



## Distribution of Free Long Lasting Insecticidal Nets in Nine UPHOLD-Supported Districts in Uganda



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## **LIST OF ACRONYMS**

CAO	Chief Administrative Officer
CMDs	Community Medicine Distributors
DDHS	District Director of Health Services
DGHS	Director General, Health Services
DHT	District Health Team
IDPs	Internally Displaced Persons
IEC	Information Education and Communication
ITNs	Insecticide Treated Nets
LC	Local Council
LLINs	Long Lasting Insecticide Treated Nets
NMCP	National Malaria Control Program
RDC	Resident District Commissioner
SC	Sub County
UPHOLD	Uganda Program for Human and Holistic Development

## EXECUTIVE SUMMARY

This report covers the experiences and lessons learned during the distribution of free long lasting insecticidal nets (LLINs) to nine UPHOLD supported districts between December 2005 and March 2006, using the existing Home-based Management of Fever (HBMF) system as the distribution channel.

In March 2005, the Uganda Program for Human and Holistic development (UPHOLD) conducted a '*Focus for Impact*' analysis, to identify crucial interventions for increased results. Malaria prevention and control interventions were earmarked as one of the areas of focus. Subsequently, 260,000 LLINs were procured and targeted at nine districts in order to achieve an estimated 15% overall increase in insecticide treated net (ITN) coverage among children below five years in the targeted districts. Estimations were based on projected district populations as well as ITN coverage data from UPHOLD's annual Lot Quality Assurance Sampling surveys conducted in 2004 and 2005. These districts included five 'non-conflict' districts which had insecticide treated nets (ITNs) coverage in children below five years lower than 10% (Bugiri, Bushenyi, Mayuge, Mubende, Rukungiri) and four 'conflict-affected' districts (Gulu, Kitgum, Lira and Katakwi).

Between December 2005 and March 2006, UPHOLD worked in partnership with the Ministry of Health National Malaria Control Program (NMCP), district health authorities, district leaders and lower local government structures, to identify, register and distribute LLINs to the most deserving children below five years. Facilitators from the NMCP and UPHOLD developed a training manual and information, education and communication (IEC) materials for use at the district level to prepare the district health teams (DHTs) for the net distribution exercise. District Health Teams were subsequently oriented on the process and equipped on how to train the community medicine distributors (CMDs) and mobilize the communities for free net distribution.

Through discussions with the MoH, it was agreed to aim at attaining a high coverage of at least 70% in children below five years, in the selected sub-counties and internally displaced people's (IDP) camps of the beneficiary districts. This localization would assist MoH to better focus ITNs expected from the Global Fund procurement and other partners at a later date. Working with the DHTs and using available information (LQAS 2005), sub-counties and camps with lowest ITN coverage in children below five years and perceived low socio-economic status were selected and the allocation of LLINs computed accordingly.

A total of 205,155 LLINs were distributed over a three month period, in five 'non-conflict' and four 'conflict-affected' districts. In the 'conflict-affected' districts, distribution covered 11 camps in Kitgum, seven camps in Katakwi, 43 camps in Lira and 53 camps in Gulu. In the five 'non-conflict' districts, a total of 26 sub-counties (SCs) received LLINs; nine SCs in Bushenyi, three SCs in Bugiri, six SCs in Mubende/Mityana, four in Mayuge and four in Rukungiri. A total of 5,768 CMDs distributed the 205,155 free LLINs under supervision of the DHTs, NMCP and UPHOLD staff.

A post-distribution Lot Quality Assurance Sampling (LQAS) survey conducted in November 2006 showed an average increase in the number of children below five years of age sleeping

under an insecticide treated bed net from the 2005 coverage of 11.4% (ranging from 3.6% in Katakwi district to 16.4 % in Bushenyi district). It was further noted that while post-distribution coverage estimates were remarkably similar to those found in the LQAS survey for the ‘non conflict’ districts, the estimates did not hold true for the ‘conflict-affected’ districts. The explanation may lie in the fact that apart from Kitgum, the other three ‘conflict-affected’ districts subsequently sub-divided into smaller entities. In addition to this there was an active effort on part of the government to decongest IDP camps and resettle people elsewhere. Which factors could have affected the sampling frames changed and hence the estimates for these districts during the survey.

The distribution exercise proved that using existing community systems is a feasible way of rapidly distributing free ITNs and subsequently increasing ITNs coverage in children below five years. This approach should be adopted by Ministry of Health and partners for rapid scale up of ITNs.

## 1.0 INTRODUCTION

### 1.1 Background

Malaria remains Uganda's leading cause of morbidity and mortality leading to serious economic and social consequences.

Malaria is highly endemic in over 95% of the country, with all year round transmission. Available information indicates that malaria accounts for about 25-40% of all out-patient visits to health facilities, 20% of admissions and 14 % of in-patient deaths (Ministry of Health, 2004).

The estimated annual number of deaths attributable to malaria in Uganda, ranges from 70,000 to 100,000. Children below five years are most affected by malaria; nearly half of hospital inpatient paediatric deaths are due to malaria (Ministry of Health, 2004). This is a highly regrettable situation because Malaria is a preventable disease.

Many factors have contributed to this high burden of malaria in Uganda, including; limited access to personal protection measures from mosquito bites, limited access to adequate treatment in the formal health facilities and increased resistance of malaria parasites to the previously cheap and effective anti-malarial drugs resulting in increased treatment failures.

Insecticide-treated nets (ITNs) have been shown to reduce the burden of malaria in children by providing personal protection from the mosquito vectors. Regular use of ITNs by young children can reduce the overall risk of dying by 20%, and the number of clinical malaria episodes by 50% (WHO, 2002).

The Ministry of Health (MoH) mosquito net policy recommends free net distribution to be targeted to low socioeconomic populations and internally displaced persons (IDPs), because these categories have limited purchasing power and may not afford to access nets from the commercial sector.

The Uganda Program for Human and Holistic Development (UPHOLD), a five year USAID-funded project has been supporting the MoH's anti-malaria efforts since 2003. In March 2005, UPHOLD conducted a focus for impact analysis, aimed at identifying crucial interventions capable of having meaningful results, if implemented on a large scale. Malaria prevention and control intervention were identified as one of the important areas for focus for impact. This analysis indicated that 260,000 ITNs were required in order to increase ITN coverage for children below five years by 15% in selected UPHOLD-supported districts<sup>1</sup>. A decision was made to purchase long lasting insecticidal nets (LLINs), because they would offer protection for a longer period without requiring re-treatment. These LLINs were targeted at five non-conflict districts whose ITNs coverage in children below five years was below 10% as shown in UPHOLD's annual Lot Quality Assurance Sampling (LQAS) survey (Mabirizi et al, 2004), namely Bugiri, Bushenyi, Mayuge, Mubende, Rukungiri and four districts in conflict situations; Gulu, Kitgum, Lira and Katakwi.

The selection of beneficiary sub-counties and camps was guided by LQAS results of September 2005. In the conflict affected districts of Gulu, Lira, Katakwi and Kitgum, the ITNs coverage in children below five years was low at an average of 29.9% (Mabirizi et al 2005). Similarly,

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<sup>1</sup> Districts selected on basis of low ITNs coverage and location in a conflict setting



Bushenyi, Bugiri, Mubende, Mayuge and Rukungiri, had even lower ITN coverage at an average of 10.7%. As indicated in Table 1, although the ITNs coverage in children below five years had increased between 2004 and 2005 in all the nine districts, it was still below the MoH national of increasing the proportion of children below five years sleeping under an ITN to 50% by end of 2005 (MoH, 2000). This situation compelled UPHOLDS to intervene urgently to ensure further distribution of nets in these districts to increase coverage.

**Table 1: ITNs coverage in children below five years, in nine UPHOLD-supported districts**

District	Under five ITN coverage %	
	2004	2005
<b>'Non-conflict' Districts</b>		
Bugiri	4.2	19.6
Bushenyi	4.2	9.4
Mayuge	2.1	4.7
Mubende	3.7	9.7
Rukungiri	3.7	10.5
<b>Average</b>	<b>3.6</b>	<b>10.8</b>
<b>'Conflict-affected' Districts</b>		
Gulu	16.1	25.5
Katakwi	21.1	41.7
Kitgum	18.9	32.4
Lira	15.0	19.9
<b>Average</b>	<b>17.8</b>	<b>29.9</b>

*Source: UPHOLD LQAS Surveys 2004, 2005*

Having selected the beneficiary districts, the next step was to decide how to distribute the earmarked nets within these districts. Through interactive discussions with the MoH and the district health teams (DHTs), it was agreed to aim at attaining an ITN coverage of at least 70% in children below five years, in the selected sub-counties and camps of the beneficiary districts. This localization would assist MoH to better focus future distribution of ITNs expected from the Global Fund procurements, and other partners, to other localities which would not be covered in the current distribution, thereby avoiding duplication of efforts. In addition, high ITNs coverage in a given locality increases the chances of impacting on the disease burden. Against this background, beneficiary sub-counties and camps were selected and the district allocation of nets shared among them accordingly.

