



ASSESSMENT AND DOCUMENTATION OF MATERNAL AND NEWBORN TRANSPORTATION VOUCHER SCHEME IN KARAMOJA, UGANDA

Andrew Balyeku	UNICEF Uganda
Jesca Nsungwa Sabiiti*	Ministry of Health Uganda *Corresponding Author
H. Jung	UNICEF Uganda
G. Latigi	UNICEF Uganda
P. Piri	UNICEF Uganda
M. Ahmadzai	UNICEF Uganda
V. Berdaga	UNICEF Uganda
Chioma	UNICEF Uganda

KEYWORDS :

BACKGROUND

The three-delays model provides a suitable framework for identifying and assessing the barriers faced by pregnant women before they access appropriate care. Three categories of factors are identified as key contributors to the delays fueling maternal mortality: delay in making decisions in seeking care (First delay), delay in reaching the health facility (Second delay), and delay in receiving appropriate care at the health facility (Third delay). This model has also been applied to understand factors related to perinatal and neonatal mortality (Mbaruku G et al, 2009; Waiswa P et al, 2010).

This review mainly focuses on the effect on the Second Delay: reaching the health facility. The reasons why transportation delays occur have been well documented and include difficult geographical terrain, cost of transport, lack of phones and vehicles, suboptimal distribution and location of health facilities (Thaddeus and Maine 1994, Jahn and de Brouwere 2001). Many communities in Karamoja, Uganda are extremely remote and rely on seasonal roads, which are impassable especially during the rainy season. There are no maternity waiting homes. The second delay is also a direct consequence of a combination of poor, non-existent, or unaffordable transportation either from the community to the first-line health care facility or from the latter to a referral facility. The 'second delay' thus contributes disproportionately to poor maternal health outcomes where the above-mentioned conditions exist like in Karamoja.

Transport Voucher scheme programs have been widely used throughout Uganda. In the past 15 years, there have been five programs established to bring a variety of voucher options for women throughout Uganda. A voucher feasibility study conducted in 2004 led to the KfW-financed first Uganda voucher program – the "Healthy Life Voucher" in 2006 – that provided access to Sexually Transmitted Infections (STI) diagnosis and treatment in South Western Uganda. This scheme was available to everyone and redeemed through selected pharmacies and drug shops situated in poorer socio-economic areas. Several other schemes led by Baylor University, Makerere University, USAID, DFID, The World Bank and The Government of Uganda, have focused on vouchers to help pregnant women and families.

Lacking in the current knowledge

The impact of transport vouchers on the second and third delay have not been well evaluated in Uganda. Most studies

have documented the outcomes of the transport voucher as part of a wider reproductive health voucher scheme. This assessment thus contributes new knowledge by providing empirical evidence on whether, how and in what circumstances the transport voucher influences the second and third delay in using maternal and child health services.

As a component of the wider UNICEF support for the "Maternal and Newborn Health (MNH) Program" in Karamoja, UNICEF implemented a four-year MNH project (2015-2018) which included increasing utilization and quality of intra-partum, emergency obstetric and newborn services. The Transport Voucher Scheme aimed at (1) ensuring transportation of pregnant mothers to deliver at health facilities (2) improving emergency transportation for referred complicated deliveries from lower to higher-level health facilities, (3) reducing neonatal mortality in the first 7 days after delivery and (4) reducing home deliveries due to lack of transport.

OBJECTIVES

This report serves to provide lessons from experience based on interpretation of Karamoja Transport Voucher Scheme successes and failures so as to improve future programming of such transport voucher schemes on "second and third delay". In addition, it deepens knowledge, assumptions and limitations of the facility-issued transport voucher on facility delivery and emergency transportation to inform development cooperation. The specific objectives are:

- To assess women's experiences with and perceptions about accessing delivery services prior to and after introduction of the Transport Voucher Scheme;
- To assess the effectiveness of the voucher scheme in increasing facility deliveries and completing emergency referrals;
- To assess relevance, efficiency and scalability of the voucher scheme to inform UNICEF's phase-out strategy;
- To explore factors explaining the differences in uptake of the Transport Voucher Scheme between districts.

METHODS

The Uganda National Household Survey (UNHS 2017) shows that Karamoja has remained the poorest region in the country with poverty incidence above 60%, which is far higher than the national average of 27%. Karamoja also has the highest illiteracy rate with 51% of people aged 6-24 years old never attending school, and only 26% considered literate. High

levels of poverty and illiteracy may thus contribute to why most mothers face major barriers in utilizing the facility-based maternal health facility services improved by the project.

