

# The Alliance for Malaria Prevention

## Commodity Management Audit (CMA)

### Introduction to the CMA Implementation Package



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

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Cover. Large photograph. Loading bales of LLINs in Nigeria.

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# 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<sup>1</sup>. 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/](http://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



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

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.

### 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



**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	
2	00000	00000	00000	00000	00000	00000	00000	00000	00000	
3	00000	00000	00000	00000	00000	00000	00000	00000	00000	
4	00000	00000	00000	00000	00000	00000	00000	00000	00000	
5	00000	00000	00000	00000	00000	00000	00000	00000	00000	
6	00000	00000	00000	00000	00000	00000	00000	00000	00000	
7	00000	00000	00000	00000	00000	00000	00000	00000	00000	
8	00000	00000	00000	00000	00000	00000	00000	00000	00000	
9	00000	00000	00000	00000	00000	00000	00000	00000	00000	
10	00000	00000	00000	00000	00000	00000	00000	00000	00000	
11	00000	00000	00000	00000	00000	00000	00000	00000	00000	
12	00000	00000	00000	00000	00000	00000	00000	00000	00000	
13	00000	00000	00000	00000	00000	00000	00000	00000	00000	
14	00000	00000	00000	00000	00000	00000	00000	00000	00000	
15	00000	00000	00000	00000	00000	00000	00000	00000	00000	
16	00000	00000	00000	00000	00000	00000	00000	00000	00000	
17	00000	00000	00000	00000	00000	00000	00000	00000	00000	
18	00000	00000	00000	00000	00000	00000	00000	00000	00000	
19	00000	00000	00000	00000	00000	00000	00000	00000	00000	
20	00000	00000	00000	00000	00000	00000	00000	00000	00000	
21	00000	00000	00000	00000	00000	00000	00000	00000	00000	
22	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: \_\_\_\_\_

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.

reports match logistics data (transport and storage) with distribution data (number of nets received at each DP and number distributed) to give a



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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%
<b>Total number of documents</b>		<b>746</b>	<b>29</b>	<b>95%</b>	<b>410</b>	<b>86%</b>

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](http://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](mailto:allianceformalariaprevention@gmail.com).





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