## **1.2 Goal**

The overall goal of the LLINs distribution exercise was to distribute 260,000 LLINs to the biologically vulnerable group (children below five years), in nine UPHOLD-supported districts of Uganda, in order to contribute to the reduction of malaria morbidity and mortality.

### **1.2.1 Overall Objective**

By the end of March 2006, increase by at least 15%, the ITNs coverage in children below five years in nine UPHOLD-supported districts; Gulu, Kitgum, Katakwi, Lira, Bushenyi, Bugiri, Mayuge, Mubende and Rukungiri.

### **1.2.2 Specific Objectives**

1. By end of March 2006, to increase the percentage of children below five years who sleep under an insecticide treated net, in four UPHOLD-supported conflict-affected districts; Gulu, Kitgum, Lira and Katakwi, by at least 20% from the 2005 average coverage of 29.9%.
2. By the end of March 2006, to increase the proportion of children below five years who sleep under an insecticide treated net, in five UPHOLD-supported non-conflict districts; Bushenyi, Bugiri, Mayuge, Mubende and Rukungiri by at least 15% from the 2005 average coverage of 10.7%
3. To conduct behaviour change communication (BCC) activities, focusing on benefits of ITNs as well as their correct use among the beneficiary communities.
4. To distribute LLINs through the existing Home-based Management of Fever (HBMF) system and document the experiences, lessons and challenges of using this method.
5. By June 2006, collect, collate and share with MoH and other partners, basic information pertaining to the distribution of LLINs to include specifically;
  - crude estimates of cost per net distributed
  - number of beneficiaries reached
  - challenges encountered and solutions formulated
  - lessons, challenges and experiences of using the HBMF system for free net distribution

### **1.2.3 Expected outputs**

1. 260,000 LLINs equitably and rapidly distributed in nine UPHOLD-supported districts.
2. Capacity built at local level for free net distribution using already existing community structures in nine UPHOLD-supported districts.
3. Behaviour change communication activities, focusing on benefits and correct use of ITNs, conducted in nine UPHOLD-supported districts.
4. Lessons learned from the distribution of free nets documented and shared with MoH and partners for refining the national free ITNs distribution system.

## **2.0 FIELD PROCEDURES**

The mass distribution of LLINs using the existing HBMF system was being done for the first time in Uganda, therefore it needed a well planned strategy. In this regard, consultations were done with MoH and partners, in order to identify the most suitable approach that would enable equitable distribution of the 260,000 LLINs. A number of possible distribution options were considered. These included;

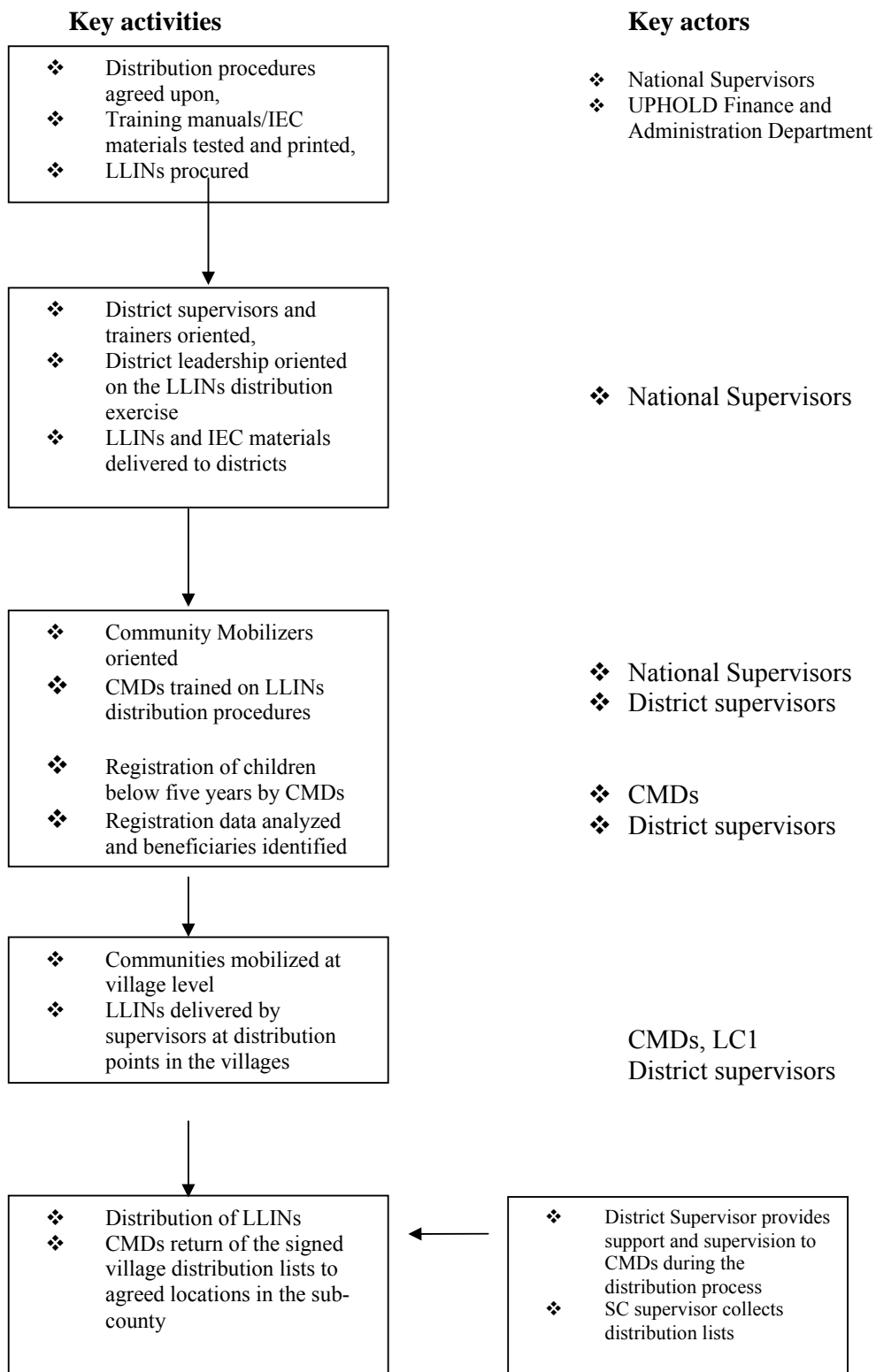
- ❖ Targeting children below five years through the young child clinics in health facilities and child days activities
- ❖ Using the universal primary education (UPE) opportunity and targeting the younger children through their siblings attending school.
- ❖ Using the LCI officials as the distribution agents
- ❖ Getting nets to the children through their mothers attending ante natal care (ANC) clinics
- ❖ Using the CMDs as the distribution agents

After wide consultation with MoH and partners who had been involved in distribution of free or subsidized nets, the HBMF system was identified as the most suitable approach. Subsequently a national team to guide the process was constituted consisting of UPHOLD staff and MoH officials from the National Malaria Control Program(NMCP). The steps for conducting the exercise were decided as outlined below;

- Training of central level supervisors,
- Training district supervisors and CMDs
- Registration of children below five years
- Managing the logistical transfer of nets from central level to the target beneficiaries (allocation, transportation and distribution of LLINs)
- Creating awareness regarding the exercise and its benefits in the target communities
- Tracking of achievements

This process and the roles played by the different actors are summarized in figure 1 and outlined in the following sections.

**Figure 1: Summary of the LLIN Distribution Process**



## **2.1 Training of Central Level Supervisors, District Supervisors and CMDs**

There were three levels of training to prepare the central teams, the district supervisors and the CMDs, who were the actual distributors of the LLINs.

The details of the training process are elaborated in the trainer's manual specifically developed for this exercise, which spelt out the major activities carried out at various levels with emphasis on the lower levels and outlines key actors and their roles.

During the training, the district supervisors were oriented on how to conduct training of CMDs at sub-county levels, in order to equip them with sufficient information to enable them to distribute LLINs to children below five years in their villages. CMDs were also equipped with appropriate information to enable them to promote correct use of ITNs in their villages using information contained in annex 1a. The main roles of the central and district supervisors were as indicated below;

### ***Central Team***

- To orient district leaders on the LLINs distribution exercise in their respective districts. During orientation, the district leaders were oriented on the distribution approach to be used and why it was chosen. They in turn used this information to explain and come to a common understanding with their communities as to why some eligible children would not be getting nets
- To equip district supervisors with appropriate knowledge and skills to enable them to train CMDs on the distribution and promotion of correct use of LLINs

### ***District Team***

1. To orient the community leaders on the LLINs distribution exercise
2. To equip CMDs with appropriate information to enable them to promote the correct use of ITNs among the mothers and caregivers of children below five years

## **Training Content**

The training at the district level focused on both the leaders and as well as the CMDs who distributed the LLINs and its content is summarized below. The orientation of leaders consisted of the first three units of the training manual while the CMDs were taken through all the five units. Each unit responded to the specific questions and issues related to malaria, LLINs and their distribution process as specified below;

### **UNIT 1: Key Facts about malaria**

- What is malaria?
- What causes malaria and how is it spread?
- Why is malaria an important disease?
- How do people prevent malaria?