Discussions with district staff confirmed that the region has a scarcity of ambulance services and no established means of maternal transport for delivery at health facilities nor emergency referral transportation from Health Centre (HC) IIs that offer normal delivery services to higher level facilities (HC IVs and Hospitals) that offer comprehensive emergency obstetric and newborn care services.

Preliminary discussion also revealed that even though the local boda boda were increasingly available in the rural areas, they had not been considered as suitable modes of transport for women in early labour by both the community and health workers. The rural boda boda cyclists indicated that they are community members who have social ties to the beneficiary communities, thus are naturally willing to assist mothers when they are in need of transportation to health facilities. Improved security was also mentioned as a contributor to more boda boda penetrating in the deeper areas of Karamoja. The boda boda cyclists further submitted that though boda bodas had expanded their reach to the rural areas, transportation costs were unaffordable for rural people, the vast majority of whom lacked any cash income.

Placing the Transport Voucher Scheme within the wider Maternal and Newborn Health Program in Karamoja ensured that mothers received quality services at the facilities.

Study Design

The study was designed to have three parts. First facility-based data on health unit deliveries in all the seven districts of Karamoja region was analyzed to assess effectiveness of the transport voucher. The data showed the number and rate of institutional deliveries increased after the introduction of the voucher. Next a cross sectional survey was conducted on December 2017 by interviewing both voucher-users and non-users in the selected three districts, namely Kaabong, Abim and Amudat district which showed a low, middle and high utilization of the voucher, respectively. This survey compared outcomes between users and non-users in terms of a rate of home delivery, normal delivery and emergency delivery and factors that made them deliver in health facilities. Lastly a qualitative study was carried out by interviewing communities and district health teams in the three districts. Qualitative methods included in-depth interviews with voucher scheme managers from CUAMM and District Health Officers, as well as focus group discussions with Voucher Scheme Transporters and women beneficiaries. The in-depth interviews were conducted in English, while the household and focus group discussions in Ngakaramajong. The qualitative data was recorded verbatim and FGD information translated into English by the research assistants and arranged in assessment themes.

Table 1: Data sources used

Data source	Tools	Sampling	Number
1. Program implementers	In-depth guide	None	3
2. District Health Office	In-depth guide	Purposive (Highest-, mid- and lowest-performing)	3
3. Transporters	FGD guide	Purposive (1 group per district)	3
4. Mothers who used vouchers in last pregnancy	Household questionnaire	Quota sampling (about 80 per district)	248

5. Mothers who did not use vouchers in last pregnancy	Household questionnaire	Quota sampling (about 80 per district)	247
6. Secondary project data	Tabulation matrix of project data Jan 2016- Dec 2017	Project data	NA

Population (patients, doctors, hospitals, etc.)

The inclusion criteria for the survey were: (1) women who delivered babies in the last 9 months preceding the survey, irrespective of whether the delivery was preterm or term and of the birth outcome (whether the baby was alive or dead); (2) next of kin of women who died during childbirth in the last 9 months preceding the survey; (3) residents in the study area, and; (4) women capable of providing informed consent, including emancipated minors. Women who were not resident in the study area at the time of the birth of their baby or women with a severe mental disorder were excluded.

The voucher scheme started without any geographic and household wealth targeting which was appropriate for Karamoja region where the majority target beneficiaries were deemed very poor. Discussions showed that over time, the resources available were insufficient for such a universal coverage approach and more geographical targeting was thus employed to focus on mothers in sub-counties located more than 10 km from HC IIs and emergency maternal and sick newborn referral.

Sampling Strategy of the Household Survey

We selected three districts out of total seven districts in Karamoja region. The three districts such as Kaabong, Abim and Amudat district represented a low, middle and high performing one, respectively in terms of utilization rate of the voucher. To detect a difference in outcomes between voucher users and non-users, the below formula was utilized and yield 235 women in each group. The study thus targeted a minimum of 240 households of each group and eventually surveyed a total of 248 voucher beneficiaries and 247 non-beneficiaries in the three study districts.

$$\text{Sample size or } n = (Z_{\alpha/2} + Z_{\beta})^2 * (p_1(1-p_1) + p_2(1-p_2)) / (p_1 - p_2)^2$$

Where $Z_{\alpha/2}$ is the critical value of the Normal distribution at $\alpha/2$ (for a confidence level of 95%, α is 0.05 and the critical value is 1.96); Z_{β} is the critical value of the normal distribution at β (e.g. for a power of 80%, β is 0.2 and the critical value is 0.84), and p_1 and p_2 are the expected sample proportions of the two groups. Within each district, sub-counties were purposefully selected by excluding those close to health facilities where the voucher scheme is not implemented any more due to the gradual phase-out strategy. Within each selected sub-county, 5 villages were blindly selected from a list of villages provided by the district staff.

