

# NATIONAL ITN STRATEGY

## REPORT OF THE FIFTH ROUND OF VOUCHER TRACKING STUDY (2010/11)

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## List of acronyms

ANC	Antenatal Care
CHMT	Council Health Management Team
DMO	District Medical Office
IHI	Ifakara Health Institute
IV	Infant Voucher
ITN	Insecticide Treated Nets
LLIN	Long Lasting Insecticide Treated net
MEDA	Mennonite Economic Development Association
MoHSW	Ministry of Health and Social Welfare
NATNETS	National ITN Strategy
PWV	Pregnant Women Voucher
RCH	Reproductive and Child Health
TNVS	Tanzania National Voucher Scheme

## Key findings

The fifth round (20010/11) of voucher tracking study was conducted between December 2010 and May 2011 and followed up 398 pregnant women vouchers and 470 infant vouchers for which records indicated that the voucher either has been redeemed, stub or both returned to MEDA.

Of the 398 sampled pregnant women vouchers, 300 (75.4%) were successfully tracked and interviews conducted. Of the 470 sampled infant vouchers, 298 (63.4%) were successfully tracked and parents/care providers interviewed.

- Based on tracked vouchers, findings indicated that to a large extent, vouchers reach the target groups:
  - Of the 300 interviewed women, 297 (99.0%) confirmed that they had received the pregnant women voucher.
  - Of the 298 respondents to the infant voucher questionnaire, 288 (96.6%) confirmed that the mothers or caretakers of infants received the voucher.
- 87.2% (259/297) of the women and 84.3% (241/286) of infants who received a voucher had exchanged their voucher for a net by the time of the interview.
- A total of 38 (12.8%) women and 45 (15.7%) infants had not used their vouchers to purchase a net. Unlike the previous rounds of voucher tracking, lack of money was not the leading barrier to access nets. Of the vouchers that had not been exchanged for a net, only 13% (PW) and 4% (IV) stated lack of money as the barrier. - this is equivalent to 1.7% (5/297) and 0.7% (2/288) of all tracked pregnant women and infant voucher recipients respectively. Both estimates are substantially lower than 9% reported in the fourth round of voucher tracking.

Lack of nets in the shops and losing/misplacement of the vouchers contributed substantially to failure to exchange the voucher for a net. Of the pregnant women who had not exchanged their vouchers for nets, 40% blamed non-availability of ITNs in the registered outlets. Nearly a quarter (24%) of infant vouchers that had not been used were due to the same reason of stock outs of ITNs from the registered outlets.

- Findings in this round of voucher tracking suggest a lower misuse of vouchers compared to the estimates derived from the previous years. While it is not easy to have a precise estimate of the misuse, it is possible to come up with a reasonable approximation.
  - Potential misuse of pregnant women voucher ranged from a minimum of 0.8% to a maximum of 25%.
  - Potential misuse of infant voucher ranged from a minimum of 2% to a maximum of 39%

The minimum value is derived from only those vouchers where women and infants had their names written on the vouchers but stated that they never received them. This assumes that all other vouchers that could not be tracked were due to interviewer's failure to track. The upper bound of the estimate is based on the assumption that all vouchers which could not be tracked were misused. In our view for the fifth round of pregnant women voucher **the most reasonable estimate of misuse derives from the sum of the "almost certainly misused" (0.8%) and "probably misused" (4.5%), giving an estimate of 5.3%.**

Applying the same logic on the infant voucher, summing the “almost certainly misused” (2.1%) and the “probably misused” (4.0%) **gives an estimate of 6% that, in our view is the most reasonable estimate of misuse** of the infant voucher.

Trend of the estimates of misuse of the pregnant women voucher from the four annual surveys are shown in Table A.

**Table A: Estimates of PW voucher misuse for 2005/6 – 2010/11 surveys**

	Minimum	Reasonable estimate
2005/6	2.4	19.9
2006/7	2.9	10.0
2007/8	3.0	9.0
2008/9	1.5	11.0
2010/11	0.8	5.3

For the 5 rounds of voucher tracking, the minimum estimate of misuse remained below 3% and was 0.8, the lowest in the 2010/11. The estimate that we consider reasonable remained at around 10 % for the initial four rounds of voucher tracking but dropped to around 5% in the latest round (2010/11).

**Success in tracking across years:** Success rates in tracking pregnant women vouchers fluctuated across the 5 years of the surveys as shown in Table B.

**Table B: Tracking success estimates**

	PW voucher		Infant voucher	
	N	%	N	%
2005/6	265	52%	-	-
2006/7	594	80%	-	-
2007/8	568	73%	441	80%
2008/9	409	60%	493	46%
2010/11	398	75%	470	63%

Besides the first round of voucher tracking, success was lowest in the fourth round for both the pregnant and infant vouchers. The latest round of tracking, (2010/2011) was fairly successful. Incomplete addresses was the major barrier to successful tracking.

## Introduction

Following the renewed funding of ITN strategies in Tanzania, Ifakara Health Institute (IHI) continues to independently monitor the National ITN strategy (NATNETS).

Voucher tracking is one of the NATNETS monitoring and evaluation activities aimed at estimating the degree of use and misuse of ITN vouchers as well as identification of sources of leakage. Such surveys have been conducted annually since 2005. The first round of voucher tracking was done in 2005. The sample of vouchers for that round was selected from only those districts that had launched the programme by February 2005. The second and third rounds of voucher tracking included most of the 21 TNVS's M&E districts. The third round 2007/8 included for the first time, the infant vouchers for those districts that were implementing the voucher which was rolled out initially in 15 of Tanzania's 21 mainland regions. The fourth round of voucher tracking survey for the NATNETS programme (2008/9) covered the 2008 set of 24 M&E districts and at that time the infant voucher was fully operational in all districts in Tanzania mainland. Thus the sample of vouchers was selected from the "new" set of 24 M&E districts. Since 2009, surveys to estimate ITN coverage have been confined to sub-national samples but voucher tracking remain at national level. Thus the tracking results reported here are from 24 districts. This is the first report about use and misuse of the new upgraded fixed top-up voucher.