**UNIT 2: Insecticide treated nets (ITNs)**

- What are insecticide treated nets (ITNs) and what are long lasting insecticidal nets (LLINs)?
- Why are we putting emphasis on children below five years?
- Why are the CMDs being involved in LLINs distribution?
- How, when and where will the LLINs distribution take place?
- Organizing the LLIN distribution center and the logistics

***Key issues emphasized during training of CMDs and mobilization of leaders and communities:***

- Focusing on the importance of effective and correct use of the ITNs for maximum protection against malaria
- Informing the communities of the other benefits of insecticide treated nets, such as killing of domestic pests (fleas, lice, bedbugs, cockroaches) that come in contact with the net.
- Addressing concerns people may have about safety of the insecticide
- Ensuring that nets are well accepted by the communities, by dispelling the myths that they might have
- Emphasizing the need to wash the net sparingly to maintain its effectiveness for a longer time

**UNIT 3: Key messages for mosquito net users (see annex 1a)**

- Knowing and understanding my LLIN
- Why should my child sleep under a treated net, is it safe?
- What to do to keep the net safe?

**UNIT 4: Organizing and managing a net distribution exercise**

- Preparations for distributing LLINs
- Managing the distribution center

**UNIT 5: Record Keeping and Supervision**

- Why keep records?
- Forms to be filled

**Role-play on conducting a distribution session**

During each of the CMDs' training sessions, role plays were used to enable the participants to better understand their roles during the exercise with *four people playing the roles of 1) a mother or caregiver of a child below five years, 2) the two CMDs and 3) the LCI chairperson*. The role play dramatized the key steps in the planned distribution exercise namely;

- ❖ Receiving the mother or caregiver
- ❖ Verification of the beneficiary child
- ❖ Handing over the net
- ❖ Correct recording
- ❖ Giving advice

## **2.2 Registration of Children below Five Years**

The CMDs compiled lists of children below five years in their villages. These lists were used by the district and central level supervisors to allocate the available nets to the most deserving children in the villages. To minimize the risk of giving the nets to less deserving children (economically able to purchase, already possessing a net), the registration lists were required to be certified by the village leader such as the LC1 Chairperson or the representative and the same person endorsed the list after giving out the LLINs using the form in annex 1b. The family type of housing was used as proxy for estimating the socio-economic status of the family. This was recorded during registration of children below five years and used in selecting beneficiaries.

## **2.3 Awareness Campaigns and Community Mobilization**

The mobilization of communities to receive free LLINs was done by district and sub-county leaders as well as CMDs. During the orientation, district leaders, sub-county leaders and CMDs, were given key information on ITNs to enable them explain to their communities, the benefits and correct use of nets and the distribution modalities (see annex 1a). Subsequently, different modalities were used to disseminate the information. They included varying combinations of radio talk shows, radio announcements, community seminars and one-to-one encounters especially by the CMDs and LC1 representatives. An informative leaflet explaining the appropriate use and benefits of the LLINs was developed and printed in three languages – Runyankore/Rukiga/Runyoro/Rutooro (4Rs), Luo and Luganda. These were given to each CMD and LC I official that participated in the exercise to provide guidance during community dialogue. A total of 44,500 leaflets were distributed to the community mobilizers, in the nine districts. During mobilization, CMDs and LC1 representatives also explained to the mothers and caregivers of children below five years, the agreed approach for distribution of LLINs and invited only those caregivers whose children were selected to receive nets to the distribution centres.

In order to reinforce information about the need for consistent use of the nets follow up BCC campaigns were carried out. These consisted of four radio spots that run three times a day on 10 top FM radio stations with national coverage for a period of six months. Two of them run for a period of three months focusing on the promotion of the correct use of ITNs, while the other two run for the next three months focusing on advocating for community support for CMDs and promotion of appropriate care-seeking behavior for prompt treatment of fever in children below five years.

## **2.4 Allocation, Transportation and Distribution of LLINs**

The main focus of this free net distribution was to ensure that the LLINs were equitably distributed, political influence minimized and high coverage attained in the benefiting localities. In order to achieve this there were a lot of consultations and discussions held at different levels to agree on the most suitable approach. Information from recent LQAS surveys was used to decide on the sub-counties (SC) and camps to target as described below.

1. Through discussions with the National Malaria Control Program (NMCP) and the District Health Teams (DHTs) of the beneficiary districts and using the available information on ITNs coverage in children below five years from UPHOLD's LQAS survey 2005, the beneficiary sub-counties were selected. Those sub-counties that had the lowest ITNs coverage in children below five years and perceived low socio-economic status were selected for distribution. Type

of housing was used as a crude estimate of socio-economic status. Those living in mud and wattle walls and grass thatched roof or grass hut (grass wall and roof) were categorized as deserving the free nets.

2. In the selected SCs or camps, the target was to attain at least 70% ITNs coverage in children below five years. Based on this approach, the LLINs for each SC or camp, were pre-determined, through interactive discussions with the DHTs and NMCP.
3. The estimated population of children below five years in the selected SC were computed using the 2002 National Census projections. Detailed allocation and distribution lists were made indicating the beneficiary SCs, number of LLINs to be allocated and name of health centre to be used for delivery and storage purposes (see sample form in annex 1c, showing the allocation details for Mubende District).
4. A letter to the Chief Administrative Officer (CAO) copied to the Director General Health Services (DGHS), NMCP Manager, District Directors of Health Services (DDHS), Chairmen Local Council 5 and Resident District Commissioners (RDC) informed these officials about the details of the allocated nets and benefiting SCs or camps.
5. In order to ease transport of the LLINs within the districts, the health centres (HCs) level II to IV within the benefiting SCs were identified and the allocated nets delivered to these units, two to three days before distribution. The aim was to limit storage time within the district, in order to minimize risks of leakage of nets from the stores.
6. UPHOLD contracted transporters who delivered the nets to the districts. In the five non-conflict districts, after being acknowledged by the DDHS' at district level, the transporters proceeded to deliver the LLINs to the identified HCs. In the four conflict-affected districts, the LLINs were delivered to the district stores and acknowledged by the DDHS. Thereafter, the DDHSs working in collaboration with UPHOLD regional offices arranged transport for the LLINs to their definitive HCs within the benefiting camps, taking care of the required security details (Fig.2).



*Figure 2: Off loading LLINs at Ongako HC II, Ongako camp, Omoro Sub-county, Gulu District*

7. The LCI Chairmen worked with the CMDs throughout the distribution exercise to ensure that the nets were given out to the eligible beneficiaries, specifically those children, who were not sleeping under ITNs and whose families had limited capacity to purchase ITNs on the open market.



8. On the day of distribution, one of the two CMDs per village went to the sub-county/health facility to collect the allocated LLINs for the village, while the other CMD worked with the village LC1 representatives to mobilize the community. Using DHT vehicles or hired vehicle or motor cycle, under supervision of central and district supervisors, LLINs were transported to the distribution points.
9. The district supervisors, supported, supervised and provided back-up support to the CMDs, during the actual distribution of LLINs and retrieved the distribution forms.
10. In all the five non-conflict districts (Bugiri, Bushenyi, Mayuge, Mubende (Mityana) and Rukungiri), the children aged below five years registered by the CMDs were a lot more than the allocated nets. In Mayuge and Bugiri Districts, the children registered by CMDs were 122% and 112% of the expected number of children below five years projected from the 2002 census.

In order to ensure equitable distribution of the available nets, in these districts, three criteria were used to select the beneficiaries, in the light of the limited numbers of LLINs. In this regard, the approach used in each district was dictated by the number of children below five years who were registered and the available number of LLINs as indicated below;

Rukungiri	One LLIN per household with a child aged below five years, giving the net to the youngest child
Bugiri	LLINs given to children born in 2004 and 2005,
Bushenyi	LLINs given to children born in 2004 and 2005
Mayuge	One LLIN per household with a child aged below five years, giving the net to the youngest child
Mubende	One LLIN per household with a child aged below five years, giving the net to the youngest child

11. Similarly, in the four conflict-affected districts (Gulu, Katakwi, Kitgum and Lira), the number of children registered by the CMDs was a lot higher than the allocated nets. The allocation of nets was guided by the sleeping pattern. Considering the size of the huts, it was agreed to give one net per hut occupied by children below five years. As a result of this approach, there were balances of LLINs from the numbers originally allocated to these districts. In Kitgum, eight camps; Akwang (Pagimo), Labuje (Layamo), Kitgum Matid, Muchwin, Lokung, Lagoro, Padibe East and Padibe West, had received nets from the International Committee of the Red Cross (ICRC) in the recent past so they were excluded. In Lira, two camps; Abia and Ogur had received also ITNs in the recent past and were therefore excluded.
12. In each village two distribution points were established and covered over two days. Each distribution point was manned by 2 CMDs and 3LC1 officials. At each distribution point, one CMD checked the registration form for the names of the beneficiary child, while the other opened up the net and instructed the caregiver on correct use and care (see Figures 3 and 4). To motivate the CMDs, each one of them participating in the exercise was given an LLIN.