Each selected village was then visited, and the first household chosen by randomly selecting directions from the central point of the village by spinning a pencil. When the pencil stopped, the direction indicated by the nib was selected. Subsequent households were selected following the "nearest household from the last household to the right" criteria until the required sample size of 10 beneficiaries and 10 non-beneficiaries was obtained. Interviewers then moved to the next selected village and repeated the selection process.

Quantitative data was entered and analyzed by means of the statistical package for social services (SPSS) and Microsoft Excel. Comparison was made on knowledge, attitudes and outcomes between voucher beneficiaries and non-beneficiaries. Reasons for participation/non-participation

were captured. In a separate hierarchical model, the predictors of non-participation were studied.

The background characteristics of beneficiaries and non-beneficiaries of the transport vouchers were found almost identical and comparable and this could be attributed to the sampling approach of selecting respective respondents from the same village clusters. In general, equal numbers of voucher beneficiaries and non-beneficiaries were sampled and they shared similar background characteristics. About one half of the mothers in both groups are below 24 years, and it is noteworthy that about 5% were young adolescents below 15 years. More than three quarters of women respondents had no education or had not completed primary school, implying that the community is generally illiterate. Almost 90% of both voucher beneficiaries and non-beneficiary respondents were married.

	Non-beneficiaries (N=247)	Beneficiaries (N=248)
By district		
Abim	84	80
Amudat	83	85
Kaabong	80	83
Age		
Below 15 years	6%	4%
15-24 years	40%	44%
Above 24 years	54%	52%
Education attainment		
None	54%	54%

Table 3: Transport voucher use and outcomes

Indicator	Jan-Dec 2016	Jan-Dec 2017	Total (2016-2017)
Number of deliveries at HU	17,008	19,070	36,078
Total number of deliveries supported by voucher (a=b+c)	9,420	5,731	15,151
% of deliveries transported by voucher	55%	31%	42%
Number of mothers transported to deliver at HC III using voucher (b)	8,290	4,087	12,377
Number of mothers referred (complications) using voucher (c)	1,130	1,644	2,774
Mode of delivery for referred mother			
Caesarean section	435	779	1214
Vaginal delivery	382	496	878
Maternal referral outcome			
Maternal death	30	14	44
FSB	46	38	84
Neonatal referral outcome			
Alive	77	123	200
Death	20	14	34

Source: UNICEF-CUAMM Voucher Scheme Report 2016-2017 and HMIS data

Note: The health unit delivery data comes from only health facilities operating the transport voucher schemes in the 7 districts of Karamoja region.

Data also shows that the scheme is shifting towards supporting emergency referral transportation and less of community to facility transportation. The number of mothers transported to deliver at health facilities using a transport voucher reduced by one half, and that of mothers with complications referred using transport voucher increased by over 500 between 2016 and 2017. It is also observed that the number of caesarean sections among the referred cases rose by 79%, while vaginal delivery among referred cases increased by 30% over the period. Neonatal outcomes also noticeably improved for the referred babies from 20% of referred babies dying in 2016 compared to 9.5% in 2017. Though all this cannot solely be attributed to the Transport Voucher Scheme, it is clear that the voucher helped in improving early and quick referrals necessary for the survival

Did not complete primary	27%	19%
Primary School completed	11%	15%
Secondary	9%	10%
Tertiary and above	0%	0%
Marital status		
Married	88%	90%
Single	10%	9%
Widowed/Separated/Divorced	2%	2%
Gravidiae		
1	23%	21%
2	19%	23%
3	19%	23%
4	17%	14%
5 and above	22%	18%

RESULTS

Trends of institutional deliveries during the voucher scheme implementation

Data from project reports shows that for the two years from January 2016 to December 2017, the scheme provided transport vouchers for 15,151 deliveries or 42% of the 36,078 reported deliveries at health facilities for the same period. The scheme scaled down as shown by a reduction of the proportion of mothers transported by voucher from 55% in 2016 to 31% in 2017. In spite of the transport voucher reduction, the number of facility deliveries registered rose from 17,008 to over 19,070 in the same period. This indicates that the cessation of the transport voucher in some sub-counties did not substantially affect increases in facility delivery rates.

of mothers and babies.

