

**Monitoring and Evaluation of the Tanzanian
National Net Strategy**

Under-five catch Up campaign

Rose Nathan

Yovitha Sedekia

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Executive Summary

This report provides summaries of results from household surveys that were conducted in Nachingwea, Mtwara Urban (Southern zone), Sengerema, Rorya and Chato (Lake zone). The household surveys in both zones were conducted after distribution of free nets (LLINs) to children under-five and hang-up campaign. Net retreatment campaign had been completed in the Southern zone.

The survey addressed four main objectives:

1. To assess the coverage of the under-five catch up campaign (U5CC) for children under five years in the Southern and Lake zones
2. To assess household ownership and use of ITNs for children under five years in the Southern and Lake zones
3. To assess the coverage of the hang-up campaign
4. To assess the coverage of re-treatment campaign

A total of 592 households were surveyed in the Southern and 891 in the Lake zone.

Process indicators for the under-five catch up campaign

The U5CC campaign is designed such that prior to distribution of the LLINs, registration of all the eligible children should be done and each registered child provided with a registration card. Hang-up campaign followed after distribution of the free nets.

The survey results showed that preparatory work for the distribution was fairly completed.

In the Southern zone 83% of the households with at least one child under five years was registered and of those 95% received cards. Household registration coverage was higher in the Lake zone where 95% of households with at least one child under-five years was registered and of those 94% received registration cards.

Household ITN ownership

Definitions of ITN used in the NATNETS household surveys in 2008 were adopted; ITNs included recently treated nets with conventional insecticide and nets with long lasting treatment. Long lasting insecticidal nets (LLINs) are a subset of ITN.

Estimates of household ownership of ITN (at least one) in the Lake and Southern zones were 82% and 61% respectively. Both were higher than the 2008 national estimates (46%). Estimates by socio-economic status, showed that in the Southern zone, 51% of the poorest households owned at least one ITN while 73 % of the least poor households owned at least one ITN. In the Lake zone ownership of ITN was highly equitable, 83% of the poorest households owned at least one ITN and 84% least poor households owned at least one ITN.

When estimates were restricted to only households with at least one child under five; ITN coverage in the Southern zone was 85% and 95% in the Lake zone. Household ownership estimates were fairly

equitable across SES quintiles, 82% and 90% of the poorest and the least poor households respectively, had at least one ITN in the Southern zone (equity ratio=0.9). Likewise, in the Lake zone 96% and 93% of the poorest and the least poor households respectively, had at least one ITN (equity ratio=1.0)

ITN use in children

Point estimates of personal ITN use were derived from the question about sleeping under ITN in the night preceding the survey. Of the children under-five included in the survey 48% in the Southern zone and 62% in the lake zone slept under ITN. These estimates were higher compared to the 2008 estimates (26% in the Southern zone and 24% in the Lake zone). Estimates for use of LLIN indicated that Lake zone had a higher coverage of 55% compared to the Southern zone that had a coverage of 34%.

Socio-economic inequity was observed in the Southern zone where only 24% of children in the poorest households slept under ITN, compared to 60% of the children in the least poor households. In the Lake zone, children in the poorest households had a higher proportion of use (67%) than those in the least poor households (51%).

ITN use by other household members

Coverage of ITN use among women of child bearing age (15-49) were much higher compared to the 2008 estimates. In the Southern zone 24% and 35% of the women were reported to have slept under ITN in the night preceding the survey in 2008 and 2009 respectively. Increase in coverage was much higher in the Lake zone -20% in 2008 and 50% in 2009.

Hang-up campaign

Receiving a net is the first step towards use but not sufficient, another important step is to hang up the net. Distribution of the LLINs was followed by hang-up campaigns. Two thirds (67%) and over eighty percent (82%) of the households that received at least one LLIN in the Southern zone and Lake zone respectively had hanged the net by the time of the survey.

Coverage of information about hanging up the net, as reported by the heads of households was very low. In the Southern zone only 20% of the household heads said they received some instructions about hanging up the net and as low as 15% in the Lake zone.

Reports from the heads of households about household visitation as part of the hang-up campaign indicated a very low coverage in both zones. Only 9% and 28% of the households (among those asked) in the Southern zone and Lake zone respectively stated that someone visited the household to give instructions about hanging-up the net .

Re-treatment campaign

Results show that registration of the households for net retreatment was very poor. Only 26% of the surveyed households were registered for that purpose and only 20% took their nets for retreatment. Of the registered households, 75% took their nets for retreatment.

Context

Two major contextual factors need to be considered in interpreting the ITN use indicators.

1. Timing of the survey with reference to the implementation of the U5CC: Usually, evaluation of such campaigns needs to happen very close to the date of distribution. While that was the case in the Lake zone where distribution of LLINS happened in October 2009 and the household surveys conducted between November and early December 2009; in the Southern zone the LLINs were distributed in May 2009 but the household survey was carried out in October. Child age was calculated as per the date of the survey.
2. Seasonality: Evidence of the association of seasonality and use of net is well established. During the survey the Southern zone was dry while rainy season had started in the Lake zone. The TNVS national surveys were conducted each year from July to August/September.

Acknowledgements

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Background

The initial phase of the national ITN strategy (2004-2008) provided subsidized nets targeted at vulnerable groups through discounted vouchers issued at antenatal clinics. The voucher could be used as part of payment for ITN from appointed retailers. Alongside, through support, the commercial distribution system played a significant active role in procuring and selling of bed nets bundled with insecticide for treatment. The scheme achieved some significant improvements in coverage (both ownership and use), however the pace suggested that achievement of the set targets was unlikely and equity across socio-economic groups was not achieved¹. In order to accelerate coverage and address the equity gap, in 2009 the National Malaria Control Programme diversified the strategy to include distribution of free long lasting insecticidal nets (LLIN) to children under -five (U5CC), delivery of high-value (fixed-top up) vouchers to pregnant women and infants and universal coverage campaign (UCC) that will distribute long-lasting insecticidal nets to households with sleeping places that are not currently covered by LLIN. Parallel to these, Behaviour Change and Communication (BCC) programme are implemented as well as “hang-up campaigns”. In combination these approaches are expected to impact both ownership and use of nets.

The overall aim of the National Insecticide Treated Net Strategy (NATNETS) is to scale up access to ITNs to 80% coverage through those delivery models. This seemingly ambitious target is expected to be achieved through support from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), World Bank and the United States “Presidents Malaria Initiative”.

Strategies for Monitoring and Evaluation of coverage and impact on morbidity and mortality of those delivery systems have also been revised to reflect the timing and coverage of each delivery system and use the opportunity of other national level surveys that produce the desired indicators of interest such as DHS, MIS. IHI has been commissioned to monitor and evaluate NATNETS. National household and health facility surveys were conducted yearly from 2005 to 2008 to monitor and evaluate progress towards ITN goals. Furthermore, the 2008 national survey for the NATNETS programme of work provided a baseline for the 2009 mass distribution of free long lasting insecticidal nets (LLIN) for all children under-five years and mass re-treatment with longer lasting insecticide. As well as implementation of the upgraded voucher.