*Figure 3: Care givers of children below five years, lining up to receive LLINs, Ongako camp, Gulu District, March 2006*



*Figure 4: A CMD hands over a net to a mother of a child under five years, while a second CMD verifies the records, Ongako Camp, Gulu District, March 2006*



*Figure 5: A demonstration of how to hang an LLIN, Mubende District, February 2006*

## **2.5 Record-Keeping and Supervision**

ITNs coverage is one of the key indicators spelt out in Health Sector Strategic Plan (HSSP) II for the period 2005/6 – 2009/2010. Therefore, while monitoring the LLINs distribution activities, extra care was taken to keep a record of all the nets that were distributed for evaluation purposes.

At the end of the distribution exercise at each distribution point each CMD handed in the distribution list dully endorsed by the LC1 official who supervised the distribution point. Thereafter the SC supervisors collected the distribution forms from the CMDs from a prior agreed point, compiled parish and SC summaries and submitted them to the district level for compilation of the district summary. District summaries were then submitted to UPHOLD Kampala using the forms in Annex 3a - 3g.

These forms which are shown in annexes 2a -2g, were filled out by CMDs and supervisors in order to track LLINs distribution, to record the number of nets distributed and who they were given to and pick baseline information (the children already sleeping under ITNs and the children's sleeping patterns in order to rationalize the distribution:

- Form for tracking LLINs allocation at district Level (Annex 2a)
- Form for tracking LLINs allocation at Sub-county Level (Annex 2b).
- Form for tracking LLINs allocation at Parish/Camp Level(Annex 2c)
- Parish summary form for LLINs distributed (Annex 2d)
- Sub-county summary form for LLINs distributed (Annex 2e)
- District summary form for LLINs distributed (Annex 2f)
- Summary form for LLINs distributed to CMDs (Annex 2g)

At the end of the distribution exercise, each sub-county supervisor compiled the information on the children given LLINs and submitted to the district level all copies of the forms used.

### 3.0 ACHIEVEMENTS

A total of 205,155 LLINs were distributed over a three-months period in nine UPHOLD-supported districts, with an estimated population of 983,508 children below five years. The distribution summary for all the nine districts and the estimated district ITN coverage attained in children below five years is summarized in Table 2 and figure 5. The estimated district percentage increase in ITN coverage in children below five years in the conflict-affected districts ranged between 23.2% in Kitgum District to 45.6% in Gulu District. In the non-conflict districts, the percentage increase ranged between 12.4% in Mayuge District to 13.5% in Rukungiri District. The estimated increase in ITNs coverage in children below five years, attained in the beneficiary sub-counties and camps are shown in the individual tables in annexes 3a-3i.

**Table 2: Estimated ITN coverage in children below five years in nine UPHOLD supported districts, LQAS 2004, 2005 and 2006 as well as estimated coverage after distribution**

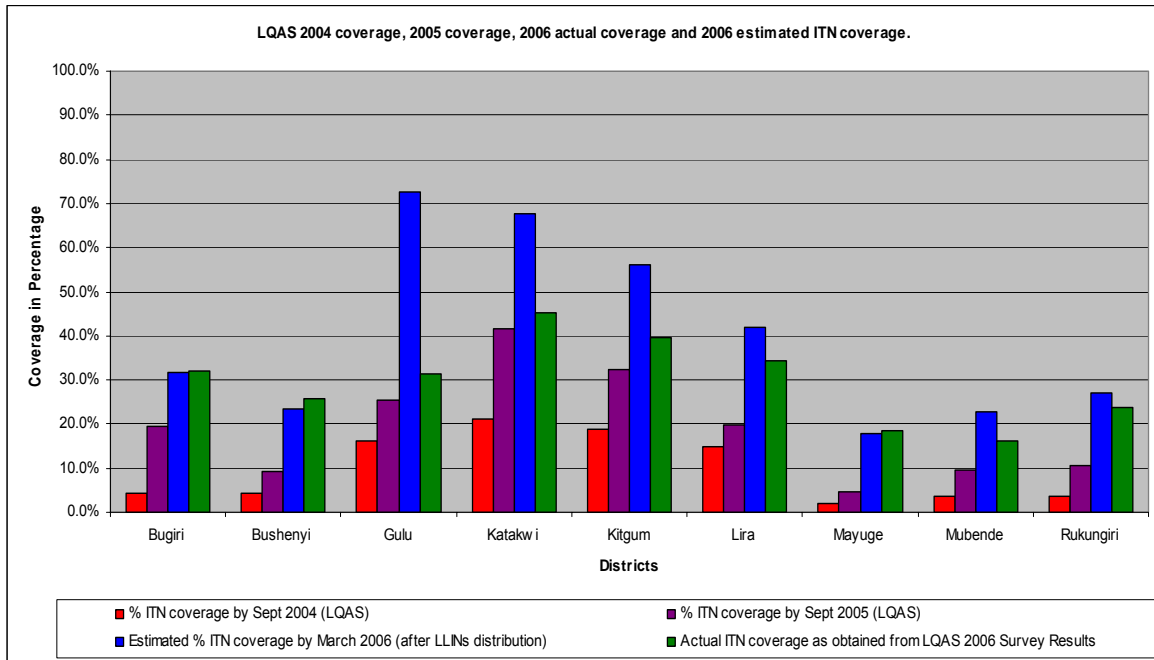
District	Estimated population under-5 years (2005)	Estimated population of children under five years (2006)	% ITN coverage by Sept 2004 (LQAS)	% ITN coverage by Sept 2005 (LQAS)	Estimated # of ITNs coverage before the mass net distribution exercise	# of ITNs distributed by UPHOLD Dec-March 2006	Estimated % ITN coverage by March 2006 (after LLINs distribution)	Actual ITN coverage as obtained from LQAS 2006 Survey Results
Bugiri	95,610	100,104	4.2%	19.6%	18,740	13,000	31.7%	32.1%
Bushenyi	156,784	159,920	4.2%	9.4%	14,738	22,800	23.5%	25.8%
Gulu*	104,599	107,663	16.1%	25.5%	23,535	51,525	72.6%	31.4%
Katakwi*	72,331	76,815	21.1%	41.7%	30,162	21,945	67.8%	45.3%
Kitgum	64,347	66,985	18.9%	32.4%	17,052	16,650	56.0%	39.5%
Lira*	165,528	171,156	15.0%	19.9%	32,940	38,775	41.9%	34.2%
Mayuge	72,714	75,259	2.1%	4.7%	3,418	10,000	17.8%	18.4%
Mubende*	150,875	154,948	3.7%	9.7%	14,635	20,529	22.7%	16.3%
Rukungiri	58,122	58,993	3.7%	10.5%	6,103	9,931	27.2%	23.7%
<b>Totals</b>	<b>940,910</b>	<b>971,843</b>	<b>9.8%</b>	<b>19.2%</b>	<b>161,323</b>	<b>205,155</b>	<b>40.1%</b>	<b>29.6%</b>

\*These districts broke up and became smaller entities before the LQAS 2006 Survey but for purposes of this analysis, the original geographical area and population of the district before break-up has been utilized. This however has an impact on the accuracy of the 2006 LQAS estimates of coverage

*Source: Program Records, UPHOLD 2006*

A total of 11 camps in Kitgum, seven camps in Katakwi, 43 camps in Lira and 53 camps in Gulu received LLINs. In the five non-conflict districts, LLINs were distributed in 26 sub-counties (SCs) in total, nine SCs in Bushenyi, three SCs in Bugiri, six SCs in Mubende/Mityana, four in Mayuge and four in Rukungiri. Each of the 5,768 CMDs who participated in the distribution exercise received a free LLIN.

**Figure 5: ITN coverage for children below five years, in nine UPHOLD supported districts, 2004 – 2006**



*Source: UPHOLD LQAS 2004, 2005, 2006 and projected 2006 estimates*

A post-distribution Lot Quality Assurance Sampling (LQAS) survey conducted in November 2006 showed an average increase in the number of children below five years of age sleeping under an insecticide treated bed net from the 2005 coverage of 11.4% (ranging from 3.6% in Katakwi district to 16.4 % in Bushenyi district). It was further noted that while post-distribution coverage estimates were remarkably similar to those found in the LQAS survey for the ‘non conflict’ districts, the estimates did not hold true for the ‘conflict-affected’ districts. The explanation may lie in the fact that apart from Kitgum, the other three ‘conflict-affected’ districts subsequently sub-divided into smaller entities. In addition to this there was an active effort on part of the government to decongest IDP camps and resettle people elsewhere. Which factors could have affected the sampling frames changed and hence the estimates for these districts during the survey. Remarkably too, the graph shows that for the ‘non-conflict’ districts that did not sub-divide (i.e., Bugiri, Bushenyi, Mayuge and Rukungiri) the actual ITN coverage in children under five years for 2006 is very close to what was estimated as the coverage to be achieved as a result of this net distribution exercise.

