 sub-districts and over 550 PPS for the campaign to begin in May.

Ghana. © Nothing But Nets

Delivery of nets to districts was based on estimated population figures because registration figures were not yet available. They were, however, available for delivery from districts downwards. This meant some disparities, with deficits in some districts and surplus in others. To address this, a rapid response team was set up to respond to all calls for nets, and to ensure that all nets were delivered to households and hung within the week.

Storage arrangements were varied. At the pre-positioning sites, nets were stored in places ranging from houses of chiefs, Community-Based Health Planning and Services (CHPS) compounds, churches and schools, houses of assemblymen and even in the homes of some trusted volunteers. The inbuilt tracking and community participation system of the general strategy and the logistics plan, and the training provided, however, made it easy to track each net throughout the campaign. The number of nets hung in every sub-district throughout the region was recorded daily through a reporting system that was set up to track progress and to ensure that the logistics team was always on top of any issues.

Before the exercise, four one-day training sessions were held at different venues to cover districts and sub-districts in the region. Participants were district and sub-district level storekeepers. Following an overview of the campaign, training covered transportation, storage, tracking and daily reporting, as well as selection of PPS and return (follow-up) logistics. Training sessions inspired the storekeepers and helped them understand the vital role they would play in the success of the campaign.

On return logistics, members of the logistics team returned to the region three weeks after the campaign to validate the numbers of nets reported as hung by counting empty packs. They also collected hammers that had been provided to volunteers to help hang the nets.

be determined. Exact quantities in a container can be specified when ordering. Using these estimates, it is then possible to match shipping quantities with needs at target locations[1] and to programme a mix of containers and delivery paths. The economics nevertheless favour maximizing the volume of the container, so the strategy should take this into account when planning decentralized locations for delivery. Any gap in LLIN quantities would have to be identified and corrected, then LLINs moved where needed, creating a possible cost issue.

Different countries offer opportunities and challenges for decentralized LLIN distribution. Ports, rivers, mountains, lakes, road and rail networks, the location of population centres, and mobile phone and intermodal infrastructure can all be significant factors in determining the most appropriate points for unloading each container. See the Resources R5-4 and R5-5 for examples of master pre-positioning plans for universal coverage distribution campaigns in Uganda and Ghana.

One benefit of decentralized logistics is the fact that LLINs in a container are secure and insured at least until the container is opened. Once the container is opened alternative arrangements need to be in place to ensure that the LLINs remain secure until they arrive in the beneficiaries' hands. In some circumstances containers can be purchased to serve as storage in the absence of adequate storage capacity. They may also be used in the future for continuous routine distribution.

A decentralized strategy does, however, require conducting a thorough needs assessment and accurate micro-planning for the district at the provincial or regional levels before supplies are ordered.

[1] In reality, bales come in quantities of 25, 40, 50 or 100 nets, so it may not always be possible to get an exact match at the target location. See, however, the section on Splitting bales later in this chapter.

A decentralized strategy worked well in a number of countries, but the method must be carefully considered given geographical and other country-specific constraints. Issues to consider in the decision of whether to use a decentralized approach include:

- Road infrastructure must allow semi-trailer trucks to reach down to the district level (this was not possible in Equatorial Guinea or Madagascar).
- If nets are not to be unloaded at the target location, it might be necessary to buy either the containers (end-usage containers, at a cost) or negotiate a longer-than-normal retention period and pay a deposit for each container taken out of the port or customs bonded area.
- Using roll-on roll-off trucks can make the containers easier to off-load. This was done in Mali during the 2007 campaign, but in general it should be noted that availability of this type of equipment could be limited.
- Control and monitoring of stock appears more problematic when container drop-off points are serving more than one district, requiring stock to be moved to a number of further sites. Training for this aspect must be emphasized.

Warehousing and storage

The supplier(s) and principal recipient (PR)[2] are normally responsible for the macro level of the supply chain from border of entry to central or lower level warehousing location, as specified in the tender for procurement of the LLINs. Macro level warehousing activities at central level and transportation of all LLINs down to district levels are normally the responsibilities of the PR with country NMCP oversight (if they are not the same). If the delivery strategy is direct to districts from supplier, the PR is still considered responsible for macro level activities down to district areas. It is useful to keep in mind that there may be multiple PRs and/or

[2] Terminology used by the Global Fund. Other funders will use different terms, but the principle will be the same.

Updated.
See Brief 5: Warehouse assessment

COUNTRY CASE STUDY

Burkina Faso. © Katie Eves, IFRC

The distribution of more than 8 million LLINs was the task facing Burkina Faso during its universal coverage campaign in 2010. It was decided that a decentralized system of delivery to district level would be the most efficient method, together with a rolling distribution region by region according to LLIN arrival schedules. Staff and volunteers at every level were trained well in advance.

Quantification was based on the 2010 population divided by two for the purposes of the Global Fund grant proposal. However, a pilot distribution in 2009, after the submission of the proposal, revealed a 32 per cent difference between quantification at one LLIN for every two people and the registered need during household registration. Following the pilot distribution, quantification for the countrywide LLIN distribution was revised based on the pilot experience in the health district of Diébougou and initial gaps based on macro-quantification were filled with LLINs from other donors and partners.

Household registration and handing out of vouchers was then organized over the whole territory at the same period. This registration revealed a gap of over one million LLINs even after adjustments made during the macro-quantification. To counteract this, the organizing committee made the decision to remove one LLIN from every voucher that had more than two, which then meant that all households surveyed could be included to receive nets.

To explain to the population what was happening and why one LLIN was being deducted from vouchers designating more than two LLINs, an intensive communication exercise was put in place using the mass media, press conferences and interpersonal communication.

Distribution happened region by region according to the arrival of the LLINs. LLINs supplied through the Global Fund Round 8 grant had been procured in 13 lots to coincide with the 13 health regions. The strategy adopted was direct delivery to each health district, bypassing the regional level, with containers purchased to be used for storage. LLINs coming from other sources were stored at central level and then dispatched to the districts according to their needs. Each donor took responsibility for the costs of transport to their chosen health district. Once at the district level, LLINs from all sources were put together and delivered to health centres, or were taken to village distribution points (DPs) two days before distribution. Transport costs were calculated and given to the districts and the health centres according to the number of LLINs to be transported. Each one needed to organize its own adequate transport. Waybills were used at each stage of delivery. At the level of the DPs, stock sheets to track movement in and out of the storage were put in place. At each level, the security of the LLINs was the responsibility of the organizing committee at that level.

secondary recipients (SRs) with possible different areas of responsibility in terms of logistics activities. It is important in such cases that roles and responsibilities are clearly defined and a coordination structure is established to ensure regular and open communication.

Regardless of where the first level of storage occurs (e.g. central, regional, district, etc.), the central logistics team will need to locate and secure appropriate warehouse(s) with adequate capacity to store the nets. Proper identification and management of warehousing is of primary importance.

Some basic criteria to be used in warehouse selection are:

- overall capacity
- location
- accessibility (number of doors, unloading/loading docks/ramps)
- condition (dry and protected from weather elements)
- proper security (lockable doors and windows, exterior lighting, guards and access control)

Security

Planning for the security of the LLINs is one of the requirements of accountability. LLINs must remain in the supply chain and reach the beneficiaries. It is important to take measures against leakage during storage. These measures should include:

- Implementing a sound LLIN tracking system: a well-designed and properly implemented tracking system should act as a deterrent to LLIN leakage since it will rapidly identify where leakage has happened and who is responsible. The tracking tools will have the names and signatures of people involved at each step of the supply chain where responsibility for the LLINs is passed from one location to another.
- Secure warehouses, stores and storage points: obviously, all storage facilities must have locking doors (or chains and padlocks) and consideration should be given to the potential need to have the facilities guarded day and night. If so guards will need to be hired to provide security. At village level, the local community leadership structure will usually provide security.

Warehouses must be clean, dry and secure and should be maintained on a regular basis. Standard warehouse procedures must be used at the warehouse with a warehouse inventory management system. A well-experienced and well-trained warehouse manager should be in control of the warehouse and should use stock sheets and waybills to ensure maintenance of up-to-date information in the inventory system.

Stock sheets, waybills, tally sheets and goods received notes (see Appendix 5A and Resource items R5-8 to R5-15) are tools used in tracking and accounting for all items entering and/or leaving a warehouse or storage facility. Transport loads are documented in detail using waybills to ensure safe, secure delivery to assigned destinations. Once the LLINs are received by the designated consignee, a waybill is completed and returned to the warehouse shipper indicating condition, quantities and shortages (if any) to complete the delivery process within the supply chain.

Transport plan

Normally the macro level transport plan covers transport from central warehousing to campaign intermediary (districts) level. The first part of the process is to select the transport provider, often a private company. It can be helpful to call together representatives of a number of existing transport providers to describe and discuss the scope of the work. When companies do tender for the business, they are then more likely to meet the capacity needs of the contract. Since there are major financial implications involved with large-scale logistics operations, this is an important element in achieving viable bids. Proper Request for Proposals (RFP) should be developed and implemented by the Procurement Unit and/or PR.

Tendering for transport

In a transparent procedure, calls for tenders should be sent out with deadlines for submission

Updated.
See Brief 5: Warehouse assessment

Sierra Leone. © Doug Mole, IFRC

of bids clearly stated, according to country or donor guidelines. A clear statement of the resources that are required to ensure timely and efficient transport to the end of the supply chain must be included. See Resource item R5-6 for a sample call for tender.

Once received and the deadline date reached, all bids must be opened by the logistics sub-committee (usually members who represent different partner organizations) in a closed session. Total transparency is very important. Bids should be evaluated, usually by comparing them against a list of criteria, including security risk. See Resource item R5-7 for a sample comparative bid analysis. The offer that best meets all the criteria (not necessarily the cheapest bid) should be accepted through a group decision. All companies that offered submissions should be informed in writing of the decision of the reviewing group.

Once a company or companies have been selected, it is good practice to involve them in the development of the transport plan, where this is not part of the tendering process. They bring the knowledge and experience of routes, driving times, road conditions and preferred truck sizes depending on areas of delivery. The transport timeline chart must coincide and support the timeline chart of the overall campaign, achieving timely receipt at distribution points with planned number of nets delivered.

The planning for transport of supplies can be improved by examining distances covered during a normal supply circuit, such as the provision of routine service supplies from medical stores to district or community level health facilities. This information can be used as a base for estimating costs and timelines for delivery of all supplies to (1) interim storage areas and (2) actual campaign sites.

A precise transport plan to the districts should identify transport routes/axes in order to optimize truck capacity and take best advantage of the road network, and define a dispatch plan with fixed dates. From this, truck-loading schedules, rotations and re-loading can be organized. See Resource item 5-16 for a sample preliminary transport plan.

If the monitoring of the logistics operation is weak, leakage can occur during transport, warehousing and pre-positioning of the nets (getting the nets to the distribution sites in advance of the campaign). Lack of security can also lead to leakage, especially during storage.

To prevent this kind of leakage, a number of precautions can be applied, including:

- improved security during transport, through the use of conveyors who travel with the trucks to the drop-off points
- improved security during storage through the use of guards. Security needs vary, and it may be important to consider whether the nets will be stored in urban or rural locations. In Rwanda, local defence forces were hired to safeguard stock at each storage point
- decreased amount of time LLINs are kept in district-level storage spaces. Security guards monitoring the storage sites still need regular supervision at facilities where nets are being warehoused, loaded and sent to lower points in the supply chain

When you see this icon, download the resources from the AMP website (www.allianceformalariaprevention.com). See Transport dispatch resource.

- improved storage facilities with proper locks, secure doors and windows and external lighting to assist in upgrading security levels
- use of proper packaging and marking of nets. LLIN packaging should contain warnings in large print, such as "NOT FOR RESALE". In addition, LLINs can be given to beneficiaries with the packaging already torn open to decrease resale value, or removed, provided appropriate waste management procedures are in place
- market surveys conducted during and after the campaign to assess the availability of any leaked campaign nets

5.2 Logistics plan of action including timeline

Normally after the country strategy has been developed and the country preliminary campaign plan of action has been completed, the logistics team will begin to draft a detailed logistics plan of action (LPoA). The LPoA is developed in line with the direction, policies and timelines provided by the country's campaign plan of action. It is important to follow the overall campaign plan of action, especially when numerous partners/stakeholders are involved in the planning, as it provides a clear indication of the agreed direction and strategy.

The objective of the detailed LPoA is to ensure efficient and timely delivery of LLINs to the end users. It focuses on strategies and methodology already determined and gives a detailed breakdown of activities and their timelines. It answers the questions:

- why?
- how?
- what?
- when?
- where?
- by whom?

Points covered in the LPoA

1. Introduction	An outline of the time and coverage of the campaign and its programmatic scope, taken from the campaign plan of action.
2. Source data for the campaign	Official data (from macro-quantification, for example) on quantities required and their breakdown by source of funding and geographic area. Product specification and supplier(s). This information can be found in the campaign plan of action and the procurement documentation and bids received and accepted.
3. Strategy	Description of supply chain and delivery method selected (centralized versus decentralized).
4. Organization and management	Identification of the different partners in the logistics sub-committee and their roles and responsibilities (see the terms of reference for a logistics sub-committee in Appendix 2C at the end of Chapter 2).
5. Methodology	Related closely to the macro- and micro-logistics plans and should provide detailed information on activities (transport, storage, clearance, security, resources, tools).
6. Operational logistics structure	All levels, central, regional and district.
7. Training needs and plans	The training schedule and training method (training of trainers (ToT) and cascade training, for example)
8. Budget	This should cover procurement and operational costs against all activities of the supply chain. More details on budgets are included later in this chapter (5.5).
9. Calendar of events	This should include all critical dates, i.e. date of tender, date of purchase, estimated shipment date and estimated arrival at the point of entry for all commodities. This calendar should be regularly updated and used by the logistics sub-committee for review of progress. Later edits of the calendar of events should include actual arrival dates in-country as well as estimated and actual arrival dates at lower levels of the supply chain (regional/state, district, distribution point, etc.).
10. LLIN tracking, logistics monitoring and reporting	This section should focus on description of activities and what is needed for their implementation (transport, personnel). Indicators developed for monitoring should be included and reference tools and matrices should be annexed to the plan of action. Specific guidance on logistics monitoring, evaluation and reporting tools are found later in this chapter (5.6).
11. Timeline of activities	This is different from the calendar in that it demonstrates a critical path to achieve key activities, both process-related activities and those directly related to the supply chain.

Updated.
See Brief 2: LPoA

A sample timeline can be found in Appendix 5B. It includes all the process-related activities presented (in green), as well as shipment and in-country logistics timelines (in yellow). For developing the timelines, two methods should be used:

- Retrograde method: for development of the timelines for planning of the events related to shipment and in-country logistics. With this method the timelines are developed backwards, from the last event, i.e. campaign date, followed by estimated timeline for transport to districts, and then from district to community level, all the way to estimated shipment date from the port of discharge (supplier).
- Progressive method: for developing timeline for process-related activities. In this case the timeline development starts from the first event, for example development of macro- and micro-logistics plans.

5.3 Micro-logistics: the micro-planning process

The principles used in micro-logistics, or micro-planning of the logistics element, are similar to those used in macro-logistics to plan storage and transport, personnel and training, develop budgets, and to ensure safety aspects, follow-up and tracking of LLINs.

Sierra Leone. © Doug Mole, IFRC

Logistics micro-planning is critical to finalizing need estimations, timelines, and, importantly, the global campaign budget. It occurs at the district level, based on guidelines set at the national level and using tools and templates developed to collect the necessary information from the lowest points in the supply chain. It is a "bottom-up" process, implying involvement from community level upwards. Micro-planning involves gathering detailed information from the district/community levels of the campaign, regarding the need for supplies, personnel, supports, data recording and reporting forms.

A logistics micro-plan should be completed at least six months prior to the launch of the campaign, with regional and district management teams working together to identify key activities and focal points, develop timelines and finalize a budget to ensure timely disbursement of funds for implementation of campaign activities. See Resource items R5-17 and R5-18 for samples of a micro-planning questionnaire.

First steps

For the first steps in micro-planning, the logistics sub-committee develops or adapts tools, templates and guidelines for the regions and/or districts, using tools from past campaigns. The tools will include training resources for the staff and volunteers who will be involved in any aspect of the logistics plan.

Each district is best placed to plan at its own level since health management teams know their communities and their territory (state of roads, remote or isolated zones, seasonal access, axis of road networks, capacity of storage and so on).

Guidelines and templates are usually sent to the regional or district level in advance of field visits to allow health authorities to begin collecting necessary information from each district. This information includes the target population numbers by locality, broken down so that accurate numbers of nets reach the correct villages and distribution points (DP).

One of the key elements of micro-planning is determining the number of PPS and/or distribution points required to reach the target population. Local conditions and resources are very different at the micro-level with operations at a reduced scale and size. Access is often more challenging, with difficult terrain. Transport is generally slower because it is carried out with smaller vehicles or by other means (motorbike, bicycle, boat, cart, carrier, for example).

Field missions for logistics planning

There are requirements for the central/regional logistics team to plan and conduct field missions, to source out and gather important information and discuss with local health teams, community leaders and traditional leaders their concerns, availability of facilities and any funding issues.

The purposes of field missions vary. They might include:

- filling in a logistics mapping questionnaire for a general assessment of facilities, in order to identify distribution points and facilities and to assess transport, personnel and storage provision and requirements (see Resources R5-17 and R5-18)
- micro-planning, including development of timelines and micro-budget for activities taking place at local level
- supervision of on-the-job training activities and monitoring of implementation
- collection of documents for reporting/ commodity management assessment (CMA)

Documents to support these missions might include:

- template of micro-positioning of LLINs
- storage and transport personnel training guidelines and LLIN tracking tools
- template of logistics budget to include costs of storage, transport, handling, training, personnel and supervision

There would normally be a mission prior to the commencement of LLINs moving down the supply chain. Another might be prior to the start of the LLIN distribution campaign in order to confirm security of LLINs, check warehouse conditions, and ensure that all tracking tools are being used and are well understood in advance of any distribution activities. These missions can be coordinated with other campaign programme or on-the-job training missions to reduce costs and limit excessive vehicle use and manpower.

Logistics personnel are trained in the essential and systematic use of the tracking tools (waybills, stock sheets and tally sheets), in order to record and track all movements of the nets during every stage of the supply chain.

The supervision of training is a vital aspect of field missions. The importance of good training for logistics personnel cannot be emphasized enough, and must be included in the development of the micro-plan. Training is usually done through the training of trainers (ToT) with effective cascading of training required to all staff and volunteers involved. Supervision of quality of training sessions is key to ensure information remains consistent at all levels of training.

Planning for pre-positioning and distribution sites

A good starting point for planning the required number and locations of LLIN distribution sites would be the micro-plans from past measles campaigns. This is because in general, measles campaigns take place at public sites that are familiar to the beneficiary population. Sites may be fixed, advanced or mobile. Fixed sites are health facilities or MoH structures accessed by community members for routine health services. Advanced sites are those set up in schools or other permanent structures for people living between five and ten kilometres from a health facility. Mobile sites are generally used for populations more than ten kilometres from a health facility. In previous integrated

Updated.
See Brief 7: Logistics training

campaigns, it proved easier to integrate LLIN distribution into a campaign using such sites.

While the list of locations used previously in measles campaigns can help in determining how to reach the target population, LLIN distribution sites require security and sufficient space to stock LLINs, and therefore advanced and temporary sites used by EPI may not be suitable. Polio and vitamin A campaigns are often door-to-door, making it harder to integrate LLIN distribution, because the bulk and weight of nets do not allow them to be easily transported by door-to-door teams.

With a door-to-door delivery method of LLINs by volunteers, pre-positioning areas for LLINs must be close to the implementation area and identified in advance to ensure non-costly successful completion of distribution. See Chapters 3, Planning, and 7, Implementation, for further detail on pre-positioning and distribution sites.

Splitting bales

At the micro level (usually from district to distribution point), implementers will be facing the issue of whether they should split bales in order to pre-position the exact number of nets at the distribution points.

Whereas in the past, nets were often packaged in bales of 100 units, nowadays they can be ordered in bales of 50, 40 or 25 nets. For the logistics operation, bales of 100 units have many disadvantages: they are too large and too heavy for easy handling (loading and offloading) as well as for transport at micro level, which often uses small volume modes such as oxcart, bicycle, canoe or hand carriers.

Most of the time, the number of nets required at the DPs do not amount to full bales, regardless of the number of units in the bale, and in order to pre-position the exact number at DPs, there would be a need to split (open) bales. Bales of 100 present a greater disadvantage as more of them would need to be opened, and might even need to be opened earlier in the supply chain, before arriving at DPs.

What are the consequences of rounding figures in order to avoid splitting bales? In other words, what are the discrepancies that would occur at DP level? Would it amount to significant shortages or surpluses being pre-positioned?

COUNTRY CASE STUDY

An analysis was made on a sample district in Madagascar during the 2010 campaign where a total of 96,125 nets were to be distributed in 56 DPs. The number of nets for each DP was rounded (up or down, whether more than half a bale or less than half a bale) for the four case scenarios (100, 50, 40 and 25 nets). The results showed an average difference (in shortage or surplus) of 1.8 per cent at DP level for bales of 100 nets. As expected, the percentage went down with smaller bales, at 0.9 per cent for bales of 50 nets, 0.7 per cent for bales of 40 nets and 0.4 per cent for bales of 25 nets.

Given all the factors that come into the calculation of needs and determination of how many nets are required at the DPs (from macro-quantification to household registration and distribution strategy, which all bring in a certain margin of error), it would be safe to say that the percentage of error (0.4 per cent to 1.8 per cent) introduced by rounding figures to full bales does not appear to be too significant. The decision whether to round or split bales must be weighed against the risk of leakage when bales are opened before reaching the DP. All efforts should be made to avoid the splitting of the largest, i.e. 100 unit, bales.

If the national campaign policy is to split bales so as to be more exact at DP levels or higher up in the supply chain, there are standard logistics procedures to follow for accountability and security. If bales are split into individual net bags they should be:

Mali. © Hannah Koenker/JHUCCP

- secured in smaller bags (no loose nets)
- accounted for accurately on all stock cards at all warehousing levels
- accounted for accurately on all waybills during transport
- accounted for accurately at all DPs during inventory verification prior to distribution to beneficiaries

Whatever the programme decision on splitting of bales, it is important that the national campaign plan of action reflects the approach.

5.4 International and in-country procurement

While LLINs and indelible markers are often procured internationally (see Chapters 3 and 4), other commodities and services required for the distribution campaign may be procured in the country itself. These commodities and services might include transport, storage and printing requirements.

If indelible markers are to be used (generally for integrated campaigns), they require storage space that is dry and not in direct sunlight. Excessively hot storage spaces will dry out the markers more quickly. Markers should not be stored in homes or where people are living or sleeping, as large quantities of markers emit powerful fumes.

The transport of markers may be linked to the transport of LLINs. Using the calculations for quantification (see Chapter 3), an estimate should be made of the number of markers required for a given site depending on the number of nets being shipped. Markers can be packaged into boxes or bags and labelled by drop-off point. They should be loaded on the trucks with the nets and included in the waybills accompanying the shipments to the drop off points. The consignee and quantity should be clearly marked on each well-sealed package, and appropriate supply chain management documents and procedures should be used to minimize leakage and ensure safe transportation and storage.

Most printing of supply chain management tools will be done in country at central level. In some cases, existing MoH tracking tools are used if there are sufficient available and if they meet the required standards for logistics tracking. Waybills need to be printed with forms in quadruplicate, one copy at the original storage point, one at the drop-off point, one for the transporter and one for the CLT. Books of waybills should be sufficient to cover the number of axes of transport and trucks that will be moving at any given time. For each storage location, stock sheets should be prepared in duplicate and printed in sufficient quantity to monitor all movement of nets in and out of the warehouse. If a separate sheet is to be used for each day of warehouse activity, this should be factored into the printing quantities.

5.5 The logistics budget

The logistics budget is the financial framework for planning and implementing the logistics activities. It is an integral part of the logistics plan of action and can also serve as an advocacy tool for fundraising.

Additional information.
See Brief 8: Reverse logistics

The structure of the logistics budget is linked to the LPoA and may contain the following:

Income	
1. Income	All income should be included in the budget: • internal contributions • in-kind (free advertising, loan of premises, for example) • donor funding
Expenditure	
1. International procurement of LLINs and any other commodity (e.g. markers)	• Include all activities involved in calls for tender and selection of supplier(s).
2. In-country procurement of printing services, stationery, etc.	• Include all activities and items involved in the programme such as printing of registration forms, distribution cards, training materials, volunteer training packages and all logistics tracking tools (waybills, stock sheets, etc.)
3. Transport of LLINs and other commodities from producer to country or port of entry	• Take into consideration factors influencing transport, such as delivery to appropriate location if country is land-locked, and then delivery on to central or decentralized warehouse(s). Include factors such as type and size of nets, costs of freight and insurance.
4. Port charges and customs clearing	• Include demurrage[3], off-loading containers or renting containers. Before placing orders, it is imperative to secure from the relevant ministry letters of exoneration of duties and taxes as well as port duties. Even when exemptions are already in place, an official letter will help avoid delays with tax and port authorities once LLINs are delivered. • Include transport from port to central warehouse if centralized system selected.
5. Warehousing and handling	• Selection of warehousing including loading and off-loading if nets are not transported directly from port or point of entry to district in containers. Include security, dispatch to districts, selection and contracting of transporters.
6. Micro-planning	• Include field missions to plan and assess transport route and transport providers, storage and security. • Include plan and production of all documentation needed from arrival of LLINs until after distribution for tracking and reporting.
7. Logistics training	• Include training of logistics staff including warehousing staff and conveyers at central level as well as regional, district and distribution point level to ensure familiarity with use of data management tools.
8. Transport from central level to regions and/or districts	• Include transport and conveyance from central level (or from port) to regions and/or districts including security, loading, off-loading and storage at district (or regional) level.
9. Transport from districts to distribution points	• Include transport from districts down to distribution points, whether by vehicle, boat, etc. This should take into consideration repositioning of nets in case of ruptures of stock from one point to another.
10. Supervision before, during and after distribution.	• Include supervision and follow-up by central level to regions and/or districts, district level to health centres and/or distribution points. • Include collection of dispatch forms for reporting purposes.
11. Administration and management	• Include office supplies, communication, local transport including fuel costs and salary support where relevant. • Include bank charges and any other charges such as expenditure from foreign exchange fluctuations and audit.
12. Monitoring and evaluation post-distribution, Commodity Management Assessment (CMA)	• Include field missions for data collection and compiling for post-distribution evaluation and lessons learned. Include CMA process.
13. LLIN coordination	• Include development of tracking tools, indicators, data collection, and information-sharing meetings before, during and after distribution.