Prior to launching the national U5CC, in 2008 a pilot was conducted in Mpanda district. Evaluation of the pilot followed soon after completion of distribution of LLINs. Results from the pilot informed the programme for the actual implementation at national level.

¹ National NATNETS Household report (2008)

Here we present estimates of ITN coverage among children following the under five catch-up, re-treatment and hang up campaigns in the Southern and Lake zones. Where logical we make a comparison with the 2008 coverage indicators.

The Under-five catch up, re-treatment and hang up campaigns

The U5CC involved registration of all children under-five years of age and each child was issued a card. Registration for the under-fives and net re-treatment was done in the household sometime prior to the distribution of the LLIN. Specific distribution points were set up in each community where the child's care provider/parent on the day of distribution, collected the LLIN for the child. On the same day and same points, old nets were re-treated.² As a strategy to ensure that the free LLIN are used, a hang-up campaign that included a person visiting a household followed soon after the distribution of the nets.

Objectives

1. To assess the coverage of the U5CC campaign for children under five years in the Southern and Lake zones
2. To assess household ownership and use of ITNs for children under five years in the Southern and Lake zones
3. To assess the coverage of the hang-up campaign
4. To assess the coverage of re-treatment campaign

Methodology

Study site

The survey was carried out in five of the 24 districts selected in 2008 for the NATNETS baseline survey. These included two districts from the Southern zone (Mtwara Urban in Mtwara and Nachingwea in Lindi) and three from the Lake zone (Chato in Kagera, Sengerema in Mwanza and Rorya in Mara). Selection of zones was guided by implementation schedule of the U5CC where the Southern zone was the first to be covered followed by the Lake zone.

Timing

Unlike the initial national surveys that were conducted each year from July to August/September, the U5CC survey was determined by the implementation timetable. The U5CC was implemented in the Southern zone in May 2009 followed-up by the hang-up campaign that was completed in early September 2009. In the Lake zone distribution of the free nets was done in July and the hang-up in October 2009. Thus the household surveys were conducted in October and November 2009 in the

² Net re-treatment was done in the Southern zone only

Southern and Lake zones respectively. It is worth mentioning that during the survey the Southern zone was dry while rainy season had started in the Lake zone.

Preliminary results were presented to the NATNETS partners meeting on the 3rd February 2010.

Sampling and sample size

Two zones (Southern and Lake) and later the Coastal zone are clearly marked in NMCP M&E as zones that would be sampled for the sub-national NATNETS surveys. The two zones were deliberately covered first in the U5CC being the zones with the highest prevalence of malaria. All the districts that were included in the 2008 household survey sample in the Southern zone were included in the survey, while in the lake zone, 3 out of 4 districts were purposively selected. Sampling scheme was adopted from the previous national TNVS household surveys where each household within the chosen district had an equal chance of being included in the sample. Sampling within the district started with selecting clusters (villages) with probability proportional to the size of the village. Within each chosen village, one sub-village (kitongoji) was selected using simple random sampling (by drawing lots). Within each selected kitongoji, 30 households were chosen using a modified EPI-type sampling procedure. From each district 10 clusters were chosen and from each cluster 30 households were chosen, thus 300 hundred households were selected from each district.

The sample size of 300 hundred households was set to estimate net use in the night before the survey in children under-five years with a standard error of 10% at district level.

The survey tool

Design of the questionnaire was primarily guided by the Mpanda pilot household survey tool and the 2008 household survey tool. Drawing on the two tools with consultation with NATNETS partners and focusing on the corresponding NMCP –M&E indicators, a questionnaire for the U5CC was constructed.

The U5CC household survey questionnaire of 2009 consisted of 4 modules:

1. Household module (HH).

- Identifiers

- Household roster for all residents

- Household assets (markers of socioeconomic status)

- Education and occupation of the household residents

- Location of the household using a GPS

- Knowledge and participation in the under-five free net distribution

- Hang-up campaign issues

- Awareness of re-treatment campaign and actual re-treatment

- Household net ownership and use of net/ITN by all household members

- Awareness of the importance of early attendance to ANC clinic

2. Women's module (W) for all women aged 15-49

- Awareness of the importance of early attendance to ANC clinic
- Current pregnancies
- Use of antenatal services
- Pregnancies in the previous 24 months
- Receipt of voucher during pregnancy
- Susceptibility and severity of malaria

3. Mothers/care providers to children under-five

- Knowledge and participation in the under-five free net distribution
- Hang-up campaign issues
- Awareness of re-treatment campaign and actual re-treatment
- Behaviour communication and change indicators for carers of children 0-59 months
- Psychosocial factors related to malaria prevention and treatment
- Behaviour communication and change indicators

4. Children under-five years (Respondents were the care providers)

- Child was registered
- Child received the LLIN
- Children slept under the LLIN

Data collection was done using personal digital assistant (PDA).

Logistics

The survey was carried out by 2 teams, each composed of 7 interviewers, a supervisor and a driver. The teams were also accompanied by 1 research officer (senior supervisor) and one data manager. Both teams completed one district at a time.

Quality control

The field team

All the interviewers and supervisors were selected from the best of those who had participated in the previous national household surveys.

Training

The team was trained for a total of 8 days including 2 days of piloting the tools and household selection. Training included, the consent process, interview technique, probing for dates using local event calendars and household selection. Similar to the previous national surveys, a detailed interviewers' guide was prepared, piloted during the training sessions and carried in the field by each interviewer.

Field supervision

Supervisors accompanied some interviews and did re-interviews on key aspects of the questionnaire in some randomly selected households. Completeness check forms were completed for each cluster.

Checking and storing data

Similar procedures to the previous household surveys were adopted. At the end of each day supervisors synchronized the PDAs to their Laptop computers and ran sets of checks using purpose-written MS Access programmes. The quality control check compared the original interview and re-interview and identified discrepancies. The reporting programme produced a summary of the data collected for each cluster, including specific problems. Interviewers completed data error forms whenever a data entry error was encountered. These were collected by the supervisors and provided to the data manager for subsequent data cleaning.

Data processing

Data management followed similar procedures used for the TNVS national surveys. All survey data were entered into handheld computers at the point of data collection. Data cleaning was undertaken by the data manager using information from the data error forms, supervisor summary forms, daily Access-generated reports and standard range and consistency checks.

Informed consent

Information sheet about the campaigns and the study was drawn up in Swahili, providing in summary the U5CC, hang-up and re-treatment campaigns along with explanation about why the study was being carried out, by whom, and what it involved. A copy of the information sheet was left with each household. Respondents were asked if they had any questions and whether they agreed to take part in the study. Written consent of all respondents was obtained before proceeding with interview. This consent was sought from the household heads (or appointed representative) and from each woman /mother interviewed.