## 4.0 FIELD EXPERIENCES AND LESSONS LEARNED

### 4.1 Lessons Learned

1. Communities value nets and there was excessive demand for free LLINs. Mothers and caregivers, requested for nets for themselves and older children who were not included in this exercise.

In Bobi camp Gulu District, the mothers and caregivers of older children who were not receiving nets, mobilised themselves and went to Bobi HC III to demand for nets for themselves and their children. Similarly, in Bushenyi District, as the mothers and caregivers of children below five years received LLINs for their children they asked the supervisors when they should expect to come back for their own. The communities of Malongo Sub-county in Mayuge District, which was originally not included as a target area, besieged the Malongo HC III where the LLINs had been temporarily stored, demanding to be given nets. The transporters, who delivered LLINs to Rukungiri District, stole 300 LLINs. This theft was identified by the Rukungiri District Malaria Focal Point Person, who while receiving the nets noticed that a number of bales were open. He proceeded to count the LLINs in the open bales to ascertain whether they had the right number (75 LLINs per bale). On realising that there were missing LLINs, he took the culprits to police where the matter was sorted out and the company refunded the stolen nets.

There were other attempts to steal nets at the distribution points. At one distribution point in Pabbo IDP camp in Gulu District, one mother attempted to receive a second net but was blocked by other mothers who had already seen her receiving a net for her child. In Bugiri District, a young man grabbed three nets from a distribution point and sped off, but was shortly apprehended by the residents assisted by local police and the nets recovered. In Pabbo IDP camp, in Gulu District rowdy young men started commotion at the distribution site and sped off with five LLINs but were apprehended by the police and the nets recovered.

2. Mobilisation for free nets was easy because all parents of the registered children were eager to receive the nets.
3. There were attempts by district politicians to influence the allocation of LLINs to localities of their choice to boost their image. However this was minimised because the allocations had been done centrally, based on criteria agreed upon with the National Malaria Control Program.
4. District leaders and LC officials at different levels were grateful for the LLINs, requested for more and willingly participated in the distribution exercise at different levels. In Gulu District, one district leader appreciated the LLINs and presented them as his big achievement to the electorate, while soliciting for votes.
5. Tight control by the DDHS' and district leaders was crucial for preventing LLINs leakages.
6. There is a high level of awareness about ITNs in the communities. In Bobi and Coope IDP camps in Gulu District, a sample of about 20 women all knew that mosquitoes transmit malaria and that ITNs prevent malaria.

## 4.2 Feedback from Stakeholders

- CMDs felt a sense of satisfaction for having been recognized as the most suitable persons to distribute LLINs for preventing malaria in the children that they have been according treatment for the same disease
- In Bushenyi District, a Phillipino doctor working in Ishaka Hospital remarked:  
*‘My dream for the Ugandan Government to give everyone a mosquito net is becoming a reality now’*
- In Gulu District, the LC5 chairman thanked UPHOLD/USAID for the donation, which he said would be put to good use by the recipients

## 4.3 Challenges

- The demand for free nets was very high and made the selection of beneficiaries difficult because all parents wanted nets for their children
- The numbers of children qualifying to receive nets was always higher than the available nets, necessitating quick decisions on how to equitably distribute the available numbers
- The political activities taking place at the time (presidential and parliamentary elections ) distracted the attention of some community leaders, supervisors, CMDs and communities, thereby making the exercise longer than had been planned
- District leaders (politicians and non-politicians) wanted to influence LLINs distribution to cover their localities in order to boost their image
- Attempted theft of the LLINs, in Bugiri and Gulu Districts and actual stealing of LLINs in Rukungiri District were a pointer to the tight controls required while distributing the nets
- Some distribution points were very remote and exceedingly difficult to access by car (Rukungiri, Bushenyi and Gulu), needing alternative means (boda-boda, or bicycle) of transporting the nets
- Some LC officials and supervisors wanted free nets despite the fact that they had better purchasing power than the targeted beneficiaries

## 4.4 Costs

The costs of distributing LLINs using the HBMF system was estimated to be US \$ 50 cents per net distributed. This crude estimate includes; transportation of nets, storage costs and operational costs (personnel time for training, mobilization, registration of children, distribution of nets and supervision).

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusions**

- A total of 205,155 LLINs were successfully distributed through the existing HBMF system in nine districts over a period of three months, through the concerted efforts of MoH, UPHOLD and the district health teams. This exercise proved that;
  - It is feasible to rapidly and equitably distribute large numbers of nets through a campaign approach using community based volunteers as the end point distributors.
  - The CMDs have a high level of commitment in ensuring smooth flow of activities in their communities.
  - The community leaders play a pivotal role in mobilizing and organizing their communities to maximize equitable distribution.
  - Although the HBMF system has many systemic challenges it can be successfully used to rapidly deliver nets to children below five years. It was found to be an effective delivery mechanism; delivering each net at an estimated cost of about 50 US cents (crude estimates).
  - The beneficiaries were very appreciative of the donation and requested for more nets to cater for older children and adults.
- The LQAS surveys constitute a good tool for identifying those communities with the lowest ITNs coverage in children below five years in order to target the most deserving populations and ensure equitable distribution of free nets. In addition they are useful for monitoring coverage.
- Identification of key actors in LLINs distribution and delegation of roles and responsibilities ensured a high level of commitment. Using the HBMF system proved to be a reliable method of reaching the vulnerable groups living in rural remote areas, which would not have been reached if the nets had been distributed through the health facilities, as had earlier been considered. CMDs, if well guided, can play a central role in mobilizing and delivering services to their communities, because they are trusted and they understand the dynamics of their communities.
- The demand for free nets is very high and has to be managed carefully to minimize misallocation and leakages.
- Nets are very bulky commodities and logistics for their transportation need to be worked out carefully well in advance to ensure smooth flow of activities, putting into consideration provision for hard to reach areas.

### **5.2 Recommendations**

1. Distribution of ITNs through a campaign approach is feasible and should be adopted by the MoH and partners for future distributions for rapid scale up of ITNs coverage in vulnerable groups.
2. Selection of beneficiaries should always be done jointly by MoH, the DHTs and partners to avoid duplication of efforts and minimize misallocation of nets that can result from influence by politicians at the local level.
3. The MoH should always be involved in determining the deserving localities in the district as well as in estimating the required numbers of ITNs.



4. Criteria of selecting beneficiaries in the event of registering more children than the available nets should always be agreed in advance to ensure fair play
5. The sleeping patterns of children should always be put in consideration when distributing nets to maximize the number of children covered.
6. Community meetings and minimum radio programs are adequate for mobilization of the community to minimize costs, since the demand for free nets is already high.
7. Follow up BCC activities are essential after distribution to assure correct use.

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## ANNEXES

### Annex: 1a Key messages for mosquito net users

*When mobilizing the community use the information below to make them understand the value of ITNs in preventing malaria and the need for correct use*

#### *Knowing and understanding my LLIN*

It is important to understand the type of net you have in order to handle it properly. Although many people now have heard that mosquito nets protect the users against malaria, majority are not convinced that this is true. This is because the families do not use the nets properly or correctly. The protection the net provides doubles when the net is treated with the insecticide. There are two ways of treating a net with the insecticide; 1) in the factory when weaving and 2) outside the factory after manufacturing or even sewing. Those treated in the factory during manufacture are called Long Lasting insecticidal Nets (LLINs) also called long lasting insecticide treated nets and the other are just Insecticide- Treated Nets (ITNs). The type of net your child has received to day is called OLYSET net one of the LLINs. The insecticide in this net lasts its life time (3 years) therefore; you may not need to re-treat it in future. You need to care for it well to protect it from destruction by rats or fire.

#### *How does the net work?*

The Protection comes as a result of the net repelling the malaria transmitting mosquitoes or even killing them when they rest on the net trying to bite the sleeping child or person. In this way the mosquito is prevented from biting the child or person sleeping under the net thereby preventing it from spreading the malaria germs (parasites) from one person to another. Therefore the mosquito net works as a barrier and also drives away or kills the mosquitoes. If the child sleeps with another child or an adult relative, they will all benefit and be protected from malaria. Malaria transmitting mosquitoes bite mostly at night that is why we emphasize sleeping under the mosquito net. A treated net also kills other insects like bedbugs, fleas, head lice and cockroaches.

#### *How do I hang it!*

The mosquito net is hanged over the sleeping place of the intended user. The nets we are giving out now have been provided for children below five years, so these nets should be hanged where the child or children sleep. If the child sleeps with another child or an adult relative, they will all benefit and be protected from malaria. These nets are rectangular, like the shape of the sleeping place or bed. Use the four loops on the net to tie the net ends on either nails sunk in the adjacent walls or on the poles improvised. Lower it to cover the users every night and tie it up every morning.