See Appendix 5C and Resource items R5-19 and R5-20 for sample budgets.

[3] Demurrage is the daily cost charged for not emptying a container at the port within a determined period (usually five days).

Once micro-planning has been completed, the harmonization of micro-logistics budget activities at districts and peripheral levels with the central level global budget is essential. Once the micro-planning is completed, and the budgets for planning and implementation at the peripheral levels are finished, these need to be validated by the central level. This will often lead to some reductions in what is required because of overestimates on fuel needs, etc. The central level then validates and sends back to the district the final validated version. Once the district budgets are finalized, the global estimated budget should be reviewed and finalized based on actual costs for planning and implementation at district and peripheral levels. Communication during the micro-planning process is essential, notably if funding requested by the district level is reduced at central level.

It is important for the districts to receive, in advance of implementation of activities, the final micro-plan and budget as validated by the central level.

All budgets should be completed in the local currency but, for purposes of advocacy and fundraising, should be linked to one or more currencies such as the Euro or US dollar, using a credible currency conversion organization, such as Oanda[b].

The global budget should be broken down to a monthly budget linked to the plan of action and timeline so that funding is available in time for activity implementation. It is important for logistics activities to have funding available for immediate payment of warehouse contracts and transport services. Advance planning to access these funds is critical to smooth logistics operations.

The financial reporting format is developed by using the budget and adding a column for expenditure control, line by line, month by month. This can also be done by quarter, but always going line by line.

Before activities start, agreement should be reached and guidelines developed on the process to follow if there is overspending. It is recommended that, for any expenditure over 10 per cent of the budget line, the CLT should be informed and approval and guidance sought from the National Coordinating Committee. The total of the budget group (e.g. storage), as well as the bottom line, should remain the same. The guidelines should also describe the procedures if additional funds are required, and what to do if there are unspent funds.

The final narrative report is not complete without a supporting financial report showing budget, expenditure and variances. An explanation of financial challenges, solutions found and lessons learned helps guide the budget planning and implementation for future campaigns. See Chapter 9 for more information on campaign reporting.

5.6 Logistics supervision and monitoring

The logistics operation requires careful attention to supervision and monitoring of activities from the planning to implementation and post-distribution stages. Unlike other campaign activities, logistics activities are not supervised or monitored by external persons, but from within (self-supervised and monitored).The aim of the supervision and monitoring is to ensure that activities are carried out according to plans and against designated timelines, and to check that tools are being used correctly to ensure later tracking of LLINs.

During the logistics planning stage the key activities that should be supervised and monitored by the CLT at all levels are as follows:

- selection and securing of transport companies
- selection and securing of storage facilities
- development of transport plans
- selection and training of logistics personnel

Madagascar. © Alain Daudrumez, IFRC

- development of micro positioning plans
- development of micro budgets

During implementation, monitoring and supervision should be carried out at all levels to ensure that:

- transport of all commodities (LLINs, markers, etc.) is carried out according to plans
- tracking tools (waybills, stock sheets and tally sheets) are used correctly by all those involved in logistics activities
- exact quantities of commodities are positioned correctly at all levels according to macro- and micro-quantification figures and timelines

All logistics personnel must be aware of the vital importance of their systematic use of tracking tools, inventory checks and so on, and must be trained to use them appropriately in order that the campaign as a whole goes to plan and donors can confirm accountability.

Post-campaign (follow-up) supervision and monitoring are important and include the following:

- collection and aggregation of tracking documents (tools) at all levels
- proper filing of procurement documents for commodity management assessment (see 5.7 below)
- preparation of logistics report and lessons learned

See Appendix 5D and Resource item R5-21 for sample monitoring forms.

The use of tracking tools is a crucial monitoring function as they allow for monitoring of the movement of commodities through the entire supply chain until they get to the beneficiaries. Given the above scenario, supervision and monitoring of logistics activities relies on everyone involved in the activities. This is one reason why effective training is so critical.

5.7 Tracking and accountability

Millions of nets represent millions of dollars and can save millions of lives. It is for these reasons that all those involved in distribution campaigns, and specifically those managing the LLIN supply chain, must ensure that logistics operations (transport and storage) as well as distributions are carried out in the most controlled, accountable and transparent manner.

To accomplish this, the CLT and regional/district teams should:

1. Put in place proper LLIN tracking tools to record every movement of the nets at each step of the supply chain, and ensure that responsibility is transferred accordingly, with names and signatures on the tracking documents, of all those involved.

   Three essential tracking tools will be used throughout the operation: the waybill, the warehouse stock sheet and the distribution tally sheet. The waybill will accompany the nets as they travel from point A to point B. The stock sheet will be used at every storage facility in the supply chain, and will track nets coming into and issued out of central warehouses, intermediary and peripheral stores. The tally sheet will record nets received by the distribution team (from the DP store) and handed over to beneficiaries. If these tracking

Updated.
See Brief 6: Management of the supply chain

tools are used properly and throughout the operations, at the completion of the campaigns there should be a clear and uninterrupted "audit trail" (paper trail) of the nets, in the form of waybills, stock sheets and tally sheets.

Samples of LLIN tracking tools and details of how they are used are included in Appendix 5A and in Resource items R5-8 to R5-15 on the CD.

2. Ensure proper filing of all logistics documents, including documents related to the procurement of goods and services and tracking tools. At the end of a campaign all documents will be aggregated and kept at a designated location that has been agreed upon during the planning phase.

3. Plan for measures that will guarantee the security of the nets throughout the supply chain.

4. Receive and provide adequate training: the tracking tools will serve their purpose as long as proper training is provided to those who will be using them. Therefore, logistics planning and implementation of activities will include comprehensive training of all personnel involved at all levels: central, intermediary (district) and peripheral (DP).

Commodity management assessment (CMA)

In the context of LLIN distribution campaigns, the purpose of CMA is to measure the level of accountability and transparency achieved in the management and distribution of LLINs. In other words, a CMA should verify that:

- adequate tools and procedures were used for proper tracking of LLINs and control of the operation, including precise record keeping and control of key activities (receiving, warehousing, transporting and distributing the nets)
- LLINs have reached the targeted beneficiaries

In general, a CMA is based on collaboration between MoH, NMCP and partners to review a limited sample of the internal supply chain routes in order to assess and verify degree of success, areas for improvement and/or weak tracking methods, etc. The CMA framework could include:

- consensus on the scope for assessment, e.g. an overview of what the CMA will focus on and the type of sampling to be used
- selection of routes to be verified with CMA sampling from start point to finish point at DP site
- details of how the assessment process should be carried out: need for both quantitative data (how many nets, via a percentage of sampling, have been moved from point A to point B with proper tracking) and qualitative data (feedback from the field logisticians on the usefulness and effectiveness of tracking tools, processes, etc.)
- list of documents to be tracked (waybills, warehouse stock sheets, tally sheets, etc.)
- other areas related to the logistics supply chain for review, e.g. training, communication, planning
- designated individuals to conduct CMA
- proposed budget, resources, timelines

Just as financial reports must be based on proper accounting with supporting documents (invoices, receipts, etc.), logistics and distribution reports must be based on proper LLIN accounting with supporting tracking documents (waybills, stock sheets and tally sheets). Performed on a reasonable sampling of supply chain documents, the CMA will verify the existence of clear and complete audit trails for the nets, recording each and every step in the transport, storage and distribution of the nets. The CMA will also verify the proper use of the tracking documents (whether they have been filled in properly, including all required signatures) as well as the proper filing of all supply chain documents. Additionally, it will review logistics and distribution reports to determine if corresponding tracking documents support figures.

Finally, the CMA will assess whether detailed and consolidated logistics and distribution reports were produced in sufficient quantity and quality to provide full accountability and transparency

Sierra Leone. © United Methodist Church

for the LLINs distributed. Should the CMA find that distribution reports are complete (i.e. cover all DPs) and reliable (supported by corresponding waybills, stock sheets and tally sheets) it could then conclude that these reports effectively and truly reflect the results claimed to have been achieved in the campaign.

5.8 Key logistics recommendations

Campaigns that have been implemented so far provide a great deal of experience from which lessons can be learned. In the case of the logistics operation, key lessons have led to the following recommendations:

- The CLT requires members who are practical and experienced logisticians, and who will be physically involved in the campaign from the beginning to the end of the logistics operation.
- Budgets should be completed to ensure that funds can be released in a timely manner. Operational funds must be released to the CLT, regions and districts to allow micro-planning activities to be conducted early in the campaign planning process.
- A detailed timeline must be developed so that the CLT has sufficient lead time to request fund transfers at appropriate points to support logistics activities.

The CMA is a vital tool for countries to assess the efficiency of the logistics operation and the LLIN tracking tools, and to learn lessons for future campaigns. It is a post-campaign activity that should be planned and carried out as any other campaign follow-up survey. To ensure that a CMA will effectively take place, adequate resources (personnel and funding) must be allocated from the early planning stage of a campaign.

Updated.
See Brief 1: Key logistics recommendations

- Adequate and appropriate training is essential for the logistics operation. It is necessary for macro-planning (arrival of LLINs, transport to warehousing, storage and security), micro-planning (transport, storage and security), use of tracking tools, warehouse management, CMA, budgeting and finance management.
- The identification of appropriate personnel involved in logistics and supply chain management at all levels is critical, and their training must be planned carefully. CLT members and central warehouse managers need to be trained before the arrival of the LLINs in the country, district logisticians and district store managers need to be trained before the arrival of nets at district level. For cascade training, those who will do the training at the lower levels must be given the capacity and knowledge of training methodology in order to give adequate training. Cascade training can be effective if there are trained supervisors to manage and monitor training.
- In the case of warehouse tracking tools, practical, hands-on training is generally an effective way of ensuring understanding of the purpose of the tools and their importance. Training and supervision of training must be given adequate financing in the budget.
- The use of conveyors, who travel with trucks to the DPs is recommended to ensure the security of the LLINs during transport. Conveyors will require training and funding.
- Lack of flexibility in delivery locations has led to sub-optimal coverage during distribution. LLINs should be procured in bales of 25, 40 or 50 and split at the lowest possible point in the supply chain.
- Where warehousing space is problematic, containers should be purchased, with a plan in place to ensure that containers can be unloaded safely at their destination.
- Centralized or decentralized delivery and storage should be decided early in the planning process, bearing in mind that decentralized will require more than one logistics base and more than one management team. Logistics personnel (CLT) should be involved in discussions prior to procurement of the LLINs.
- Commodity management assessment as a post-campaign activity is essential to assess the efficiency of the logistics operation and the tracking tools used, as well as accountability for the LLINs. CMA must be planned from the outset and included in the budget.

Updated.
See Brief 1: Key logistics recommendations

Appendix 5A: Examples of LLIN tracking tools

Waybill/ Delivery Note

No. (pre-numbered)

Date _____

Sender _____	**Consignee** _____
Location _____	**Location** _____

Transportation mode: _____ No. _____

no.	Item	Quantity	Unit	Packaging	# of packages
1.	LLINs	20,000	pce	Bale x 25 nets	400
2.					
3.					
4.					
5.					
6.					
7.					

Comments/observations (condition of goods on reception: missing/damaged etc.)

Loading confirmed (conveyor or driver)	**Receipt** (designated consignee)
Name _____	Name _____
Signature _____	Signature _____
Date _____	Date _____

Signature of sender _____ Date _____

White: consignee Blue: transporter Green: return to sender Yellow: sender

Updated.
See Brief 6: Management of the supply chain

1. WAYBILL/Delivery note

The Waybill (WB/Delivery Note) is one of the three essential LLIN tracking tools to be used during distribution campaigns. Its purpose is to control and record the movement of LLINs from point A to point B.

- The waybill is issued by the sender. It indicates the nature and quantity of commodities being shipped.
- One waybill must be issued for each destination (drop-off point). Therefore, one truck will carry as many waybills as drop-off points it will cover.
- When a shipment is received, the consignee must verify that the quantity received corresponds to the quantity indicated on the waybill.
- Any discrepancies (bales missing or in excess) or damaged goods must be documented, i.e. the consignee must indicate in the "comments/observations" box how many bales are missing or in excess, or how many bales are damaged (with brief description).
- It is important to respect the colour coding for the four copies of the waybill.
- It is absolutely essential that the waybill should be carefully and properly filled out exactly as indicated below. All the required information (including signatures) must be filled in the right place, and nothing must be left out.

How to fill out the waybill

Date

E.g. Date that loading finished and truck is ready to depart.

Sender

a. When shipping nets from districts to villages distribution points (DPs) the "sender" is the district stores person. Therefore the district stores person must write his name on this line. On the line below (location) the district stores person will write the name of the district stores location (if there is more than one warehouse at district level, it is useful to also indentify which warehouse the nets are being sent from). Note also that the sender will sign at the bottom of the waybill on the line "Signature of sender".

b. When moving nets from villages/village storage areas to DPs, the "sender" is the stores person. Therefore the stores person must write his name on this line. On the line below (location) the village storage person will write the name of the village. Note also that the sender will sign at the bottom of the waybill on the line "Signature of sender".

Consignee

a. When shipping nets from districts to village storage, the "consignee" is the storage person (identified by his name) of the village where the nets are being sent. The name of the village must be written on the line below (location).

b. When moving nets from the village stores to DP site, the "consignee" is the team leader or site supervisor (identified by his name) of the DP site where the nets are being sent. The name of the community or village where the DP is located must be written on the line below (location).

Transport mode and No.

Indicate the transport mode (generally "truck") and write down the vehicle license plate number.

Item

LLINs, markers, communication supports, etc.

Quantity

Only the number of units (number of LLINs or other materials) must be written in this cell, and nothing else. See next paragraph "Unit").

Unit

In the case of LLINs, the unit is the "piece" (in short "pce"). IMPORTANT: the unit is never the bale (see next paragraph "packaging"). If the

waybill/delivery note is being used for markers or communication supports, these should be filled in the same way as LLINs, i.e. unit, then packaging, then number of packages.

Packaging
From the logistics point of view, the information regarding the packaging of the goods is important. Write here "bale x 25 nets" to indicate that the LLINs come in bales of 25 (pieces).

Number of packages
Total number of bales, marker packages, communication support packages, etc.

Comments/observations
This box serves to record any missing or damaged goods upon receiving the shipment (remember that in such a case, the driver must sign in the box to indicate his agreement).

Loading confirmed
This box must be filled out after the loading of the truck (before the departure of the truck). It must contain the signature of the conveyor (or the driver if there is no conveyor) and the date of departure of the truck. The signature will indicate that the conveyor (or the driver) is in agreement that the quantity indicated on the waybill corresponds to the quantity that has been loaded on the truck.

Receipt
Once the LLINs have been received (the bales off-loaded and counted, and any discrepancies recorded in the proper box) the consignee will write his name, put his signature and write the date of receiving the shipment.

Signature of sender
As indicated earlier, the sender must sign and indicate the date at the bottom of the waybill before dispatching the truck.

2. Warehouse stock sheet/card

Districts/Chiefdom/Village DP Sites _____ **Responsible person**_____

Ref. No.	Date	Origin	Destination	Waybill Number	Truck reg. or type of transport	Number of bales on waybill	No. of bales received	No. of bales sent	Stock (bales x 25, 40, 50 etc.)*	Stock (LLINs)	Remarks/ signature

*A separate stock sheet must be used for each size of bale (e.g. 25, 40, 50, 100).

How to use and fill out the stock sheet

The stock sheet is one of the three essential LLIN tracking tools to be used during the distribution campaigns. It must be used in every location where LLINs are stored (all warehouses, all district stores and all village/ DP stores).

The stock sheet is a combination of a standard "warehouse journal" (also called "warehouse ledger") and of a "warehouse stock card".

Therefore, the stock sheet serves two purposes:

1. As a warehouse journal: to record chronologically the quantities of nets received into the warehouse, and the quantities issued out of the warehouse.
2. As a warehouse stock card: to keep track of the stock balance in the warehouse.

Therefore:

a. At all levels, the stock sheet will record the quantities of nets received from the supplier and dispatched (sent) to all locations. It will also keep track of balance stock in the warehouse.

b. At the district level, the stock sheet will record the quantities of nets received from the main warehouse and dispatched (sent) to the village/DPs. It will also keep track of balance stock in the district store.

c. At the distribution point (DP), the stock sheet will record quantities of nets received from the village stores and issued out to the distribution team. It will also keep track of balance stock in the village store.

How to fill out the stock sheet: Note: If possible, use a different colour for "IN" and "OUT" entries.

*** Each line in the stock sheet represents either an entry of nets in the warehouse (nets being received) or an exit of nets from the warehouse (nets being shipped out).**

*** Each line in the stock sheet must be filled out chronologically: the stock sheet is a "journal"; it must therefore record each event (entry or exit) as and when they happen.**

Ref. No.
This is the sequential number of each movement (in or out) of the nets, starting with 1, 2, 3…

Date
Date that nets are either received or sent out.

Origin
When receiving nets, the place from which the nets were shipped to your store must be entered in the "ORIGIN" column (example: "Etung Warehouse", or "Ward warehouse" or "village store" depending where the stock sheet is being used). Note: if issuing out (sending out) nets, this cell must be left blank (or indicate "n/a").

Destination
When issuing out nets, the place to which the nets are to be shipped must be entered in the "DESTINATION" column (example: "district X" or "village Y"). Note that if receiving nets, this cell must be left blank (or indicate "n/a").

Waybill number
When receiving nets, indicate the number of the waybill that came with the shipment.

When sending (issuing out) nets, indicate the number of the waybill that was filled out and issued to accompany the shipment.

NOTE: During the campaign, LLINs will need to be stored at the village/distribution points. Therefore, each distribution point will have a "store" even if the quantity of nets will be relatively small. The DP store will use a stock sheet to record nets that have been received from the districts/villages and nets that will be given to the distribution team during the distribution period. When the nets are handed over by the storekeeper to the distribution team leader, this will be recorded on the stock sheet as a normal "exit" (issuing out) of nets: the DESTINATION will be "Distribution Team". However, since the nets will not be moving from one point to another (everything is taking place at the DP) it will not be required to issue a WAYBILL. In this case, instead of "waybill number" and "truck plate number" the storekeeper will write the name of the distribution team leader. IMPORTANT: the distribution team leader will sign in the "remarks" column. Note: the distribution team leader will indicate on his Tally Sheet the number of nets received from the store.

If at the end of a distribution day all LLINs have not been distributed, the leftover nets with the distribution team will need to be returned to the stores. This time the ORIGIN will be "Distribution Team" and the storekeeper will sign in the "remarks"column.

Number of bales on the waybill
This applies when receiving as well as when sending out nets. It corresponds to the number of bales as indicated on the waybill.

Number of bales received
This cell must be filled only when receiving nets (when sending out nets this cell must be left blank or indicate "n/a"). The number of bales received must normally correspond to the number indicated on the waybill, unless there are bales missing.

Number of bales sent
This cell must be filled only when sending out nets (when receiving nets this cell must be left blank or indicate "n/a"). The number of bales sent must correspond to the number indicated on the waybill.

Stock (bales)
Record the number of bales and number of nets in each bale, e.g. 100 bales x 25 LLINs.

Stock (LLINs)
Record the total number of LLINs.

Remarks/signature
Note any irregularities and sign (distribution team leader or storekeeper, depending whether nets are issued in or out).

Updated.
See Brief 6: Management of the supply chain

TALLY SHEET

(Use a separate tally sheet each day of distribution)

District: _____ Health facility: _____ Distribution point: _____

Team supervisor's name: _____ Date: _____

	Cross out one circle for each LLIN distributed					Total
1	00000	00000	00000	00000	00000	
2	00000	00000	00000	00000	00000	
3	00000	00000	00000	00000	00000	
4	00000	00000	00000	00000	00000	
5	00000	00000	00000	00000	00000	
6	00000	00000	00000	00000	00000	
7	00000	00000	00000	00000	00000	
8	00000	00000	00000	00000	00000	
9	00000	00000	00000	00000	00000	
10	00000	00000	00000	00000	00000	
11	00000	00000	00000	00000	00000	
12	00000	00000	00000	00000	00000	
13	00000	00000	00000	00000	00000	
14	00000	00000	00000	00000	00000	
15	00000	00000	00000	00000	00000	
16	00000	00000	00000	00000	00000	
17	00000	00000	00000	00000	00000	
18	00000	00000	00000	00000	00000	
19	00000	00000	00000	00000	00000	
20	00000	00000	00000	00000	00000	
21	00000	00000	00000	00000	00000	
22	00000	00000	00000	00000	00000	
23	00000	00000	00000	00000	00000	
24	00000	00000	00000	00000	00000	
25	00000	00000	00000	00000	00000	
26	00000	00000	00000	00000	00000	
27	00000	00000	00000	00000	00000	
28	00000	00000	00000	00000	00000	
					Total	

LLINs received at start of day: _____ (received from DP store)

Additional LLINs received today_____ (received from DP store)

LLINs distributed today: _____

Balance of LLINs at the end of the day: _____ (returned to DP store)

Name of DP supervisor: _____ Signature: _____ Date: _____

Updated.
See Brief 6: Management of the supply chain

Notes on the tally sheet

The tally sheet is both a logistics tool and a distribution tool:

- As a logistics tool, it creates the link between logistics and distribution: The tally sheet is used by the distribution team during the distribution period. The distribution team leader must record on the tally sheet the number of nets received from the village storage areas (and returned to the village stores at end of day, if applicable).
- As a distribution tool, it keeps track of the number of nets given out to the beneficiaries.

At the end of the campaign, the tally-sheets must be used by both the logisticians and the distribution supervisors for accountability and to compile reports.

Updated.
See Brief 6: Management of the supply chain

Appendix 5B: Sample logistics timeline

Process activities	Weeks																												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Development of macro and micro-plans																													
Training plan finalized																													
Budget plan finalized																													
Funds transferred (all levels)																													
Development and printing of log questionnaire with pre-registration forms																													
Pre-registration																													
Printing and distribution planning of IEC materials for advocacy and social mobilization																													
Tracking tools and training package finalized																													
Implementation of training activities																													
Follow-up on in-country distribution (transportation and warehousing)																													
Pre-campaign monitoring																													
Recording, monitoring and supervision during campaign																													
Post-campaign logistics reports																													
Logistics coordination and management																													
Shipment and in-country logistics																													
Shipping time from port of discharge (supplier) to point of entry in the recipient country																													
Arrival at point(s) of entry in the country																													
Customs clearance and receipt																													
Distribution from central to regional/state level																													
Distribution from regional to district level																													
Distribution from district to sub-district level																													
Distribution from sub-district to community level																													
Distribution to campaign sites																													
Campaign week																													
Overall time line 29 weeks																													

Appendix 5C: Logistics budget summary

1A	**Income**	Cost in local currency	Cost in major currency, e.g. US$ or Euro
1B	**Budget income versus expenditure**	0	$0
	Expenditure		
1	Procurement	0	0
2	Port costs and customs clearing	0	0
3	Warehousing and handling	0	0
4	Coordination and micro-planning missions	0	0
5	Log team training for warehouse/dispatching	0	0
6	Transport port to districts and convoyage	0	0
7	Transport from districts to DPs	0	0
8	Supervision before, during and after distribution	0	0
9	Management and administration	0	0
10	Monitoring and evaluation	0	0
11	LLIN tracking	0	0
	Subtotal logistic budget	**0**	**$0**
12	Admin. fee or overhead support max 5%	0	0
	Bank charges 2%	0	0
Grand total logistic budget		**0**	**$0**

Logistics budget sample

#	Description	Notes	Unit	Qty	Unit. Price	Cost in local currency	US$	Control	Comments
1A	**Income**								
	Contribution in kind					0	0		
	Funding from local donors					0	0		
	Funding from international donors					0	0		
	Earmarked funding					0	0		
					Subtotal 1A	0	0		
1B	**Budget income versus expenditure**								
	Total budgeted income					0	0		
	Total budgeted expenditure					0	0		
	Variance				Subtotal 1B	0	0		
	Expenditure								
1	**Procurement**								
1.1	Procurement of LLINs	Type of net, size				0	0		
1.1	Markers	1 marker per 125 persons				0	0		
1.1	Other supplies					0	0		
1.2	Transport of supplies to country	FoB or CIF all costs need to be included				0	0		
					Subtotal 1	0	0		
2	**Port costs and customs clearing**								
	Delivery order (container deposit)	Refunded less demurrage charges deposit				0	0		
	Forecasted demurrage costs (estimated)	60% of deposit				0	0		
	Scanning containers	Fixed price				0	0		
	Scanning transport vehicles	Fixed price				0	0		
	Port storage	Space our containers take up in port area				0	0		
	Handling	Lifting containers, etc.				0	0		
	Container Inspection	Fixed price				0	0		
	Insurance	Port insurance per container				0	0		
	Administrative and other documentation charges	Documentation of shipment				0	0		
	Container transportation	Movement out of port				0	0		
	Clearing & forwarding charges 15%	15% of total cost				0	0		
					Subtotal 2	0	0		
3	**Warehousing and handling**								
	Warehousing at point of entry	Rental				0	0		
	Warehouse security	Security guards and equipment if needed				0	0		
	Logs team (during dispatch operation)	xx persons and xx days				0	0		
	Fuel (for local runs)	20 litres per 100km				0	0		
	Off-loading containers / loading trucks	10 persons off- loading 1 container per day				0	0		
	Loading and off- loading trucks					0	0		
	Communications	Phone cards xx persons xx days				0	0		
					Subtotal 3	0	0		
4	**Coordination and micro-planning missions**								
4.1	Logistic person accommodation	Consultant accommodation during mission - could be one or more trips				0	0		
	Logistic person per diem	Consultant per diem during field mission				0	0		
	MoH log accommodation					0	0		
	MoH log per diem					0	0		
	Driver accommodation	Could be one or more teams - one or more vehicles				0	0		
	Driver per diem					0	0		
	Fuel (1 x vehicle)	20 litres per 100km				0	0		

Logistics budget sample (continued)