Data analysis

Data were analyzed using STATA software according to an analytical plan. The “svy” commands were used to allow the confidence intervals of estimated parameters to be adjusted for the cluster structure of the survey. Estimates of ITN coverage and other indicators are all presented as percentages. Similar to the approach used in the national surveys, principal components analysis was used to construct an index of socioeconomic status in order to examine the relationship between ITN coverage indicators and socio-economic status. Equity ratio (coverage in the poorest quintile/coverage in the least poor quintile) was used to assess socio-economic equity in the ownership of and use of ITN.

Definition

In this report ITN as defined as follows:

LLIN (Olyset or Permanet) or an ordinary net treated with long lasting insecticide or an ordinary net treated within the previous 12 months with conventional insecticide. As such LLIN is a subset of ITN. Whenever, that is treated contrarily it is clearly stated as “ITN excluding LLIN”.

Results

Summary estimates of indicators from the U5CC, mass retreatment and hang-up campaigns are presented. Where logical we make a comparison with the 2008 coverage indicators and/or the Mpanda pilot results. Net (any and ITN) coverage indicators were calculated from the information provided by the head of household any exception is explained.

Study sample

Out of a sample of 600 households in the Southern zone, 592 (98.7%) were interviewed. In the Lake zone 900 households were in the sample of which 891 (99%) were interviewed. Of the interviewed households in the Southern zone 46% had at least one child under-five years of age and 73% of the households in the Lake zone had at least one child under-five years of age. In the Southern zone, 611 women of reproductive age (15-49) were interviewed, 930 of such women were interviewed in the Lake zone. As shown Lake zone had comparatively more children under-five than the Southern zone (Table 1).

Table1: Summary of the surveyed households

	Southern zone	Lake zone
Number of districts	2	3
Number of clusters	20	30
Number of households	592	891
Number of household with at least one child <5	271 (45.8%)	651 (73.1%)
Number of people in the households	2522	5417
Number of people who slept in the HH in the night preceding the survey?	2317	5110
Mean household size	4.3	6.1
Children under-five	323	1214
Children under-five who slept in the HH in the night preceding the survey	304	1184
Infants	62	230
Number of women 15-49	611	930

Under-Five Catch-up campaign

Awareness, assessed by asking the head of household whether he/she ever heard about the U5CC was very high in both zones. Over 95% of the heads of household reported that they had heard about that

campaign. Several sources of information were mentioned, while local government was mentioned most frequently in the Southern zone (48%), Health workers were cited mostly in the Lake zone (52%).

Table2: Head of household awareness of U5CC

Information	Southern zone		Lake zone	
	N	% (95% CI)	N	% (95%CI)
Heard about the campaign	592	96.3(94.4-97.5)	891	97.3 (96.0-98.2)
Main source of information	570		867	
Local government		47.7 (43.8-51.7)		8.0 (6.3-9.9)
Neighbours/relatives		24.0 (20.7-27.7)		5.9 (4.5-7.6)
Health workers		7.5 (5.7-9.9)		51.8 (48.6-55.0)
Mobile car		3.5 (2.3-5.3)		0.5 (0.2-1.2)
Others		17.2 (14.3-20.5)		33.9(31.0-37.0)

According to the responses from the heads of households, coverage of registration for free LLINs was fairly high. Of the households with at least one child under-five, 82% and 95% were registered in the Southern and Lake zones respectively. In both zones, over 98% of the households were registered before the distribution day. Of the registered households, 92% in the Southern zone and 94% in the lake zone were given registration cards. Likewise, receipt of LLIN was also high, 82% and 95% of the registered households received LLIN in the Southern and Lake zones respectively (Table 3).

Table 3: Registration and issuing of nets at household level

	Southern zone		Lake zone	
	n/N	% (95%CI)	n/N	% (95%CI)
HH registered (only with <5s)	223/269 ^a	82.9(77.9-87.0)	615/647 ^b	95.1(93.1-96.5)
Registration happened at home	192/223	86.1(81.5-89.7)	573/615	93.2 (91.2-94.8)
HH registered before distribution day	219/223	98.2(95.3-99.3)	607/615	98.7(97.4-99.4)
Given registration card	204/223	91.5(87.1-94.5)	577/615	93.8(91.7-95.4)
Household received a free net	221/269	82.2(77.1-86.3)	612/647	94.6 (92.6-96.1)

^a2 missing

^b4 missing

As shown in Figure 1, up to 79% of the households with at least one child under-five received only one LLIN in the Southern zone but in the Lake zone 70% of such households received at least two LLINs This observation is not unexpected due to presence of higher mean numbers of children under five per household in the Lake zone.

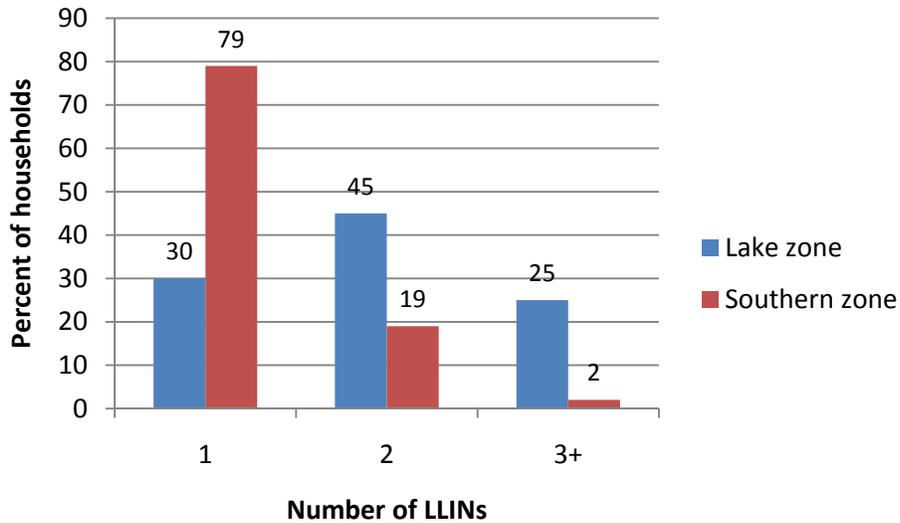


Figure 1: Number of LLINs received per household in households with at least one child <5

Proximity of the distribution point to the household is an important factor in access. This was explored by asking the person who travelled to the distribution point about time spent in travelling. The majority, 94% and 89% in the Southern and Lake zones respectively spent less than one hour to reach the distribution point. Equally important is the time spent at the distribution point. In the Southern zone, 81% of the respondents spent less than one hour waiting time, and about two thirds of the respondents in the Lake zone spent less than one hour at the distribution point, less than 5% spent at least three hours (Table 4).