We report here the findings of the first round of tracking the upgraded fixed top-up voucher for pregnant women and infants. Where appropriate we present side by side results from the 2008/9 and 2010/11 rounds of voucher tracking. This survey was conducted after the upgraded fixed top-up voucher had been operational for one year in all the districts.

### The voucher scheme

Along with the implementation of mass distribution of ITNs as a way of accelerating coverage, TNVS continues to target pregnant women and infants with upgraded fixed top-up voucher. Similar to the initial approach the fixed top-up vouchers are delivered to pregnant women and infants through reproductive and child health (RCH) clinics. Commercial sector continues to manufacture and deliver the nets. One manufacturer, on competitive basis has been contracted by the Ministry of Health and Social Welfare to manufacture and deliver the voucher nets to registered retailers across the country.

MEDA maintains a database of all vouchers showing for each voucher the date of dispatch, target clinics, redemption status and date redeemed as well as stub status (indicating whether returned or not).

Unlike the fixed-value vouchers, the upgraded voucher has a fixed top-up value of TZS 500. To implement that voucher, programme nets are of predetermined specifications; type (LLIN), mesh size, colour, shape and net size.

Every pregnant woman is entitled to one voucher during her pregnancy and the voucher is given to her at the first visit to RCH clinic for antenatal care (ANC) services. After receiving a voucher she is supposed to redeem it for LLIN condition of paying TZS 500 to any retailer registered into the programme. . The retailers can then exchange the vouchers they have collected for replenishing their stock of nets from the net manufacturer A to Z. A similar voucher is implemented for infants. Mothers or caretakers of infants are given a voucher during the first visit to RCH clinic for vaccination or growth monitoring.

Each voucher (pregnant woman's and infant's) has a stub. The stubs are returned from the facilities to the DMO's office in exchange for supply of more vouchers; in turn the DMO forwards these stubs to the logistics contractor. Both the voucher and the stub have identification information of the recipient.

Information on the stub includes:

Name of the woman/child, ANC/child health card number, serial number of the voucher, Name of the parent/care provider (for infant voucher) District, Ward, Village, ten cell leader/ street chairperson/village executive officer, Name of the clinic that issued, Name and signature of the person who issued the voucher and Date of issue.

Information on the voucher includes:

Name of the woman/child, Name of the health facility, name of the service provider, signature of service provider, date of voucher issue, .ANC/child card number, serial number of the voucher, Name of the shopkeeper, retailer number, Ward, Date the voucher was exchanged for a net.

## Methodology

Voucher tracking was done at national level in the 24 M&E districts that were sampled in 2008. The tracking activity involves following up a randomly selected samples of vouchers that have been issued. The recipients of the vouchers are sought and interviewed in their households using structured questionnaires. A specific questionnaire was used for recipients of the pregnant women's voucher and another for parents/care providers to children who were issued the voucher. Two short questionnaires, one for pregnant women vouchers and another for infants were completed for the "not found" recipients.

## Sampling

Voucher tracking is about searching for, locating and interviewing a pre-identified person who is indicated as the recipient of a specific voucher. Considering the randomness of the location of the targeted persons the sample size of the study is largely determined by the logistics involved in tracking the voucher recipients.

We applied a similar sampling approach as that used for the 2008/9 survey. In November 2010 two separate samples were drawn, one for pregnant women vouchers and the other for infant vouchers from the voucher database in MEDA. The sampling framework was all the upgraded fixed top-up vouchers that had been delivered to the 24 M&E districts for the entire period of implementation of that voucher.

Status of each voucher included in the samples was identified:

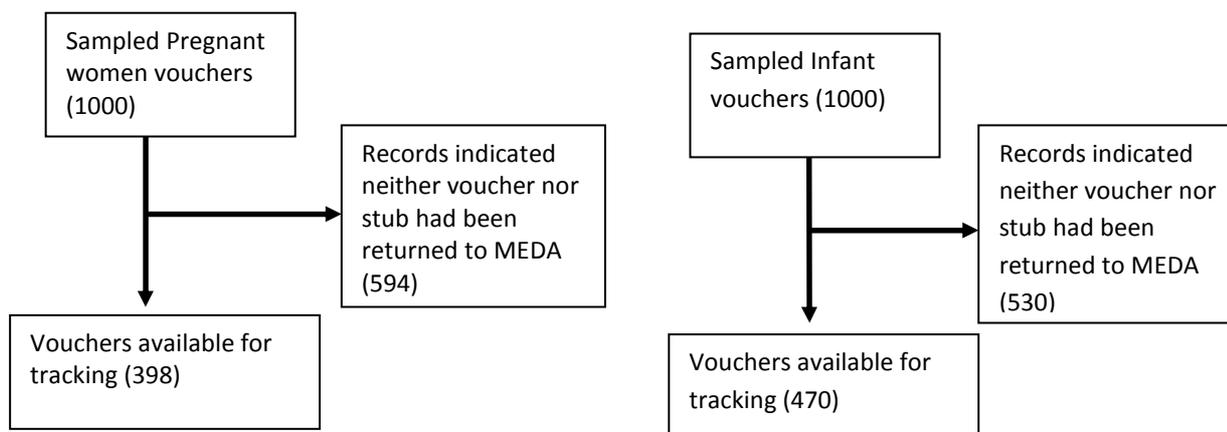
- Voucher but not stub had been returned to the MEDA office
- Stub but not voucher had been returned to MEDA
- Both voucher and stub had been returned to MEDA
- Neither a stub nor a voucher had been returned to MEDA

A returned stub without a voucher indicates that the voucher has been issued and might have been redeemed at retailer level, but not yet returned to MEDA. A returned voucher implies that the voucher had been issued, exchanged for a net and finally redeemed to MEDA.