#	Description	Notes	Unit	Qty	Unit. Price	Cost in local currency	US$	Control	Comments
4.1 cont.	Vehicle maintenance	For small repair during mission -flat tyre etc. flat fee				0	0		
	Communications	xx persons x (y units) xx missions				0	0		
					Subtotal 4.1	0	0		
4.2	Production logistic documentation	Development material, photocopies samples				0	0		
	Warehouse control lists	Printing				0	0		
	Waybill books and/or dispatch lists	Printing				0	0		
	Visibility for conveyers and or other staff	ID cards or other identification means				0	0		
					Subtotal 4.2	0	0		
					Subtotal 4	0	0		
5	**Log team training for warehouse/dispatching**								
Region 1	Accommodation	Trainers and driver				0	0		
	Transport					0	0		
	Food					0	0		
	Hall rental x 2 days	Flat rate				0	0		
	Per diem to and from training 2 days facilitator and driver	Per diem for local facilitators if needed				0	0		
	Miscellaneous stationery	To facilitate workshop activities				0	0		
					Subtotal 5.1	0	0		
Region 2	Accommodation								
	Transport					0	0		
	Food					0	0		
	Hall rental x 2 days	Flat rate				0	0		
	Per diem to and from training 2 days facilitator + driver					0	0		
	Stationery	To facilitate workshop activities			Subtotal 5.2	0	0		
Region 3	Fuel transport of facilitators	20 litres per100km				0	0		
	Stationery					0	0		
	Hall rental x 2 days	Flat rate				0	0		
					Subtotal 5.3	0	0		
					Subtotal 5	0	0		
6	**Transport port to districts and convoyage**								
6.1	Conveyors training transport support	Transport subsidy for training days				0	0		
	Conveyer lunch during training	Lunch or per diem				0	0		
	Training facilities	Flat Fee				0	0		
	Conveyers per diem and travel costs	1 conveyor per truck - each trip is 2 - 3 days or more				0	0		
	Conveyer Communications	1 phone card for each conveyer				0	0		
	Off-loading trucks in the districts	Is often included in the transport port-districts				0	0		
					Subtotal 6.1	0	0		
6.2	Transport port to district								
	Route 1	Usually a tender is called for this transport but in micro-planning give				0	0		
	Route 2	outlined number of routes and number of bales to the region/district				0	0		
	Route 3					0	0		
	Route 4	In the tender include all transport costs, toll, drivers				0	0		
	Route 5	costs, insurance and if possible off -loading in the district				0	0		
	Route 6					0	0		
					Subtotal 6.2	0	0		
					Subtotal 6	0	0		
7	**Transport from districts to DPs**								

#	Description	Notes	Unit	Qty	Unit. Price	Cost in local currency	US$	Control	Comments
7.1	Budget allocation for transport districts- distribution point	Can be allocation per bale or flat fee including all costs involved				0	0		
					Subtotal 7.1	0	0		
7.2	Contribution to regions/districts for supervision	Can be actual or flat fee per district for per diem, fuel and accommodation				0	0		
					Subtotal 7.2	0	0		
					Subtotal 7	0	0		
8	**Supervision before, during and after distribution**								
8.1	**Before distribution**								
	Logistic team accommodation	One or more persons from central level				0	0		
	Logistic team per diem					0	0		
	Transport fuel 20l per 100km	Fuel for one or more vehicle depending on number of teams				0	0		
	Communication	Phone cards for logistics team				0	0		
					Subtotal 8.1	0	0		
8.2	**During distribution**								
	Logistics team accommodation	One or more persons from central level				0	0		
	Logistic steam per diem					0	0		
	Transport fuel 20l per 100km	Fuel for one or more vehicle depending on number of teams				0	0		
	Communication	Phone cards for logistics team				0	0		
					Subtotal 8.2	0	0		
8.3	**After distribution**								
	Logistics team accommodation	One or more persons from central level				0	0		
	Logistics team per diem					0	0		
	Transport fuel 20l per 100km	Fuel for one or more vehicle depending on number of teams				0	0		
	Communication	Phone cards for logistics team				0	0		
					Subtotal 8.3	0	0		
					Subtotal 8	0	0		
9	**Management and administration**								
	Photocopy	Flat fee per month				0	0		
	Communications	Phone cards for head of logistics and assistant				0	0		
	Districts administrative support	Salary support or other office support				0	0		
	Transport	Local transport or fuel at 20l per 100km				0	0		
	Vehicle maintenance	Flat fee for support of vehicle maintenance				0	0		
					Subtotal 9	0	0		
10	**Monitoring and evaluation**								
	Logistics team accommodation	One or more team for data collection and or field meetings				0	0		
	Logistics team per diem	Per day				0	0		
	Transport costs	Fuel costs 20 litres per 100 km				0	0		
	Data collection and compiling	Flat fee				0	0		
					Subtotal 10	0	0		
11	**LLIN tracking**								
	Development of tracking tools	Printing or copying				0	0		
	Distribution of tracking tools	Distribution and collection of information				0	0		
	Post meeting regions and or districts	Flat fee for actual costs incurred				0	0		
	Post meeting central level	Flat fee for actual costs incurred				0	0		
					Subtotal 11	0	0		
TOTAL logistics BUDGET expenditure									
Budget (1 - 11)					**Subtotal 1-11**	-	0		
Administration or programme support in % max 5%					**5%**	-	0		
Bank charges 2%					**2%**	-	0		
GRAND TOTAL						**-**	**$0.00**		

Notes for the logistics budget sample

The budget is calculated in local currency and then converted into relevant foreign currency using a reputable exchange site (e.g. Oanda), using rate of exchange on the first of the month when the budget is approved. Any currency fluctuations can then be justified.

1. Budget is developed for national level and district level. Regional level can be added as necessary.
2. Consideration needs to be taken when working in a landlocked country. Sample budget will need adapting.
3. It is imperative to have official letter of exoneration from appropriate authorities for duty and taxes on nets as well as for port charges.
4. All costs involved need to be calculated regardless how they are to be covered, i.e. by funds raised or in kind contributions by MoH. This should be reflected in the income budget.
5. Costs for transport will vary depending on type of net and size (bale weight and volume will vary).
6. Policies for per diem and/or incentives for payments to volunteers, health workers or others, must be adhered to and not increased.
7. For transport calculations, 20 litres of fuel for 100 kilometres is used. For motorcycles, it is 1 litre per 18 kilometres.
8. For maintenance, the guideline is US$125 per vehicle for constant use.
9. For transport from district to distribution point, often a flat rate per bale is used to cover transport, loading, security and warehousing.
10. There is a link between monitoring and LLIN tracking. It is important to develop tools and indicators for both before activities start.
11. Logistic coordination teams need to be at all levels, national, regional and district, and flow of information should be recorded and constant.
12. Before household registration population census, macro-planning for distributions points and distribution strategy should be used to plan for transport route (axes) and teams should be established to supervise one or more axes.
13. Using many logos on logistics documentation should be avoided as this is very costly. It is recommended to use only the MoH or NMCP logo.
14. Transport between distribution points (redistribution of stock due to ruptures) is often a challenge if the population does not come to the expected point. This redistribution can be time-consuming and costly, and could cause chaos among beneficiaries.
15. This budget focuses only on LLINs. Supplies will vary if running an integrated campaign.
16. Some transport companies will not accept conveyors on trucks. In that case, final payment should be made only after the waybill with approved signatures from the recipient is received. The conveyor would normally return this document.
17. When training takes place, the documentation, distribution strategy and transport routes should all be approved and agreed upon including data collection and tracking tools.
18. Lines can be inserted or deleted as needed but for all meetings and supervision, it is important that all lines are visible and that a flat fee is not used.
19. There should be NO line for contingency or unforeseen costs. This is never acceptable in good financial planning and only reveals that planning has not been done properly. Budgets can be reviewed quarterly, especially if sufficient funding has not been raised, and the lines adjusted accordingly, Changes because of exchange rate fluctuations will be revealed if format is followed and the rate of exchange used is clear.
20. Expenditure control and reporting should be done against each line and/or group with explanation of any variances. Funds not used for a group cannot be used elsewhere unless budget has been reviewed and changes approved by the donor organization.

Appendix 5D: Sample monitoring forms[c]

LLIN UNIVERSAL COVERAGE CAMPAIGN
Checklist for daily monitoring and supervision
DURING LLIN CAMPAIGNS

These **checklists** are for monitoring the quality of services provided during the distribution of the nets at the various stages of the process. Every LGA supervisor and monitor must use these checklists during each visit. As much as possible, complete this checklist without interrupting the services at the post.

I-9a… Monitoring during training process
I-9b… Monitoring at storage site/warehouse
I-9c… Monitoring at distribution posts

Please observe activities at the post and tick [✓] the appropriate box or record your comments:

MONITORING DURING TRAINING PROCESS

STATE_____ LGA _____
WARD_____ Date____/____/____ Time of visit: _____
Name of monitor: _____ _____
Designation_____

#	Observations/questions	Yes	No
1	Is the training venue conducive?		
2	Are there adequate training materials and aids?		
3	Were lists of participants compiled?		
4	Were role-plays conducted?		
5	Was there adequate feedback from participants during trainings?		
6	Was copy of recommended lists of personnel compiled as an outcome of the training?		
7	Was final list of recruited personnel the outcome of the training?		
	What problems were observed during the training? a. b. c.		
	What corrective actions/solutions were proposed?		
	List 3 key observations/lessons learned: (Continue on the back of this page if necessary) 1. 2. 3.		

MONITORING AT STORAGE SITE/WAREHOUSE

STATE _____ LGA _____

WARD _____ Date____/____/____ Time of visit: _____

Name of monitor: _____ _____

Title _____ _____

#	Observations/questions	Yes	No
1	Adequate storage space for LLINs		
2	Adequate controls during loading and off-loading		
3	Availability of stock card		
4	Appropriate use of stock card		
5	Adequate security measures at storage site		
6	General storage condition satisfactory		
	What problems were observed in the store/warehouse visited? a. b. c.		
	What corrective actions/solutions are proposed?		
	List 3 key observations/lessons learned: (Continue on the back of this page if necessary) 1. 2. 3.		

Updated.
See Brief 6: Management of the supply chain

MONITORING AT DISTRIBUTION POSTS

STATE _____ LGA _____

WARD _____ Date____/____/____ Time of visit: _____

Name of monitor: _____ _____

Title _____ _____

#	Observations/questions	Year
1	Is distribution site properly set up?	
2	Are nets available at the distribution post?	
3	How many nets were delivered to the post at the start of the day?	
4	Is there a plan for re-stocking when supplies are running low?	
5	Is the supervisor present and in control of the post?	
6	Is the post orderly?	
7	Is the recorder checking that the net cards are from the correct ward and DP?	
8	Is the recorder correctly recording the nets given out on the tally sheet?	
9	Is the net distributor giving the correct number of nets?	
10	Is a line being drawn across each voucher?	
11	Are the vouchers being put into the voucher box?	
12	Are limited numbers of beneficiaries brought into the distribution space at a time?	
13	Was health educators' demonstration site appropriately set up?	
14	Are health education activities being carried out at demonstration site?	
15	What means of transport will be used to bring more nets to this post?	
16	What problems were observed at this post? a. b. c.	
17	What corrective actions/solutions were proposed?	
18	List 3 key observations/lessons learned: (Continue on the back of this page if necessary) 1. 2. 3.	

Endnotes

a Fritz Institute Logistics Training, 2006.

b www.oanda.com.

c Source: Nigeria Federal Ministry of Health, National Malaria Control Programme.

Senegal. © Maggie Hallahan /Sumitomo Chemical

Updating brief 1: Key logistics recommendations

REPLACEMENT FOR CHAPTER 5,SECTION 5.8

Contents

Supply chain management is one of the most critical aspects of LLIN distribution. Ideally, the central logistics team (CLT) and logistics sub-committee (LSC) require members who are experienced logisticians, committed to the job, and who will be physically involved in the campaign from the beginning to the end of the logistics operation. Members who are less experienced with logistics could be included in the CLT and/or LSC as long as they are part of the overall LLIN NMCP programme team and they can be supported by individuals with higher logistics capacity.

1. Early planning

- A logistics plan of action (LPoA) and supporting macro planning for storage and transport must be developed 6–9 months prior to the campaign to support the overall campaign plan of action. A detailed timeline and macro logistics budget must be developed at the same time as the preparation of the Logistics Plan of Action (LPoA), so that the CLT has sufficient lead time to request fund transfers at appropriate points to support logistics activities.

SEE BRIEF 2:
LOGISTICS PLAN OF ACTION

- An analysis of risks and measures to mitigate identified risks should be part of the campaign planning documents overall, but for the logistics operation is vital.

SEE BRIEF 3:
RISK MITIGATION PLANNING

- Micro-planning activities must be conducted early in the campaign planning process (4–6 months before planned distribution in most contexts[1]). It is important to ensure that operational funds are released to the LSC or CLT for:
  - communication to the districts regarding information to be collected
  - central level training
  - district level workshops
  - consolidation of data for a single logistics plan and budget for all areas targeted in the LLIN distribution

- Centralized or decentralized delivery and storage should be decided early in the planning process, bearing in mind that decentralized will require more than one logistics base and more than one management team, as well as early assessment of selected warehouses, training of warehouse management teams and availability of supply chain management tools. Logistics personnel (CLT) should be involved in discussions prior to procurement of the LLINs, particularly concerning ideal delivery locations to facilitate the movement further down the supply chain.

SEE BRIEF 4:
NET DELIVERY SYSTEMS

- Assessment of selected warehouses is a critical activity to ensure that there is sufficient space (with proper bale stacking and space left to facilitate rapid inventories of stock) and that warehouses meet the criteria for safe and secure storage of the LLINs. Staff who are making assessments need to measure accurately, using tape measures. To limit warehouse problems during LLIN reception,

[1] Note that in complex settings, it may be more prudent to do micro-planning closer to the time of distribution, particularly in contexts where there is population movement occurring on a semi-regular basis due to insecurity or other factors.

accurate details of all selected warehouses/ storage spaces must be reviewed and if information is lacking, a separate logistics field mission may be needed to reconfirm warehouse assessments.

SEE BRIEF 5: WAREHOUSE ASSESSMENT

- Supply chain tracking tools must be prepared and printed early. It is critical to ensure that the tools are available prior to the arrival of the LLINs in each storage location throughout the supply chain. This will permit the tools to be filled in at the point of arrival of the LLINs, rather than retrospectively when tracking tools are delivered after the LLINs. It is also vital to have the tracking tools available for training. Guidelines should be developed containing detailed information on how LLINs should be managed at every level and every stage of the supply chain. These guidelines should include examples of the forms and tracking tools and their correct usage.

SEE BRIEF 6: MANAGEMENT OF THE SUPPLY CHAIN

- Guidelines on the structure and content of reports should be produced, ensuring that all reports which will contribute to the final report are standardized, and that complete and correct information is recorded. During the positioning of LLINs, tracking tools should be utilized and reports documented for every LLIN movement.

2. Training

- Adequate and appropriate training is essential for the logistics operation. It is necessary for macro-planning (arrival of LLINs, transport to initial warehousing locations, storage and security), micro-planning (transport, storage and security), use of tracking tools, warehouse management, commodity management assessment (CMA), budgeting and finance management. The identification of appropriate personnel involved in logistics and supply chain management at all levels is critical, and their training must be planned carefully. CLT members and central warehouse managers need to be trained before the arrival of the LLINs in the country, district logisticians and district store managers need to be trained before the arrival of nets at district level. For cascade training, those who will do the training at the lower levels must be given the capacity and knowledge of training methodology in order to give adequate training. Cascade training can be effective if there are trained supervisors to manage and monitor training. Training at every level and supervision of training must be given adequate financing in the budget.

SEE BRIEF 7: LOGISTICS TRAINING

- It is recommended that, during the training, a module be dedicated to supply chain management, documentation, reconciliation of data and cross checking. For warehouse tracking tools, practical, hands-on training is generally an effective way of ensuring understanding of the purpose of the tools and their importance. It must be emphasized that whenever LLINs are moved, there must be complete and accurate documentation. This includes post-distribution movement, such as transfer to ANC or EPI. Systematic net tracking is essential.

SEE BRIEF 6: MANAGEMENT OF THE SUPPLY CHAIN

SEE BRIEF 8:
REVERSE LOGISTICS

- Special emphasis should be placed on the training of distribution point (DP) team leaders, who must understand their responsibility for accounting accurately for stock used or returned at the end of each distribution day and at the end of overall distribution.

- Supervision guidelines need to be clear about the management and reconciliation of data at both DP and warehouses to enable supervisors to be able to accurately spot-check supply chain management tools during their supervision and monitoring activities.

- If conveyors, who travel with trucks to the DPs to ensure the security of the LLINs during transport are used, then sufficient funding and adequate training are required.

SEE TRANSPORT
DISPATCH RESOURCE

3. During the campaign

- Documentation must be filed meticulously and securely. Tracking tools in LLIN management are the equivalent of invoices and receipts in financial management.

- The way that documents are filled in should be standardized (no ambiguity allowed, such as permitting either a tick or a cross) and procedures for filing should be part of the training. Detailed documentation (e.g. individual forms and not only summary forms) needs to be readily available at the specified levels (e.g. district, region, central) at the end of the distribution period.

Post campaign

- Commodity management audit as a post-campaign activity should be included to assess the efficiency of the logistics operation and the tracking tools used, as well as accountability for the LLINs. A CMA must be planned from the outset and included in the budget.

SEE INTRODUCTION TO THE CMA IMPLEMENTATION PACKAGE AND THE CMA IMPLEMENTATION PACKAGE RESOURCE

Updating brief 2: Logistics Plan of Action

REPLACEMENT FOR CHAPTER 5, SECTION 5.2 CHART

Section	Contents
1. Introduction	An outline of the time and coverage of the campaign and its programmatic scope, taken from the campaign plan of action.
2. Source data for the campaign	Official data (from macro-quantification, for example) on quantities required and their breakdown by source of funding and geographic area. Product specification and supplier(s). This information can be found in the campaign plan of action and the procurement documentation and bids received and accepted.
3. Strategy	Description of supply chain and delivery method selected (centralized versus decentralized).
4. Organization and management	Identification of the different partners in the logistics sub-committee and their roles and responsibilities (see the terms of reference for a logistics sub-committee in Appendix 2C at the end of Chapter 2).
5. Methodology	Related closely to the macro and micro-logistics plans and should provide detailed information on activities (transport, storage, clearance, security, resources, tools). Methodology should also include areas of development, including risk identification and strategies for mitigation of risk and plans for reverse logistics. **See Brief 3: Risk mitigation planning.** **See Brief 8: Reverse logistics.**
6. Operational logistics structure	All levels, central, regional and district.
7. Training needs and plans	The training schedule and training method (training of trainers (ToT) and cascade training, for example) **See Brief 7: Logistics training**.
8. Budget - logistics	This should cover procurement and operational costs against all activities of the supply chain. More details on budgets are included in Chapter 5 (Section 5.5).
9. Calendar of events	This should include all critical dates, i.e. date of tender, date of purchase, estimated shipment date and estimated arrival at the point of entry for all commodities. This calendar should be regularly updated and used by the logistics sub-committee for review of progress. Later edits of the calendar of events should include actual arrival dates in-country as well as estimated and actual arrival dates at lower levels of the supply chain (regional/state, district, distribution point, etc.).
10. LLIN tracking, logistics monitoring and reporting	This section should focus on description of activities and what is needed for their implementation (transport, personnel). Indicators developed for monitoring should be included and reference tools and matrices should be annexed to the plan of action. Specific guidance on logistics monitoring, evaluation and reporting tools are found in Chapter 5 (Section 5.6). Monitoring should include planning for a Commodity Management Audit (CMA). **See Introduction to the CMA Implementation Package.**
11. Timeline of activities	This is different from the calendar in that it demonstrates a critical path to achieve key activities, both process-related activities and those directly related to the supply chain.
12. Annexes	Standard annexes supporting a LPoA are generally as follows: • LLIN timeline chart (chronogram) • LLIN positioning plan • LLIN storage plan • LLIN dispatch plan • Micro-logistics warehouse assessment questionnaire • LLIN logistics budget

Updating brief 3: Risk mitigation planning

ADDITIONAL MATERIAL FOR CHAPTER 5, SECTION 5.1

Contents

1. Risk and a LLIN distribution campaign

There are many definitions of risk. The UNESCO Risk Management Training Handbook (2010)[1] uses the following: "Risk is the expression of the likelihood and impact of an uncertain, sudden and extreme event that, if it occurs, may impact positively (opportunity) or negatively (threat) on the achievement of a project or programme objective" (p. 12).

Risk = Likelihood x Impact

Why manage risk? The ultimate purpose of the exercise of risk identification and analysis is to prepare for risk mitigation. Risk mitigation can be seen as the process of taking steps to reduce adverse effects. Mitigation includes the reduction of the likelihood that a risk event will occur and/or reduction of the effect of a risk event if it does happen to occur[2], e.g. risk mitigation can help to minimize potential negative impact on the different interlocking aspects of the LLIN campaign, such as road conditions leading to transport and delivery delays during the logistics operation or the possibility of refusals during the household registration process.

Inherently, large-scale LLIN campaigns have many uncertainties and rapidly changing events or situations. In order to plan for success, it is important to identify these potential risks at the earliest stage of campaign planning. Some broad categories to consider are:

Categories	Examples
Strategic factors: those risks that affect the entire strategy planned for the campaign	• Strategy to run a national standalone universal coverage campaign with fixed site distribution, but country context does not allow for groupings of individuals (e.g. Ebola outbreak or complex operating environments) • Strategy to decentralize deliveries of LLINs, but no organization is prepared to tender to achieve this • Strategy does not include a maximum number of nets per household and LLINs are insufficient for the registered population
Operational factors: those risks that affect, in part or wholly, ability to implement the operation as planned	• Budget does not adequately cover every aspect of the operation • Insufficient structures or personnel to meet the planning for storage, transport and implementation • Unrealistic expectations of possible achievements in operation leading to blockages, delays and failures in the implementation • Management of crowds insufficient, affecting security of both commodities and personnel
Financial factors: those risks associated with budget and financing	• Budgets inadequately developed and do not reflect real costs • Changes in exchange rates • Failure of timely customs clearances of consignments, which may lead to additional demurrage charges • Delays in campaign implementation leading to increased storage costs • Security not adequate at warehouses, leading to theft or other loss of nets • Paperwork not filled out or archived correctly to allow for an audit trail for the LLINs, resulting in loss of accountability • Lack of functioning banking system in all parts of the country increasing risks for payments of campaign workers
Compliance risk: those risks associated with legal penalties when there are actions not in accordance with laws, regulations or internal policies	• Improper procedures followed for financial disbursement and justification • Improper contracting process or contract template used • Improper procedures followed for local or international procurement

Note that some issues may have implications in more than one category. Countries may also add other categories, e.g. political implications, as in the Sierra Leone framework example reproduced below.

[1] Source: UNESCO Risk Management Training Handbook, 2010. Bureau of Strategic Planning. BSP-2010/WS7. Available at unesdoc.unesco.org/images/0019/001906/190604E.pdf

[2] Source: National Academies Press. The Owner's Role in Project Risk Management (2005), Chapter 5. Available at: www.nap.edu/read/11183/chapter/7

Likelihood and impact

Two key elements to consider for each identified risk are the likelihood of the risk occurring and the impact if the risk occurs.

The table below shows one approach to categorizing each of these factors.

LIKELIHOOD OF RISK/PROBABILITY	IMPACT OF RISK	EXAMPLE OF COLOURS IF USING HEAT MAP
Unlikely	Negligible	**Low**
Likely	Insignificant	**Moderate**
Possible	Moderate	**High**
Almost certain	Significant	**Extreme**

Every campaign will have a variety of risks related to each aspect of the campaign roll out and each of these risks may have an effect across all areas of operations (technical and monitoring and evaluation, logistics and communication). Often, it will not be possible (or necessary where risks are unlikely and of limited impact) to map all risks, so a consolidated risk table with the most important risks can be considered. See the table below for part of an example risk mitigation framework developed for the LLIN campaign in Burundi in 2016. It outlines the "top four" risks.

TOP FOUR	RISK	CATEGORY OF RISK	RISK TO WHOM
Supply chain	Late arrival of LLINs at provincial level (production delays, maritime transport delays, delays on arrival in country, customs delays, delays in transport to provinces.	Operational	FM/PPM
	Changes to policy on import of goods and purchases (for example, taxes not covered by sponsors).	Strategic Operational Financial	NMCP/MOH
	Delays in delivery from provinces to communities/ distribution sites (delays in call for contract, delays in contracting transporters).	Operational	NMCP/PR
	Failure to identify and verify sufficient and appropriate storage in each community/distribution site for the quantity of nets being received.	Operational	NMCP/PR
Security	Difficulty of access to some zones	Operational	
	Refusal to register during household registration	Operational	
	Difficulties in urban areas (such as the capital of the country)	Operational	
	Displacement of population	Operational	
Season of operation	Difficulty of access to some zones	Operational	
	Volunteers demotivated in difficult working conditions	Operational	
LLIN quantification	Insufficient LLINs after counting (e.g. number based on census several years before)	Operational	

Risk has become an increasingly important element in planning for LLIN distribution campaigns, given the need to ensure that the funds invested in the procurement and distribution of the nets are well utilized. Even where a country has not been requested to submit a risk assessment and mitigation plan as part of the campaign planning documents, it is good practice for the campaign team to go through the process of identifying any potential risks to the overall campaign, the accountability of the LLINs and the security of campaign personnel.

Risk mitigation planning focus

Often risk assessment and mitigation planning focuses on logistics and the overall supply chain, but planning for mitigation of risks should cover more than just logistics. For example, there is sufficient global evidence pointing to the importance of household registration for ensuring that families receive nets. Therefore, identifying the risks that households may not be reached or may not be registered correctly during the household registration can be a good way to strengthen planning for this activity. It should be noted that many of the risks identified by a country planning team are likely to be related to experiences from previous campaigns, so it is good practice to look back at reports (which may have been written three years earlier) in order to refresh memories on where challenges happened, which warning signs were noted and how bottlenecks were resolved.

Countries should consider risk assessment as a critical aspect of the terms of reference for all sub-committees (logistics, technical and communication[3]), and use identified risks and mitigation measures to develop timelines and budgets for activities to improve the quality of LLIN campaign implementation. During the macro planning phase, it will be possible for the central level team to identify the general risks that may affect the overall campaign planning and implementation, but during microplanning, these assessments of risk can be more localized and show specific risks in only small parts of the district or health facility catchment area.