Table 4: LLIN distribution

	Southern zone		Lake zone	
	n/N	%(95%CI)	n/N	%(95%CI)
Head of household travelled to the distribution point	163/592	27.6 (24.2-31.2)	356/891	40.0 (36.8-43.2)
Travelling time spent				
- Less than 1hr	153/163	93.9 (90.1-96.3)	315/356	88.5 (85.4-91.0)
- Between 1 & 3hrs	10/163	6.1 (3.7-9.9)	41/356	11.5 (9.0-14.6)
Waiting time spent at the distribution point				
- Less than 1hr	132/163	81.0 (74.4-86.2)	236/356	66.3 (61.9-70.5)
- Between 1 & 3hrs	28/163	17.2 (12.2-23.6)	103/356	28.9 (24.8-33.4)
- 3hrs and more	3/163	1.8 (0.6-5.4)	17/356	4.8 (3.0-7.5)
Informed that the net do not need re-treatment	105/163	64.4 (56.9-71.3))	214/356	60.1 (55.1-64.9)

Household ownership and use of ITN

Net ownership

Similar to the previous TNVS household surveys, information about each net in the household was gathered. In that way it was possible to assess ownership of any nets at household level, and to identify which nets were ITNs. Table 5 shows that 86% and 92% of the surveyed households in the Southern and Lake zone respectively had a net (any). Of the surveyed households 61% in the Southern zone and 82% in the Lake zone had at least one insecticide treated net (ITN). Ownership of any net and ITN in the two surveyed zones was higher than the 2008 estimates (Table 5).

Table 5: Household ownership of nets

	N	At least one net (any)	At least one ITN	At least one LLIN
		%(95% CI)	%(95% CI)	%(95% CI)
Southern zone				
2008	875	68.7 (61.7-74.9)	46.3 (39.7-52.9)	-
2009	592	85.8 (82.9-88.3)	60.8 (56.8-64.6)	43.4 (39.5-47.4)
Lake zone				
2008	1176	61.5 (53.4-68.9)	34.1 (28.2-40.5)	-
2009	891	91.6 (89.5-93.3)	82.0 (79.4-84.5)	75.5(72.6-78.2)
Tanzania (2008)	7200	69.8 (63.8-75.2)	45.7 (40.1-51.5)	

ITN ownership at district level

ITN ownership at district level is shown in Table 6. While there was a small increase in the percent of households with at least one ITN in Mtwara Urban and Nachingwea districts, estimates in each of the districts in the Lake zone, Chato, Rorya and Sengerema were close to or more than two times higher than the 2008 estimates.

Table 6: ITN ownership by district

District	2009 % (95% CI)	2008 % (95%)
Mtwara Urban	67.5 (61.9-72.5)	66.7 (61.1,71.8)
Nachingwea	54.2 (48.5-59.8)	43.5 (33.2-54.5)
Sengerema	87.6 (83.1-91.0)	45.6 (36.6-54.8)
Chato	82.5 (77.7-86.4)	37.8 (31.1-45.0)
Rorya	76.0 (70.7-80.6)	35.0 (27.0-44.0)

Ownership and type of net

Information about the source and net treatment status of each reported net was used to categorize them accordingly. By doing that, it was possible to assess the contribution of the LLIN into the overall net ownership in the households. Among households that had at least one net in the Lake zone, LLIN contributed 83% of the ownership, such contribution was only 51% in the Southern zone (Figure 2).

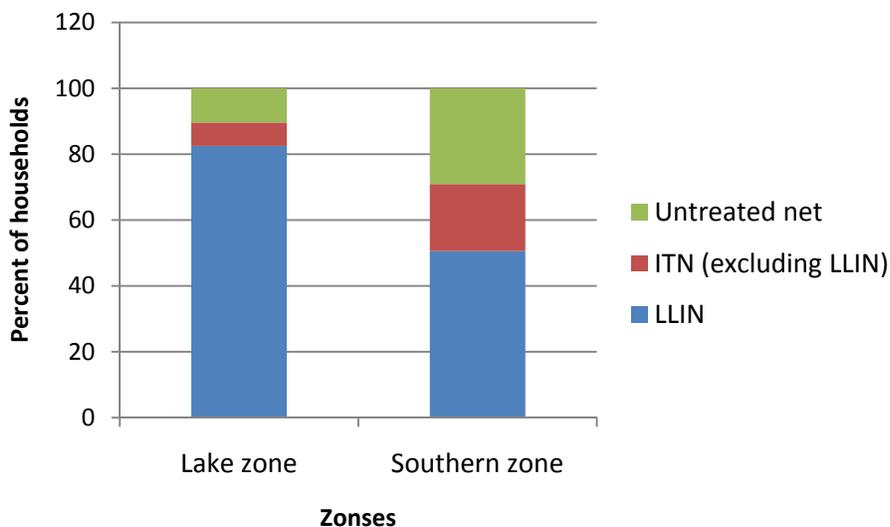


Figure 2: Net ownership by type of net

Net ownership and equity

Percent of households that owned at least one ITN across quintiles of socio-economic status was quite variable in the Southern zone where only 51% of the poorest households owned at least one ITN while the least poor had coverage of 73%, thus equity ratio of 0.7. On the other hand, the Lake zone had a much higher and fairly equitable ownership of at least one ITN across socio-economic quintiles (equity ratio=1.0). As shown in Figure 3, there was much improvement in ownership of ITN compared to the 2008 estimates. Lake zone had a much higher improvement both in the coverage (ownership) and equity.

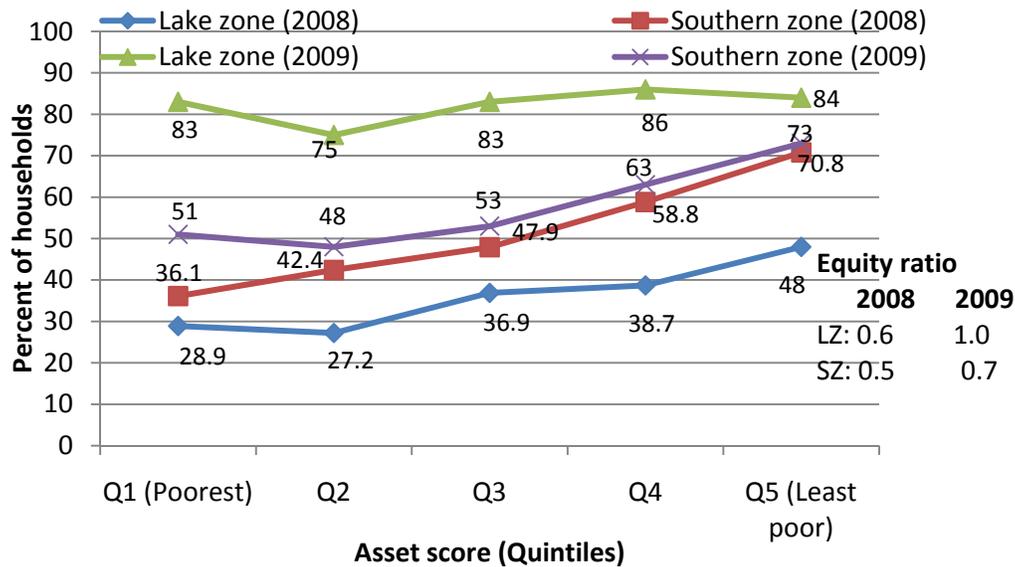


Figure 3: Percentage of households owning at least one ITN by socio-economic status

Households with at least one child under-five only

Considering the disproportion of the households with children under-five in the two zones, the ITN and LLIN ownership indicators were re-estimated for households with at least one child under-five.