## The process

A random sample of a 1000 pregnant women vouchers was drawn in November 2010 from the voucher database in MEDA. The sampling framework was all upgraded fixed top-up vouchers that had been delivered to the 24 M&E districts by the time of sampling. Similarly a sample of 1,000 infant vouchers was drawn. Based on the sampling framework, all the 24 districts were included for pregnant and infant vouchers. The districts are: Arusha Rural, Bahi, Bariadi, Chato, Iringa Rural,

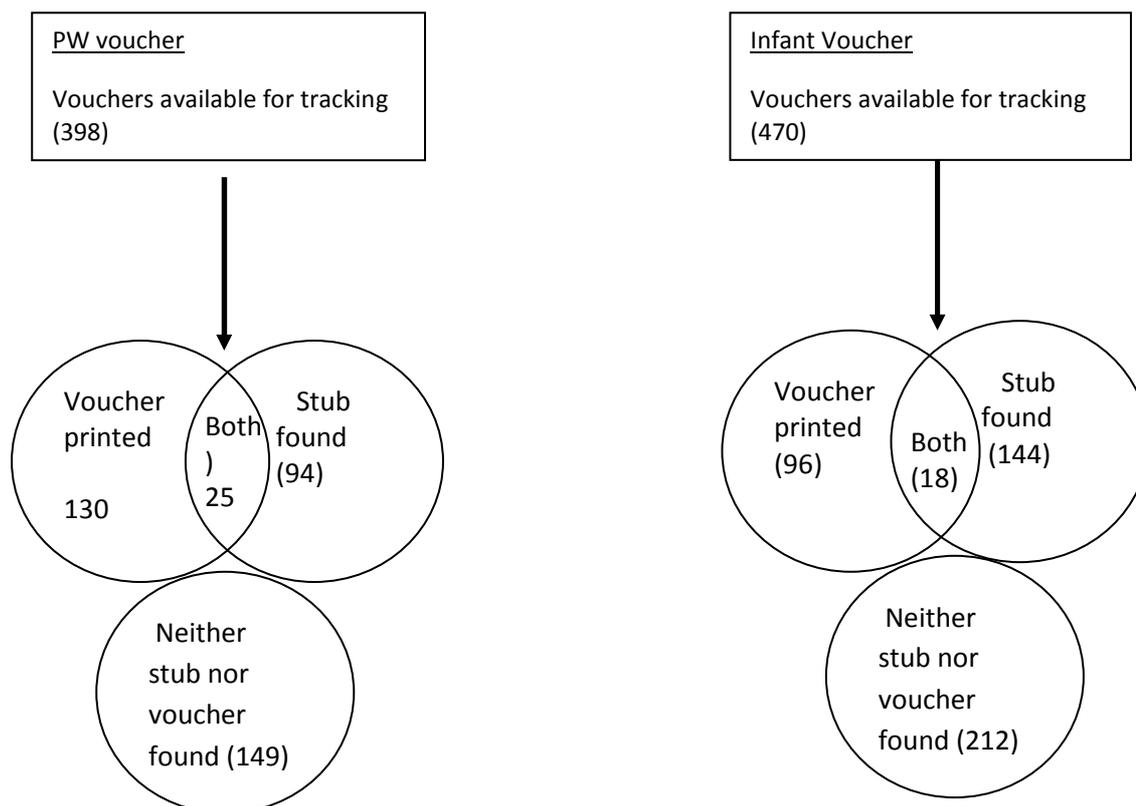
Karagwe, Kigoma Urban, Kinondoni, Kisarawe, Makete, Mbeya Urban, Moshi Rural, Mtwara Urban, Muheza, Nachingwea, Namtumbo, Rombo, Rorya, Rufiji, Sengerema, Shinyanga Urban, Simanjiro, Singida Rural and Sumbawanga Rural. Details of the sampling for this study are illustrated in Figure 1.



**Figure 1: Sampled vouchers**

As shown in Figure 1, out of the sample of 1000 pregnant women vouchers for tracking, records indicated that 398 had a voucher, a stub or both returned to MEDA office. Database indicated that out of the sample of 1,000 infant vouchers, 470 had a voucher, a stub or both returned to MEDA office. Therefore there were 398 pregnant women vouchers and 470 infant vouchers to track.

Similar to the previous surveys, tracking requires identification information about the person to whom the voucher was supposedly issued. It was therefore necessary to retrieve copies of stubs and vouchers that had been returned to MEDA offices. MEDA scans and maintains electronic files of all returned vouchers. The selected pregnant women vouchers were identified in those files and printed out for tracking. A total of 155 copies of such vouchers were printed out and 119 stubs were physically sorted out from the storage kept by MEDA and were photocopied. Among those, 25 had copies of both vouchers and stubs. The remaining 149 where neither the voucher nor the stub could be retrieved, the interviewers (trackers) kept the list of such vouchers to be used as identification for getting the address of the recipient from the ANC registers at the indicated health facilities. Retrieval of infant vouchers followed the same procedure used for pregnant women vouchers. Stubs were sorted out from piles of those returned from the districts, a total of 162 stubs were retrieved and photocopied, 114 vouchers were printed from the database, among those, 18 had copies of both (voucher and stub. A total of 212 missed both the voucher and a stub (Figure 2).



**Figure 2: Status of sampled vouchers**

### ***Training and piloting***

The study recruited and re-trained three of the 4 interviewers who conducted the 20089 voucher tracking. A fourth interviewer experienced in household surveys was newly recruited for voucher tracking. Re-training included running through the fundamental issues that were covered in each of the previous rounds of voucher tracking:

- Updates of the voucher scheme (the new upgraded fixed-top up, delivery of LLINs and redemption)
- Objectives of voucher tracking activity
- The questionnaires- concepts and content
- Tracking and interview skills
- Planning, accountability and efficiency

### ***Questionnaires***

Similar to the fourth (2008/9) round of voucher tracking, two sets of questionnaires were used for the pregnant women voucher and the infant voucher.