Once identified, the risk owner can work to develop tools/plans to assess, determine, safeguard and implement suitable corrective actions to mitigate the risk in the planning.

In exceptional situations, the risk may need to be tolerated. Transferring the risk responsibility by contracting out certain activities to third parties, e.g., transportation or warehousing, is an option. But if transferring is utilized, the goal of delivering campaign LLINs to the targeted beneficiaries must be the highest priority and the ongoing close scrutiny of a contractor's activities would be a logistics sub-committee function needing attention. In addition, the risks associated with contracting out an activity would need to be considered and evaluated.

2. Logistics risk mitigation planning

The logistics operation is key to the campaign and is where the accountability for the commodities will fall in terms of responsibility, so risk mitigation is a vital aspect of the development of the logistics plan of action and of the continuous update of the transport and storage planning.

The risk assessment and mitigation table should be seen as a key component of the logistics plan of action (LPoA) and should be submitted at the same time as other annexes (e.g. the macro transport and macro positioning plans, etc.).

The logistics sub-committee must continually monitor and discuss the ongoing logistics risks and the actions taken should be reflected in the LPoA. It is important to note that the risks may change over time, so risks identified early may not be the same as risks that arise later in the planning and implementation process. The risk assessment and mitigation process is continuous – it must be reviewed and updated on a regular basis.

See resources 1 and 2 for sample risk mitigation documents as developed for the logistics operation of the 2014 LLIN campaign in Sierra Leone. Countries should adapt the template provided to cover non-logistics issues for a full view of the potential risks associated with the campaign.

[3] Terminology may differ between countries but function of sub-committees should be similar.

Example of logistics risk mitigation planning

The example below is adapted from the 2014 LLIN campaign conducted in Sierra Leone. See also the Excel resource *Sample risk mitigation framework matrix* developed for the Sierra Leone 2014 LLIN campaign and the sample *Risk mitigation narrative* developed by the NMCP and MoHS of Sierra Leone for the 2014 LLIN campaign, in conjunction with UNICEF logistics consultant and AMP logistics consultant. This is reproduced in Appendix 1.

Resources

Sample risk mitigation framework: Sierra Leone, in French (Excel).

MILDA gestion et mesures de mitigations des risques de pertes: Cameroun 2015, in French (Word)

	Risk	Risk category	Likelihood	Impact	Heat map	Early warning signs	Key controls/ action plan	Tools required	Risk owner	Timeline
Resource mobilization	Failure to provide sufficient funds for the campaign or untimely commitment of funds	**Operational:** if there are insufficient funds for LLINs, the campaign cannot take place. **Strategic:** if funds are late, there is a possibility that a national campaign would not be possible.	1 Unlikely	4 Significant		Unconfirmed commitments five months prior to initiation of activity	Close follow up of all pledges by MOHS		MOHS (NMCP)	Confirmed commitments and timeline for delivery by December 2013
	Failure to mobilize sufficient resources for a national campaign	**Strategic:** If there are not sufficient resources for a national campaign, decisions will need to be taken on deferring the campaign until a later date or implementing a standalone campaign as opposed to an integrated campaign with the MCH week. **Political:** there will be ramifications in terms of political buy-in if the campaign is not national, given that malaria has a heavy burden throughout the country.	1 Unlikely	4 Significant		Unconfirmed commitments five months prior to initiation of activity	Close follow up of all pledges by MOHS		MOHS (NMCP)	Confirmed commitments and timeline for delivery by December 2013
Procurement	Failure to procure nets in time to meet campaign dates (non-synchronized arrival of nets in country, late arrival of nets past drop dead date to be in time for the campaign roll-out)	**Strategic:** as the campaign is tied to the MCH week, a standalone campaign would have to be considered or the option of deferring the campaign until resources become available. **Financial:** standalone campaign will require more resources as there will be no economies of scale gained from integration with other interventions. **Political**: this could lead to inability to achieve universal coverage for the programme and affect the possibility of securing further support for the malaria programme.	2 Likely	4 Significant		Procurement of nets not completed by November 2013. Unconfirmed arrival dates of shipments by February 2014 (or delay for campaign)	All orders completed by relevant agencies by November 2013. Follow up on shipment and arrival dates by relevant agencies		MOHS (NMCP)	Confirmed commitments and timeline for delivery by November 2013

	Risk	Risk category	Likelihood	Impact	Heat map	Early warning signs	Key controls/ action plan	Tools required	Risk owner	Timeline
Customs clearance	Failure of timely clearance of consignments leading to accrual of demurrage charges	**Financial:** increased costs for delivery of nets to central warehouse. **Strategic:** delayed port clearance will compress timelines for moving nets to distribution points in time for the planned distribution dates.	3 Possible	3 Moderate		No funding provided by donor for clearance or out of port storage site	Donor agreement to fund customs clearance and confirmation of sufficient storage facility/contract before shipment to country		MOHS (NMCP), UNICEF, GF, UMCOR, NPPU	Ensure clarity on clearance procedures by November 2013
							Ensure availability of documentation for consignments at least three weeks before arrival to facilitate	Bills of Lading, invoices and packing lists		
							Prepositioning of Supply and Logistics Team (three people, Clearance, Transport and Dispatch and coordination and reporting) at the quay to facilitate clearance of containers			Supply and Logistics Team identified and prepositioned by February 2014
							Obtain presidential waiver to facilitate timeline clearance and release of containers from the port	Presidential waiver		
Transport of LLINs from port/transit warehouse	Delay in securing appropriate vehicles for transporting LLINs. Appropriate refers to MAS compliance of vehicles, capacity of vehicles.	**Financial:** no opportunity for moving from the central warehouse to district. Additional fees could be incurred at the central warehouse, affecting resources available for overall campaign. **Operational:** delays at any level with movement of the LLINs could lead to implementation delays for all programme activities. **Strategic:** as above, compressed timelines for moving nets out and to DPs in time for the campaign dates.	2 Likely	3 Moderate		Slippage in terms of activities timeline	Logistics Committee to identify potential transport providers. Send Notification of Minimum Acceptable Standards for transport of nets to the transporters to identify those that meet the requirements. Establish contact with prequalified transporters.		MOHS (NMCP), UNICEF	Call for tenders completed and issued by December 2013
	Failure to ensure security of commodity on trucks through independent means	**Financial/operational:** leakage and loss of nets are possible if conveyors are not used and the transport contract does not specify responsibility and penalties.					Identify escorts for all consignments that will be in transit. Escorts or conveyors will be fully trained and apprised of their responsibilities.			
						Transport contract does not specify responsibility of transporter and penalties and operational budget does not include conveyors	Liaise with Sierra Leone police force to provide additional security for in transit stocks		MOHS (NMCP)	

	Risk	Risk category	Likelihood	Impact	Heat map	Early warning signs	Key controls/ action plan	Tools required	Risk owner	Timeline
Central transit storage for cross docking of nets	Failure to secure appropriate central transit warehousing	**Financial:** no opportunity for offloading to the central warehouse. Fees could be incurred at the port. **Operational**: consignments spend more time than expected at the port and delays at any level with movement of the LLINs could provide opportunities for loss or leakage, as well as late arrival at DPs.	2 Likely	3 Moderate		Slippage in terms of activities timeline	Use of a transit warehouse to facilitate prepacking of limited quantity of LLINs to top requirements for districts. UNICEF warehouse that meets MAS standards will be utilized, only to be used as a transit point to facilitate repacking of top-up nets to the districts.	Store Receipt Vouchers, Pre-packing/ Distribution matrix, Stores Issues Vouchers and Waybills	MOHS (NMCP)	Warehouse in place and ready for operation January 2014
						Casual workers (up to 20 persons) not identified in time for off-loading. Expenses related to off-loading and inventory payments to casual workers, fuel for forklift, etc. not properly budgeted.	Casual workers (up to 20 persons) are identified for off-loading. Expenses related to off-loading and inventory (payments to casual workers, fuel for forklift, etc.) are properly budgeted.	Casual workers.	NPPU	
	Failure to use appropriate tracking tools as nets enter the warehouses to ensure quantity of LLINs on bills of lading is correct	**Financial:** lack of proper accounting for LLINs could lead to leakage and theft of LLINs. **Operational:** fewer LLINs than needed based on macroquantification are prepositioned, leading to shortages at DPs. **Strategic:** may lead to a change in the implementation plan at the last minute to allocate fewer LLINs to households than planned. Frustration of beneficiaries, need for increased communication.	2 Likely	3 Moderate		Training of staff in logistics storage and tracking procedures not complete before net arrival in country. Procurement order for tracking documents not in time for delivery.	Development of shipment tracking and storage management tools and SOPs.	Original Bills of Lading for all sealed containers. Waybills duly signed and stamped by authorized personnel.	MOHS (NMCP)	Budget, timeline and training plan determined by December 2013
	Failure to have trained personnel in place at central warehouse to ensure tracking tools used appropriately	**Financial:** no proper accounting for LLINs could lead to charges incurred to the NMCP for lost LLINs.	1 Unlikely	3 Moderate		Training of staff in logistics storage and tracking procedures not complete before net arrival	Training of staff in inventory management procedures		MOHS (NMCP)	Budget, timeline and training plan determined by December 2013
	Failure to do proper stacking at warehouse to ensure physical counting of stock is possible	**Financial:** inability to count the nets will lead to accountability issue in the long term.	2 Likely	2 Insignificant		Training of staff not complete before net arrival	Casual workers trained in proper stacking procedures		MOHS (NMCP)	Budget, timeline and training plan determined by December 2013

	Risk	Risk category	Likelihood	Impact	Heat map	Early warning signs	Key controls/ action plan	Tools required	Risk owner	Timeline
District storage	Failure to identify sufficient and appropriate storage in each district for the quantity of nets required	**Operational:** theft and leakage of nets as a result of inappropriate storage facilities may occur therefore compromising the outcomes of the intervention.	2 Likely	4 Significant			Specification of MAS standards for the storage of LLINs	MAS standards	MOHS (NMCP) District Taskforces	Verification of all storage in January 2014 as part of microplanning
							Identification of potential MAS compliant storage in each district	Checklist for assessment of storage sites		
							Assessment of potential storage facilities			
							Identify and prioritize potential storage for upgrading	Checklist and action plan		
							Establishment and implementation of a monitoring system to ensure that storage sites maintain MAS.	MoU between MOHS and District Councils used to ensure accountability for maintaining MAS		
	Failure to use appropriate tracking tools to monitor nets dispatched and nets received					Training of staff in logistics storage, tracking and shipment planning procedures not complete before shipments to districts	Development of shipment tracking and storage management tools and SOPs	Inventory management SOPs, Receipt Vouchers, Inventory Control Cards, Waybills	MOHS (NMCP)	All training of logistics personnel completed according to activities timeline
	Failure to train warehouse managers at district level to receive and account for LLINs correctly									

	Risk	Risk category	Likelihood	Impact	Heat map	Early warning signs	Key controls/ action plan	Tools required	Risk owner	Timeline
Movement of LLINs from district warehouse to DPs	Failure to identify transport from district storage to DPs in time for planned net movement	**Financial/operational:** Delayed implementation of campaign and risk of failure to complete campaign in time	3 Possible	4 Significant		Microplans do not identify appropriate transport to ensure movement of nets to DPs	Logistics Committee to identify potential qualified (MAS) transport providers.	Waybills duly signed and stamped by authorized personnel	MOHS (NMCP), District Taskforces	Transport options at district level to be identified during microplanning in January 2014
	Exposing LLINs to risk of loss and leakage due to inappropriate prepositioning of LLINs at chiefdom and community level	**Financial/operational**: leakage/theft of commodities and failure to meet targets for beneficiaries	2 Likely	3 Moderate			Positioning plan disaggregated by chiefdom and villages	Positioning plan	MOHS (NMCP), District Taskforces	
	Failure to ensure security of commodity on trucks through independent means	**Financial/operational:** leakage/theft of commodities and failure to meet targets for beneficiaries	2 Likely	4 Significant		Transport contract does not specify responsibility of transporter and penalties	Identify conveyors for all consignments that will be in transit		MOHS (NMCP), District Taskforces	Contracts reviewed and validated before January 2014
							Liaise with Sierra Leone police to provide additional security	Goods Received Note, Stock Record Warehouse Register. Store Release Packing list Gate passes	MOHS (NMCP), District Taskforces	
	Failure to use appropriate tracking tools to monitor nets dispatched and nets received	**Financial/operational:** leakage/theft of commodities and failure to meet targets for beneficiaries	2 Likely	4 Significant		Training of staff in logistics storage, tracking and shipment planning procedures not complete before shipments to DPs	Training of staff in logistics storage, tracking and shipment planning procedure		District Taskforces	All training of logistics personnel completed according to activities timeline
	Failure to train warehouse managers at district level to receive and account for LLINs correctly						Mobilization of civil society and community structure to monitor the management of nets in the prepositioning and DP sites and report any misuse of nets	Advocacy and communication plan	MOHS (NMCP), District Taskforces	

Key

Likelihood

1 Unlikely
2 Likely
3 Possible
4 Almost certain

Impact

1 Negligible
2 Insignificant
3 Moderate
4 Significant

Heat map

Likelihood	Negligible	Insignificant	Moderate	Significant
1 Unlikely				
2 Likely				
3 Possible				
4 Almost certain				

Appendix 1: Country example

The Risk Matrix Framework for the Sierra Leone Mass Distribution of LLINs in June 2014

The Government of Sierra Leone will be undertaking a Mass Distribution of LLINs in June 2014 in an effort to attain universal coverage of LLINs to the population of Sierra Leone. The campaign will be integrated with other health interventions including deworming and Vitamin A administration.

The campaign will make use of decentralised storage of LLINs in provinces, districts and chiefdoms to preposition LLINs prior to their distribution to beneficiaries. The campaign will make use of a community-based approach for the distribution of LLINs and will engage District Management Health Teams to assume responsibility for the storage and distribution of the commodities.

1. Procurement, shipping and clearance of containers

The successful implementation of the Mass Campaign (MC) is determinant on the timely procurement and arrival of approximately 3.5 million LLINs. Since procurement of the LLINs is being carried out by different procurement agencies one of the key risks identified has been the failure to procure nets in time to meet campaign dates (non-synchronized arrival of nets in-country, late arrival of nets past drop-dead date to be in time for the campaign roll out).

Risk

Failure of timely clearance of consignments will lead to accrual of demurrage charges. Delayed port clearance will compress timelines for moving nets to distribution points in time for the planned distribution dates.

As the campaign is tied to the MCH week, a stand-alone campaign would have to be considered or the options of deferring the campaign until resources become available. This could lead to inability to achieve universal coverage for the programme and affect the possibility of securing further support for the Malaria programme.

Mitigation Strategy

All orders were submitted to the relevant agencies by November 2013. Follow up on shipment and arrival dates by relevant agencies is ongoing and includes regular conference calls with the VPP to ensure timely arrival of nets. Regular communication with procurement agencies to ensure availability of documentations for consignments at least 3 weeks before arrival to facilitate procedures is also ongoing.

A presidential waiver to facilitate timely clearance and release of containers from the port will be obtained and utilised to fast track clearance of consignments.

Supply and Logistics Team (3 people) has been identified and will be stationed at the Port to coordinate clearance, dispatch and transport of containers coordination.

2. Transportation of LLINs from the ports and protected from diversion to distribution points where beneficiaries receive the nets

Risk

Failure to identify transport from district storage to distribution points in time for planned net movement exposes the LLINs to risk of loss and leakage due to inappropriate prepositioning of LLINs at chiefdom and community levels. Failure to use appropriate tracking tools to monitor nets dispatched and nets received.

Mitigation Strategy

During the macro transportation phase of this campaign, UNICEF will be controlling and dispatching LLINs to all 13 districts as well as 2 Western Area (WA) storage locations for both urban and rural Freetown. LLINs destined for both districts/WA will initially be stored at district medical stores (DMS).

Planning for risk mitigation (diversion) during movement of LLINs, the following measures have been incorporated or will be incorporated to safeguard the campaign LLINs:

a. No LLINs will be unstuffed at the port of entry. If requirements dictate, NMCP will provide a Central Medical Store location for safe transfer of cargo within WA;
b. Training of MoHS conveyors and/or partners will be delivered prior to LLIN movement from port;
c. Conveyor personnel will escort each distribution trip to prevent pilfering along the way and ensure proper delivery, acceptance and completion of tracking waybill (from port to PHU locations);
d. Containers arriving at port of entry will remain sealed for onward transport, however if for verification reasons a container needs to be opened, a proper (new) padlock will be secured onto the door and key access held by the designated conveyors with full responsibility for nets in transit;
e. Transportation of LLINs from the port to storage sites will be carried out in containers that will be loaded on flatbed trucks. The number of nets transported from district stores to PHUs and distribution points will utilize a variety of transport means such as trucks, vehicles, porters on foot and boats for riverine areas. In order to mitigate the risk of diversion and leakage all transport of LLINs from (DMS/Chiefdom stores to PHUs and temporary distribution points) will be carried out using waybills to track the movement of commodities.

3. Availability of storage locations at all levels and the security arrangements

Risk

The risk related to storage involves failure to identify sufficient and appropriate storage in each district for the quantity of nets required. Lack of trained personnel in place at central warehouse to ensure tracking tools used appropriately and the lack of appropriate tracking tools to monitor nets dispatched and nets received will expose the programme to theft and leakage of nets therefore compromising the outcomes of the intervention.

Mitigation Strategy

Planning for risk mitigation (diversion) during storage of LLINs at all levels. WA and districts DMS are being assessed the week of 24-28 Feb 2014 by national teams. The aim is to further inspect (using the storage space assessment guide) and determine the validity of information received in early January 2014 from some districts. The following measures have been incorporated or will be incorporated to safeguard the campaign LLINs:

A. Confirm storage space is adequate for delivery quantities at each DHMT location;
B. Ensure and put into place proper physical security measures at warehousing locations to include:

a. Proper security of windows, doors and roof access.
b. Proper secure (two) padlocks in place providing access only to at least two persons.
c. Develop a day/night security plan, i.e.: number of guards, procedures for walk around security checks.
d. If no exterior lighting is available, ensure flashlights are available for all security guards.
e. Access control to storage facilities will be enforced during off-loading and uploading of LLINs ensuring proper storage that will allow visible uniform stacking of bales.
f. Counters will be used to ensure accurate bale count is completed during loading activities from districts to chiefdom/PHU locations.
g. Training of storekeepers is targeted for 13/14 March 2014.
h. All LLIN transport from storage facilities will be properly documented using the NMCP stock-cards, and waybills.
i. Mobilisation of civil society and community structures such as youth groups will take place to monitor the management of nets in the prepositioning and distribution sites and report any misuse of nets.

Please refer to Risk Matrix Framework for more details

4. Timelines for implementation of identified measures.

Campaign Logistics sub-committee timeline (chronogram) is being updated to reflect the storage assessment mission and the proposed logistics training dates of district/chiefdom storekeepers.

All logistics tracking tools have been developed and compiled and are being sent for official signatures and forwarded onward to UNICEF for reproduction. They consist of:

a. LLIN vouchers will be security printed embossed with GoSL logo in different colours per districts, booklets of 100 and each individual voucher will be serialized to specify for each district,
b. Waybill booklets (both 50 / 15 pages booklets – all quadruplicate) with "how to" complete instructions,
c. Warehouse stock-cards with "how to" complete instructions, Control sheets for Household LLIN Issuing Tally Form for vouchers, and
d. Control sheet for daily LLIN distribution Tally Form.

Please refer to revised chronogram for timelines of implementation of activities

Updating brief 4: Net delivery systems

UPDATED MATERIAL FOR CHAPTER 5, SECTION 5.1, LLIN delivery methodologies

Contents

Supply chain management is one of the most critical aspects of LLIN distribution. Ideally, the central logistics team (CLT) and logistics sub-committee (LSC) require members who are experienced logisticians, committed to the job, and who will be physically involved in the campaign from the beginning to the end of the logistics operation. Members who are less experienced with logistics could be included in the CLT and/or LSC as long as they are part of the overall LLIN NMCP programme team and they can be supported by individuals with higher logistics capacity.

1. Planning the delivery

LLIN procurement and level of delivery on arrival in-country are important factors in the overall campaign planning, both in terms of timelines for all campaign activities and in terms of planning for the in-country logistics operation. It is critical to ensure strong coordination and communication between the procurement, programme and logistics teams for a successful LLIN campaign without unnecessary delays.

The aim of this brief is to provide information for procurement and logistics teams about the various delivery systems, as well as planning considerations and general guidance to facilitate decision-making about delivery levels for LLINs prior to procurement.

Ultimately, the delivery method and level selected is the responsibility of the NMCP/the Ministry of Health (MoH), in collaboration with the LLIN donor(s). It is important, however, that logistics teams are familiar with the decisions taken, how these affect their work and the planning required to ensure a smooth in-country logistics operation.

Procurement agencies/funders (e.g. Global Fund, PMI, World Bank, UNICEF, etc.) should be made aware of the delivery decisions for the LLINs at the time of the LLIN order being placed. Local details can be an important factor, and a macro positioning plan should be put together prior to ordering LLINs. This plan may be very general, providing quantities and general information (such as name of district but not specifying the actual address of the warehouse), and will be developed further alongside the Logistics Plan of Action, but it will provide sufficient information for suppliers and procurement agents to come up with cost estimates for sign-off by the country and the LLIN donor(s) in order to proceed with producing the nets.

2. Centralized or decentralized delivery

In general terms, there are two methods that can be adopted when ordering LLINs: centralized delivery and decentralized delivery. A "mixed" method may also be adopted, and has many advantages, particularly when population estimates based on census projections are likely to be inaccurate.

With all methods of delivery, the procurement agency will facilitate all the needed insurance during transport (from manufacturer to delivery destination), import documentation and pre-shipment quality assurance/quality control processes. Depending on the way responsibilities for the procurement are divided out and decisions on levels of delivery, LLINs may be delivered to the NMCP centrally or the procurement agent may be responsible for moving the LLINs down to a decentralized delivery point, where they will be received by the Ministry of Health and partners. In both cases, the NMCP and the

Ministry of Health procurement office will be responsible for providing specific details, including quantities and locations for LLIN deliveries, to the donor/procurement agent.

Where LLINs are received centrally, a reception committee should be organized for the offload and count of the bales and once all nets have been received and the paperwork has been signed off, the procurement agent has completed their role. Responsibility for the LLINs is then handed over to the NMCP. With centralized deliveries, the Logistics Plan of Action will describe both the macro phase (moving from central to decentralized storage) and the micro phase (moving from decentralized stores to distribution points or pre-positioning sites) of the logistics operation.

Where LLINs are received in decentralized locations, the quantities and condition will not be verified centrally, so a reception committee needs to be organized for the delivery in each storage location. In this case, once delivered and the paperwork signed off, the NMCP will take the responsibility for the nets at the decentralized level. With decentralized delivery, the Logistics Plan of Action will focus on the micro phase of the logistics operation. In this case, it is important for the procurement office and the logistics sub-committee to confirm the details of the delivery and obtain contact information for the individuals facilitating these processes for pipeline monitoring purposes and better coordination of LLIN arrival.

Centralized

Centralized delivery generally refers to LLINs being shipped to the capital city of the country or to the capital of a region in the case of a very large country. There they are received and stored until being transported further down the supply chain as described in the Logistics Plan of Action.

Some considerations for centralized delivery include:

- Determine if there is a central (or regional, depending on country size) warehouse with sufficient space available, typically in the capital city or port of delivery in a small country, or if more than one warehouse is needed. If the decision to warehouse centrally in one or more structures is taken, the LLIN order must indicate the delivery location(s) and the quantities required for each one, ensuring that quantities and space requirements are aligned.
- In most cases, once delivered to the identified warehouse(s), the delivery responsibilities of the procurement/shipping agent are complete and the country logistics team will take over the planning of the movement from the central warehouse down to the peripheral storage sites and distribution points. There may be situations where the nets are temporarily warehoused centrally and then moved to decentralized levels, still under the responsibility of the procurement/shipping agent, where the logistics team would take over the planning for and management of the nets at a lower level. The LPoA will describe at what level of the supply the responsibility shifts from the procurement agent to the Ministry of Health and partners.
- Examine the timeline between LLIN delivery and planned LLIN distribution dates. If the timeline is tight and there are risks of delays during the in-country transport operation, the centralized delivery option should be assessed in terms of risks and mitigation measures adopted to reduce possible delays in campaign implementation.
- In general, centralized delivery will allow for a greater level of flexibility and security with the LLINs, as quantities for lower levels in the supply chain can be adjusted once more accurate population data are received from the micro-planning and household registration activities and nets are stored in a single or a limited number of warehouses centrally where oversight can be ensured. However, the major challenge is time for delivery once more accurate data are received; the timing for transport to peripheral storage and distribution points must be well planned to avoid delays.

Decentralized

Decentralized delivery generally refers to LLINs being shipped on arrival to a sub-national level, such as state, region or province. From the state, region or province, the LLINs are then transported to peripheral storage and distribution points or pre-positioning sites. The movement of the nets from point of delivery is described in the Logistics Plan of Action. Note that in many cases, procurement agents will not deliver to peripheral stores (such as district or sub-district) because of cost and capacity to manage a large number of delivery locations. The decentralized delivery level will be determined during negotiations between the procurement agent and the Ministry of Health procurement office/NMCP.