Estimates of ownership of ITN only in **households with at least one child under-five** showed that coverage was **95.3% (93.4-96.7) in the Lake zone and 85.0% (80.2-88.8)** in the Southern zone.

Assessment of equity in ITN (including LLIN) and LLIN ownership among the **households with at least one child under-five**, revealed that in both zones, ITN and LLIN coverage (ownership) was fairly high and equitable across the SES quintiles (Figure 4). In the Lake zone 96% and 93% of the poorest and the least poor households respectively, had at least one ITN. In the Southern zone, 82% and 90% of the poorest and the least poor households respectively, had at least one ITN. Ownership of LLIN was equally high in the Lake zone where 95% and 90% of the poorest and least poor households respectively had at least one LLIN. However, ownership in those households was slightly lower in the Southern zone, 78% and 79% of the poorest and the least poor respectively, had at least one LLIN. Notably is the high level of equity (equity ratios were 1.1 and 1.0 in the Lake and Southern zones respectively).

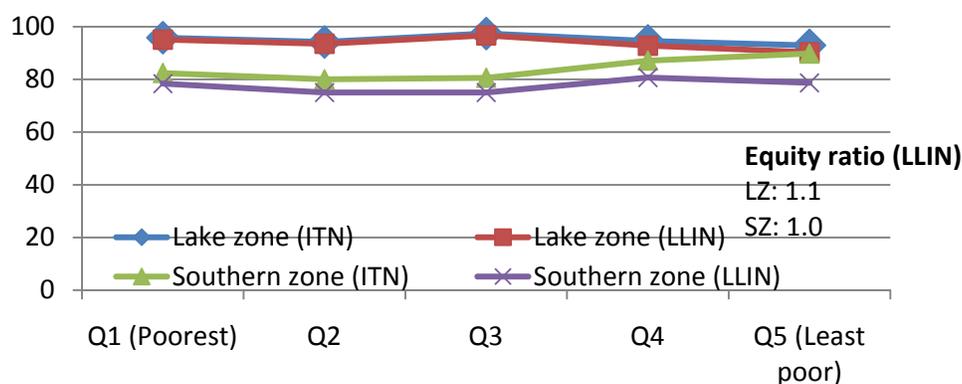


Figure 4: Ownership LLIN only in households with at least one <5

Net use

Sleep under a net in the night preceding the survey is a coverage indicator of use of net. The TNVS household national surveys monitored coverage by producing estimates of sleeping under any net and sleeping under ITN. For evaluation of the U5CC we added another coverage indicator - sleeping under LLIN. In the 2009 survey, compared to the 2008 zonal estimates, any-net coverage was much higher in both zones (61% and 71% in the Southern and Lake zones respectively), compared to 37% and 48% in 2008.

Likewise, ITN coverage in the two zones was also much higher than the 2008 zonal estimates. However, ITN coverage was higher in the Lake zone (62%) than in the Southern zone where only 48% of the children under-five in the surveyed households slept under ITN in the night preceding the survey. Proportion of children under-five reported to have slept under LLIN in the night preceding the survey was 34% in the Southern zone and 55% in the Lake zone (Table 7). ITN coverage in children under-five by source of net is shown in figures 3 and 4.

Table 7: Net use – children under-five

	N	Any net	ITN	LLIN
Southern zone				
2008	638	37.0 (30.0-44.6)	25.9 (21.0-31.4)	-
2009	304	61.2(55.5-66.6)	48.0 (42.3-53.8)	33.9 (28.6-39.6)
Lake zone				
2008	1408	40.2 (32.3-48.6)	23.9 (19.1-29.4)	-
2009	1184	71.2 (68.0-74.2)	62.2 (58.8-65.5)	55.4 (51.9-58.8)
Tanzania (2008)	5701	48.3 (40.8-55.8)	28.8 (22.3-36.3)	-

To gain more understanding about the contribution of the free net distribution to the use of ITNs in children under-five, we present Figure 5, showing the net type-specific coverage. In both zones, the distributed LLINs had the highest contribution in the net coverage in children under-five. However, the LLIN coverage was much higher in the Lake zone (55%) compared to the Southern zone where the coverage was just one third.

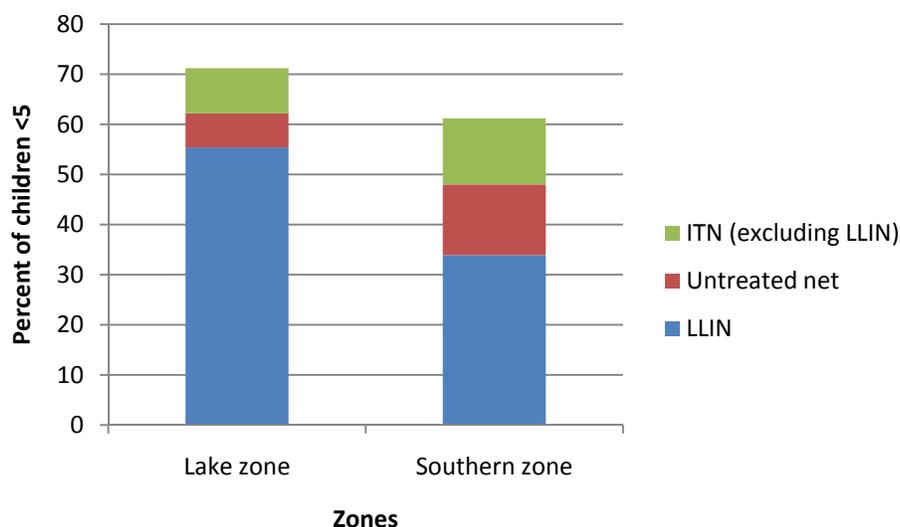


Figure 5: ITN use among children under five years by type of net

Net use and equity

The TNVS household annual surveys (2005-2008) consistently showed a positive gradient in the use of ITN among children under-five across socio-economic quintiles. Children in the households categorized as least poor had always a higher use than those in the poorest households (In the 2008 survey the equity ratios for the Lake and Southern zones were 0.6 and 0.2 respectively). Results from such analysis in the U5CC household survey are presented in Figure 6. While in the Southern zone, ITN use in the poorest households was 24% and 60% in the least poor households (equity ratio=0.4), in the Lake zone, coverage in the poorest households (67%) was higher than in the least poor households (51%) with an equity ratio of 1.3 (Figure 6).