One structured questionnaire (PWV) was used for interviewing women whose names were indicated as recipients of the pregnant women voucher and were found. Another structured questionnaire was completed by the interviewers for the women whose names appeared on vouchers or stubs but could not be identified (nobody knew the person) or identified but not found for interview (PWV\_not found). For infant's vouchers, a structured questionnaire (IV) was completed for children whose names were written on vouchers or stubs and were found - their mothers or care givers were interviewed. For the children that could not be found another questionnaire (IV\_not found) was completed by the interviewers.

The main contents of the PW and IV questionnaires included: Identification information of the voucher, background information of the voucher recipient, knowledge about voucher scheme, receipt and use of the upgraded fixed top-up voucher, use of the voucher net and the last part of the questionnaire collected information about the household.

For the infant voucher the questionnaire had one additional section that collected background information of the mother/care giver. In each of the two questionnaires (PW and IV), there was an open-ended question for the respondents who reported that they never received the voucher to provide explanation/circumstances that led to missing the voucher.

Questionnaires PWV\_Not found and IV\_Not found contained identification information of the voucher and reasons for not finding the voucher recipient.

### ***The fieldwork (Tracking)***

Tracking was done in the same way as in the previous rounds. The interviewers (voucher trackers) were given copies of stubs and vouchers bearing the names of the recipients to be identified and interviewed, grouped by districts. They also had lists printed from the MEDA database showing the health facilities where each voucher was supposed to have been originally sent. This list was also useful for tracking vouchers that had neither a stub nor a voucher retrieved from MEDA.

The fieldworkers used motorcycles to travel within the district and used private trucks to transport the motorcycles from one district to another. The actual fieldwork started in the fourth week of December 2010 in Kisarawe district and was completed in May 2011 in Kinondoni district. As in the previous rounds of tracking, about a week before arrival of the interviewers letters were sent to the District Medical Officers (DMO) of the selected districts to inform them about the voucher tracking activity and the dates on which the activity would be taking place in their district.

Upon arrival at each district the interviewers visited the DMO's office for introduction and seeking administrative support. The DMOs then wrote letters to the health facilities that were indicated to have issued the sampled vouchers asking the responsible persons to offer support to the interviewers. The interviewers then visited the respective facilities to check the ANC registers, firstly to ascertain that the recipients to be tracked were recorded, and secondly, where applicable, to complete the addresses with additional information from ANC or voucher registers and child vaccination registers. As in the previous rounds, the ANC service providers were very supportive in making the records of their clients accessible to the interviewers and in some cases they gave the interviewers directions to the residence of the voucher recipient.

With the support of the sub-village chairpersons, ten cell leaders and street chairpersons, each indicated voucher recipient was sought for interview. Several community/village health workers offered a lot of support in this exercise as they knew most people in their areas. The voucher recipient was declared "not found" only where the address was complete and the interviewer had gone to the lowest level possible (ten cell leader) but nobody could identify the person whose name was written on the voucher.

To ensure that the collected data was of good quality, several measures were put in place:

- Proper training of the field team
- Daily review of completed forms and filling the summary forms
- Visits by the survey manager

## ***Data processing and analysis***

All completed questionnaires were sent to the data unit at IHI. As a control mechanism, each questionnaire was assigned a unique serial number. The data were double entered in Cspiro 3.3 for windows and checked using routines developed in the same software. Four independent databases were managed; PWV, PWV\_Not found, IV and IV\_Not found. Consistency and range checks were performed before doing analysis. STATA 11 was used for data analysis. Generally, the analysis was descriptive with most of the indicators expressed in percentages. Those variables that assume continuity were summarised in arithmetic means. Principal Component Analysis (PCA) method was used to derive a wealth index which was used to classify the households into wealth quintiles.

## **Results**

We present descriptive results starting with the explanation of the status of each tracked voucher. Where necessary we included results from the 2008/9 round of voucher tracking.

### **Tracking**

Similar to the previous rounds of voucher tracking, a description is presented for each of the voucher identified for tracking. Table 1 shows a summarised description of the results for each of the targeted voucher recipient both for pregnant women and infant vouchers. Results from the fourth round of voucher tracking (2008/9) are included for comparison.

As shown in Table 1, 300 (75.4%) of the pregnant women vouchers were successfully tracked and recipients interviewed. Similar to the previous rounds of voucher tracking, the remaining pregnant women vouchers that could not be tracked were grouped by reasons for failure to track. Among those who were not interviewed, the largest group comprised of those who had incomplete addresses (15.6%). Tracking success rate was higher compared to the fourth round of voucher tracking (75.4 Vs 58.9). Tracking the infant's voucher recipients was less successful (63.4%) compared to the pregnant women's but substantially higher than the fourth round where only 46% of the vouchers were successfully tracked. Incomplete address continued to contribute to the reasons for missed interviews, however the missed were at lower proportions for both pregnant women and infant vouchers compared to the fourth round of voucher tracking. Most of the vouchers in the category of "incomplete address" could not be found in the registers at the targeted health facilities. Some of such vouchers were from the books sent to health facilities different from what was shown in the databases. In the Kinondoni district, tracking for the "number only" for infant vouchers was particularly difficult due to incomplete identification information.