Some considerations for decentralized delivery include:

- If the decision is for LLIN delivery to be at state, region or province level, this will require additional planning and a review of budget implications by the programme, the procurement office and the donors prior to submitting the procurement request.
- Where decentralized delivery is selected, the logistics budget should include a line to allow for costs incurred during any LLIN lateral movement (i.e. between different states, regions or provinces). If possible, lateral movement should be avoided, but where this is not possible due to inaccurate population figures, an additional 0.5 per cent (or more – should be based on the context of the country and actual transport costs) could be added to the logistics transport budget as a "contingency" to minimize the effects of having no funding planned for needed lateral LLIN movement. It is important to note that the lateral movement of LLINs between states, regions or provinces is not typically part of the call for tenders for transport, which is focused on moving the LLINs down the supply chain rather than laterally. This should also be taken into consideration during planning.
- As far as possible, it is important to avoid shortages or surpluses of LLINs being delivered to state, region or province level. With more accurate population figures (e.g. comparing projections with other sources of population data to come to the closest estimates possible), it will be possible to limit additional, and often unforeseen, in-country logistics costs. Countries are encouraged to look at past campaign data (both LLIN and EPI, where population can be extrapolated from coverage, as well as data from onchocerciasis or other programmes that update population data on a regular basis) in order to compare figures, determine which more accurately reflect the current situation and make adjustments to projected population figures/LLIN quantities where necessary.
- When decentralized delivery is selected to the state, region or province level, it is necessary for the country to develop a detailed plan to be submitted with the procurement order to indicate delivery quantities and locations. Note that final confirmation of delivery locations (approved warehouses that have been evaluated according to set criteria – see Brief 5: Warehouse assessment) will be sent to the procurement agency prior to shipment. This plan should be based on previous experiences with LLIN campaigns in terms of route feasibility and storage locations that meet the established selection criteria. As the country has a better understanding of the situation and context for transport and storage than the individuals receiving the procurement documents, a greater amount of detail in the submitted procurement documents will assist shipping agents to plan and ensure alignment with the planning of the NMCP/MoH/ implementing partner(s).

Updated.
See Brief 5: Warehouse assessment

Mixed

Mixed delivery generally refers to part of the total quantity of nets being delivered to decentralized locations, but with a percentage of nets being held back at a higher level (central, regional or province) to eliminate the need for lateral movement of LLINs after delivery and to allow for positioning of the remaining nets (those held back) based on more accurate population data from microplanning and household registration.

Some considerations for mixed delivery include:

- Examine previous LLIN campaign experiences and data to determine the accuracy of the macro quantification data used for the procurement and the delivery of the nets. If it appears that the population data were inaccurate, such as in areas that may have discrepancies due to population movement, workforce migration or outdated census data, or that there were logistics challenges created by the delivery levels during the past campaigns, these considerations and risks should be accounted for in determining the delivery locations for the next campaign. The main purpose of a mixed model for delivery is to enable NMCP/MoH planners to be able to fill LLIN shortages or ruptures where they are needed once more accurate data are available.
- The holdback quantity will be dispersed at a later date when more accurate targeting is possible (after household registration, for example), when correct quantities of LLINs can be dispatched to the different decentralized locations. The decision to move the holdback quantity may come as early as the microplanning phase, if the population data show that the total number of nets will be needed and there is no need to maintain the stock in a different warehouse that is incurring rental charges.
- The holdback percentage varies by country and should be determined by the NMCP and campaign implementation partners. In many cases, 80 – 90 per cent of LLINs are delivered to the decentralized locations while 10 – 20 per cent are held back at a higher level under the responsibility and management of the NMCP. Standard procedures need to be put in place for the management of the holdback stock, including the procedures and approvals for these nets to be transported out of the warehouse to peripheral warehouses or to distribution points.
- Logistics budget planning needs to include budget lines to capture the in-country costs needed to warehouse and transport this holdback percentage. Note that as transport and storage costs are typically on a "per net" basis, a mixed model should not incur much additional cost and anything additional is likely to be linked to the extra warehouse space and warehouse personnel required.
- The procurement documents, in the case of a mixed delivery model, must be very clear, indicating the quantities and locations for both the delivery of the decentralized quantity of LLINs and the delivery of the holdback stock. In many cases, the holdback stock and the decentralized delivery of LLINs will be in the same region or province but not necessarily in the same town, as the decision on the location of the warehouse for the holdback stock will depend on how many decentralized locations the warehouse is serving.

Summary

Prior to determining whether LLIN delivery will be centralized, decentralized or mixed one of the critical areas planners need to reflect on is: How accurate are the population estimates likely to be for the lower parts of the supply chain (e.g. at district level)? In most countries, population projection accuracy is not 100 per cent. For this reason, countries should think about the best approach for the LLIN delivery, considering:

- Available funding for the in-country logistics and whether it is sufficient to manage extensive movement of LLINs between delivery locations. If the costs for re-positioning LLINs upon

delivery are high, a mixed delivery model should be considered to ensure that there is flexibility to move the required number of nets to the right place when better quantification data are available.

- Available storage capacity and whether it is possible to store all nets centrally or regionally while waiting for better quantification from microplanning and household registration.
- The timelines between delivery and distribution and the possible risks to the transport operation from/to each level in terms of creating campaign delays.
- The security of warehousing options at central/regional and decentralized levels. Where insecurity in a specific decentralized location is a concern and the plan involves storing nets for an extended period of time before distribution, it will be important to look at risks and how they can be mitigated. If the mitigation options are not sound, it is advisable to avoid the decentralized delivery in this case and move nets from a central or regional location closer to the time of the distribution and on the basis of more accurate quantification of needs.
- Ownership of LLINs and the ease of moving nets delivered from one decentralized location to another. If the reception of the nets is synonymous with the ownership of the nets, it may be difficult to move nets from one area that is "oversupplied" due to concerns that LLINs are never enough when the distribution starts. It is important to ensure clear understanding of regional or district authorities that the nets received are still the property of the national programme, in order to prevent problems when trying to take surplus nets delivered to one area to fill gaps in another area.

3. Delivery strategies

Centralized	Decentralized	Mixed
Description		
Delivery to central warehouse location (may involve two or more warehouses depending on space requirements), typically either at the port or in the capital city of the country or region. In some cases, there may be regional warehouse locations (considered as "central") that are used to ensure nets are closer to the operational level, but holding the quantity of nets for all districts that they will be serving. With centralized delivery, nets are dispatched to decentralized locations (districts, distribution points) based on updated population numbers from microplanning or household registration.	Delivery to multiple warehouses in different locations below central level, (state, region or province). In the case of decentralized delivery, the quantity of nets for the actual implementation of the campaign is estimated based on population projections for the delivery level and this quantity is delivered to decentralized warehouse/storage locations. The nets would then be dispatched to peripheral stores and distribution points based on updated population numbers from microplanning or household registration.	Delivery of a percentage of nets required to multiple warehouses in different locations below central level (e.g. 80 to 90 per cent of LLINs required delivered to the province level) while holding back the balance percentage of nets at a "centralized" location (e.g. warehouses in the port, capital city or region closer to implementation levels) to be dispatched when more accurate population data are available/ validated. Nets are dispatched to decentralized locations (peripheral stores, distribution points) based on updated population numbers from microplanning or household registration.
Strengths		
• Better security since the full quantity of nets is centralized in a limited number of warehouses where greater oversight is possible • Enhanced dispatching controls and control of quantities of LLINs being moved lower to peripheral storage locations • Improved efficiency of LLIN movement	• Shorter supply chain transport route to final distribution points • Less workload for central logistics teams in terms of transport management (no macro transport, only micro transport) • Less risk for donors and the country and partners when LLINs are managed by the procurement agent further down the supply chain (and removes one level of needed insurance as a country responsibility)	• Less possibility of unforeseen logistics costs for lateral movement between decentralized locations • Ability to move holdback nets from central or regional stores on basis of microplanning and/or household registration data to complete LLIN needs • Avoids over and under supply at decentralized levels • Leaves decision-making power around held back nets with national programme or implementing partner • May reduce reverse logistics needs if quantities are dispatched using more accurate figures

Limitations		
• Longer supply chain transport routes to final distribution points • Overall warehousing may be more costly • Availability of adequate large volume storage space • Availability of adequate large transport resources to move all LLINs	• As decentralized delivery decisions are taken at the time of procurement, updated population figures from microplanning or household registration will not be available to inform estimates, which may lead to over or under supply in some districts • More warehouse staff needed, fewer skilled logistics personnel at decentralized levels, more leakage/loss is possible (training in advance of LLIN arrival is critical – see Brief 7: Logistics training) • Availability of adequate warehousing/ storage may be problematic	• Using mixed delivery locations will increase manpower and require more personnel to be trained in storage and dispatch procedures • More warehouse staff needed, fewer skilled logistics personnel at decentralized levels, more leakage/loss is possible (training in advance of LLIN arrival is critical – see Brief 7: Logistics training) • Availability of adequate warehousing/ storage may be problematic

4. Delivery and pipeline monitoring

Pipeline monitoring, in line with each donor's procurement process, should be handled by the LSC. The LSC will maintain an up-to-date picture of :

- How many nets have been procured and by whom
- How many nets have been shipped, received, cleared and transported to final destination(s)
- Any delays during production

The LSC will also manage the in-country situation and will be responsible, with the NMCP and implementing partners, for updating the procurement agent on changes in a country (for example, a district has a natural disaster or other crisis) and proposing modifications to the deliveries based on unforeseen circumstances.

Monitoring the pipeline situation requires the LSC to maintain regular contact with the procurement agency or procurement officers at Ministry of Health, NMCP and/or partners' offices as well as with suppliers and their representatives in country (where applicable).

Updating brief 5: Warehouse assessment and stacking practices

REPLACEMENT FOR WAREHOUSING AND STORAGE PARAGRAPHS OF CHAPTER 5, SECTION 5.1

Contents

1. Selection of warehouses

Proper oversight and planning are essential components of any LLIN campaign process. During the logistics operation, one key element that requires accurate and detailed information is the selection of warehousing facilities at all levels where LLINs will be stored. At district level, this becomes extremely important for the Central Logistics Team (CLT), when a Pooled Procurement Mechanism (PPM) is used to acquire the country's shipments of LLINs. If direct delivery to district levels is selected, all warehouses to be used for storing LLINs at these levels must be identified early and must be sufficient in size and meet proper standards and security for campaign LLIN storage.

2. Warehouse assessment tool

Prior to any field visit, the team leaders must be aware of and briefed on information needed for undertaking a warehouse assessment. A Warehouse Assessment Tool should be developed to gather this detailed information. See the Resource example of a warehouse selection assessment guide from the Sierra Leone 2015 campaign.

Warehouse or storage facilities used at distribution points and pre-positioning sites also need to be fit for purpose, and should be included in the assessments.

3. Initial assessment

Some areas that are important and must be considered when assessing storage are:

- Size of each warehouse space (measured accurately to obtain square footage and including height).
- Name and location of warehouse and contact information (including mobile phone numbers for owner or managers).
- Availability of large truck access to loading and unloading sites, number of doors/ramps, etc.
- Relevant health officials (e.g. District Health Management Team) and logistics personnel (e.g. District Logistics Officer) should be aware of facility and be familiar with owner/managers. If the warehouse has been used before for similar activities, determine if there were any problems or concerns that should be discussed and addressed before selecting the warehouse.
- Check availability of each warehouse storage space for planned campaign dates. Include monthly rental costs and possibility for further extension of rental agreement to be notified 30 days in advance of rental termination date in case any delays in campaign implementation occur.
- Conduct preliminary discussion with owner/manager to negotiate/reduce any rental costs, together with relevant health officials (e.g. the District Medical Officer and District Logistics Officer).
- Preparation of contracts and signatures. Following signature, arrangements should be made for warehouse/storage space owner/manager to be contacted at an agreed time prior to LLIN arrival to ensure that the space is ready.

4. Necessity of field trips

In many cases, all micro level storage facilities would be assessed within the process of campaign micro planning field trips conducted prior to the actual delivery of LLINs. Warehouse assessment forms are sent out early to ensure teams on the ground can assess their warehouse availability based on approved criteria and volume of storage space required for each location.

If it is not possible to time the warehouse assessments with the micro planning (e.g. the nets are arriving very early), separate missions will need to be planned and budgeted for the CLT to ensure that this key step is complete prior to LLIN arrival in country and delivery to initial storage points as well as through to the lowest storage levels. This activity also forms part of risk assessment and mitigation.

SEE BRIEF 3:
RISK MITIGATION PLANNING

A key CLT challenge is to analyse the information collected during the campaign micro planning field trips and determine whether proposed storage space is accurate and acceptable. If there are gaps in information, locations missing or improper assessment assumptions made, there will be a requirement to conduct a detailed warehouse assessment field trip. It will be important to work closely with local health and logistics personnel, such as appropriate members of the District Health Management Teams, including District Medical Officers and District Logistics Officers, as well as other logistics representatives to identify the resources of each district. The assessment should be conducted as a collaborative exercise between national level and districts. An example of a warehouse assessment field trip activity could be as follows:

- Mission to all targeted areas of the country consisting of ____ x teams with representation from Ministry of Health, Central Medical Stores (as appropriate) and the National Malaria Control Programme. Each assessment team would be responsible to assess ____ x districts and selected warehouses.

- Assessment field trip findings and any action taken or suggested (such as need for purchase of fire extinguishers) must be communicated to the CLT to ensure remedial action is taken prior to LLIN delivery schedules.

- Assessment information, which might include photographs of the warehouses and their environment, must be compiled and analysed quickly on completion of the assessment to enable the CLT to submit any additional costing if needed to the campaign programme and to move forward with contracting, so that identified, suitable space is not lost through lack of timely action.

5. Action required

Some general issues that may be identified during a warehouse assessment field trip and require follow-up action are:

- Minor repairs or purchases needed in some storage locations to improve security, such as additional locks, bars on doors and fire extinguishers.

- District needing more than one location to accommodate the quantities of LLINs forecast for delivery.

- Some warehouses might be sharing a percentage of space with other non-campaign products. This needs to be carefully assessed because of the insecticide on the LLINs.

- Drop-off storage points (if any) not appropriate.

- Lack of contact information or rental cost per warehouse storage location.

It is important to note that a stand-alone warehouse assessment field trip would only be necessary if the logistics information from the campaign micro-

planning trip were inaccurate or missing. It is paramount to ensure appropriate warehousing is available when receiving LLIN shipments for security reasons, LLIN storage quality and accountability.

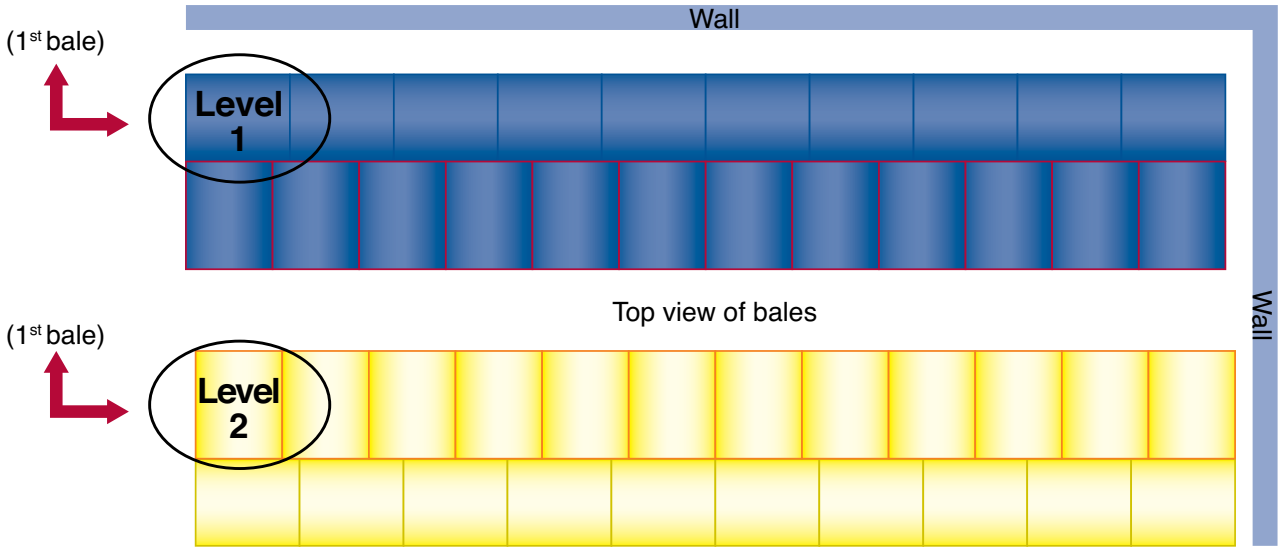
6. Arrival of LLINs and stacking practices

Each warehouse stacking configuration must be well planned to enable safe, accurate LLIN dispatching and inventory checks as well as providing adequate space for building fire safety measures.

When offloading and storing bales of LLINs, it is imperative to ensure stacking is securely done and safe for all workers within the warehouse facility. Normally, an alternating stacking position of LLIN bales will provide an interlocking system for a solid secure platform. Standard height of stacking is usually 2.0 metres using this interlocking system. In some cases, dependent on the warehouse height and the bale compression (LLIN baling tightness), 2.5 metres may be used. However, the higher the stack of LLINs, the more difficult it is for workers loading and unloading; the climbing height will become somewhat perilous and when planning, safety must always be paramount.

2013 Indonesia bale size

Bales: 1.60 x 2.62 x 1.31 ft or
0.49 x 0.80 x 0.40 m



Level1: first layer of bales on the floor. First row positioned all one way; second row on floor positioned opposite way (blue squares are ground level).

Level2: second layer of bales sit on of first level. Position the bales opposite direction starting at the first bale as indicated. Repeat same positioning pattern for all remaining rows.

Continue alternating this positioning pattern for all addition levels. (ie: level 3 will be similar to level 1; level 4 will be similar to level 2; etc, etc).

This develops an interlocking positioning system that helps to provide rigid stability.

IMPORTANT: if bales are not compressed properly, the stacking will be compromised as the stacking height increases.

Ideally, usage of available warehouse space is normally only about 80–85 per cent with the remaining space used as walking space around LLIN stacks, fire safety corridors and space to complete inventory verification, all part of good warehouse management.

Resource: Sample Warehouse Selection Assessment Guide, Sierra Leone 2015 (Excel file).

Updating brief 6: Management of the supply chain

UPDATED AND ADDITIONAL MATERIAL TO REPLACE SECTION 5.7, APPENDIX 5A AND APPENDIX 5D

Contents

Introduction

Over the course of the mass LLIN distribution campaigns that have taken place in diverse countries over the last few years, many lessons have been learned about the management of LLINs in the supply chain. The logistics operation is vital to the success of the campaign. It therefore requires meticulous planning, sufficient financial resources, a reliable supply of services such as transport and warehousing, and experienced and well-trained staff.

In order to ensure accountability and transparency, LLINs must be tracked at every stage of the campaign. At any one time, every LLIN that has arrived in the country should be able to be accounted for, whether it has been distributed to a beneficiary, is in a central warehouse, is at a regional or district warehouse or store, is at a distribution point, has been passed on post-campaign to another service, such as routine antenatal or immunization, or was stolen, lost or damaged at any point during transport, storage, distribution and/or reverse logistics.

Recommendations

1. LPoA

For each mass LLIN distribution campaign, the operational flow of the supply chain should be outlined in a comprehensive Logistics Plan of Action (LPoA), that details the management of LLINs at every level and stage of the logistics operation to ensure a chain of responsibility for the LLINs, and describes the tracking tools to be used. The LPoA should include documents specifying the procedures to be followed for filling tracking tools out and filing them correctly, with clear instructions and examples. See Appendix 1 of this brief for sample "how to" documents. These documents should be used during training and be available for reference at every point where LLINs are stored or transported. For further information on the LPoA, see Section 5.2 of Chapter 5 of the AMP Toolkit. Refer also to Brief 2: Logistics Plan of Action.

2. Documentation

The following standard documentation should be used:

- Waybill: this is used to control the movement of nets from point A to point B. The waybill is issued by the sender, and indicates the nature and quantity of goods being shipped. At the delivery location, counting of quantities received is done and compared with the information from the sender. Any discrepancies in quantities must be noted on the waybill and communicated to the NMCP logistics focal point. This tracking tool is signed by the sender, the receiver and the transporter, which strengthens the authenticity of the information included on the waybill when it is later used to audit the management of the supply chain. The waybill is a tool to ensure that LLINs stay in the supply chain during *transport.*

- Stock sheet: this records the quantities of nets received at the warehouse or store as well as the quantities shipped out of the

warehouse or store – stock in and stock out. The stock sheet also maintains a constant inventory of LLIN stocks in the warehouse or store. During supervision, inventory-taking can be used to verify the information on the stock sheet and identify any discrepancies. A stock sheet is used at every location and level at which LLINs are stored. This document might also be named "warehouse register". The warehouse manager should manage the stock sheet, and entries in the stock sheet (stock in or stock out) should be initialled so that the responsible individual for any LLIN movement can be identified. The stock sheet is a tool to ensure that LLINs stay in the supply chain during *storage*.

- The tally sheet: this is both a logistics and a distribution tool. It is used by the distribution team during the distribution period to keep track of the number of nets given out to beneficiaries. The number of nets received each day from the distribution point or other store must be recorded, as well as the number of nets returned to stores at the end of the day, if there are any remaining. A new tally sheet should be started on each distribution day. The tally sheet, combined with the stock sheet, is a tool to ensure that LLINs stay in the supply chain during *distribution* and that they reach the intended beneficiaries.

- Inventory: this is an activity that must be done on a regular basis throughout the operation, as well as at the end of the operation, and which serves as an internal control on the management of stock. The inventory can also be implemented as part of supervision and monitoring as an external control on the management of stock. The inventory is a physical count of the stock in the storage location. The inventory report should be compared with the stock sheet and the waybills to ensure that there is no leakage of LLINs during the storage and transport. It is important to document all deficiencies during a physical inventory. If shortages arise, manager/storekeeper must securely file inventory results for follow-up action by supervisors and/or LLIN campaign management.

Full updated information on the documentation and how to fill the forms in and use them can be found in Appendix 1 of this brief.

3. Training

The leader of the distribution team must be trained to be responsible for accounting for stock used and stock returned from the distribution point on the correct supply chain management tools. In addition, the leader of the distribution team must understand how any loss or leakage during the distribution should be reported (i.e. reports required to explain or justify any loss).

4. Tracking of losses or leakage

The tracking of any loss or leakage at any stage of storage, transport, distribution or reverse logistics is important for insurance and for informing the donor of the circumstances. Documentation should include any police or incident reports.

5. Supervision

Supervisory staff should be trained to do spot checks at both distribution point and storage locations to ensure that documentation is being correctly and completely filled in. There should be no ambiguity in the way that documents are filled in. The use of a tick or cross, for example, must be well defined and be included in training. Training should also include net reconciliation and cross checking, e.g. by use of a physical inventory count. See the accompanying resource (Appendix 2) for updated sample supervisory and monitoring forms.

6. Post-campaign movement

Post-campaign movement must be equally well documented. LLIN stocks may be transferred to continuous distribution services, such as routine antenatal or immunization, or they may be returned to the original district/regional/central storage site. It is vital to account for these LLINs in the documentation. The same supply chain tools should be used for reverse logistics of LLINs, tracking all transport and storage on waybills and stock sheets to ensure accountability.

7. Filing

Correct and complete filing of records is vital for accountability. Correct filing is important to ensure that paperwork can be retrieved for use in a post-campaign commodity management audit (CMA), data quality assurance exercise or external review of supply chain management. The post-distribution supply chain evaluation checks the level of accountability achieved in the management of the supply chain, and helps to strengthen future campaigns by detecting potential weaknesses that can be addressed. A CMA or other supply chain evaluation verifies the completeness or otherwise of the paper trail, i.e. checks the availability of all tracking documents. It also verifies if the documents have been used correctly, and checks that the balance of stock agrees with the figures in the tracking documents.

8. Budget

In order to ensure a good working environment and a clear commitment by the logistics staff to the correct filling in and filing of tracking documents and supervisory practices and evaluation of the overall logistics operation adopted for supply chain management, the overall campaign budget must capture all logistics activities and be made available to ensure that the workers receive regular remuneration for their services.

9. Final report

A final logistics report should be produced that brings together all the reports from the different localities where LLINs have been stored and distributed. A template/structure should be developed so that reports are standardized and can be prepared rapidly after the end of a mass distribution campaign. Within the report, analysis of costs should be made at every level, right down to distribution points. The report should also present numbers of LLINs at each level and identify any points of loss or leakage, including per cent loss of all LLINs received in the country.

Appendix 1
Resource: Examples of LLIN tracking tools

Waybill/ Delivery Note

No. (pre-numbered)

Date _____

Sender _____
Location _____

Consignee _____
Location _____

Transportation mode: _____ No. _____

No.	Item	Quantity	Unit	Packaging	No. of packages
1.	LLINs	20,000	pce	Bale x 25 nets	400
2.					
3.					
4.					
5.					
6.					
7.					

Comments/observations (condition of goods on reception: missing/damaged etc.)

Loading confirmed (conveyor or driver)
Name _____
Signature _____
Date _____

Receipt (designated consignee)
Name _____
Signature _____
Date _____

Signature of sender _____ Date _____

White: consignee Blue: transporter Green: return to sender Yellow: sender

How to use and fill out the waybill

The Waybill (WB/DELIVERY NOTE) is one of the three essential LLIN tracking tools to be used during distribution campaigns. Its purpose is to control and record the movement of LLINs from point A to point B and to ensure accountability during *transport*.

1. The waybill is issued by the sender. It indicates the nature and quantity of commodities being shipped.
2. One waybill must be issued for each destination (drop-off point). Therefore, one truck will carry as many waybills as drop-off points it will cover.
3. When a shipment is received, the recipient or consignee must verify that the quantity of commodities received corresponds to the quantity indicated on the waybill.
4. Any discrepancies (bales missing or in excess) or damaged goods **must be documented**, i.e. the recipient must indicate **in the "comments/observations" box** how many bales are missing or in excess, or how many bales are damaged (with brief description). Note that it is not necessary to count pieces as the package being transported is the bale and the bales were not opened after the supplier(s) commenced the shipping process. Any discrepancies showing less than the supplier's agreement should be noted and follow-up action will be needed for compensation.
5. **It is important to respect the colour coding for the four copies of the waybill: white stays with the recipient after the delivery is made; blue remains with the transporter; green should be returned to sender after delivery; yellow remains with the sender.**
6. It is **absolutely essential** that the waybill should be carefully and properly filled out **exactly as indicated below.** All the required information (including signatures) must be filled in the right place, and **nothing must be left out.** Note that the example below is from district to peripheral level, but the process applies to any transport of LLINs from one location to another.

Filling out the waybill

Date

E.g. Date that loading finished and truck is ready to depart.