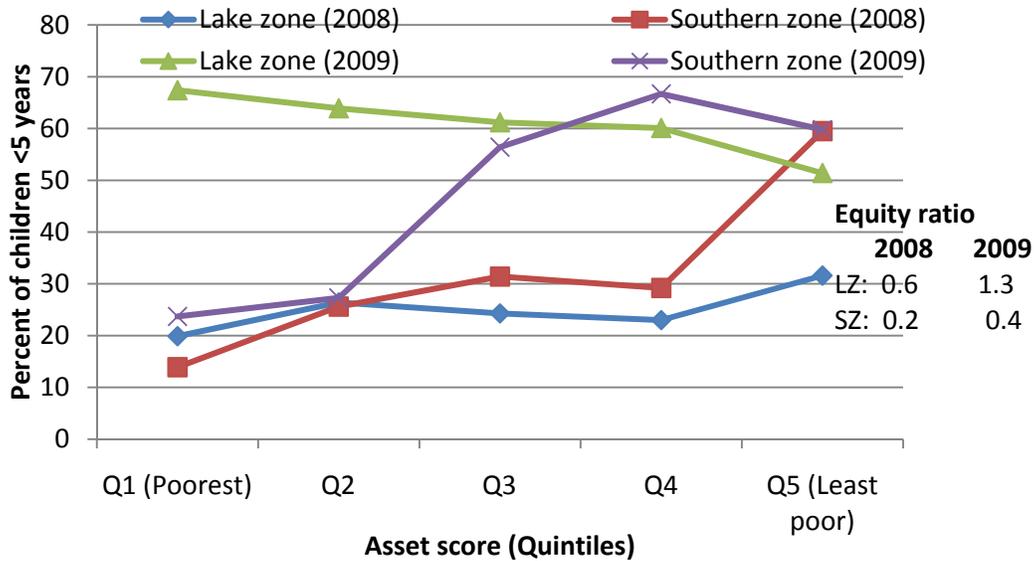


Figure 6: ITN use among children under five years by socio-economic status

A further analysis focused on the U5CC free LLINs to explore equity in the ITN use by children under five (Figure 7).

In the Southern zone, there was no clear indication that the free nets (LLINs) contributed equitably in the ITN use by children under-five, rather the results show that the poorest were least reached. LLIN use among children in the poorest households was 19% and 35% in for those in the least poor households (equity ratio=0.5). Contrarily, the Lake zone data provide some evidence that distribution of free LLINs to children under-five reached the poorest favourably. LLIN use among children in the poorest households was 62% while their counterparts in the least poor households was 38% (equity ratio=1.6).

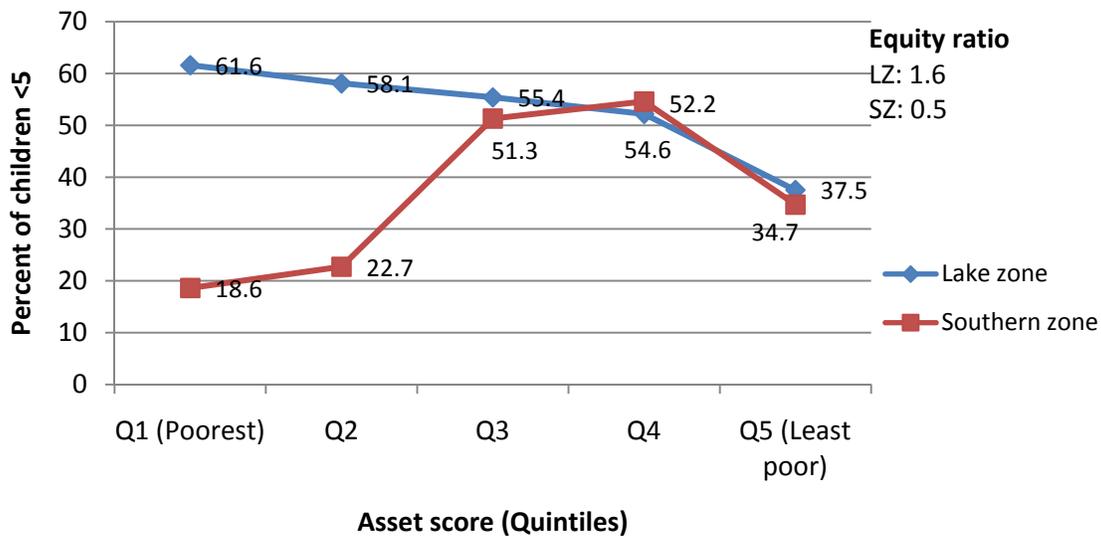


Figure 7: LLIN use among children under five years by socio-economic status

Another assessment of equity in net use was done by producing estimates by type of net by SES quintiles. Results communicate similar message – in the Lake zone, a higher proportion of children from the poorest households slept under LLIN compared to those in the least poor households. But in the Southern zone, such equity was not achieved (Figure 8)

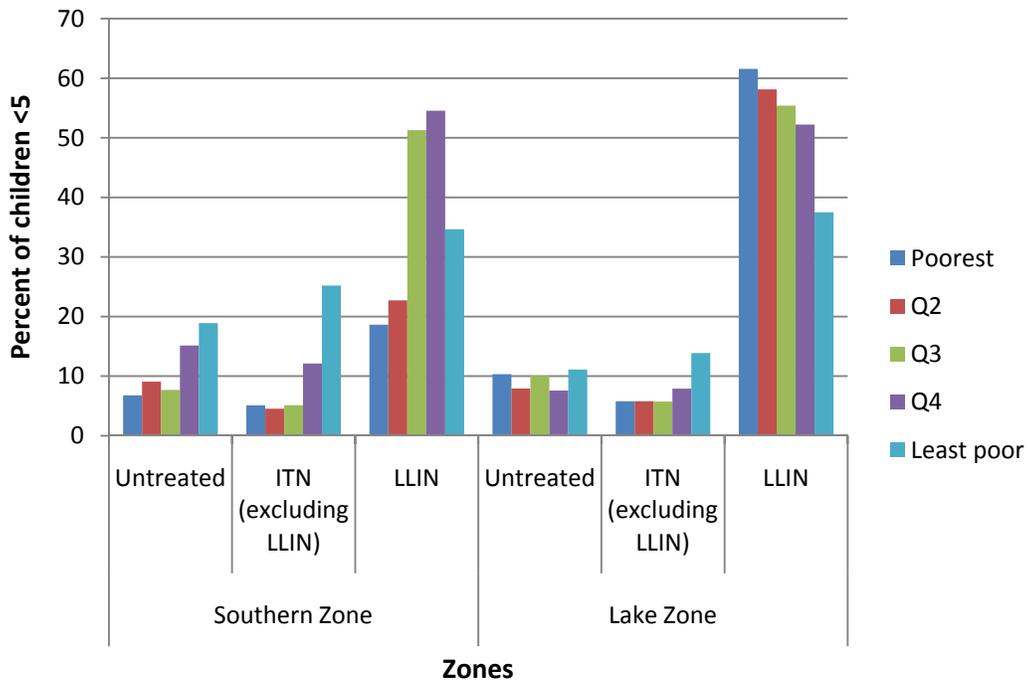


Figure 8: Net use among children under five years by type of net and social economic status

District level ITN use estimates among children under five are shown in Table 8.