**Table 1: Status of the tracked vouchers from the sample**

Status	Pregnant women voucher		Infant voucher	
	Fourth round (2008/9) N= 409	Fifth round (2010/11) N= 398	Fourth round (2008/9) N=493	Fifth round (2010/11) N=470
	n (%)	n (%)	n (%)	n (%)
Found and interviewed	241 (58.9)	300 (75.4)	228 (46.2)	298 (63.4)
Identified but not interviewed because they had travelled	10 (2.5)	4 (1.0)	12 (2.4)	23 (4.9)
Migrated out of the district	12 (2.9)	11 (2.8)	16 (3.2)	10 (2.1)
Nobody knows this person	39 (9.5)	18 (4.5)	42 (8.5)	19 (4.0)
Died	-	3 (0.8)	-	-
Incomplete address	107(26.2)	62 (15.6)	195 (39.6)	120 (25.5)
<b>Total</b>	409 (100)	398 (100)	493 (100)	470

The operational voucher information status was established after retrieval of stubs and printing of voucher images from MEDA storage and databases. We present tracking success rates by voucher information status (Table 2). For both types of vouchers, tracking was most successful where the stub was available. As would be expected, those with “numbers only” (either voucher or/and stub returned but could not be found) were more likely to have incomplete address and thus least likely to be tracked successfully but for the infant voucher the “voucher only” category was equally less likely to be tracked. Those done successfully without a copy of the voucher or stub (number only) happened only where health facilities had complete records about the voucher recipients. In places where voucher books were sent to a facility different from that indicated in the MEDA database, it was impossible to track recipients in the absence of a voucher or a stub.

**Table 2: Success rate by voucher information status**

Retrieved from MEDA	Interviewed n (%)	Not Interviewed n (%)	Total n (%)
<b>Pregnant women Voucher</b>			
Voucher only	101 (77.7)	29 (23.3)	130(100)
Stub only	81(86.2)	13(13.8)	94 (100)
Voucher and stub	24 (96.0)	1 (4.0)	25 (100)
Number only*	94 (63.1)	55(36.9)	149 (100)
Total	300(75.4)	98(24.6)	398 (100)
<b>Infant Voucher</b>			
Voucher only	56 (58.3)	40 (41.7)	96 (100)
Stub only	100 (69.4)	44 (30.6)	144 (100)
Voucher and stub	17 (94.4)	1 (5.6)	18(100)
Number only*	125 (59.0)	87 (41.0)	212 (100)
Total	298 (63.4)	172 (36.6)	470 (100)

\*neither a stub nor a voucher could be retrieved from MEDA but records indicated that it had either been redeemed or/and stub returned

Consistently, dispensaries were the main source of both types of vouchers (over 70%). The mean time difference between date of issue of vouchers to women/infants and the date of the interview for both types of vouchers was about 11 months (Table 3). This was long enough to allow for the purchase of the net and to assess whether the nets were sticking to the beneficiary. Among the antenatal cards or child cards that were seen by the interviewers, 86% and 95% of those respectively, had the voucher number recorded on. By the time of interview, all children had been taken at least once, to RCH clinic.

**Table 3: Some characteristics of the tracked vouchers**

Aspects of the vouchers	Pregnant women voucher		Infant voucher	
	N	n(%)	N	n(%)
<b>Place of issue</b>	300		298	
Dispensary		219 (73.0)		213 (71.5)
Health centre		60 (20.0)		59 (19.8)
Hospital		21 (7.0)		26 (8.7)
Voucher number written on the card*	295	255 (86.4)	276	262 (94.9) (85.0%)
Time from voucher issue to interview (mean months) (95% CI)	298	11.3 (10.9-11.6)	293	11.4 ((11.0-11.8)

\*only for the cards seen

As shown in Table 4, the mean ages of the respondents to the pregnant women and infant vouchers were 27 and 28 years respectively. The youngest respondent to the pregnant women voucher was 16 years old. Nearly two thirds of the respondents were subsistence farmers and over 70 % of them lived in the rural areas. The mean number of years of education was around 6 years, about 13% and 14% of the respondents to the pregnant women and infant vouchers respectively, had no education. A slightly higher proportion of the respondents to the infant voucher interviews were married (66%) compared to the respondents to the pregnant women voucher interviews (57%). Virtually all respondents to the infant voucher interviews were biological mothers (99.7%).

**Table 4: Characteristics of the respondents**

Characteristics	Pregnant women voucher (N=300)	Infant voucher (N=298)
Mean age (CI)	27.1 (26.4-27.8)	28.1 (27.4-28.8)
Mean completed years of education (CI)	6.3 (6.0-6.7)	6.4 (6.0-6.7)
Occupation		186 (62.4%)
Farmer	191 (63.7%)	86 (28.9%)
Service and business	71 (23.7%)	26 (8.7%)
Other	38 (12.6%)	
Residence	222 (74.0%)	
Rural	78 (26.0%)	215 (72.2%)
Urban		83 (27.8%)
Marital status		
Single	68 (22.7%)	52 (17.4%)
Married	172 (57.3%)	196 (65.8%)
Other	60 (20.0%)	50 (16.8%)
Relationship with the child		
Mother		297 (99.7%)
Grandparent	NA	1 (0.3%)

**Knowledge**

All the respondents reported that they had heard about the ITN voucher programme. The main sources of information was RCH clinics (96.7%) followed by radio (66.3%). Several other sources were mentioned by few respondents.

**Receipt and use of the voucher- the tracked vouchers**

A total of 300 women were successfully tracked and interviewed for pregnant women voucher. Out of the 300 interviewed women, 3 (1%) reported that they had never received any voucher despite their names appearing on a voucher or stub. For the infant vouchers a total of 298 respondents were found and interviewed. Of those, 10 (3.4%) stated that they never received a voucher for the child whose name was indicated as a recipient.

As shown in Table 5, about 99% of the interviewed women whose names appeared on the pregnant women vouchers or stubs did actually receive a voucher. Of those, 87% had exchanged their vouchers for nets at the time of the interview. Among those who had bought a net, about 96% purchased a net during pregnancy.

Shops were the main sources of the nets (94%) but there was a small proportion of nets (5.4%) purchased from RCH facilities. 94% of the women who had bought a net still had the net at the time of interview; and 83% were verified by the interviewers. The missing nets were reported to have either worn out or given to another person.

As in the previous rounds of voucher tracking, results indicated that the purchase of nets using a voucher happened on average within the first month of receipt of the voucher. Most women purchased the nets within a walking distance from their residence; only about 12 % of women incurred some travel costs. The reported travel costs ranged between TZS 200 and TZS 1,000.