#### *Why should my child sleep under an insecticide treated net?*

Young children suffer from malaria many more times than the older children and adults. They also suffer more attacks of severe malaria. A net that is treated with insecticide **doubles your child's protection against malaria.**

- A treated net drives away and kills malaria-spreading mosquitoes.
- A treated net also kills other insects like bedbugs, fleas, lice and cockroaches.

*Are young children safe under a Long Lasting Insecticide Treated Net?*

Young children are very safe under a treated net. The amount of insecticide used to treat a net is so little that it cannot harm a person, a child or even a baby. **Experience has shown that the dose of insecticide in each net is very little indeed, such that even if a baby leaked the net, it would get any problems.**

However, some children may be allergic to the insecticide and may experience skin itching, cough, headache or eye sensation especially for the first 1-3 days. For this matter, you should leave the LLIN spread out open for 2 days before using it.

*How often should the child sleep under the net?*

Once you commence use, the child should sleep under the net every night all year round because there are malaria transmitting mosquitoes every day all the year round. There are times when the mosquitoes reduce in number but they never disappear completely so, still use the nets during such periods. **Protect the child against malaria not just mosquito nuisance.**

*What to do to keep the net safe*

The net fabric can get dirty, tear or burn like other clothes you have. Wash whenever it appears dirty to you. Avoid soiling it with food to prevent it from being eaten by rats. Also avoid getting it close to open fires such as candles. Keep the net tied up during day time to prevent children misusing it and lower it as they go to sleep. In case the net gets torn, ensure that it is mended in time before the holes get too large to repair. **Remember a stitch in time saves nine!!**

### Annex 1b: Community Medicine Distributor’s Registration Form for Children below Five Years

Name of Enumerator/Distributor..... Village/LC1/zone.....Parish/camp.....Sub County.....

Nearest Health Facility..... District..... Date.....

s/n	Name of HH Head	Type of dwelling; *T=Temporary *S=Semi Permanent *P=Permanent	Names of <5 ,Children in HH	Date of Birth	Sex F/M	Child had fever in the last 2 weeks Y/N	Where treated; *CMD, *HF, *D/S, *P/C, *N/A	Child sleeps under a net Y/N	Child shares sleeping place with another person 1= <5 child, 2= Older child 3= Adult, 4= sleeps alone	given Y/N	Signature/ Thumb print of recipient

Name and Signature of LC1 Official after < 5s registration

Date:.....

**\*Key**

- \*T = Mud +Wattle, Grass/Polythene thatched
- \*S = Mud + Wattle, Iron Roofed
- \*P = Brick cemented, Iron or tile roofed
- \*CMD = Community Medicine Distributor
- \*HF = Health Facility
- \*PC = Private Clinic
- \*D/S = Drug Shop
- \*N/A = Not Applicable

Name and Signature of LC1 Officer after distribution

Date:.....

**Annex 1c: LLINs Allocation Details for Mubende District (Total LLINs=21,075)**

	<b>Sub-county</b>	<b>ITNs coverage (LQAS 05)</b>	<b>No of estimated &lt;5s</b> <i>(projected from 2002 census)</i>	<b>No. of &lt;5s registered by CMDs</b>	<b>Allocation of LLINs for &lt;5s 1 per HH</b>	<b>No. of CMDs</b>	<b>No. of bales*</b>	<b>Villages/ CMDs</b>	<b>No. of SC supervisors</b>	<b>Delivery Point HC</b>
1.	Butologo	7.1%	3,222	4539	3,294	50	45	25/50	3	Butologo HC2
2.	Malangala	6.5%	4,068	3495	2,659	94	37	47/94	3	Malangala HC3
3.	Kiyuni	7.1%	4,482	3897	3,164	56	43	28/56	3	Kiyuni HC3
4.	Butayunja	6.5%	2,153	1558	1,312	46	18	23/46	3	Kitongo HC3
5.	Kiganda	4.7%	7,757	7126	5,845	130	79	65/130	3	Kiganda HC4
6.	Manyi	6.5%	6,099	4,948	4,255	170	59	85/170	3	Manyi HC3
	<b>Total</b>		<b>27,781</b>	<b>25,563</b>	<b>20,529</b>	<b>546</b>	<b>281</b>	<b>273/546</b>	<b>18</b>	

\* A bale contains 75 nets

**Annex 2a: Form for Tracking LLINs Allocation at District Level**

**District.....**

No.	Name of Sub County	No. Parishes /camps	No. Villages/ LC1/zone	No. of ITNs received	Name & position of person receiving LLINs	Signature of person receiving LLINs	Name & position of person Issuing out LLINs	Signature of person issuing out LLINs	Date
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
<b>Total</b>									

**Annex 2b: Form for Tracking LLINs Allocation at Sub-County Level**

**District.....**

**Sub County.....**

<b>No.</b>	<b>Name of Parish/camp</b>	<b>No. Villages/ LC1/zone</b>	<b>No. of ITNs allocated</b>	<b>Name &amp; position of person receiving LLINs</b>	<b>Signature of person receiving LLINs</b>	<b>Name &amp; position of person Issuing out LLINs</b>	<b>Signature of person issuing out LLINs</b>	<b>Date</b>
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
<b>Total</b>								



**Annex 2c: Form for Tracking LLINs Allocation at Parish or Camp Level**

**District..... Sub County..... Parish/Camp.....**

<b>No.</b>	<b>Name of Village/LC1/zone</b>	<b>No. of ITNs received</b>	<b>Name &amp; position of person receiving LLINs (CMD)</b>	<b>Signature of person receiving LLINs</b>	<b>Name &amp; position of person issuing out LLINs (HU in charge)</b>	<b>Signature of person issuing out LLINs</b>	<b>Date</b>
<b>1</b>							
<b>2</b>							
<b>3</b>							
<b>4</b>							
<b>5</b>							
<b>6</b>							
<b>7</b>							
<b>8</b>							
<b>9</b>							
<b>10</b>							
<b>Total</b>							

**Annex 2d: Parish or Camp Summary Form for Recording LLINs Distributed**

**District..... Sub-county..... Parish/Camp..... Date.....**

<b>No.</b>	<b>Name of Village/LC1/zone</b>	<b>Total No. of HH S/huts</b>	<b>No. ITNs received</b>	<b>No. CMDs</b>	<b>No. CMDs received ITNs</b>	<b>HHs with &lt;5s</b>	<b>No. &lt;5s received ITNs</b>	<b>% &lt;5s</b>	<b>% HHs with ITNs</b>
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
<b>Total</b>									

**Name of supervisor.....**

**Signature.....**

**Date.....**

**Annex 2e: Sub-County Summary Form for Recording LLINs Distributed**

**District..... Sub-county ..... Date.....**

No.	Name of Parishes/camps	No. Villages/L C1/zone	No. ITNs received	No. CMDs	No. CMDs received ITNs	Total HHs	HHs with <5s	No. <5s	No. <5s received ITNs	% <5s	% HHs with ITNs
1											
2											
3											
4											
5											
6											
7											
<b>Total</b>											

**Name of Sub-county supervisor.....**

**Signature.....**

**Date.....**

**Annex 2f: District Summary Form for Recording LLINs Distributed**

**District.....**

**Date.....**

No.	Name of Sub-County	No. Parishes/camps	No. Villages/LC1/zones	No. ITNs received	No. CMDs	No. CMDs received ITNs	Total HHs	HHs with <5s	No. <5s	No. <5s received ITNs	% <5s	% HHs with ITNs
1												
2												
3												
4												
5												
6												
7												
8												
<b>Total</b>												

**DDHS: Name.....**

**Signature.....**

**Date.....**

**Malaria Focal Person: Name.....**

**Signature.....**

**Date.....**

**Annex 2g: Summary Form for Recording LLINs Distributed to CMDs**

**District..... Sub-county..... Parish/Camp.....**

No.	Name of CMD	Village/LC1/zone	Signature of CMD	Name of person issuing the LLINs	Position of person issuing LLINs	Signature of person issuing LLINs	Date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
<b>Total</b>							

**Name of supervisor.....**

**Signature.....**

**Date.....**

**Annex 3 a: Rukungiri District LLINs Distribution Details and Coverage by Sub-county, December 2005**

Sub County	Under fives ITNs coverage LQAS 2005	Under fives estimate, projected from 2002 census	No. of <5s registered by CMDs	Under fives with ITNs before distribution	Total LLINs given out by UPHOLD (Dec 05)	Total under fives with nets after LLINs distribution	estimated overall SC <5s coverage after LLINs distribution
Buyanja	7.9%	7,798	5,807	616	5,245	5,861	75.2%
Ruhinda	7.7%	5,811	4,587	447	3,572	4,019	69.2%
Buhunga (only one parish given nets)	7.7%	4,965	990	382	668	1,050	21.2%
Nyakagyeme (only one parish given nets)	29.0%	7,626	641	2212	446	2,658	34.8%
<b>Total</b>	<b>13.1%</b>	<b>26,200</b>	<b>12,025</b>	<b>3426</b>	<b>9,931</b>	<b>13,357</b>	<b>51.0%</b>

A total of 12, 025 children below five years were registered by CMDs in 4 sub-counties of Rukungiri district. This number represents 46% (12,025/26,200) of the under population estimated from the projected 2002 census figures. A total of 9,931 LLINs were distributed giving an estimated overall ITNs coverage of 51.0% in children below five years, in the 4 sub-counties that received LLINs. In Nyakagyeme and Buhunga Sub-counties, the distribution covered only one parish, thus the low coverage attained in those sub-counties.