District estimates for ITN use by children under-five showed substantial variations. In Nachingwea district, only 37% of the children under-five slept under ITN in the night preceding the survey but in Mtwara Urban, 59% of such children slept under ITN. Estimates for the districts in the Lake zone ranged from 47% in Chato to 72% in Sengerema. Compared to the 2008 estimates, each district had a higher coverage, but Mtwara had the least gain whereas Chato and Rorya had the highest improvement.

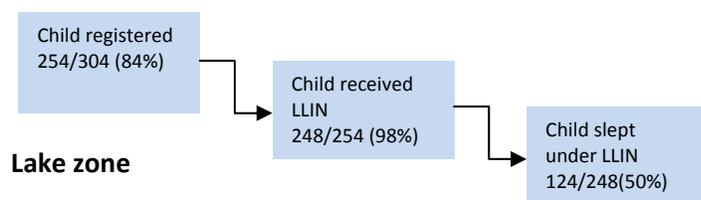
Table 8: ITN use- Children under five by district

District	2009 % (95% CI)	2008 % (95%CI)
Mtwara Urban	59 (50-65)	47 (46-60)
Nachingwea	37 (29-45)	14 (9-22)
Sengerema	72 (66-77)	30 (23-39)
Chato	47 (42-53)	12 (8-18)
Rorya	69 (63-75)	17 (13-24)

U5CC - Steps involved in having a child sleep under ITN

Care providers were asked several questions about each child under five years of age. That included whether the child was registered for LLIN, received and slept under the received LLIN. As shown in Figure 9, registration was very high in both zones and over (98% and 85% in the Southern and Lake zones respectively) of the registered children received LLIN. However, responses to the question “did the child sleep under the received LLIN?” indicated that only 50% of the children in the Southern zone and 62% in the Lake zone slept under the free LLIN, as reported by the care provider.

Southern zone



Lake zone

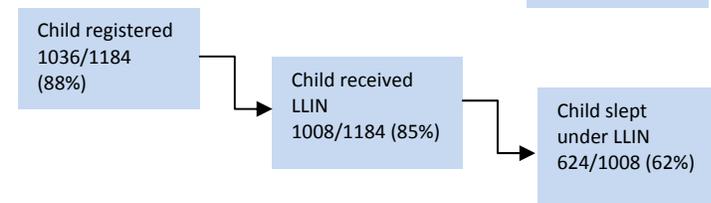


Figure 9: Steps involved in having a child sleep under ITN (as reported by mother or care provider)

ITN use for other groups of people

ITN coverage for **all household members** in the surveyed households was 46% in the Lake zone and 30% in the Southern zone. These estimates were higher compared to those reported in the 2008 survey

particularly in the Lake zone where coverage increased from 17% to 46% (Figure 10).

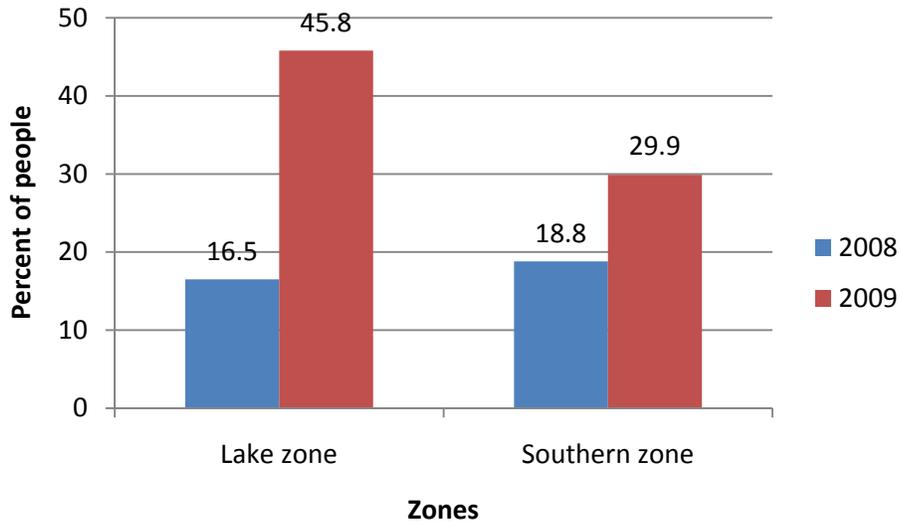


Figure 10: ITN use by all household members

According to responses from the heads of households, about 50% and 35% of **women of children bearing age (15-49)** in the Lake and Southern zones respectively, slept under ITN in the night preceding the survey (Figure 11). In comparison with the 2008 estimates, the ITN use among women (15-49) in the Lake zone increased by more than 100% while there was a comparatively less increase in the Southern zone (less than 50%)

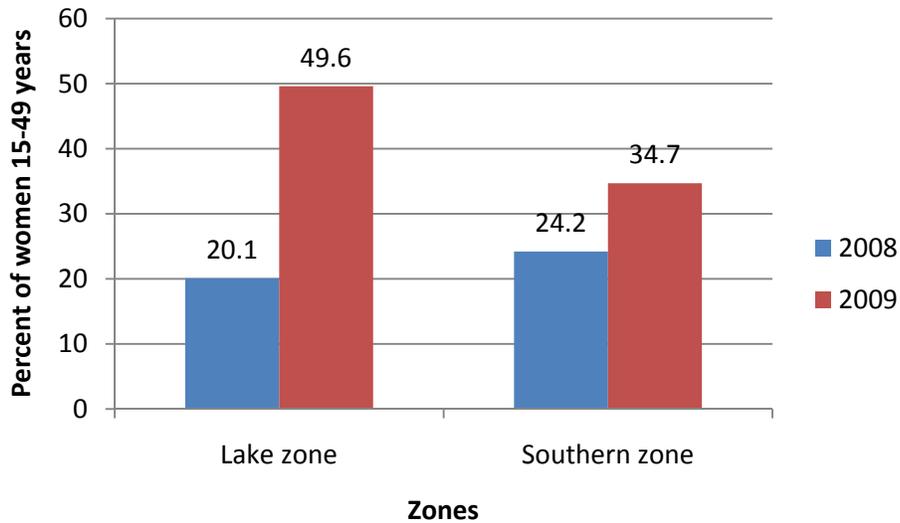


Figure 11: ITN use by women (15-49)

The target for LLINs is a child under-five, but practically it was expected that other household members could potentially share those nets as per sleeping arrangements. Analysis showed that 33% and 10% of the household members above the age of five years slept under the free LLIN in the night preceding the survey.

Hang-up campaign

Among the households that received at least one LLIN, 67% and 82% in the Southern and Lake zones respectively, reported that the net had already been hanged. Most of such LLINs were hanged within a week of receipt (64% and 80% in the Southern and Lake zones respectively). Heads of the households that received LLIN were asked whether they received any instructions about hanging-up the net; of those 20 % said “yes” in the Southern zone and 15% in the Lake zone. Among the households that were asked whether someone visited to give instructions about hanging-up the net, 9% in the Southern zone and 28% in the Lake zone respectively gave a “yes” response (Table 9).