For infant vouchers (shown in Table 5), about 97% of the interviewees whose children's/grandchildren's names appeared on the infant vouchers or stubs did actually receive a voucher. Of those, about 84% had exchanged their vouchers for nets at the time of the interview. Shops were the main sources of the nets (92%) but 7% of the nets were purchased from RCH facilities. 94% of the nets purchased using the infant vouchers were still in the household at the time of interview; and 82% were verified by the interviewers. Most of the missing nets (64%) were reported to have been given to another person.

Results indicated that the purchase of nets using a voucher happened on average within the first month of receipt of the voucher. Similar to the case of the pregnant women, most nets acquired using the infant vouchers were purchased within a walking distance from the recipients residence; less than 10% incurred some travel costs. Among those who incurred travel costs the minimum reported travel cost was TZS 200 and TZS 2,000 was the highest.

**Table 5: uptake and use of the pregnant women and infant fixed top-up vouchers**

	Pregnant women voucher		Infant voucher	
	N	n (%)	N	n (%)
Woman/child received a voucher	300	297 (99.0)	298	288 (96.6)
Used a voucher to buy a net	297	259 (87.2)	286*	241 (84.3)
Purchased a net while pregnant	259	248 (95.8)	-	-
Net bought from	259		241	
Shop		244 (94.2)		222 (92.1)
RCH clinic		14 (5.4)		16 (6.6)
Other		1 (0.4)		3 (1.2)
Still has a net	259	243 (93.8)	239*	225 (94.1)
Net seen by the interviewer	241	201 (83.4)	225	185 (82.2)
Mean time (minutes)travelled to buy the net (95% CI)	259	29 (27-32)	241	30 (27-33)
Paid TZS 500 for the net (TZS)		252 (97.3)	241	240 (99.6)
Mean number of months between receipt of the voucher and buying a net (95% CI)	254	0.8 (0.6-0.9)	241	0.6 (0.4-0.8)

\*2 missing values

#### Reasons for not receiving the voucher

Similar to the previous rounds of voucher tracking, women and respondents to infant voucher questionnaires whose names were written on the vouchers but reported that they did not receive a voucher, were asked a follow up question that required them to state the reasons for not receiving the voucher. This was an open-ended question; we present here some excerpts of their responses.

#### *Pregnant women voucher*

Of the interviewed women only 3(1%) reported that they did not receive a voucher. Each one of them stated that she did not know why she was not given the voucher.

*"I know that pregnant women are supposed to be given a voucher but I was not given one and I do not know why the nurses did not give me". (Voucher issued in Mtwara Urban on 23/2/2010)*

*"I do not know why I was not given a voucher but I have been given one for my baby but not for pregnancy". (Voucher issued in Singida Rural on 10/6/2010)*

*"Frankly, I do not know why I was not given a voucher". (Voucher issued in Singida Rural on 10/12/2009).*

#### *Infant voucher*

A total of 10 (3.4%) of the interviewed parents/care providers stated that they were never given the infant voucher for various reasons. Of those particular vouchers, 3 were issued in Singida Rural district:

*"I do not know the reason for not being issued the voucher" (Voucher issued in Sumbawanga Rural on 26/7/2010)*

*"The vouchers were out of stock, they asked us to come back later but I did not go". (Voucher issued in Arusha rural on 1/3/ 2010)*

*"Frankly, I do not know the reason for not receiving the voucher". Voucher issued in Singida Rural on 23/2/ 2010)*

*"They said vouchers were out of stock, since then I have been taking my child to the clinic but never asked whether they have received a new stock". (Voucher issued in Singida Rural on 22/1/ 2011).*

*"When we were waiting for our children to receive vaccination she informed us that we would be issued a voucher but she did not do so, maybe she forgot". (Voucher issued in Singida Rural on 17/5/010).*

*"At the clinic they informed me that vouchers were out of stock and advised me to visit on a later date to collect the voucher but I did not go". (Voucher issued in Sengerema on 15/3/2010).*

*"When I attended clinic for vaccination, vouchers were out of stock they advised me to visit on a later date but I did not". (Voucher issued in Karagwe on 17//12/2009).*

*"Vouchers were out of stock, they advised me to visit on a later date but to date I have not gone back". (Voucher issued in Kinondoni 16/4/2010)*

*"I do not know as to why I was not given a voucher". (Voucher issued in Nachingwea on 28/10/2009)*

#### **Exchange of the voucher for a net- Pregnant women and Infant vouchers**

About 21 % (49/235) and 16% of the women and infants respectively who received a voucher had not exchanged their vouchers for a net by the time of the interview. Responses to the question as to why they did not buy a net using the voucher are shown in Table 6. It is worth noting that both pregnant women and infant vouchers that were not misplaced had been kept for several months ranging from a minimum of 8 months to a maximum of 15 months.

Unlike previous rounds of voucher tracking where lack of money had been the most common reason for failure to exchange the voucher for a net, for the 2010/11 round that was not the case. Stock outs of nets in the outlets and losing/misplacing the voucher were the most common reason for failure to exchange the voucher for a net. Lack of money was mentioned by only 5 (13.5%) of those who did not purchase the net and this goes down to 1.7% (5/297) of all those who received a

pregnant women voucher. That reason was reported at a much smaller proportion for infant vouchers (4.4%), that translates to less than 1% of the received infant vouchers.

**Table 6: Reasons for not exchanging the voucher for a net**

	Pregnant women voucher		Infant voucher	
	Fourth round (2008/9) N= 49 n (%)	Fifth round (2010/11) N= 37* n (%)	Fourth round (2008/9) N=41 n (%)	Fifth round 2010/11 N=45 n(%)
Had no money	21 (42.9)	5 (13.5)	19 (46.3)	2 (4.4)
Lost the voucher	13 (26.5)	10 (27.0)	5 (12.2)	18 (40.0)
There were no nets in the shop	6 (12.2)	15 (40.5)	8 (19.5)	11 (24.4)
Had a net already	5 (10.2)	3 (8.1)	2 (4.9)	6 (13.3)
Other	4 (8.2)	4 (10.8)	7 (17.1)	8 (17.8)

\* 1 missing

### Equity in exchange of the voucher for a net

Achieving equity is fundamental in the ITNs delivery strategies. We attempted to explore equity in sub groups of pregnant women and infants by deriving sub-group proportions of those who did not purchase nets using the vouchers. It is important to note that for sub-group analyses such as this, the number of individuals in each quintile is so small that it is difficult to detect statistically significant differences. The following analysis is therefore exploratory in nature. As shown earlier, 38 (12.8%) of women and 45 (15.7%) infants received a voucher but had not exchanged it for a net at the time of the survey.