The voucher costs were limited to boda bodas (motorcycle taxis), because this is the main mode of commercial transport readily available in the Karamoja rural areas. Traditional Birth Attendants (TBAs) who escort mothers late at night were given UGX 5,000 (\$1.4) motivation honorarium. The role of TBAs has thus been reinvented from delivery to provision of support to mothers for facility-based deliveries. TBAs now positively collaborate with the health facility workers to support facility delivery.

The transport voucher has contributed to strengthening community health systems, especially in mobilizing demand for health facilities. The initiative has also established possibilities for public-private partnerships in the emergency referral system. Discussions with boda boda riders revealed that they seek to form an association with leadership that interfaces with the health facility. They propose having a coordinator at the facility to interface on their behalf with the facility management. The transporter usually selected the facility to take the mothers to and through experience, and

transporters have learned to navigate the mothers through the facility or seek out midwives from their homes late at night.

The districts together with CUAMM developed simple protocols and guidelines for the Transport Voucher Scheme, which are available for improvement as well as for reference in scaling up other reproductive health voucher programs in Uganda. Though the voucher protocols were developed with the district staff, the responsibilities and roles of the district staff were not clarified, and key informant interviews with District Health Officers showed that they were not full participants. The performance risk and thus the accountability for results remained with CUAMM as the voucher management agency. There was also a worry from the key informant discussions that facility staff did not benefit much from the voucher and the increased facility utilization increased the work burden without addressing necessary inputs such as additional human resource.

There was also concern from the district health managers that the transport voucher undermined the district's referral system, as the mothers preferred going straight to "bigger" facilities. In addition, husbands not moving with wives to delivery curtailed promotion of more meaningful male involvement in delivery support to their wives. Thus, delivery expenses were placed outside the family and this could cause unsustainable dependence.

Different Outcomes between the Voucher beneficiaries and non-beneficiaries

Almost all mothers gave birth to a live child and there was no significant difference in the outcome of pregnancy between the beneficiaries and non-beneficiaries of the voucher in regard to giving birth to a live child or child still surviving at least 9 months after delivery (see Table 5).

Table 5: Pregnancy outcome of previous delivery

	Use of transport voucher	
	Beneficiary	Non-Beneficiary
Gave birth to live child in most recent delivery	99.60% (244/245)	98.40%(242/246)
Child from last pregnancy still living	99.60% (244/245)	98.40%(242/246)

Source: Household interviews

Data shows a significant difference in source of information about the transport voucher. The study was done at the time when the scheme was scaling down and thus mothers in sub-counties near facilities were not offered the transportation at the time of the study. Table 6 below shows that about 42% of the non-beneficiaries were informed about the voucher scheme during their ANC visits.

Table 6: Informed about transport voucher to facility at ANC

	Use of transport voucher	
	Beneficiary	Non-Beneficiary
Informed about transport voucher to facility at ANC	91.5% (227/248)	42.4% (104/245)

Source: Household interviews

There is no difference between the place of deliveries among beneficiaries and non-beneficiaries for delivery at health centers, with the majority (76%) delivering at these levels. This is because most non-beneficiaries also delivered in HC III's even prior to 2016. However, significantly more non-voucher beneficiaries delivered at home. In addition, we found a statistically significant difference in emergency referrals between voucher user and non-user, proving the voucher scheme improved emergency referrals for complicated delivery cases.

Table 7: Place of delivery

		Use of transport voucher	
		Beneficiary	Non-Beneficiary
Home*	n	1	17
	%	0.40%	6.90%
Hospital*	n	52	34
	%	21.00%	13.80%
Health Centre	n	188	187
	%	75.80%	75.70%
On the way	n	7	9
	%	2.80%	3.60%
Total	N (%)	248 (100%)	247(100%)

*Indicates (P<0.005) Source: Household interviews

The result shows that the voucher contributed to the women's decision to deliver in health facilities and access health facilities (P<0.005). We found statistically significant differences between the two groups in delivering in their preferred places (p<0.005). A higher proportion of beneficiaries (90%) delivered in their preferred place such as health facilities compared to non-beneficiaries (78%) as shown in Figure 2.