Table 9: Hang-up campaign indicators for household with children under-five

	Southern zone		Lake zone	
	n/N	% (95%CI)	n/N	% (95%CI)
Household received at least one net (restricted to households with at least one child <5)	221/269*	82.2(77.1-86.3)	612/647**	94.6(92.6-96.1)
The new net already hanged	149/221	67.4(61.4-72.9)	504/612	82.4 (79.4-85.1)
Time lapse between receipt of LLIN and hang-up				
Within a week	96/149	64.4(57.1-71.10)	402/500 ^a	80.4 (76.8-83.6)
Within a month	31/149	20.8 (15.1-27.9)	54/500 ^a	10.8 (8.4-13.8)
Over a month	22/149	14.8 (10.1-21.2)	44/500 ^a	8.8 (6.6-11.6)
Reasons for not hanging				
No mosquito	20/72	27.8	49/108	45.4
Using other net	27/72	37.5	39/108	36.1
Didn't get around to it yet	4/72	5.6	3/108	2.8
Cannot hang it	2/72	2.8	1/108	0.9
Others	19	26.4	16/108	14.9
Received instructions about hanging the net	45/221	20.4 (15.5-26.3)	89/612	14.5 (12.1-17.4)
Someone came to the household to show how to hang the net	4/45	8.9	25/89	28.1

*2 missing **4 missing

Re-treatment campaign

Head of households were asked about awareness and participation in the net retreatment campaign. Of the interviewed heads of households in the Southern zone, 76% reported that they had heard about the retreatment campaign and the main source of information was local government. However, only 26% of the households were registered for net re-treatment and very few households took their nets for retreatment (20%). Noteworthy, 75% of the households that were registered took their nets for re-treatment (Table 10).

Table 10: Net retreatment indicators

	Southern zone	
	n/N	% (95%CI)
Heard about the campaign	447/592	75.6 (72.0-78.7)
Source of information		
Local government	233/447	52.1 (47.7-56.5)
Neighbour/relative	111/447	24.8 (21.1-29.0)
Other	51/447	11.4 (8.8-14.7)
Number of HHs registered	156/592	26.4 (23.0-30.0)
Place of registration		
Home	120/156	77.0 (59.6-82.9)
Net retreatment point	35/156	22.4 (16.6-29.7)
Village govt. office	1/156	0.6 (0.1-4.5)
Took a net for retreatment	117/592	19.8 (16.8-23.1)
Place of retreatment		
Net retreatment point	106/117	90.6 (84.2-94.6)
Home	4/117	3.4 (1.4-8.4)
Village govt. office	7/117	6.0 (3.0-11.4)

Discussion

This report has summarized process and coverage indicators of the U5CC, hang-up and, re-treatment campaigns. A clear message that emerges from the results is that ownership of ITN does not necessarily translate into use.

U5CC

Over 95% of the interviewed heads of households in both zones, stated that they had heard about the U5CC. This high coverage of awareness is an indication that the community was well reached with the information.

Results are indicative that the registration process in both zones closely adhered to the set procedures. Household registration for free LLIN was substantially high, 83% and 95% of the households with at least one child under-five years were registered in the Southern and Lake zones respectively. That was much higher compared to the Mpanda pilot household survey, where less than 50% of the eligible children were registered for free LLIN.

Location of the distribution points, assessed by the time it took the head of household/child care providers to reach the point, suggested that they were fairly close to their households. About 94% and 89% of those who travelled to the distribution points in the Southern and Lake zones respectively, reported that they spent less than one hour to get there.

Results of the summary indicators for LLINs delivery to the households with children under-five suggest that distribution was done fairly well. In the Southern zone 82% of households with at least one child under-five received LLIN, in the Lake zone that indicator was 95%.

Net ownership

Ownership of ITN at household level is an important indicator to measure progress in coverage but not sufficient to attribute to protection against malaria. The survey showed that household ownership of ITN in the Southern zone increased from % in 2008 to 61% in 2009 and in the Lake zone it increased from y% in 2008 to 82% in 2009. ITN ownership in the households with at least one child under-five was much higher than in the general population – 85% in the Southern zone and 95% in the Lake zone.

Disaggregation of ITN ownership by socio-economic status showed that in the Southern zone there was a positive gradient across the quintiles where 51% and 73% of the poorest and least poor households respectively owned at least one ITN (equity ratio=0.7). In the Lake zone, equity was fully achieved in the household ownership of ITN, 83% of the poorest and 84% of the least poor households had at least one ITN, thus an equity ratio of 1. Equity ratio in both zones was higher than for the national level in 2008 (equity ratio=0.4).

Use of ITN

While receipt of the LLIN by children under-five was very high (above 80%) in both zones, sleeping under ITN was much lower, particularly in the Southern zone, where only 48 of the children under-five slept under ITN in the night preceding the survey. Generally, ITN coverage in children under-five in the Southern zone increased across the socio-economic quintiles, 24% and 60% in the poorest and least poor respectively, thus an equity ratio of 0.4. In the Lake zone, ITN coverage in children under-five was fairly equitable across the socio-economic quintiles, the poorest had a coverage of 67%, that was slightly higher than 51% for the children in the least poor households (equity ratio=1.3).

The LLINs were distributed to children under-five, but results indicated that other household members also benefited from those nets. The rapid increase in the coverage of ITN among women (15-49 yrs) and general household members in 2009 compared to the 2008 estimates is suggestive that the free LLINs covered a wider population of individuals beyond children under-five. The evidence is derived from the actual percent of such individuals who slept under LLIN – 33% in the Lake zone and 10% in the Southern zone.

Hang-up

Survey findings showed that a high proportion of the distributed LLINs were already hanged by the time of the survey. Encouragingly most of those LLINs were hanged within a week of receipt (64% in the Southern and 80% in the Lake zone respectively). However, use of the LLINs was much lower. The message here is that hanging a net does not necessarily translate into use.

Re-treatment campaign

Results suggest that messages about the campaign were fairly communicated but the rest of the process (eg. registration) was poorly done and resulted into very low response. Considering that 75% of the households that were registered took their nets for retreatment, it is suggestive that registration was the key for retreatment.

Context

Two major contextual factors need to be considered in interpreting the ITN use indicators.

1. Timing of the survey with reference to the implementation of the U5CC: Usually, evaluation of such campaigns needs to happen very close to the date of distribution. While that was the case in the Lake zone where distribution of LLINs happened in October 2009 and the household surveys conducted between November and early December 2009; in the Southern zone the LLINs were distributed in May 2009 but the household survey was carried out in October. Child age was calculated as per the date of the survey.
2. Seasonality: Evidence of the association of seasonality and use of net is well established. During the survey the Southern zone was dry while rainy season had started in the Lake zone. The TNVS national surveys were conducted each year from July to August/September.