As shown in Table 7, proportions of women (17.2%) and infants (21.0%) who had not exchanged their vouchers for a net in the lowest wealth quintiles were slightly higher than those in the highest wealth quintiles (11.7% and 17.2% respectively) but statistically insignificant. Likewise, analysis by residence indicated that proportions of women and infants that had not exchanged the voucher for a net were higher for those living in rural settings compared to those in the urban, however the difference was not statistically significant ( $p>0.05$ ).

**Table 7: Voucher not exchanged for a net by sub-groups of women and infants**

Categories	Did not purchase a net			
	Pregnant women voucher		Infant voucher	
	N	n (%)	N	n (%)
<b>SES quintiles</b>				
(Lowest wealth quintile)	58	10 (17.2)	57	12 (21.0)
(Highest wealth quintile)	60	60 (11.7)	58	10(17.2)
		P=0.389		P=0.603
<b>Residence</b>				
Urban	77	9 (11.7)	80	16 (20.0)
Rural	220	29 (13.2)	206	29 (14.1)
		P=0.736		P=0.217

Table 8 shows that about 94% of the nets purchased using the pregnant women and infant vouchers were still in the household. However, only 76 % and 78% of the pregnant women and infant voucher nets were respectively reported to be used in the night prior to the survey. About 63% of the nets received by pregnant women and 90% received by infants were used by those women and infants respectively, in the night prior to the survey date. Ninety percent of the women who purchased a voucher net while pregnant reported that they slept under that net while they were pregnant. A substantial proportion (28%) of nets purchased using the pregnant women voucher were used to protect older children (1-4). Likewise the infant voucher nets were used to protect other additional young children (13%).

**Table 8: Protection by the voucher net**

	Pregnant women voucher		Infant voucher	
	N	n (%)	N	n (%)
Purchased net is still in the household	259	243 (93.8)	239	225 (94.1)
Voucher net used last night	243	186 (76.5)	223**	173 (77.6)
Woman slept under the voucher net while pregnant*	230	208 (90.4)	-	-
Woman slept under the voucher net last night	184**	121 (65.8)	-	-
Infant/the child given the net slept under the voucher net last night		116 (63.0)	173	156 (90.2)
Child (1-4 years) slept under the voucher net last night		51 (27.7)	172	23 (13.4)

\*Only women who purchased the net while pregnant

\*\*some missing

### Potential misuse of the voucher scheme

As always, estimation of the magnitude and sources of misuse of the voucher scheme is the basis of this study. However precise estimates of misuse remain a challenge. We present here estimates based on observed actual misuse and misuse inferred from failures to track voucher recipients for the pregnant women and infants.

Table 9 shows that in the fifth round of voucher tracking, 297(74.6%) women were identified, interviewed and confirmed as the recipients of the specific pregnant women vouchers. Those vouchers were certainly not misused. That indicator is higher than for the fourth round where only about 58% of the vouchers were confirmed as used appropriately (received by the identified individuals).

Those whose recipients were known in the community but had traveled, migrated out of the district or died were considered as probably not misused. This category accounted for around 5 % (same as the fourth round) of all the pregnant women vouchers available for tracking. Pregnant women vouchers bearing names that were not known in the community were potentially misused. Such vouchers comprised of 4.5% n the fifth round, suggesting much improvement compared to 9.5% in that category in the fourth round of voucher tracking.

Vouchers that had names of known women but stated that they had not received that particular voucher were almost certainly misused. Those were 3 (0.8%) markedly lower than 6 (1.5%) in the fourth round.

In total, the “almost certainly” and “probably” misused categories for the fifth round added to 5.3% of the total and for the fourth round they added to 11%. If those with incomplete addresses are added, this rises to 20.9%, the figure is lower than 37.2% reported for the fourth round. The maximum amount of leakage for the fifth round was 25% and as high as 42.5 % in the fourth round, these estimates assume that all vouchers that were not successfully tracked and receipt confirmed were misused.

For the infant vouchers, a total of 288 (61.3%) parents/care givers were identified, interviewed and confirmed as the recipients of the specific infant vouchers. Those vouchers were certainly not misused. The “almost certainly misused” was 2.1% and the “probably misused” where names were potentially faked, was 4%. Thus, the total potential misuse was 6.1 %. This was substantially low compared to 16% in the fourth round (2008/9). An estimate for the maximum level of leakage was 39% in the fifth round and 61% in the 2008/9 round of voucher tracking, these estimates assume that all vouchers that were not successfully tracked were misused as well as those whose recipients were identified but could not be reached for interview. Trend of estimates of voucher misuse for the five annual surveys of voucher tracking is shown in Table 10.