Sender

a. When shipping nets from districts to distribution points (DPs) the "**sender**" is the district warehouse manager. Therefore the district warehouse manager must write his name on this line. On the line below (location) the district warehouse manager will write the name of the district warehouse location (if there is more than one warehouse at district level, it is useful to also identify which warehouse the nets are being sent from). *Note also that the sender will sign at the bottom of the waybill on the line "Signature of sender".*
b. When moving nets from pre-positioning sites or peripheral storage areas to DPs, the "**sender**" is the stores person. Therefore the stores person must write his name on this line. On the line below (location) the pre-positioning site/peripheral storage person will write the name of the community/village where the stores are located. *Note also that the sender will sign at the bottom of the waybill on the line "Signature of sender".*

Consignee

a. When shipping nets from districts to pre-positioning sites/peripheral storage, the "**consignee**" is the storage person (identified by his name) at the lower level stores where the nets are being sent. The name of the community/village where the stores are located must be written on the line below (location).
b. When moving nets from the pre-positioning site/peripheral stores to DP, the "**consignee**" is the team leader (identified by his name) of the DP where the nets are being sent. The name of the community/village where the DP is located must be written on the line below (location).

Transport mode and No.

Indicate the transport mode. For a truck, write down the vehicle license plate number. For other mode of transport (boat, bicycle, cart, etc.) write the owner/driver's name, contact number (if available) and proof of personal ID, if possible (e.g. identity card).

Item

LLINs, training packages, communication supports, etc.

Quantity

Only the **number** of units (number of LLINs or other materials) must be written in this cell, and nothing else. See "Unit" below).

Unit

In the case of LLINs, the unit is the "**piece**" (in short "pce") or the individual LLIN. IMPORTANT: the unit is **never** the **bale** (see "Packaging" below). If the waybill is being used for markers or communication supports, these should be filled in the same way as LLINs, i.e. unit, then packaging, then number of packages.

Packaging

For logistics accounting, the information regarding the packaging of the commodity is important. The way in which the units are packaged should be described here for accuracy. For example, write "bale x 25 nets" to indicate that the LLINs come in bales of 25 (pieces).

Comments/observations

This box serves to record any missing or damaged goods upon receiving the shipment (remember that in such a case, the driver must sign in the box to indicate his agreement).

Loading confirmed

This box must be filled out **after the loading** of the truck (before the departure of the truck). It must contain the signature of the conveyer (or the driver if there is no conveyer) and the date of departure of the truck. The signature will indicate that the conveyer (or the driver) is in agreement that the quantity indicated on the waybill corresponds to the quantity that has been loaded on the truck.

Signature of sender

As indicated earlier, the sender must sign and indicate the date at the bottom of the waybill before dispatching the truck.

Receipt

Once the LLINs have been received (the bales offloaded and counted, and any discrepancies recorded in the proper box) the consignee will write his name, put his signature and write the date the shipment was received.

Warehouse stock sheet/card

Location of warehouse/store _____ **Responsible person**_____

Ref.No.	Date of shipment	Origin of shipment	Destina-tion	Waybill Number	Truck reg. or type of transport	No. of single pieces (pcs) on waybill	Number of bales on waybill	No. of single pieces (pcs) received	No. of bales received	No. of single pieces (pcs) sent	No. of bales sent	In stock - LLINs x single pieces (pce)	In stock bales x 25, 40, 50, etc.[1]	Remarks/ signature

[1]A separate stock sheet must be used for each size of bale (e.g. 25, 40, 50, 100).

How to use and fill out the stock sheet

The stock sheet is one of the three essential LLIN tracking tools to be used during the distribution campaigns. It must be used in every location where LLINs are stored (all warehouses, all district stores, all peripheral and all DP stores).

The stock sheet is a combination of a standard "warehouse journal" (also called "warehouse ledger") and of a "warehouse stock card".

The stock sheet serves two purposes:

1. As a warehouse/store journal: to record **chronologically** the quantities of nets **received** from any source into the warehouse/store, and the quantities **issued out** of the warehouse/store. This must be done at all levels - central, district, peripheral, DP.

2. As a warehouse stock card: to keep track of the **stock balance** in the warehouse/store. Again, this is at all levels of storage.

Filling out the stock sheet

Note: If possible, use a different colour for "IN" and "OUT" entries.

Each line in the stock sheet represents either an **entry** of nets into the warehouse (i.e. nets being received) or an **exit** of nets from the warehouse (i.e. nets being shipped out). Each line must be filled out **chronologically**: the stock sheet is a "journal"; it must therefore record each event (entry or exit) **as and when it happens.**

Ref. No.

This is the sequential number of each movement (in or out) of the nets, starting with 1 and continuing with 2, 3, etc.…

Date

Date that nets are either received or dispatched.

Origin

When receiving nets, the place from which the nets were shipped to the store must be entered in the "ORIGIN" column (example: "Etung Warehouse" or "Ward warehouse" or "village store").

Note: if issuing out (sending out) nets, this cell must be left blank (or indicate "n/a").

Destination

When issuing out nets, the place to which the nets are to be shipped must be entered in the "DESTINATION" column (example: "district X" or "DP Y"). **Note that if receiving nets, this cell must be left blank (or indicate "n/a")**.

Waybill number

When receiving nets, indicate the number of the waybill that came with the shipment. When sending (issuing out) nets, indicate the number of the waybill that was filled out and issued to accompany the shipment.

During the campaign, LLINs will often be stored at the distribution points. Therefore, each distribution point will have a "store" even if the quantity of nets will be relatively small. The DP store will use a stock sheet to record nets that have been received from the peripheral or district stores and nets given to the distribution team during the distribution period. When the nets are handed over by the DP team leader (or other person responsible for the stock) to the distribution team member, this is recorded on the stock sheet as a normal "exit" (issuing out) of nets: the DESTINATION will be "Distribution Team". However, since the nets will not be moving from one point to another (everything is taking place at the DP) **it will not be required to issue a WAYBILL**. In this case, instead of "waybill number" and "truck registration or type of transport" the DP team leader will write the name of the distribution team member. **IMPORTANT:** the distribution team leader will sign in the "remarks" column. **Note:** the distribution team member will indicate on his tally sheet the number of nets received from the store.

If at the end of a distribution day all LLINs have not been distributed, the leftover nets with the distribution team will need to be returned to the stores. This time the ORIGIN will be "Distribution Team" and the **DP team leader** will sign in the "remarks" column.

Number of bales on the waybill

This applies when receiving as well as when sending out nets. It corresponds to the number of bales as indicated on the waybill.

Number of pieces (pce) on the waybill

This applies when receiving as well as when sending out nets. It corresponds to the number of loose pieces (individual nets) as indicated on the waybill.

Number of bales received

This cell must be filled only when receiving nets (when sending out nets this cell must be left blank or indicate "n/a"). The number of bales received will correspond to the number indicated on the waybill, unless there are bales missing. If there are bales missing, this will be noted on the waybill in terms of quantities actually received during offloading, and the actual number received will be the same as that found on the stock sheet.

Number of bales sent

This cell must be filled only when sending out nets (when receiving nets this cell must be left blank or indicate "n/a"). The number of bales sent must correspond to the number indicated on the waybill.

Stock (bales) and Stock (LLINs)

Record the number of bales and number of nets in each bale, e.g. 100 bales x 25 LLINs. These two columns will keep track of LLIN stock in the warehouse. They will provide a constant running balance, since nets are being added or subtracted chronologically each time the warehouse receives a delivery or ships out. The balance is kept both in terms of bales and units (i.e. LLINs).

Remarks/signature

At all levels of storage, when LLINs are issued in or out, any irregularities should be noted and a signature of the responsible person added (e.g. warehouse manager, store keeper, DP team leader).

LLINs CAMPAIGN TALLY SHEET

(Use a separate tally sheet each day of distribution)

Region: _____ District: _____ Date: _____

Health Facility: _____ Location: _____

Name of fixed post: _____ Team supervisor's name: _____

	Cross out one circle for each LLIN distributed					Total
1	00000	00000	00000	00000	00000	
2	00000	00000	00000	00000	00000	
3	00000	00000	00000	00000	00000	
4	00000	00000	00000	00000	00000	
5	00000	00000	00000	00000	00000	
6	00000	00000	00000	00000	00000	
7	00000	00000	00000	00000	00000	
8	00000	00000	00000	00000	00000	
9	00000	00000	00000	00000	00000	
10	00000	00000	00000	00000	00000	
11	00000	00000	00000	00000	00000	
12	00000	00000	00000	00000	00000	
13	00000	00000	00000	00000	00000	
14	00000	00000	00000	00000	00000	
15	00000	00000	00000	00000	00000	
16	00000	00000	00000	00000	00000	
17	00000	00000	00000	00000	00000	
18	00000	00000	00000	00000	00000	
19	00000	00000	00000	00000	00000	
20	00000	00000	00000	00000	00000	
21	00000	00000	00000	00000	00000	
22	00000	00000	00000	00000	00000	
23	00000	00000	00000	00000	00000	
24	00000	00000	00000	00000	00000	
25	00000	00000	00000	00000	00000	
26	00000	00000	00000	00000	00000	
27	00000	00000	00000	00000	00000	
28	00000	00000	00000	00000	00000	
					Total	

LLINs received at start of day: _____

Additional LLINs received today_____

LLINs distributed today: _____

Balance of LLINs at the end of the day: _____

Name of DP supervisor: _____ Signature: _____ Date: _____

How to use and fill out the tally sheet

The tally sheet is one of the three essential LLIN tracking tools to be used during the distribution campaigns. It must be used at every distribution point. The tally sheet is the primary data form to be used daily to collate the number of LLINs issued out to beneficiaries at every distribution point.

The tally sheet is both a logistics tool and a distribution tool.

As a logistics tool, it creates the link between logistics and distribution, i.e. it ties the transport and storage information to the LLINs distributed to beneficiaries and allows information from the bottom to the top of the supply chain to be triangulated for verification.

The tally sheet is used by the distribution team during the distribution period. The distribution team leader must record on the tally sheet the number of nets received from the DP store at the beginning of the day, as well as additional nets received over the course of the day of distribution. The number of nets returned to the DP store at the end of the day must also be recorded, if applicable.

As a distribution tool, the tally sheet keeps track of the number of nets given out to beneficiaries. At the end of the campaign, the tally sheets must be used by both the logisticians and the distribution supervisors for accountability and to compile reports.

Filling out the tally sheet

1. Fill in information at the top of the sheet (region, district, health facility, location, name of fixed post (DP), team supervisor/DP team leader's name and date). A separate tally sheet must be used for each day of distribution, although there may be more than one page. Ensure that page 2 and any subsequent pages are dated.

2. In the information box at the bottom of the form, enter the number of LLINs received at the start of the day from any source (e.g. DP store).

3. When distribution begins, cross out one circle for each LLIN distributed to a beneficiary. In many cases, beneficiaries will receive more than one LLIN, so ensure that the corresponding numbers of circles are crossed out. At the end of each line, write the total number of LLINs crossed out. If all the circles in a line are crossed out, the total will be 25. If all the circles in a group of 4 are crossed out, the total will be 4 x 25 = 100. If the circles in all 28 lines are crossed out, the grand total on that page will be 700.

4. During the day, if additional LLINs are received from any source, write the number received against "Additional LLINs received today" in the information box at the bottom of the form.

5. At the end of the distribution day, write down the number of LLINs distributed against "LLINs distributed today".

6. To find the number to put against "Balance of LLINs at the end of the day", add together "LLINs received at the start of day" and "Additional LLINs received today" and subtract "LLINs distributed today".

7. Write the name of the DP supervisor/team leader, add his/her signature and the date.

Appendix 2
Sample monitoring forms[2]

LLIN UNIVERSAL COVERAGE CAMPAIGN
Checklist for daily monitoring and supervision
DURING LLIN CAMPAIGNS

INSTRUCTIONS:
These **checklists** are for monitoring the quality of services provided during the distribution of the LLINs at the various stages of the process.

Every supervisor and monitor must use these checklists during each visit. As much as possible, complete this checklist without interrupting the services during the training, at warehouse or at the DP.

Monitoring during training process (specific to logistics training)
Monitoring at storage site/warehouse
Monitoring at distribution posts

[2] Based on materials from the Nigeria Federal Ministry of Health, National Malaria Control Programme.

MONITORING DURING LOGISTICS TRAINING PROCESS

Region:_____ District:_____

Locality (town/village/etc.):_____

Name of training venue:_____

Date____/____/____ Time of visit:_____ Name of monitor:_____

#	Questions	Yes	No	Observations/comments
1	Is the training venue appropriate and conducive to learning (large enough, light enough, quiet, well arranged in terms of seating, etc.)?			If no, what was the problem?
2	Did participants arrive on time?			If no, how did the facilitator(s) deal with this?
3	Was the number of participants according to recommended session size (not more than 30 per facilitator)?			If no, how many participants were there?
4	Did sessions and planned breaks keep to time according to the agenda?			If no, what caused the time problems?
5	Were there sufficient training materials and aids (PPT, sample forms, etc.)?			If no, what was missing?
6	Was the training methodology appropriate (adult learning principles, mix of theory and practice, role play, discussion, small group work, feedback to participants, feedback from participants, etc.)?			If no, how was the session conducted (e.g. all presentations, no discussion)?
7	Were facilitators well prepared, and showing sufficient expertise?			If no, what was the problem?
8	Did any problems arise during the training?			If yes, what were the problems and how were they resolved?
9	At the end of the training session, were participants asked to give feedback on their experience?			If yes, what were the general outcomes of this feedback?
10	Was there an evaluation of the results of the training e.g. post test?			If yes, what kind of evaluation?
11	State three things that were positive about the training. 1. 2. 3.			
12	State one or two challenges during the training that must be reviewed before any future training. 1. 2.			

MONITORING AT STORAGE SITE/WAREHOUSE

Region:_____ District:_____

Locality (town/village/etc.):_____

Name of site:_____

Date____/____/____ Time of visit:_____ Name of monitor:_____

#	Questions	Yes	No	Observations/comments
1	Is there adequate storage space (space to walk around, etc.) for the number of LLINs being stored?			If no, what was the problem?
2	Is access adequate for large truck loading/ unloading?			If no, what is the situation?
3	Are the LLINs stored in appropriate conditions, e.g. dry, secure, warehouse/store equipped with fire extinguishers, etc. (See Brief 5: Warehouse assessment)			If no, what is the situation?
4	Are commodities other than LLINs stored in the same storage space?			If yes, what are these commodities?
5	Are recommended bale stacking practices used? (See Brief 5: Warehouse assessment)			If no, how are bales stacked?
6	Are there adequate controls during loading and off-loading?			If no, what controls are in operation?
7	Is personnel safety compromised in any way?			If yes, what is the situation?
8	Are tracking tools available?			
9	Is comprehensive documentation on how to fill in tracking tools available?			
10	Are tracking tools being used at every stock movement?			If no, what controls are in operation?
11	Are tracking tools being used correctly?			
12	Are spot checks on staff presence being carried out on a random but regular basis?			
13	Are spot checks on tracking documentation being carried out on a random but regular basis?			
14	Has there been a physical inventory since there has been movement of stock?			If no, when was the last physical inventory carried out?

MONITORING AT DISTRIBUTION POSTS

Region:_____ District:_____

Locality (town/village/etc.):_____

Name of site:_____

Date____/____/____ Time of visit:_____ Name of monitor:_____

#	Questions	Yes	No	Observations/comments
1	Is the distribution point properly set up? • Crowd control • LLIN security • Separate distribution area from LLIN stores • Tracking tools available • Health education demonstration			If no, what is wrong? What is missing?
2	Are LLINs available at the DP?			
3	Were LLINs delivered to the DP at the start of the day? • From DP stores • From other level			If yes, how many?
4	Were LLINs available for distribution on time according to the social mobilization for the distribution?			
5	Were additional LLINs delivered to the DP during the day?			If yes, how many?
6	Is there a plan for re-stocking when supplies of LLINs are running low?			
7	Is the supervisor/team leader present and in control of the DP?			If no, where is he/she? Who is controlling the DP?
8	Are DP staff running the post as they were trained to do?			If no, what is wrong?
9	Are the correct numbers of LLINs being distributed to the beneficiaries?			
10	Are vouchers / bracelets being collected and verified correctly? OR Is the registration sheet being verified for each beneficiary at the site?			
11	Are the distributed LLINs being recorded accurately on the tally sheet?			
12	What is the process for unregistered beneficiaries at DPs? Are they being registered correctly on all data collection sheets to ensure accountability when documents and numbers are compared?			
13	Are limited numbers of beneficiaries brought into the DP at a time?			
14	Are health education activities being carried out at the DP?			
15	Was the health education area appropriately set up?			
16	Were any problems observed at this DP?			If yes, what kind of problems?
17	Were any problems resolved quickly?			If yes, how were problems resolved. If no, what is the situation?

Updating brief 7: Logistics training

ADDITIONAL MATERIAL FOR CHAPTER 5, SECTIONS 5.6 AND 5.7

Contents

Introduction

1. Central level training

1.1 Target audience

At the top level of the training cascade, participants should be key logistics personnel from the National Malaria Control Programme (NMCP) and implementing partners, logisticians from other programmes within the Ministry of Health, key LLIN distribution personnel participating at central level and external logistics technical support, if present. These participants will become the trainers for the next levels of the cascade. It is therefore critical to ensure that their knowledge and capacity is solid and comprehensive prior to rolling out cascade training at lower levels. It is anticipated that participants will have previous experience in the logistics field, as well as experience with training people at national and sub-national levels. The top level training will generally be facilitated by NMCP staff, members of the logistics sub-committee and possibly external consultants.

1.2 Length of training

Two days is the minimum required time for training on logistics and supply chain management. The training sessions should be interactive, with presentations combined with opportunities for participants to take part in small group and plenary discussions, to work on specific tasks and simulations together and to present their own experiences and lessons learned. In line with adult principles for learning, experiences of participants from other logistics operations (whether LLINs or not) should be gathered at the beginning of the training and used as a reference throughout the training to tie in the theory with real life practice. An overview of lessons learned from experiences, challenges and successes during previous logistics operations in the country should assist participants to build on best practices for the current campaign.

It is critical to ensure that participants have sufficient time to practise with the supply chain management tools.

1.3 Objectives of the training

1. To provide a general overview of the overall country LLIN campaign planning, including communication and logistics, highlighting strategies, risks and mitigation methods and proposed timelines.
2. To provide training on planning specific to logistics, including supply chain management (SCM), reverse logistics, logistics risk assessment and mitigation

planning and timelines.

3. To provide detailed information about logistics tracking tools used for ensuring accountability for commodities during a mass distribution of LLINs.
4. To review the logistics team's roles and responsibilities at all levels, as well as key activities and their timing, including microplanning, warehouse assessment, training, tracking of LLINs through the supply chain during transport and storage, supervision, end of distribution reporting and archiving (levels and documents) and communication lines for reporting problems.
5. To provide hands-on use of tracking tools for all transport and storage during the logistics operation.
6. To provide information on planning specific to LLIN movement and storage (micro) from peripheral level storage to distribution points (via satellite sites where these are part of the supply chain).
7. To confirm elements related to implementation, setting up storage sites, data collection/collation, document filing and archiving and reporting.
8. To offer participants an opportunity to share previous LLIN campaign experiences, especially in the logistics area, and build on lessons learned.

1.4 Training outputs

At the end of the training, participants will be able to:

- Outline the overall campaign planning and how the logistics work will support the plan
- Describe the key elements of the Logistics Plan of Action (LPoA), as well as approaches for assessing and mitigating risks
- Detail the importance of meticulous tracking of commodities for accountability, as well as the plan for archiving of all tools at the end of the campaign
- Describe and demonstrate the principles of planning and implementation of the logistics operation, including development of transport and storage plans and reverse logistics
- Describe and use correctly the key tracking tools that will be used for the logistics operation
- Outline the next steps and roles and responsibilities, as well as the communication chain for reporting on problems (e.g. damage, losses, theft, etc.)

1.5 Resources and materials required

- Sufficient copies of the most current campaign plan of action or implementation guidelines and LPoA, as well as risk assessment and mitigation plan and timeline
- Sufficient copies of handouts for each participant. Handouts will include the agenda, as well as examples of waybills, stock sheets, tally sheets, warehouse evaluation forms and the accompanying "how to use" guidelines for each tool
- Printed and/or electronic versions of microplans for the targeted districts for review and updating during training
- Flipchart paper, markers, post-it notes, projector for presentations
- Printed version of the agenda for the next level of training

Additional information for logistics personnel and trainers can be found in the Alliance for Malaria Prevention toolkit (AMP Toolkit Chapter 5 (dated September 2012, Second Edition) as well as the updated logistics briefs[1]).

1. 1: Key logistics recommendations. 2: Logistics Plan of Action. 3: Risk mitigation planning. 4: Net delivery systems. 5: Warehouse assessment. 6: Management of the supply chain. 7: Logistics training. 8: Reverse logistics.

1.6 Suggested training agenda

NOTE: this training agenda is for two days, but all areas can be expanded to increase time on practical experience if a third day is added.

Day 1

Time	Theme/topics	Notes for facilitators	Materials to be developed (PowerPoint/flipchart)
08:00 – 08:30	**Arrival of participants**		
08:30 – 08:45	**Welcome and opening** • Welcoming of participants • Administrative information		
08:45 – 09:00	**Official opening of training**		
09:00 – 09:30	**Self-introductions, objectives and outputs** • Self-introductions by participants and facilitators • Objectives of training and expected outputs • Review of agenda • Setting ground rules • Parking lot		• Objectives on flipchart/screen • Agenda on flipchart/screen • Flipchart to record ground rules • Flipchart for parking lot and issues arising
09:30 – 10:00	**General overview of campaign** • Campaign plan of action and core activities – Description of advocacy, communication and social mobilization activities – Strategy for household registration, LLIN allocation and identification of beneficiaries – Strategy for LLIN distribution • Campaign coordination structure and partners at national and sub-national levels • Importance of the logistics role in success of campaign	Specific to country campaign.	• Presentation: Campaign overview, coordination structure • Campaign plan of action or implementation guidelines and LPoA: refer to appropriate sections of macro planning documents
10:00 – 10:10	**Questions, answers and discussion**		
10:10 – 10:15	**Introduction – information required for generating lessons learned**	Ask participants to think about their own experiences and write one or two positive points and challenges to be addressed from the previous campaign or other experience. Participants should write responses (anonymous) on post-it notes and put on prepared flipchart paper.	Facilitator to prepare flipcharts with key areas of the logistics operation (e.g. coordination, transport, storage, tracking tools, training, supervision, etc.) to which participants may add post-it notes
10:15 – 10:45	**Refreshment break**		
10:45 – 11:30	**Lessons learned from previous campaigns** • Capture the experiences from past campaigns • Discuss and record major gaps or challenges that need to be considered for the upcoming campaign and provide recommendations • Build on best practices	Review post-it note submissions on key campaign areas and discuss in plenary. Address areas as they come up in later sessions and strive to find solutions/ improvements.	• Facilitator should review at the end of day 1 and reorganize to ensure that all issues get covered
11:30 – 12.15	**Procurement details and delivery of LLINs – roles of donors and country** • Macro-quantification and total number of nets arriving • Product (specifications) • Procurement process (which donors, who is responsible, etc.) • Delivery locations in tender (and potential logistics challenges) • Preparation and responsibilities for reception and warehousing of LLINs at initial point of delivery in-country • Timing for LLIN arrival	A brief overview of the procurement process, which would already have taken place, including information on delivery levels and responsibilities of different partners.	• Presentation: Procurement of campaign LLINs and delivery to country

12:15 – 12:30	**Questions, answers and discussion**		
12:30 – 13:00	**Logistics – key definitions and roles and responsibilities** • Review of Logistics Plan of Action (LPoA) – Operational logistics structures – review role, responsibilities and ToRs for logistics sub-committee/ CLT (where it exists) and peripheral levels, as well as for campaign partners (see Appendix 1 for ToR for the logistics sub-committee) – Key terms (including macroplanning and microplanning, SCM, reverse logistics) – Terms of reference and criteria for selection of personnel at all levels (plenary discussions) – roles and responsibilities for storage, transport, supervision • Review of timeline, highlighting critical activities and milestones	A brief overview, making reference to the LPoA and key sections with which participants should be familiar.	• Presentation: Logistics plan of action summary • Handouts: Printed copy of LPoA for reference during presentation (e.g. for roles and responsibilities, etc.) and printed version of timeline (focus on activities from microplanning forward)
13:00 – 13:15	**Questions, answers and discussion**		
13:15 – 14:15	**Lunch**		
14:15 – 14:55	**Microplanning and micro logistics** • Review of one district microplan to identify roles and responsibilities for national logistics for: – Analysis of storage planning and warehouse assessments to identify areas that were flagged for follow-up before net arrival and require verification – Analysis of transport plans (including reverse logistics) for cascade training at district level – Analysis of planned security and role of national team in verification – Risk assessment and mitigation and national team responsibilities for review and update prior to operation	Each national logistician will be training a specific district or districts and must be familiar with the final, validated microplan(s) in order to cascade the training at the lower levels effectively.	• Handout: Example of district microplan • Handout: risk assessment and mitigation planning
14:55 – 15.05	**Questions, answers and discussion**		
15:05 – 15:35	**Logistics standard operating procedures** • Explanation of process for identification, evaluation and final verification pre arrival of nets at storage locations • LLIN security considerations (for example, conveyors) during transport and storage and communication chain for reporting problems • LLIN reception and process (general) • Bale stacking to facilitate inventory management	Warehouse identification at district level will have taken place, but national team needs to understand how it was done and follow up. Communication chain to be defined for reporting, e.g. on warehouses where repairs promised have not taken place, etc.	• Handouts: Warehouse assessment and storage practices (see annex to LPoA) • Proper bale stacking practices (see Brief 5: Warehouse assessment)
15:35 – 15:45	**Questions, answers and discussion**		
15:45 – 16:00	**Refreshment break**		
16:00 – 16:45	**Logistics tracking tools and supervision and monitoring of logistics operation** • Key control tools (waybill, stock sheet, inventory [if separate], tally sheet) • "How to use" documents • LLIN tracking, monitoring and reporting • Supervision and monitoring of the use of tracking tools	Introduction to tools for logistics tracking and to group work that will take place on day 2. Identify participant(s) that will do review of day 1 on morning of day 2.	• Handouts: Copies of all tracking tools and "how to use" documents, as well as checklist for supervision/ monitoring of the logistics operation and supply chain management
16:45 – 16:55	**Questions, answers and discussion**		
16:55 – 17:00	**Wrap up**		

Day 2

Time	Theme/topics	Notes for facilitators	Materials to be developed
08:00 – 08:30	**Arrival of participants**		
08:30 – 08:45	**Review of Day 1** • Overview of key areas and address outstanding items	Identified participant(s) to review the previous day. Other participants to offer additional comments. To be completed by facilitator. Keep the summary of the previous day for the training report.	
08:45 – 09:15	**Introduction to group work, division into groups, provision of materials** • Plenary walk-through of first step in simulation exercise	Facilitator must be prepared and engage groups/stimulate group feedback to ensure that group work will be productive.	• PPT prepared to show "how to use" for first step in terms of filling in tools
09:15 – 10:00	**Group work with logistics tracking tools** • Simulation exercise – waybill and stock sheet	The facilitator should hand out one copy of each tool at the start of the session and tell participants that additional copies are available as needed to ensure participants think through each aspect of the SCM.	• Copies of all tracking tools and "how to use" documents • Simulation scenarios
10:00 – 10:30	**Refreshment break (working)**		
10:30 – 12:30	**Group work with logistics tracking tools (continued)** • Simulation exercise – waybill, stock sheet and tally sheet		
12:30 – 13.00	**Plenary** • Challenges • Questions and answers • Discussion	Flipchart should be used to gather the challenges, issues to be addressed from group work, etc.	
13:00 – 14:00	**Lunch**		
14:00 – 14:45	**Process for end of the LLIN distribution** • Linking the tally sheet (or other LLIN distribution summary sheet in countries that do not use tally sheets) to the DP stock sheet (and voucher control sheet) and verification process in case of discrepancies • Closing the LLIN distribution (final data) • Physical inventory at DP stores (and other stores with campaign nets) • Determining quantities for reverse logistics • Transmission of final data tools (completed) **Archiving of LLIN supply chain documents** • The importance of maintaining detailed records and how they will be used after the campaign • Detailed information regarding where documents should be archived at the end of the campaign and who is responsible	Facilitator should focus on the importance of closing the campaign distribution entirely – e.g. communicating final data and nets remaining, physical inventory of all stores with nets from the campaign, transporting remaining nets to level identified by NMCP, etc. Refer to LPoA appropriate section	Handouts: LPoA and refer to end of distribution process and policy for leftover nets and policy for archiving
14:45 – 15:15	**Reverse logistics process and requirements** • Communication channels • Organizing and managing transport • Tracking tools	Facilitators should focus on the importance of informing the receiving levels of quantities of nets being sent, the systematic use of tracking tools and how transport should be organized.	• Handouts: LPoA and refer to end of distribution process and policy for leftover nets
15:15 – 15:30	**Group work: Managing end of distribution and reverse logistics**	Continuation of simulation exercise. Emphasize the importance of planning and use of tracking tools.	