Table 8: Preferred place for delivery

	Non-Beneficiary		Beneficiary	
	n	%	n	%
Not sure	3	2.48%	2	0.00%
At home/at relative's home	1	0.00%		0.00%
Government hospital	66	36.36%	58	29.87%
Health Centre	176	60.33%	187	68.83%
House of the TBA	1	0.83%	1	1.30%
Total	247	100.00%	248	100.00%

Source: Household interviews

Figure 2: Proportion who delivered at place of choice



As shown in Table 9, the transport voucher was effective in motivating beneficiaries to deliver in health facilities. 37.2% of the beneficiaries and 4.5% of non-beneficiaries selected the transport voucher as the reason why they delivered in the HF's. The result shows a statistically significant difference between the two groups' response and proves that the voucher contributed to their decision to deliver in health facilities (p<0.005).

Significantly more non-beneficiaries relied on the decision of the husband/family-preferred proximal facilities for delivery and expected better pregnancy outcomes. In general, both groups felt that these facilities had the adequate health workers and could get quick referrals in case of emergency, but that less than half believed that facilities had the required medicines.

Presence of doctors and nurses was the primary reason for health facility delivery in both beneficiary (76.9%) and non-beneficiary group (75.7%). Availability of quick referral in case of emergency was the secondary reason in both groups: 58.3% of beneficiaries and 59.7% of non-beneficiaries. Better pregnancy outcomes and adequate resources (medicine) came as the third and fourth reasons to choose the HF delivery. For these factors, both groups showed similar responses.

Furthermore, it is seen from the results that availability and

quality of services influence women's selection of the institutional delivery more than the transport voucher. As the voucher was already proven effective to increase the HF delivery in the region, the other interventions of improving services at HF level seem to complement success of transport vouchers.

Table 9: Reasons for delivering in facility (multiple choices allowed up to 3)

		Use of transport voucher	
		Beneficiaries (N=247)	Non-Beneficiaries (N=243)
Better pregnancy outcome*	n	116	148
	%	47.00%	60.90%
Quick referral in case of emergency	n	144	145
	%	58.30%	59.70%
Presence of doctors and nurses	n	190	184
	%	76.90%	75.70%
Adequate resources (medicine)	n	115	119
	%	46.60%	49.00%
Husband/family decision	n	65	77
	%	26.30%	31.70%
Transport voucher*	n	92	11
	%	37.20%	4.50%
Near home*	n	32	60
	%	13.00%	24.70%

* Indicates P<0.005 Source: Household interviews

The effectiveness was also affected by availability of transport. The report on "Assessment of Availability of Transport Options in Karamoja" done by CUAMM in June 2013 showed that, in most districts, the more urban sub-counties had more options available compared to those distant from the town councils, as expected. It also noted that many sub-counties in Kaabong and Abim Districts did not have any transport option available.

It was also found that about 25% of mothers required transportation from the community to a facility at night, which meant that special arrangements had to be made, especially in remote districts like Kaabong, because of low availability of boda boda cyclists at night. One of the special arrangements that evolved in response to this was the use of TBAs to escort mothers to health facilities late at night. The TBAs were provided UGX 5000 (USD 1.4) through the project as a motivation to do this. This is a positive development, since the role of TBAs has thus been redefined from promoting home deliveries to providing support to mothers for institutional deliveries. TBAs now positively collaborate with the health facility workers to ensure that mothers attend ANC and deliver in health facilities.

Client satisfaction with transportation

On type of transport in the region, household interviews showed that a significant proportion of both beneficiaries and non-beneficiaries used boda boda. This is in line with findings from the initial "Assessment of Availability of Transport Options in Karamoja", which indicated that motorcycles are the commonest available local transportation means. Analysis of household data showed that a statistically significant proportion of non-beneficiaries walked to the health facility for delivery as compared to beneficiaries as shown in Table 12. The higher use of vehicles may be attributed to the emergency transportation among the voucher users.

Table 10: Type of transport used to delivery location and level of satisfaction

	Use of transport voucher	
	Beneficiaries	Non-Beneficiaries

Type of transport used for HF deliveries			
• Car (Private)*	n	9	2
	%	3.60%	0.80%
• Car (Public)	n	3	3
	%	1.20%	1.20%
• Motor Cycle*	n	190	127
	%	76.60%	51.40%
• Truck	n	1	4
	%	0.40%	1.60%
• Walked or other*	n	45	111
	%	18.10%	45.00%
Satisfied with travel time spent to arrive in delivery site*	n	197/248	137/240
	%	79.40%	57.10%
Satisfied with mode of transport*	n	211/247	144/247
	%	85.4%	58.3%

* Indicates P<0.005 Source: Household interviews

Users were satisfied with their transportation means and time spent while travelling. There was no difference among the beneficiaries and non-beneficiaries in time taken to arrange transport or reach the facility with almost 90% taking less than two hours to reach the facility. It is also significant that voucher beneficiaries were more satisfied with duration of transport to the facility and the mode of transport they used than the non-beneficiaries. On how beneficiaries contacted the transporters, about 60% of the beneficiaries contacted the cyclists using mobile phones and 23% directly contacted the rider at their homes. Though the voucher was free of cost, about 58% of beneficiaries indicated that they were willing to top up the voucher costs if necessary. On who should be paying transportation of pregnant women to health facilities for delivery, 22% of the beneficiaries felt that households should be paying for transportation of pregnant women to health facilities for delivery.