**Table 9: Use and misuse of voucher**

Categories of misuse	Type of use/misuse	Pregnant women voucher		Infant voucher	
		Fourth round (2008/9) N=409 n (%)	Fifth round (2010/11) N=398 n (%)	Fourth round (2008/9) N=493 n (%)	Fifth round (2010/11) N=470 n (%)
Certainly not misused	Tracked and confirmed receipt	235(57.5)	297(74.6)	191 (38.7)	288 (61.3)
Probably not misused	Known but had travelled, migrated or died	22 (5.4)	18 (4.5)	28 (5.7)	33 (7.0)
Almost certainly misused	Voucher bearing a real name of a client/non-client but never received it	6 (1.5)	3 (0.8)	37 (7.5)	10 (2.1)
Probably misused	Possibly faked names (no one knew the person in the community)	39 (9.5)	18 (4.5)	42 (8.5)	19 (4.0)
Not apparent (incomplete address)	Tracking failure due to incomplete address	107 (26.2)	62 (15.6)	195 (39.6)	120 (25.5)

For pregnant women vouchers, the minimum estimates across the five years of surveys remained fairly low and a downward trend was observed for the last three rounds of tracking with lowest estimate of 0.8% in the last round (Table 10). Minimum estimates for the infant voucher fluctuated across the three years of the surveys but attained the lowest level of 2% in the 2010/11 survey. The estimates that we considered reasonable were around 10 % except for the first round of the surveys where that estimate was around 20% and the fifth round where the estimate was minimal at about 5%.

**Table 10: Estimates of misuse of PW and Infant vouchers for 2005/6 – 2010/11 surveys**

Year	Minimum estimate (Almost certainly misused)		Reasonable estimate (Almost certainly misused + probably misused)	
	PW (%)	IV (%)	PW (%)	IV (%)
2005/6	2.4	n/a	19.9	n/a
2006/7	2.9	n/a	10.0	n/a
2007/8	3.0	4.3	9.0	12.0
2008/9	1.5	7.5	11.0	16.0
2010/11	0.8	2.1	5.3	6.1

## Discussion

The fifth round of voucher tracking, the first for the upgraded fixed top-up continues to provide evidence which confirms that the scheme is reaching the target groups (pregnant women and infants) at a fairly high rate as far as access to discount vouchers is concerned. Of the 300 interviewed women, 297 (99.0%) had received the vouchers documented as issued to them. Up to the time of the interview, 259 (87.2%) had purchased a net. Similarly, among the 298 respondents for the infant vouchers, 288 (96.6%) confirmed receipt of the voucher and among those, 241<sup>1</sup> (84.3%) had exchanged the voucher for a net at the time of interview.

As anticipated in the fourth round of voucher tracking that free net distribution and implementation of the upgraded fixed top-up voucher would address the initially persistent inequity in access to ITNs, findings from the reported round provide evidence for that. Unlike previous rounds of voucher tracking where lack of money was reported as the leading cause of failure to purchase a net, that was no longer the case in the fifth round of voucher tracking. Only 1.7% and 0.7% of the vouchers confirmed receipt by pregnant women and infants respectively, reported that they failed to exchange their vouchers due to lack of money. In the fourth round such estimates were substantially higher (8.9% for the pregnant women voucher and 9.9% for infant vouchers).

Loosing/misplacing vouchers remained a significant reason for not exchanging voucher for a net. Over a quarter (27%) of the pregnant women who had not exchanged the voucher for a net stated that they failed to do so because they lost the voucher and the same reason applied to 40% of the infant vouchers that had not been exchanged for a net. Increased coverage of ITNs following free distribution might perhaps have reduced the value attached to the voucher. In the fourth round, the proportions of those who stated that they lost the voucher were comparatively lower for infant vouchers but not trivial, for the pregnant women voucher there were 13 (26.5%) and 5 (12.2%) for the infant voucher.

Similar to the observation documented in the 2008/9 but at a higher proportion is the experience of ITN stock-outs in the retailer shops. Of the pregnant women who had not exchanged their vouchers for nets, 40% blamed non-availability of ITNs in the registered outlets. Nearly a quarter (24%) of infant vouchers that had not been used were for the same reason of stock outs of ITNs from the registered outlets. At the time the tracked vouchers were issued, the “new” ITN delivery model (A to Z to retailers) was at its infancy, this might be a reason for the stock-outs.

As in the previous rounds of voucher tracking, reports of the women whose/children’s names were written on vouchers but confirmed that they never received them suggest possible misuse of the scheme. Potential misuse of the pregnant women voucher in the fifth round ranged from a minimum of 0.8 % to a maximum of 25%. The value of the minimum estimate is about half of that reported in the fourth round (1.5), likewise the maximum value was much lower than in the fourth round (42.5%). Infant vouchers had all the estimates of misuse slightly higher than pregnant women voucher, the value of the minimum estimate was 2.1 % and the maximum was about 39%. Encouragingly the estimates were much lower than those documented for the fourth round where the minimum was 7.5% and the maximum was 61%.

The minimum value is derived from the assumption that all the “probable misuse” was due to interviewer’s failure to track, and the maximum from assuming that all vouchers which could not be tracked were misused. In our view for the fifth round of tracking the pregnant women voucher, the

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<sup>1</sup> Denominator used here is 286 due to missing information for 2 vouchers

most reasonable estimate of misuse derives from the sum of the “almost certainly misused”(0.8%) and “probably misused” (4.5%), giving an estimate of 5.3%. Applying the same logic on the infant voucher, summing the “almost certainly misused”(2.1%) and the “probably misused” (4.0%) gives an estimate of 6.1%.

Similar to the previous rounds but at a much lower proportion, the findings suggest that some RCH service providers abuse the scheme by writing and redeeming vouchers through use of names of some pregnant women or children, particularly those who visited the clinic during voucher stock-outs. If the retailers strictly sell the nets on condition that they see the ANC card or child health card, then the RCH service providers either write a fictitious card or collude with the retailers to get a net or money in exchange with the voucher.

Abuse of the vouchers at varying scales has remained evident in all the five rounds of voucher tracking. However, the estimates of misuse in the fifth round of voucher tracking indicate a lot of improvement compared to the previous rounds but there is still a room for further improvement. Strengthening supervision and follow-up at all levels of operation and at facility level in particular can potentially reduce further, the misuse of the scheme.

### **Limitation of the study**

As reported in the previous voucher tracking studies, it is difficult to determine what share of the vouchers that were not tracked was misused, versus problems of “tracking failure”.

There is no way to conclude about the status of the vouchers not tracked – whether “legitimate” (tracking failure, e.g. related to problems of women having many names) or not.