15:30 – 16:00	**Refreshment break**		
16:00 – 16:30	**Group work: Managing end of distribution and reverse logistics (continued)**		
16:30 – 16:45	**Plenary: Managing end of distribution and reverse logistics**	Plenary session to discuss the results of the group work and work through any challenges.	
16:45 – 17:00	**Next steps/follow-up: planning for next training in cascade** • Review/modification of agenda and planning for materials (e.g. tools and printing required) • Confirming understanding of roles and responsibilities • Next steps for logistics teams	Facilitators should work with participants to assign teams to districts for next training.	• Handout: Logistics plan of action, agenda for next training level
17:00 – 17:15	**Training wrap-up** • Participants complete training assessment		• Training assessment / evaluation forms
17:15 – 17:30	**Conclusion of training** • Official closing of logistics training • Certificates and photos (if appropriate)		• Prepared certificates

1.7 After the training

It is suggested to follow up within a week of the training, and prior to the cascade trainings, with the following:

- A summary of the training, with number of participants and the key elements that arose from the various training sessions and the group work.
- A summary of the training evaluations, trying to capture the highlights and areas for improvement.
- If any commitments were made during the training for the provision of additional information, resources or follow-up action, aim to honour the commitments.

1.8 Points for consideration

- The selection of logistics personnel must be carried out according to the criteria provided (see Appendix 2). Where participants clearly do not meet the criteria for selection, decisions must be taken with the NMCP and key partners on how the situation should be managed.
- Timing of the logistics training is critical. It is critical that the training be held prior to arrival of LLINs in the country.
- All logistics tracking tools must have been finalized and printed in advance of the training – the training is not an appropriate venue to revisit and modify the tools. It is important that tools are available for the practical sessions.
- The trainers must be familiar and comfortable with the materials and tools in order to establish a level of trust from the participants. Where trainers are not comfortable or are unable to respond to questions asked by participants, discussions may begin and time on the agenda may be lost. Trainers must support one another.
- Participation rules must be clear and presented at the start of the training to all participants. For maximum benefit and to ensure LLIN accountability, it is necessary that all participants commit to the full training period, as well as the full implementation period.
- Consider using secretarial staff who will capture notes on all discussions and outcomes from group activities, and will also summarize outstanding items that may arise.
- The selection of a location for training is critical. It should be large enough to allow for break-out areas for group work, and have facilities for refreshment breaks and lunch.
- Computer templates must be prepared in advance to use as examples and as tools to provide during group work. Where it is possible to work on paper, handouts should be prepared in advance. Where it is

necessary to provide participants with electronic files, consider doing this via a USB stick for each participant to avoid virus transfer. Consider putting all materials (electronic versions) and presentations on the USB memory stick to be given to each participant during the training (presentations can be used as reference materials during group work).

2. Peripheral level training

2.1 Target audiences

The peripheral level will be defined differently in each country. For example, in some countries, the nets are delivered to a district, provincial or state level, so a second ToT needs to take place in order to equip the district, provincial or state level Ministry of Health and implementing partner logisticians with the information and tools to cascade the training to subsequent levels (as defined in the LPoA). The agenda for this training should mirror the agenda adopted for the central level ToT, as the roles and responsibilities of the central and district, provincial or state levels are largely the same: training, supervision and monitoring of the supply chain, and reporting on LLINs received, transported, stored, distributed, remaining at distribution points at the end of the campaign and transported back up the supply chain during reverse logistics to their final destination.

The audience for the peripheral level logistics training will typically include warehouse managers or storekeepers, distribution point team leaders and others who are involved in the micro storage and transport of the LLINs. If a country is using conveyors to accompany the nets during transport, a separate briefing will need to be organized that covers their specific tasks (see Section 3 below).

In many countries, the individuals identified for these tasks at the peripheral levels may not have much previous experience in the logistics field, but must still be able to fulfil key logistics functions in support of the campaign. The training should be provided by district, provincial or state level trained logistics focal points (using cascade training) and supported by the central (national) level logistics team to ensure that the quality of the training is high. Where a country has planned for a separate training session for the distribution point supervisors (or persons responsible for the management of the LLINs at the distribution point) in advance of the distribution, the quality of this training should be ensured by the district, provincial or state logistics focal points acting as facilitators. Where the logistics aspects are part of the one or two day agenda for the training of distribution point teams, it is important that sufficient emphasis is put on the supply chain management at the distribution points, which is where small quantities of nets are being moved and distributed on a daily basis and tracking can become problematic.

The number of people to be trained will be dependent on the number of storage locations identified during the macroplanning/microplanning and the number of people needed for each. In general, one or two people must be trained per storage location: the stores manager and the assistant stores manager (if part of planning). The stores manager, in turn, will be responsible for the briefing of the security personnel. It is best to train the stores manager and assistant stores manager (if part of planning) in a group with similar roles and provide instructions for a briefing for security personnel once they return to their stores location. As with other trainings, the number of participants should not exceed 30–35 per session, so where a door-to-door strategy is employed with a large number of pre-positioning sites (and therefore stores managers), it may be necessary to organize more than one training session per district or other peripheral level.

Criteria for selection of personnel (see Appendix 2) must be respected for the identification of warehouse managers, security guards, distribution point team leaders, conveyors and any others responsible for the accountability of the LLINs between arrival in country and distribution.

2.2 Length of training

Two days anticipated. However, all areas can be expanded to increase time on practical experience if a third day is added.

2.3 Objectives of the training

1. To provide a general overview of the LLIN campaign and logistics planning, highlighting strategies, risk mitigation methods and proposed timelines.
2. To describe roles and responsibilities of stores managers (including tracking of LLINs during transport and storage, warehouse management/supervision and end of distribution reporting, as well as communication lines for reporting problems) and security personnel (for later briefing sessions).
3. To provide information on planning specific to LLIN movement and storage (micro) from peripheral level storage to distribution points (via satellite sites where these are part of the supply chain).
4. To provide detailed information about logistics tracking tools used and about ensuring accountability for commodities.
5. To provide practical hands-on use of tools at the micro logistics level of the logistics operation.
6. To confirm elements related to implementation, setting up storage sites, data collection/collation, document filing and archiving and reporting.

2.4 Training outputs

At the end of the training, participants will be able to:

- Describe briefly the overall LLIN campaign plan and how the logistics will support a successful campaign
- Detail roles and responsibilities of local logisticians, stores managers and security personnel
- Describe the importance of tracking of commodities, as well as the plan for archiving of all tools at the end of the campaign
- Use correctly all tracking tools that will be in place for the logistics operation, and describe their importance for accountability
- Describe LLIN monitoring and security requirements both during transport and in all storage locations
- Outline practices for reverse logistics and how to handle logistics reporting and trouble-shooting procedures, including the communication chain for reporting on problems arising
- Describe warehouse processes for receiving and dispatching nets, and the tracking of LLIN transport to (and from) distribution sites

2.5 Resources and materials required

- Sufficient copies of the most current LPoA, as well as risk assessment and mitigation plan and timeline
- Sufficient copies of handouts for each participant. Handouts will include the agenda, as well as examples of waybills, stock sheets, tally sheets, warehouse evaluation forms and the accompanying "how to use" guidelines for each tool
- Printed and/or electronic versions of microplans for the targeted districts for review and updating during training
- Flipchart paper, markers, post-it notes, projector for presentations

Additional information for logistics personnel and trainers can be found in the Alliance for Malaria Prevention toolkit (Second Edition, dated September 2012), Chapter 5, as well as the updated logistics briefs (2017)[2].

2. 1: Key logistics recommendations. 2: Logistics Plan of Action. 3: Risk mitigation planning. 4: Net delivery systems. 5: Warehouse assessment. 6: Management of the supply chain. 7: Logistics training. 8: Reverse logistics.

2.6 Suggested training agenda

Day 1

Time	Theme/topics	Notes for facilitators	Materials to be developed (PowerPoint/flipchart)
08:00 – 08:30	**Arrival of participants**		
08:30 – 08:45	**Welcome and opening** • Welcoming of participants • Administrative information • Official opening of training		
08:45 – 09:05	**Self-introductions, objectives and expected outcomes** • introductions by participants and facilitators • Objectives of training and expected outputs • Review of agenda • Setting ground rules • Parking lot		• Objectives of training • Agenda • Flipchart for ground rules • Flipchart for parking lot and issues arising
09:05 – 09:45	**Campaign and logistics overview** • Campaign - brief overview of campaign activities • Delivery levels for LLINs, chain of responsibility and roles of logistics personnel (including supervision) and campaign partners • Timelines (calendar of key events)	Brief description of all tracking tools.	• Presentation: Overview of campaign and logistics operation including timeline • Handout: roles and responsibilities at all levels
09:45 – 10:00	**Questions, answers and discussion**		
10:00 – 10:30	**Refreshment break**		
10:30 – 11:00	**Why is the logistics operation important and what does accountability involve?** • Commodity management and security of nets • Mitigating risks related to improper management • Tracking tools, supporting documentation and archiving	Facilitators should focus on the critical aspects of the logistics operation that lead to questions on accountability so that the major risks are clear to participants.	• Handout: risk assessment and mitigation planning
11:00 – 11:45	**Review of LLIN tracking tools and how they are used** • Waybill – used for transport • Stock sheet – used for storage • Tally sheet – used for distribution	Facilitators should describe each tool, its purpose and how it is filled out.	• Presentation: LLIN tracking and tools • Handouts: tools and "how to use" documents
11:45 – 13:00	**Guided group work and discussion: Filling in LLIN tracking tools** • Practise completing each tracking tool using a simulation/ scenario • Storage/archiving of tracking tools	Important session where participants have hands-on experience of filling in tracking tools correctly.	• Scenario handouts for each small group with blank forms to fill in
13:00 – 14:00	**Lunch**		
14:00 – 15:45	**Group work with logistics tracking tools** • Simulation exercise – waybill and stock sheet	Important session where participants have hands-on experience of filling in tracking tools correctly.	• Copies of all tracking tools and "how to use" documents • Simulation scenarios
15:45 – 16:15	**Refreshment break (working)**		
16:15 – 16:45	**Group work with logistics tracking tools (continued)**		
16:45 – 17:00	**Plenary** • Challenges • Questions and answers • Discussion **Training wrap-up (day 1)**	Flipchart should be used to gather the challenges, issues to be addressed from group work, etc. Identify participant(s) that will do review of day 1 on morning of day 2.	

Day 2

Time	Theme/topics	Notes for facilitators	Materials to be developed (PowerPoint/flipchart)
08:00 – 08:30	**Arrival of participants**		
08:30 – 08:45	**Review of Day 1** • Overview of key areas and address outstanding items	Identified participant(s) to review the previous day and others to add comments. To be completed by facilitator.	
08:45 – 09:45	**Warehouse and LLIN storage sites** • Role of the designated stores manager • Safety and security considerations • Procedures for reception, storage and dispatching of LLINs • Communication responsibilities and reporting lines • Unloading and loading processes • Stacking of nets (size and weight of LLIN bale of nets) • Importance of ongoing tracking of LLIN inventory • Physical inventory – frequency and reporting as per procurement and logistics SOPs • Document completion, control and storage • Briefing of additional staff (such as additional loaders or security as needed)		• Storage: roles and responsibilities, procedures, processes, documentation, etc. • Roles and responsibilities for security personnel
09:45 – 10:00	**Questions, answers and discussion**		
10:00 – 10:30	**Refreshment break**		
10:30 – 11:15	**LLIN movement and storage (micro) from peripheral level to DP** • Provide information on planning specific to LLIN movement and storage (micro) from peripheral level storage to distribution points (via satellite sites where these are part of the supply chain) • Using microplanning data (outputs) to develop transport plans • Using household registration data to update transport plans • Key considerations, such as proper accountability procedures at the distribution points, particularly where nets are moved out to peripheral distribution points and balances returned at the end of each day		• Examples of mapping of peripheral storage locations and DPs (handouts) • How to develop a micro transport plan
11:15 – 13:00	**Group work** • Managing LLIN movement: Review of microplanning for storage and transport at peripheral level down to DPs and from DPs to peripheral DPs	Flipcharts should be used to gather key points. Work in groups to review district level microplanning for storage and transport.	• Review of group work prior to end of session
13:00 – 14:00	**Lunch**		
14:00 – 14:45	**Reverse logistics and end of distribution** • Procedures for nets being returned to the stores at the end of distribution • Reporting on discrepancies • Physical inventory – when and how? • Reporting on stock received, stock dispatched, stock returned and stock balances	Facilitators should train according to the agreed procedures and directions in terms of movement of nets (e.g. from DPs to satellite stores to district stores, etc.)	
14:45 – 15:15	**Group work: Managing end of distribution and reverse logistics**	Simulation exercise. Emphasize the importance of planning and use of tracking tools.	
15:15 – 15:45	**Refreshment break**		
15:45 – 16:15	**Training summary - confirming and assessing understanding** • Troubleshooting procedures • Question and answer session about roles and responsibilities, and when and how to use the LLIN tracking tools • Questions and answers from participants	Prepare a list of questions or activity to assess knowledge	• Assessment materials
16:15 – 16:30	**Training wrap-up** • Participants complete training evaluation • Next steps after training • Official end of training		• Prepare training evaluation forms

2.7 After the training

As soon as possible:

- Develop a summary of the training, outlining the key elements that arose from the various training sessions and the group work.
- Provide a summary of the training evaluations, trying to capture the highlights and areas for improvement.
- If any commitments were made during the training for the provision of additional information, resources or follow-up action, aim to honour those commitments.

2.8 Points for consideration

- Timing of the logistics training is critical. It is important that this training be held prior to nets arriving in the designated area.
- Resources must be prepared in advance to use for practical exercises, and handouts should be available for each participant.

3. Briefing of conveyors

In centralized net logistics operations, it can be helpful for conveyors to accompany the trucks carrying the supplies in order to monitor and control loading, transport and off-loading. Conveyors have also been used in some countries for the transport of nets at the peripheral levels. If using conveyors, a separate briefing will need to be organized that covers their specific tasks.

Benefits from using this system are:

- Load monitoring along the delivery route
- Proper delivery of commodities to consignee
- The noting of proper completion of tracking system, i.e. waybill/delivery notes and receiving process
- Real time situation reporting such as delays, accidents or breakdowns
- It extends the central (or state/province/district) logistics control over the commodities further along the supply chain with individuals that are largely independent of those managing the supply chain

Prior to dispatching commodities, all conveyors will be briefed in their roles and responsibilities (see Appendix 2). They are usually briefed in LLIN transport, including the use of waybills.

3.1 Suggested conveyor half day briefing

1. *Overview of role*
   - ➢ Conveyors have a critically important role in the overall distribution of LLINs; overseeing the delivery of nets from central warehousing to county/district/satellite storage facilities. In accompanying deliveries conveyors facilitate prompt and efficient delivery to proper destinations and ensure deliveries are received and signed for by the proper receiving authority.
2. *Breakdown of duties and responsibilities*
   - ➢ Observe the loading of LLINs:
     - – Identify self to logistics coordinator and driver
     - – Observe loading process and identify challenges in notebook
     - – Ensure waybill is signed by sender and driver
   - ➢ Accompany the delivery, checking the load at all times
   - ➢ Assist in overseeing the unloading of LLINs:
     - – Identify self to receiver
     - – Observe/count (country-defined roles) bales being unloaded
     - – Ensure waybill is signed by receiver and returned to logistics coordinator
   - ➢ Act as contact point for delivery:
     - – Communicate any problems directly to logistics coordinator and/or contact person at destination
3. *Familiarization with waybill*
   - ➢ Where to write quantities and where to sign
   - ➢ Which copies to deliver, and which to retain
4. *Overview of routes*
   - ➢ Provide copy of dispatch plan, assign routes

Appendix 1: Terms of reference for the logistics sub-committee (LSC)

The LSC must develop documents and tools for the management of the LLINs through the supply chain from arrival to distribution points. Training will be done prior to utilization of these tools at all levels of the supply chain.

The specific tasks of the logistics sub-committee include:

- Attend regular meetings, chaired by the NMCP logistician, and ensure minutes and action points are circulated and validated by all members of the LSC
- Develop a logistics plan of action (LPoA) based on national campaign plan of action
- Estimate needs for commodities (non-LLIN) in partnership with the technical sub-committee
- Develop logistics budget
- Develop LLIN positioning plan, including storage space requirements, for central warehouse (if used) and district warehouses for initial delivery and ensure that warehouse assessment and verification are undertaken prior to LLIN arrival
- Develop a detailed logistics timeline and monitor progress of activities against projected campaign timelines
- Via information transmitted from international shippers, monitor the status of LLIN procurement and pipeline
- Provide support to state/province/district health teams in the form of technical assistance and training, throughout the campaign process (warehouse identification and evaluation – microplanning – implementation – reporting)
- Incorporate micro-logistics planning with overall programme microplanning and provide support for microplanning workshops at central, district and peripheral levels
- Guide LLIN transport, accounting for requirements for all contexts in all districts, ensuring that mapping of infrastructure and terrain is included as part of microplanning, and ensuring that LLINs are sent to the right district warehouses in the right quantity
- Train all people involved in the supply chain in use of tracking tools (waybills, stock-sheets and tally-sheets) and proper reception and management of LLINs
- Provide both supervision and monitoring of all logistics activities, notably verifying proper completion of all tracking tools and LLIN storage security levels at sub-storage areas and at LLIN distribution points
- Identify and resolve in-country supply chain bottlenecks
- Provide detailed instructions for the movement of LLIN security stock out of regional warehouses to increase pre-positioned LLIN stocks (if used)
- Ensure that reverse logistics is included in district and distribution point plans, including training for management of leftover nets
- Ensure staff in districts and health facilities/ distribution points understand the importance of proper completion and filing of supply chain documents during the campaign
- After the campaign, collate all documents tracking the movement of LLINs through the supply chain and ensure proper filing and archiving for analysis and accountability
- Develop a comprehensive waste management plan with implementation processes and ensure its successful operation
- Review and confirm effectiveness of supply chain management through planning and budgeting for Commodity Management Assessment (CMA)
- Write final logistics report, based on district distribution reports, including lessons learned for subsequent LLIN distribution campaigns

Appendix 2: Roles and responsibilities and selection criteria of campaign logistics personnel

Training is more than the distribution of manuals, guides and job supports. For logistics training to be effective, adequate time must be taken for a participatory learning process centred on practical action and focused on an appropriate number of participants. Selection criteria, meaning a list of the essential and desirable skills, attributes, experience and education required to carry out the specified role and responsibilities of each job, must be prepared in advance, and staff selected for the training according to how well they meet these criteria.

This applies not only to the staff at central and district level overseeing and managing the logistics process, but to any person responsible for the accountability of the LLINs between arrival in country and distribution to beneficiaries (warehouse managers, security guards, warehouse assistants, distribution point team leaders, conveyors, etc.)

Managerial level

At the central and state/province/district levels, the technical personnel managing the logistics will be staff of the Ministry of Health from the NMCP, implementing partners and the district health management team. Role and responsibilities are matched to selection criteria so that those selected will be able to carry out their duties efficiently and effectively.

Role and responsibilities	Selection criteria
• Develop logistics plan of action and supporting annexes, including timeline, budget and macro storage and transport plans • Develop risk assessment and mitigation framework • Quantify all tools required for proper supply chain management • Develop microplanning documents and templates to ensure proper logistics data are collected and used for context-specific planning • Facilitate microplanning workshops and consolidate and validate logistics planning • Develop micro-transport plans • Facilitate training • Support the coordination of campaign activities • Assure quality of implementation through supportive, effective supervision and monitoring • Validate campaign data • Ensure efficient reverse logistics to limit loss or leakage of LLINs at the end of distribution • Contribute to final report	• Excellent leadership and communication skills • Previous experience in LLIN (or other) campaigns (vaccination, child health, etc.) • Supply chain management and/or logistics experience • Knowledge of malaria and its prevention, diagnosis and treatment • Ability to manage multiple tasks in a fast paced environment with tight deadlines • Training, supervision and monitoring skills • Ability to be proactive in identifying and addressing bottlenecks • Good report writing skills • Available for full period of campaign

Warehouse manager

Role and responsibilities	Selection criteria
• Manage LLIN reception at the storage location • Ensure procedures for stacking bales are followed • Ensure correct and consistent use of the tracking tools • Perform inventories on a regular basis • Oversee the work of, and supervise, security staff and warehouse assistants • Report daily on LLIN balance and any stock outs • Communicate and report on losses or problems at the storage location	• Good management skills • Previous experience in record-keeping and stock management • Ability to correctly and consistently use tracking tools and ensure they are filed • Ability to write clearly and perform simple calculations • Good knowledge of local area • Ability to work with limited supervision and achieve set objectives • Ability to communicate effectively • High level of honesty and integrity, respected within the community • Available for full period of training and campaign

Warehouse assistants

Role and responsibilities	Selection criteria
• Follow procedures for stacking and loading bales • Use tracking tools correctly and consistently • Undertake inventories as required by manager	• Ability to follow procedures correctly • Ability to write clearly • Ability to use tracking tools correctly and consistently • High level of honesty and integrity • Ability to work in a team • Ability to communicate effectively • Available for full period of training and campaign

Security personnel

Role and responsibilities	Selection criteria
• Ensure that the storage location is correctly locked at the end of each day • Restrict entry to only those people with responsibilities in the warehouse • Monitor entries and exits from the storage location • Develop a loading/unloading system with counters to verify LLINs and to monitor movement activities in/out of warehouses	• Ability to follow procedures correctly • Ability to write clearly • High level of honesty and integrity • Ability to work in a team • Ability to communicate effectively • Available for full period of training and campaign • Available to provide physical security throughout a loading/unloading activity and able to quantify LLIN loads accurately

Distribution point supervisor

Role and responsibilities	Selection criteria
• Set up distribution point properly so that distribution takes place in an orderly and efficient manner • Oversee distribution of LLINs to beneficiaries • Oversee correct and consistent use of tracking tools • Respond rapidly to need for more LLINs • Respond rapidly to any crowd control issues • Collect data daily and transmit appropriately • Monitor communication with beneficiaries to ensure messages given are correct • Oversee any health education activities	• Good supervisory skills • Excellent communication skills • Ability to identify and resolve bottlenecks in a constructive and timely manner • Good understanding of the local environment and language • Respected member of the community in which the DP is located • Ability to follow procedures and use tracking tools correctly and consistently • Ability to write clearly and perform simple calculations • Available for full period of training and campaign

Conveyors

Role and responsibilities	Selection criteria
• Carry out inventory control during off-loading and note problems or discrepancies in notebook (e.g. personnel not using tools properly) • Be aware of the consignee and their position and telephone number • Be familiar with the planned route and duration of the trip • Possess a mobile phone to contact responsible person for any problems that arise. Air time will be provided for conveyors to ensure that they are able to communicate in a timely manner. Appropriate contact information should be provided during the briefing (print out the list of contacts for each participant) • Ensure commodities delivered are properly handed over and secured in warehousing/storage site	• Ability to follow procedures and use tracking tools correctly • Good communication skills • High level of honesty and integrity • Knowledge of the localities and road networks, including areas with specific access issues

Updating brief 8: Reverse logistics

ADDITIONAL MATERIAL FOR CHAPTER 5

Contents

1. Planning

In the case of a LLIN campaign, the term "reverse logistics" refers to the reverse flow of LLINs from either a distribution point or pre-positioning site (last point in the supply chain) back up the campaign supply chain for distribution through a different channel (e.g. into health facilities for routine distribution to pregnant women during ANC) or for secured warehousing until a decision is taken as to their use.