### Annex 3b: Bushenyi District LLINs Distribution Details and Coverage by Sub-county, December 2005

Sub- County	Under fives ITNs coverage LQAS 2005	No of under fives (<5s) estimated from 2002 Census	No. of under fives registered by CMDs	Under fives with ITNs before distribution	Total LLINs given out by UPHOLD Dec 05	Total under fives with nets after LLINs distribution	Under fives overall SC LLINs coverage
Rwengwe	5.3%	3285	2738	174	2226	2400	73.1%
Burere	5.3%	5688	5276	301	3975	4276	75.2%
Karungu	5.3%	5244	4892	278	3975	4253	81.1%
Bihanga	5.3%	4033	3537	214	3399	3613	89.6%
Mutara	10.5%	4710	3747	495	3000	3495	74.2%
Katunguru	13.2%	698	794	92	515	607	87.0%
Bugongi (only one parish covered)	15.4%	3373	875	519	750	1269	37.6%
Bumbeire	23.7%	7060	5283	1673	4050	5723	81.1%
Kichwamba	13.2%	5534	1537	730	910	1640	29.6%
<b>Total</b>	<b>10.8%</b>	<b>39,625</b>	<b>28,679</b>	<b>4280</b>	<b>22,800</b>	<b>27080</b>	<b>68.3%</b>

A total of 28,679 children below five years were registered by CMDs in 9 sub-counties of Bushenyi district. This number represents 72% (28,679/39,625) of the under five population estimated from the projected 2002 census figures. A total of 22,800 LLINs were distributed, giving an estimated ITNs coverage of 68.3% in children below five years in the 9 sub-counties that received LLINs. In each of the 2 sub-counties; Bugongi and Kichwamba, LLINs distribution was done in only one parish; as a result a low coverage was attained compared to the other sub-counties where the entire sub-county was covered.

**Annex 3c: Bugiri District, LLINs Distribution Details and Coverage by Sub-county, December 2005**

Sub -/County	Under fives ITN coverage LQAS 2005	Under fives (<5s) estimate projected from 2002 census	No of under fives registered by CMDs	Under fives with ITNs before distribution	Total LLINs given out by UPHOLD Dec 05 - March 06	Total under fives with nets after LLINs distribution	Under fives LLINs overall SC coverage
Buwunga	2.8%	7,884	7,956	221	5,057	5,278	66.9%
Muterere	2.8%	4,720	5,899	132	3,469	3,601	76.3%
Nankoma	2.8%	6,804	7,966	191	4,474	4,665	68.6%
<b>Total</b>	<b>2.8%</b>	<b>19,408</b>	<b>21,821</b>	543	<b>13,000</b>	<b>13,543</b>	<b>69.8%</b>

A total of 21,821 children below five years were registered by CMDs in 3 sub-counties of Bugiri District. This number represents 112% (21,821/19,408) of the under five population estimated from the projected 2002 census. A total of 13,000 under fives received LLINs giving an estimated under fives coverage of 69.8% in the 3 sub-counties that received LLINs.



**Annex 3d: Mayuge District, LLINs Distribution Details and Coverage, by Sub-county, December 2005**

Sub-County	Under fives ITN coverage LQAS 2005	Under fives (<5s) estimate projected from 2002 census	No. of <5s registered by CMDs	Under fives with ITNs before distribution	Total LLINs distributed by UPHOLD, Dec 05 - March 06	Total under fives with nets after LLINs distribution	Under 5s LLINs overall SC coverage
Baitambogwe	2.6%	7,573	7,000	197	3,345	3,542	46.8%
Kigandalo	5.4%	6,247	14,629	337	3,283	3,620	58.0%
Mpungwe	2.6%	4,449	5,641	116	2,334	2,450	55.1%
Malongo (only 1 parish covered)	15.4%	10,426	7,729	1,606	1,038	2,644	25.4%
<b>Total</b>	<b>6.5%</b>	<b>28,695</b>	<b>34,999</b>	1,865	<b>10,000</b>	<b>11,865</b>	<b>41.3%</b>

A total of 34,999 children below five years were registered by CMDs in the 4 sub-counties of Mayuge District. This number represents 122% (34,999/28,695) of the under five population projected from 2002 census figures. A total of 10,000 LLINs were distributed, giving an estimated, overall under fives coverage of 41.3%, in the 4 sub-counties that received LLINs. In Malongo sub-county, only one parish was provided LLINs and subsequently the coverage attained was much lower than in the other 3 sub-counties.

**Annex 3e: Mubende District, LLIN Distribution Details and Coverage by Sub-county, February 2006**

Sub-county	Estimated under fives (projected from 2002 census)	Under fives ITNs coverage (LQAS 2005)	No. of <5s registered by CMDs	Under fives with ITNs before distribution	Total LLINs distributed by UPHOLD, Dec 05 - March 06	Total under fives with nets after LLINs distribution	Under 5s LLINs overall SC coverage
Butologo	3,511	7.1%	4539	249	3,344	3,593	101%
Malangala	4,432	6.5%	3495	288	2,753	3,041	66%
Kiyuni	4,883	7.1%	3897	347	3,220	3,567	72%
Butayunja	2,345	6.5%	1558	152	1,510	1,464	62%
Kiganda	8,451	4.7%	7126	397	6,372	6,242	74%
Manyi	6,548	6.5%	4,948	426	4,851	4,681	71%
<b>Total</b>	<b>30,170</b>	<b>6.4%</b>	<b>25,563</b>	<b>1931</b>	<b>21,075</b>	<b>22,934</b>	<b>76%</b>

A total of 25,563 children below five years were registered by CMDs in 6 sub-counties, in Mubende district. This number represents 85% (25,563/30,170) of the <5s population estimated from the projected 2002 census. A total of 21,075 under fives received LLINs giving under fives overall SC coverage of 76%

**Annex 3f: Katakwi District, LLIN Distribution Details and Coverage by Sub-County, February 2006**

Sub county	ITN coverage LQAS 05	Estimated under 5 pop. Projected from the 2002 census	Total under 5 registered by CMDs	Under fives already having nets before LLINs distribution	Total No. LLINs distributed Dec 05-March 06 (UPHOLD)	Total under fives with nets after LLINs distribution	Estimated under fives coverage after LLINs distribution by SC
Ngariam	18.9%	6,769	3,444	1,279	1,627	2,906	43%
Magoro	18.9%	2,749	2,723	520	1,062	1,582	58%
Usuk	18.9%	4,758	3,766	899	1,331	2,230	47%
Katakwi	18.9%	8,431	909	1,593	483	2,076	25%
Ongongoja	18.9%	2,300	3,197	435	1,222	1,657	72%
Obalanga	52.6%	6,728	3,802	3,539	1,501	5,040	75%
Omodoi	18.9%	2,790	836	527	499	1,026	37%
Acowa	57.9%	7,893	3,789	4,570	2,040	6,610	84%
Abelelia	57.9%	4,319	2,547	2,501	1,560	4,061	94%
Kapelebyong	52.6%	2,709	2,570	1,425	1,430	2,855	105%
Wera	57.9%	4,243	1,564	2,457	1,328	3,785	89%
Orungo	52.6%	4,519	2,820	2,377	2,105	4,482	99%
Morungatuny	52.6%	5,254	4,751	2,764	2,641	5,405	103%
Kuju	57.9%	5,544	2,309	3,210	1,808	5,018	91%
Asamuk	57.9%	5,911	4,720	3,422	1,308	4,730	80%
Subtotal		74,917	43,747	31,518	21,945	53,463	71%

The under fives registered by the CMD constitute 58.3% (43,747/74,917) of the under five population in the 11 sub-counties of Katakwi (Amuria) as projected from 2002 census. After distribution of LLINs, the estimated overall under fives ITNs coverage is 71%.