Reverse logistics uses standard logistics tracking documentation consisting of:

- transport waybills
- warehouse stock sheets
- tally sheets (to verify issue/returns quantities are correct)

The logistics staff should receive stringent training on how to use and fill in the supply chain management tools. One of the risk factors that must be addressed is linked to the proper use of the tools and ensuring accountability for the LLINs purchased for the campaign. As with any supply chain activity, tracking and accountability are critically important for reducing leakage or loss of commodities during and after the LLIN campaign. Unfortunately, the reverse logistics operation is not usually well planned, which can lead to "lost" nets when they are provided to health facilities or moved away from pre-positioning or distribution sites without the correct documentation in place to track this movement.

Within a country's LLIN campaign planning it is important to have policies and plans in place to handle any possible surplus of LLINs at the end of the distribution, and how the reverse logistics activity will be carried out. It is critical that this planning is done early so that information about LLIN reconciliation and reattribution can be included in training for each cadre of campaign workers at each level of planning and implementation. At the end of a campaign, the logistics (or data quality) audit or commodity management assessment will review how well the reverse logistics was handled.

Planning and budgeting for reverse logistics should be done at the time of the development of the campaign and logistics plans of action. The policy may be to reattribute leftover LLINs to health facilities to be used in routine delivery channels (such as to pregnant women at ANC or children receiving vaccination at EPI) or it may be to store securely until needed. However, it is vital that, whatever the final destination, the LLIN tracking tools continue to be used systematically to ensure no loss or leakage between the end of the mass distribution campaign and LLIN reattribution. Training should emphasize the need for accountability right up to the end destination. At that point, responsibility for the LLINs passes to another party, usually the Ministry of Health.

2. Beginning routine distribution

Where there is no existing plan for routine distribution, a country should consider developing this at the same time as they are implementing the micro-planning for the campaign. The listing of facilities and population in each catchment area is already a part of the micro-planning for the campaign, so adding on the needed information to develop a plan for routine distribution should not be too difficult. Where routine distribution has not yet started but is a priority for a country, the leftover campaign nets provide an opportunity to begin. In these cases, it is advisable for the country to prioritize routine

distribution in areas where it is expected that the campaign distribution may not access 100 per cent of the population for any reason (e.g. logistics, cultural or physical barriers to participation in health campaigns or to uptake of LLINs, marginalized or highly vulnerable populations, etc.). An additional consideration when planning for moving leftover campaign nets into the routine system should be the access to targeted facilities during the rainy season and whether pre-positioning an increased stock of LLINs (e.g. to cover the months that logistics will be difficult) is an option.

3. Estimating the cost

Estimating costs for reverse logistics is not easy for two reasons:

1. It is unclear if there will be any nets remaining at the end of the distribution.
2. The number of LLINs remaining at the end of the distribution will be unknown during the planning period.

However, it is still important that this planning and budgeting is done to avoid a problem at the end of the distribution where there are leftover nets and no plan or budget to move them back to the specified locations. Without a plan and budget available, the risks for the management of leftover LLINs and loss or leakage at the end of the distribution period are increased.

Therefore, it is advised that countries plan and budget for reverse logistics by:

1. Estimating the percentage of LLINs that may remain undistributed during the campaign (e.g. five per cent).
2. Applying the cost per net for the transport down the supply chain to moving the nets back up.

The percentage of LLINs that may remain undistributed can be estimated using results from the last mass distribution, assuming that this information was gathered and compiled following the distribution. Any assumptions made (such as the five per cent figure) must be detailed in the budget. Reverse logistics must be discussed and processes agreed during macro level planning. In addition to the costs for transport of the LLINs for return up the supply chain or for redistribution between districts or implementation areas, the logistics sub-committee members and NMCP should consider other costs that may be associated with the reverse logistics and planning for leftover nets including:

- fees for local labour for loading/offloading
- storage fees at whichever level is selected for storing the nets, particularly if this is not at a health facility or involves a larger quantity of LLINs to be stored
- security fees for safeguarding LLINs (if not already in place)
- production of tracking tools (if not already available)

COUNTRY CASE STUDY

In a Uganda campaign scheduled for 2016, any surplus (leftover) LLINs would be moved back to the sub-county stores from either the pre-positioning sites/distribution points and quantified or inventoried in order to allow the NMCP to make decisions on their next destination. This logistics operation must take place whether moving to other sub-counties during mass distribution or being transported to health facilities in the same sub-county for routine distribution.

It is critical that there is a full accounting for the LLINs allocated for campaign distribution (physical inventory), and reconciliation for the LLINs received prior to them being moved elsewhere. In addition, the location that will receive the LLINs will need to have inventoried any existing stock before receiving the new stock in order to ensure a clear paper trail on all nets in the supply chain.

4. Shortages during mass distribution campaigns

Reverse logistics could be used to supply areas (districts, distribution points) that experience unforeseen LLIN shortages during implementation of activities with LLINs from areas that have a surplus. During these movements, LLINs must be tracked and closely monitored to eliminate loss or leakage. Utilizing campaign tracking tools is important since training should have taken place and personnel are already familiar with the processes. Part of the training should have been dedicated to the end of distribution process, including reverse logistics, and practice undertaken with filling in the supply chain management tools correctly.

COUNTRY CASE STUDY

In 2011, an integrated distribution campaign took place in Togo. The distribution was limited to 29 out of the 35 health districts in the country, there being insufficient LLINs to cover five districts of the capital, Lomé, and Golfe health district. After the campaign, a stock of 38,387 LLINs remained undistributed in the districts that had received nets. It was decided to send these LLINs to Lomé, from where they could be dispatched to cover part of the needs of Golfe district. The LLINs were collected and transported to Lomé by the same transport company that had undertaken the original transport from Lomé to the district warehouses.

This operation, not foreseen at the macro planning stage and not in the LPoA or budget cost more than 3,900,000 XAF (Communauté Financière Africaine franc) (approximately 5,900 Euros/USD 6,700).

5. Further checks

Although not often part of the general logistics planning for mass campaigns, there is the possibility of further checks on the management of the supply chain and the quality and accuracy of the documentation used post-distribution. An option is to conduct a final review of the LLIN supply chain with a Commodity Management Audit (CMA). The CMA verifies if all LLINs are accounted for, including any surpluses, shortages and/or returns up the supply chain.

SEE CMA IMPLEMENTATION PACKAGE DESCRIPTION AND RESOURCE

The Alliance for Malaria Prevention

Commodity Management Audit (CMA)

Introduction to the CMA Implementation Package

January 2016

This publication was produced by the Alliance for Malaria Prevention (AMP).

Report prepared by Alain Daudrumez and Vivienne Seabright

The Alliance for Malaria Prevention

Commodity Management Audit (CMA)

Introduction to the CMA Implementation Package

January 2016

Table of contents

1: Background

Half the world's population (3.2 billion people) is at risk of being infected with malaria. Although preventable and curable, the disease does, however, still kill one child every two minutes. Nearly all malaria deaths occur in children under five years of age. Pregnant women are also more vulnerable. Approximately 90 per cent of the global total deaths in 2015 (438,000) occurred in Africa[1]. There, mosquitoes that transmit malaria primarily bite from dusk to dawn, so bed nets can provide effective protection. In the global campaign to achieve universal coverage with bed nets of populations at risk of malaria, millions of long-lasting insecticide-treated bed nets (LLINs) and instructions on their care are being provided to beneficiaries, together with awareness-raising and behaviour change communication on prevention and treatment of malaria.

Based on requests from National Malaria Control Programmes (NMCP), the Alliance for Malaria Prevention (AMP) provides globally-recognized expert technical assistance through distance and in-country missions to help countries successfully plan and execute net distribution campaigns. Since 2002, AMP has supported 36 countries in sub-Saharan Africa, Asia-Pacific and the Americas. In addition, countries have participated in AMP-organized workshops aimed at strengthening and sharing the skills of NMCP and partner organization staff in LLIN campaign planning, logistics, behaviour change communication and monitoring and evaluation. In 2014 alone, AMP supported 16 countries through 38 in-country missions and distance support, which contributed to ensuring that over 53 million nets were successfully distributed to the targeted recipients. During 2015, around 41.5 million additional nets were distributed with AMP's support.

1. WHO World Malaria Report, 2015. See: www.who.int/malaria/publications/world-malaria-report-2015/report/en/

2: Commodity management

Distribution is, however, only one part of the whole picture. Systems need to be in place to ensure that the millions of dollars' worth and huge quantities of commodities, in this case bed nets, reach beneficiaries in the most effective and efficient manner possible. The logistics exercise is a huge and complex operation, requiring meticulous documentation and well-trained staff, security of the commodities, transparency and accountability. In addition to accountability and value for money, donors require the knowledge that their investment is being handled in an efficient and timely fashion. To demonstrate all this, an audit of the LLIN supply chain can document and measure quality of handling and levels of accountability in the various processes and steps that are taken to make LLINs available to beneficiaries at distribution points.

Commodity management refers to how the commodities (in this case LLINs) are handled through storage and transport at various levels of the supply chain. It covers sea transport to country, port transit and customs clearing, transport to warehouse(s) at first level of warehousing, further transport and storage at secondary levels of warehousing (e.g., region, district), transport to and storage at distribution points and finally, distribution to beneficiaries. The audit will cover movement of nets after delivery to the central location. A number of different documentation tools, such as waybills, stock sheets, tally sheets and inventories are used to track the movement of nets. Our example Commodity Management Audit, which took place in Nigeria, is therefore an appraisal of the appropriate use and filing of tracking tools used in the supply chain during a specified mass LLIN distribution campaign. It should be noted, however, that a CMA can be carried out to cover any commodity at any time. The test is of the tracking system and its documentation as a whole.

In general, with mass LLIN distribution, since numbers of commodities are so huge and the logistics operation so complex, an audit of the entire supply chain would be difficult. It is therefore more likely that a sample, perhaps of a small number of districts, selected without bias, serves to act as a snapshot of the entire supply chain.

3: Objectives of the CMA

The objectives of the CMA are to:

- Document the level of accountability achieved in the management of the LLIN supply chain
- Strengthen the management of the LLIN supply chain for future campaigns by detecting potential weaknesses that can be addressed

The CMA aims to achieve these objectives by:

- Verifying the completeness or otherwise of the LLIN "paper trail", i.e. checking the *availability* of all tracking documents
- Verifying if the tracking documents have been used correctly, i.e. assessing the *quality* of use
- Verifying if all the LLINs that have been supplied are accounted for, i.e. checking that the *balance* of stock agrees with the figures in the tracking documents

The CMA is a vitally important process to determine whether nets are actually reaching beneficiaries, and to check on the quality of training of supply chain personnel. The audit can, for example, demonstrate certain weaknesses, whether in the final processing of leftover LLINs, the filling in of documentation, or the correct filing of all supply chain documents. It can also show in which areas the main strengths lie, to be built on for the future. Learning from the audit can and should feed into the planning for the next mass distribution campaign.

Nets are taken to their destinations by many different modes of transport.

4: The CMA Implementation Package

To assist the CMA process, AMP has produced a CMA Implementation Package, a set of documents and tools that were developed with the aim of streamlining and standardizing CMAs for LLIN supply chains. The process of the CMA is similar for any kind of commodity audit, but the tools developed by AMP would need to be adapted for other commodities.

The CMA Implementation Package contains five folders:

1. Training: A set of PowerPoint slides to be adapted for the training of supply chain personnel; sampling protocol example
2. Conducting the CMA: sample Terms of Reference for the organization who will carry out the audit; Standard Operating Procedures; step by step instructions for carrying out the CMA at region, district and DP level; and notes on naming and filing CMA documentation
3. LLIN tracking tools: waybill, stock sheet and tally sheet and how to use and fill them out
4. Assessment tools: region, district and DP workbooks in Excel (all formulae included), plus detailed descriptions of how to use them and stock sheet quality assessment forms
5. Reporting: an example of the report from Nasarawa State in Nigeria, to be used as a template for the final CMA report.

5: Development of the CMA package: the example of Nigeria

Malaria is endemic in Nigeria, with more than 160 million people at risk of infection and 97 per cent living in high malaria transmission areas. The country ranks first in the world on absolute number of malaria deaths. LLIN distribution is therefore a vital lifesaving intervention.

During the 2009–2013 mass distribution campaigns in Nigeria, over 59 million LLINs were provided in all states of the country. In 2014, a second wave of replacement campaigns, covering 17 states and 40 million nets to replace worn out nets, was planned. In compliance with the implementation guidelines for the replacement campaigns, the distributions were designed to ensure that one LLIN was available for every two persons. The investment was substantial, and the National Malaria Elimination Programme was interested in assessing the management of the supply chains to check on accountability, transparency and efficiency. Could LLINs be tracked and accounted for at every stage of the supply chain? Did numbers agree when LLINs were moved from stage to stage? Were they reaching beneficiaries in the correct quantities to achieve the campaign objectives? To respond to these questions, CMAs have been adopted into the revised Nigeria LLIN campaign guidelines, making them an integral and critical part of the LLIN replacement campaigns. AMP was requested to provide technical assistance, and together with the national CMA core team, two international AMP consultants helped to develop the Implementation Package and test it in one state of Nigeria, as well as undertake the training of the selected firms for the CMA in the remaining 16 states.

A LLIN being given to a beneficiary during the mass distribution campaign

The pilot CMA in Nasarawa State

The CMA Implementation Package was tested during a pilot CMA which was carried out in April/May 2015. The CMA was carried out in accordance with strict operating procedures, and covered one state out of the 17 targeted for replacement campaigns.

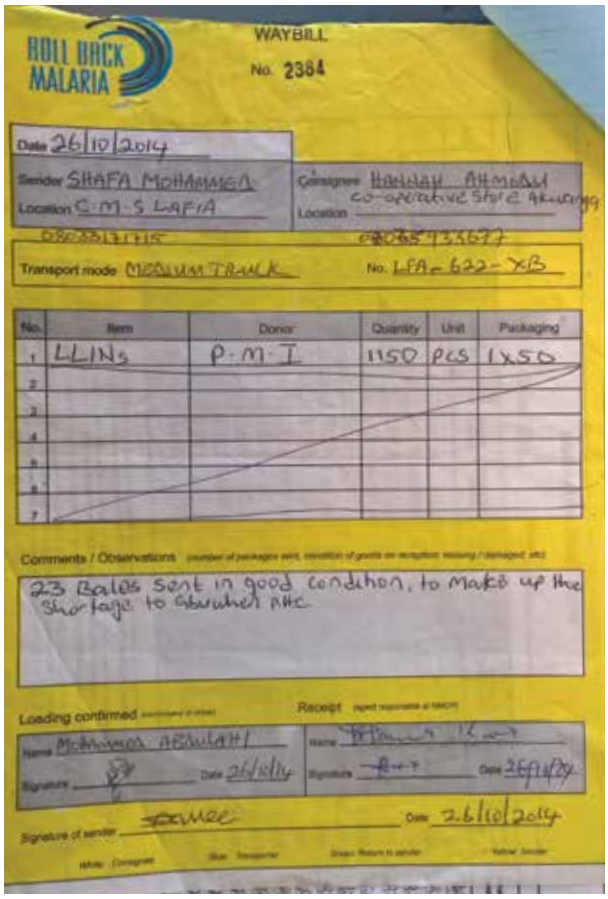
Nasarawa State, in central Nigeria, was selected as the pilot state for the CMA, with five out of the 13 local government areas (LGAs), each equivalent to a district, and twelve distribution points per LGA randomly selected for audit. The State has an estimated population (for the campaign planning) of 2,981,250 people. In order to achieve universal coverage of the population of the State, 1,656,250 LLINs were procured and received through financing from PMI/USAID. According to the final distribution report (reconciliation report), a total of 1,617,099 LLINs were distributed during the replacement campaign at 517 distribution points.

The pilot audit helped to fine-tune the CMA Implementation Package, which should be readily adaptable for CMAs for the supply chain of LLINs in other countries. The tools would need to be adapted for other commodities, but the process of the audit remains similar

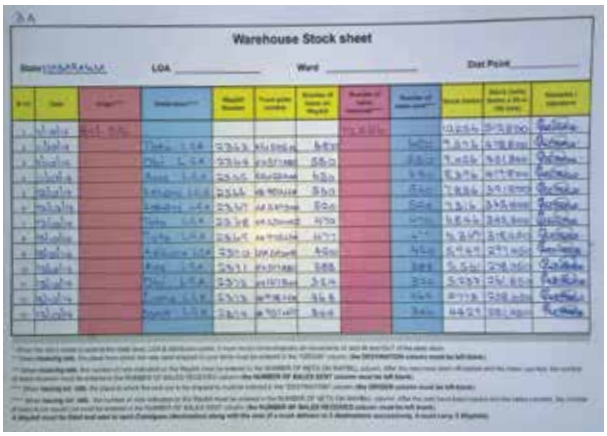
6: Conducting the CMA

All supply chain documentation from region, district and DP must be available to audit. The audit takes place at a selected location, such as a district, where all documentation will be archived. Documentation includes waybills, stock sheets, tally sheets and inventories, used as follows:

- Waybill: used to control the movement of nets from point A to point B. The waybill is issued by the sender, and indicates the nature and quantity of goods being shipped. The waybill is a tool to ensure that LLINs stay in the supply chain during transport.

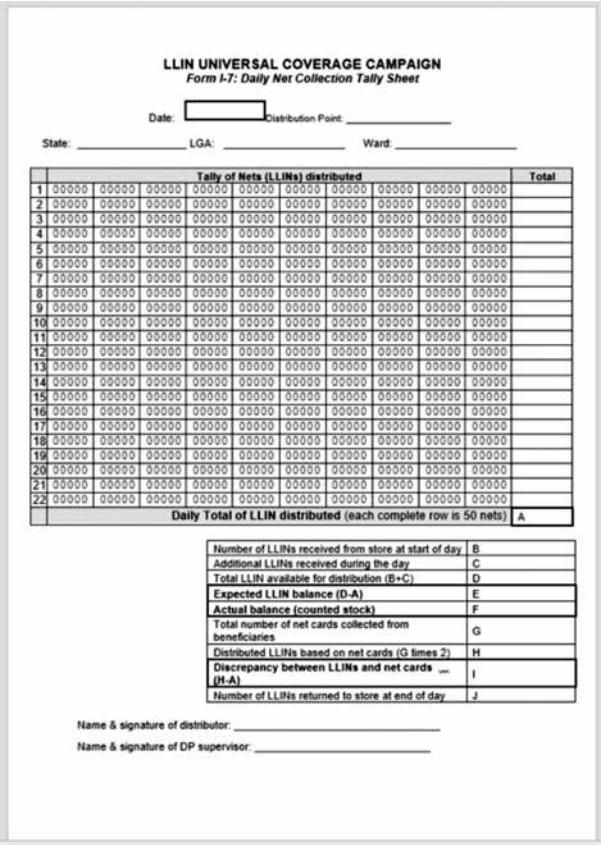


- Stock sheet: this records the quantities of nets received at the warehouse or store as well as the quantities shipped out of the warehouse or store. The stock sheet also maintains a constant inventory of LLIN stocks in the warehouse or store. A stock sheet is used at every location and level at which LLINs are stored. This document might also be called "warehouse register". The stock sheet is a tool to ensure that LLINs stay in the supply chain during storage.



- The tally sheet: this is both a logistics and a distribution tool. It is used by the distribution team during the distribution period to keep track of the number of nets given out to beneficiaries. The number of nets received each day from the DP store must be recorded, as well as the number of nets returned to stores at the end of the day, if there are any remaining. One tally sheet should be used on each distribution day. The tally sheet, combined with the stock sheet, is a tool to ensure that LLINs stay in the supply chain during distribution and that they reach the intended beneficiaries.
- Inventory: this is an activity that must be done on a regular basis throughout the operation, as well as at the end of the operation, and which serves as an internal control on the management of stock. The inventory is a physical count of the stock in the storage location. The inventory report should be compared with the stock sheet and the waybills to ensure that there is no leakage of LLINs during storage and transport.

The audit also includes the reconciliation reports (also called LLIN distribution reports), prepared after the distribution campaign has ended. These



LLIN UNIVERSAL COVERAGE CAMPAIGN

Form I-7: Daily Net Collection Tally Sheet

Date: _____ Distribution Point: _____

State: _____ LGA: _____ Ward: _____

	Tally of Nets (LLINs) distributed										Total
1	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
2	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
3	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
4	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
5	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
6	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
7	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
8	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
9	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
10	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
11	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
12	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
13	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
14	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
15	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
16	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
17	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
18	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
19	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
20	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
21	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
22	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	
	Daily Total of LLIN distributed (each complete row is 50 nets)										A

Number of LLINs received from store at start of day	B
Additional LLINs received during the day	C
Total LLIN available for distribution (B+C)	D
Expected LLIN balance (D-A)	E
Actual balance (counted stock)	F
Total number of net cards collected from beneficiaries	G
Distributed LLINs based on net cards (G times 2)	H
Discrepancy between LLINs and net cards (H-A)	I
Number of LLINs returned to store at end of day	J

Name & signature of distributor: _____

Name & signature of DP supervisor: _____

reports match logistics data (transport and storage) with distribution data (number of nets received at each DP and number distributed) to give a complete picture of how the LLINs were managed. During the course of the CMA, the information on the reconciliation reports is cross-checked with the data from the tracking documents.

The organization conducting the audit must physically review the documentation coming from each level in order to compare figures between the different sources of information. For example, figures for nets sent from one level and figures for nets received at the next level should be the same. Any discrepancies mean that some nets may not be accounted for. Availability of the tracking documents should also be checked, as well as their quality (how well they have been filled in). For example, if the number of nets sent from one level is different from the number of nets received at the next level, but this information is not recorded on the waybill, there will be a discrepancy in the numbers due to the incorrect filling out of the supply chain tools. This could be related to loss during transport or on arrival at the storage location, which would need to be investigated to assess whether the issue is leakage in the supply chain or a counting error when loading.

In the CMA Implementation Package, the tools used for CMA data recording and analysis consist of three Excel workbooks, one for each audit level (region, district and DP). Each workbook contains several data entry spreadsheets linked to data summary and data consolidation tables. Workbooks are linked, so that the summary tables contain the data for all levels. Details of how these workbooks should be used are provided.

Example of a consolidation table:

Availability and quality scores

Audit level	Type of document	Number of tracking tools AVAILABLE	Number of tracking tools MISSING	Availability score	Number of tracking tools REVIEWED	Quality score
DP level (60 DPs)	Waybills IN	59	1	98%	n/a	n/a
	Tallysheets	255	31	89%	255	90%
	ICC	60	0	100%	60	65%
LGA level (5 LGAs)	Waybills IN	30	1	97%	n/a	n/a
	Waybills OUT	230	-12	104%	60	96%
	Stocksheet	5	0	90%	5	82%
State level	Waybills IN	48	7	87%	n/a	n/a
	Waybills OUT	58	1	98%	29	100%
	Stocksheet	1	0	100%	1	75%
All levels	Waybills IN	137	9	94%	n/a	n/a
	Waybills OUT	288	-11	101%	89	95%
	Stocksheet/ICC	66	0	97%	66	74%
	Tallysheets	255	31	89%	255	90%
Total number of documents		**746**	**29**	**95%**	**410**	**86%**

Availability checks whether all the tracking documentation is produced. An availability score of less than 100 per cent means that supporting documents are missing, which introduces a LLIN accountability discrepancy. Over 100 per cent (for waybills) may mean missing or incomplete stock sheets, also introducing a LLIN accountability discrepancy. The quality score refers to how the tracking tools were used, i.e. filled out properly, readable data, no information or signatures missing. It does not refer to the correctness of the number of nets moved through the supply chain and distributed at DPs. A document might get a 100 per cent quality score regardless of the correctness of the LLIN numbers. The main purpose of the quality assessment is to identify any weaknesses in the use of the tracking tools in order to provide better training for future campaigns.

7: Steps in conducting a CMA

STEP 1: Training. All personnel (company or organization contracted for the task) associated with the CMA must receive training and be assessed on CMA knowledge.

STEP 2: Sampling. NMCP develops a sampling protocol and randomly selects sampling area and specific distribution points to be assessed.

STEP 3: Coordination with national CMA team, NMCP and partners. Good coordination between all stakeholders is essential. Communication with people at the district level responsible for assembling documentation.

STEP 4: Preparation for fieldwork. All tracking documentation (waybills, stock sheet, tally sheets, inventories, and reconciliation reports) should be assembled and filed at the selected CMA locations. The CMA tools (Excel workbooks) should be prepared/populated from the reconciliation reports.

STEP 5: Travel to assigned area selected during sampling. A travel plan should be prepared in advance of any movement to the area.

STEP 6: Contact with regional authorities. Briefing meetings and travel plans should be held with regional authorities.

STEP 7: Fieldwork. The company or organization contracted for the CMA work should brief authorities at district level in the selected CMA locations before beginning the review of reconciliation reports and tracking documents. Tracking tools are assessed, and scanned copies taken.

STEP 8: Analysis followed by debriefing. Local authorities should receive a summary of the preliminary findings and recommendations.

STEP 9: Report. Using the standard reporting template provided in the CMA Implementation Package, a report should be produced. This should be accompanied by the assessment workbooks and scans of all audited documents.

Participants at a workshop to learn about CMA procedures

8: Using the results of the CMA

Results of the CMA should identify where any weak links in the supply chain occur. Weaknesses may occur at the handling level, with procedures not being carried out properly, or in the filling out and correct filing of documentation. The final report should give recommendations, backed up by evidence, that will feed into planning, training for and implementing the next mass LLIN distribution campaign in order to improve performance, strengthen the supply chain and reduce any leakage and loss of nets.

The audit might show, for example, serious mistakes in filling in documentation, such as incomplete data. The recommendation would be to improve the training and supervision. Training should include simulation exercises, and supply chain personnel must be competent and confident in the use and completion of all tracking documentation.

Availability of documentation is also important: missing waybills, incomplete stock sheets and missing tally sheets might lead to the recommendation that increased emphasis should be on the importance and necessity of proper filing and archiving of all documents. Generally poor results might lead to a recommendation that the whole region or a specific district undergo a full audit.

Another recommendation might be that the supervision and monitoring during the operation should be strengthened. Training should emphasize proper procedures and those supervising should receive adequate guidance on their main tasks and responsibilities.

Further information

The CMA Implementation Package can be downloaded from the website (www.allianceformalariaprevention.com) and adapted to the specific country situation. Further adaptation to the tools would be required to cover other commodities.

For further information, contact: allianceformalariaprevention@gmail.com.

Contact information

Website: www.allianceformalariaprevention.com
E-mail: allianceformalariaprevention@gmail.com