### Annex 3g: Lira District, LLIN Distribution Details and Coverage, by Sub-county, March 2006

Sub-county/Camp	No. of Camps	ITN coverage LQAS 05	Estimated under 5 pop. Projected from the 2002 census	Total no. of H/H with under 5s	Total under fives registered by CMDs	Under fives already having nets before LLINs distribution	Total No. LLINs distributed Dec 05- March 06 (UPHOLD)	Total under fives with nets after LLINs distribution	Estimated under fives coverage after LLINs distribution by SC
Olilim	2	13.2%	3,390	594	1,095	447	652	1,099	32.4%
Orum	1	13.2%	4,194	779	1,433	554	906	1,460	34.8%
Adwari	3	13.2%	4,843	1,256	2,172	639	1227	1,866	38.5%
Okwang	1	13.2%	3,061	437	716	404	501	905	29.6%
Omoro	1	10.8%	7,223	1,083	2,126	780	1364	2,144	29.7%
Amugo	1	10.8%	5,076	2,087	3,224	548	2029	2,577	50.8%
Abako	2	10.8%	9,641	2,350	3,635	1,041	2720	3,761	39.0%
Apala	3	10.8%	7,514	3,244	4,369	812	3037	3,849	51.2%
Aromo	3	13.2%	6,796	3,916	6,070	897	4460	5,357	78.8%
Ogur	3	13.2%	10,196	5,842	7,641	1,346	6466	7,812	76.6%
Aloi	2	10.8%	11,254	6,962	11,125	1,215	7650	8,865	78.8%
Barr	1	13.2%	7,961	2,077	3,438	1,051	1912	2,963	37.2%
Adekwok	3	13.2%	12,476	308	613	1,647	408	2,055	16.5%
Adyel Division	3	51.4%	7,498	411	707	3,854	555	4,409	58.8%
Central Division	6	51.4%	4,280	1,264	1,994	2,200	1380	3,580	83.6%
Railway Division	2	51.4%	1,218	538	922	626	452	1,078	88.5%
Ojwina	2	51.4%	9,166	209	323	4,711	265	4,976	54.3%
Lira S/C	4	13.2%	4,895	2,296	4,496	646	2791	3,437	70.2%
Aputi	0	23.7	5629	0	7423	1334	0	1334	23.7%
Awelo	0	23.7	7497	0	7282	1777	0	1777	23.7%
Muntu	0	23.7	6115	0	7363	1449	0	1449	23.7%
Namasale	0	23.7	4549	0	5060	1078	0	1078	23.7%
<b>Subtotal</b>	<b>43</b>		<b>144,472</b>	<b>35,653</b>	<b>83,227</b>	<b>29,057</b>	<b>38,775</b>	<b>67,832</b>	<b>47.0%</b>

A total of 42,028 Households/huts (HHs) inhabited by children below years were registered. Of these 2,651 (6.3%) HHs(huts) already had ITNs, with 3,977 under fives reported to be sleeping under ITNs, while 38,729 HHs/huts had no ITNs and had a total of 60,246 <5s that were currently not sleeping under ITNs. A total of 3,589 HHs/huts in Obia and Ogur camps had recently received ITNs from another partner (ICRC), so they were omitted in this exercise. A total of 38,775 huts received LLINs, The under fives registered by the CMDs constitute about 58% (83,227/144,472) of the under fives population in the 22 sub-counties of Lira as projected from 2002 census. After distribution of LLINs, under five ITN coverage was estimated at 47%.

### Annex 3 h: Kitgum District, LLIN Distribution Details and Coverage by Sub-county, March 2006

Sub-county/Camp	ITN coverage LQAS 05	Estimated under 5 pop. Projected from the 2002 census	Total under 5 registered by CMDs	No. of under fives with nets before LLIN distribution	Total No. LLINs distributed Dec 05-March 06 (UPHOLD)	Total under fives with nets after LLINs distribution	ITN <5 coverage after distribution of LLINs, by SC
Namukora	13.2%	3,619	2,205	478	1,304	1,782	49.2%
Orom	13.2%	5,817	2,513	768	1,388	2,156	37.1%
Omiya Anyima	13.2%	4,314	2,631	569	1,564	2,133	49.5%
Madi Opei	37.1%	2,623	1,711	973	1,052	2,025	77.2%
Agoro	37.1%	4,192	3,599	1555	2,035	3,590	85.6%
Kitgum T.C	15.8%	10,782	7,216	1704	4,740	6,444	59.8%
Palabek Ogili	20.5%	2,216	1,508	454	778	1,232	55.6%
Paloga	37.1%	2,651	1,335	984	872	1,856	70.0%
Amida	15.8%	2,739	1,808	433	1,203	1,636	59.7%
Palabek Kal	20.5%	3,069	2,379	629	1046	1,675	54.6%
Palabek Gemi	20.5%	2,969	2,374	609	668	1,277	43.0%
Muchwini*	13.2%	3,863	0	510	0	510	13.2%
Kitgum Matid*	15.8%	3,138	0	496	0	496	15.8%
Labong Akwang*	15.8%	2,990	0	472	0	472	15.8%
Labong Layamo*	15.8%	2,197	0	347	0	347	15.8%
Lagoro*	15.8%	3,355	0	530	0	530	15.8%
Lokung*	61.0%	4,829	0	2946	0	2,946	61.0%
Padibe East*	61.0%	3,430	0	2092	0	2,092	61.0%
Padibe West*	61.0%	3,070	0	1873	0	1,873	61.0%
<b>Subtotal</b>	<b>26.5%</b>	<b>71,863</b>	<b>29,279</b>	<b>19,040</b>	<b>16,650</b>	<b>35,690</b>	<b>49.7%</b>

\* These camps did not receive UPHOLD distributed LLINs

\*UPHOLD did not distribute nets in these camps. These camps had received nets from ICRC less than 3 months prior to UPHOLD distribution. A total of 19,236 huts (HHs) inhabited by <5 children were registered. Of these 3,619 (18.8%) HHs (huts) already had ITNs, with 4,623 <5 children reported to be sleeping under ITNs, while 15,991 HHs/huts had no ITNs and had a total of 29,279 <5s that were currently not sleeping under ITNs. Eight camps that had received ITNs from ICRC in the recent past were not given LLINs. A total of 16,650 HHs/huts received LLINs, making HH coverage of ITNs, among huts registered by CMDs =83.1%. The < 5s registered by the CMDs in the beneficiary sub-counties constitute about 79.0 % ( 29,279/37,071) of the <5 population in the 11 camps of Kitgum that received LLINs as projected from 2002 census. Therefore after distribution of LLINs, 70% of under five children in the 11 camps in Kitgum live in a hut that has an ITN. Estimated district under five ITNs coverage after LLINs distribution is 49.7 % ( without considering the recent distribution by other partners).

### Annex 3h: Gulu District, LLIN Distribution Details and Coverage by Sub-county, March 2006

Subcounty/Camp	ITN coverage LQAS 05	Estimated under 5 pop. Projected from the 2002 census by SC	Total under under fives registered by CMDs	Total no. of H/H with under 5s by SC	Under fives already having nets before LLINs distribution	Total No. LLINs distributed Dec 05- March 06 (UPHOLD)	Total under fives with nets after LLINs distribution	Estimated under fives coverage after LLINs distribution by SC
Awach	2.7%	2,693	2,256	1256	73	1307	1380	51.2%
Bungatira	2.7%	5,515	2,867	1,909	149	1,619	1768	32.1%
Paicho	2.7%	5,686	4,811	3,445	154	3,059	3213	56.5%
Palaro	2.7%	1,524	1,910	1159	41	1015	1056	69.3%
Patiko	2.7%	2,086	1,501	952	56	931	987	47.3%
Amuru	18.4%	6,463	8,033	4835	1189	4830	6019	93.1%
Atiak	18.4%	6,303	5,189	3304	1160	3075	4235	67.2%
Lamogi	18.4%	8,760	11,588	7688	1612	7147	8759	100.0%
Pabo	18.4%	10,779	12,002	7348	1983	7326	9309	86.4%
Alero	7.9%	3,284	2,950	1762	259	1423	1682	51.2%
Anaka	7.9%	3,273	4,818	2755	259	2742	3001	91.7%
Purongo	7.9%	1,974	2,319	1534	156	1396	1552	78.6%
Koch Goma	7.9%	2,040	1,565	955	161	815	976	47.9%
Bobi	18.9%	3,727	4,708	3402	704	3247	3951	106.0%
Koro	18.9%	4,354	3,724	2121	823	2128	2951	67.8%
Lakwana	18.9%	3,348	5,645	3776	633	3532	4165	124.4%
Lalogi	18.9%	4,446	1,932	1141	840	1113	1953	43.9%
Odek	18.9%	5,939	4,774	2889	1122	2932	4054	68.3%
Ongako	18.9%	3,487	3,041	1809	659	1760	2419	69.4%
Gulu MC	36.8%	27,288	0	0	10042	128	10042	36.8%
<b>Subtotal</b>	<b>25.5%</b>	<b>112,969</b>	<b>85,633</b>	<b>54040</b>	<b>28807</b>	<b>51525</b>	<b>80332</b>	<b>71.1%</b>

A total of 54,040 Households/huts (HHs) inhabited by children below 5 years were registered. Of these 3,943 (7.3%) HHs(huts) already had ITNs, with 6,935 <5 children reported to be sleeping under ITNs, while 49,829 HHs/huts had no ITNs and had a total of 78,698 <5s that were currently not sleeping under ITNs. A total of 50,556 HHs/huts received LLINs, making HH coverage of ITNs, in the huts registered by CMDs = 93.5%. The under fives registered by the CMD constitute about 76% (86,833/112,898) of the <5 population ( as projected from 2002 census) in the 19 sub-counties /53amps in Gulu district that received LLINs. An estimated average coverage of 71.1% in under five was attained after distribution