DISCUSSION

The assessment shows that the transport voucher is highly relevant given that unsafe deliveries at home and poor a poor referral system were major causes of maternal morbidity and mortality in Karamoja. It addressed a key obstacle to utilization of institutional delivery within the wider MNH program and was necessary in facilitating utilization of the improved availability and quality of health facility services in Karamoja. Placing the transport voucher within the wider program ensured that expectant mothers and very sick babies accessed a comprehensive package. The study showed a need to support transport vouchers in hard-to-reach areas to turn a health unit delivery pattern. Especially, the transport voucher was proven more effective for emergency referrals than normal deliveries. If a financial resource is limited, the voucher scheme should focus supporting the referrals at first. Additionally, quality of care (presence of midwives/medical doctors and medicine) was shown as the most motivating factor for institutional delivery along with the voucher. When the voucher scheme is introduced in other regions, transportation incentive as well as other interventions to improve RMNCAH cares should be planned together.

The transport voucher was especially relevant in mobilizing locally available transportation. By ensuring the availability of free transportation from the community to the facility, coupled with community mobilization, most mothers came to appreciate the importance of facility delivery. Given the Karamoja situation where the ambulance services are grossly insufficient, the voucher facilitated emergency referrals through mobilizing private transporters and fueling the ambulances that otherwise did not have adequate government budgets. Karamoja communities now have an explicit system to provide emergency transport for pregnant

women who require care at basic and comprehensive emergency obstetric care facilities.

Almost all the respondents mentioned that the Transport Voucher Scheme could last only as long as the donor project. However, the effects will remain in that now the Karamoja community recognizes the importance and benefit of the HF delivery. All district managers concurred that the scheme should be scaled down because the HF deliveries had increased, and the community has seen the benefits. They however recommend that emergency transportation should remain, because capacity for ambulance services is still low. The role of peer mothers and TBAs is also deemed substantial in mobilizing mothers to attend ANC as well as facility deliveries and this should be maintained. This scheme has shown that high rates of facility delivery are possible in communities with very low institutional delivery rates like Karamoja.

Additionally, both voucher users and non-users selected a presence of skilled health workers, possible referrals in case of emergency and available medicines as major reasons why they chose institutional deliveries. This finding suggests that the availability and quality of care are also important motivating factors along with the transport voucher. The success of the voucher scheme can be attributed to the UNICEF MNH program being comprehensive and complementing. Thus, when the voucher scheme is introduced in other regions, it should be planned together with other interventions to improve MNH care.

The Voucher Scheme has been implemented from 2014 through to 2018 to increase institutional deliveries in Karamoja region. To be prepared against ending donors' support and ensure sustainability, UNICEF has employed a gradual phase-out strategy by focusing sub-counties beyond 10km radius away from health facilities since 2017. Before the exit of the Scheme, UNICEF needs to sensitize both the community and facility before the transition in order to ensure that the community recognizes their role in birth preparedness and takes up the responsibility for transportation.

The use of transport vouchers could be coupled with mobilization of "covert" traditional birth attendants in the rural communities, especially towards shifting their roles from facilitators of unsafe home deliveries to promoters of institutional deliveries. They can be effective in mobilizing mothers to go for ANC and facility delivery.

Health facility workers can potentially work as voucher distributors to achieve efficiencies in scheme management. This is because when facility workers are deployed as voucher distributors, there would be less need to create entirely new voucher management mechanisms in the existing health system, avoiding an increase of administrative cost for voucher management. As the government plans Results Based Financing (RBF) in the health sector, there will be needed to consider how voucher distribution can be included within the regular government facility operations, especially in regard to emergency maternal and newborn transportation. The Transport Voucher Scheme makes a difference in emergency referral transportation. In many cases, facility-based ambulances are lacking, not fueled when needed or even difficult to maintain. Yet, emergency obstetric referral is needed as 15% of deliveries are anticipated as emergency cases for C-section. The voucher distribution by facility workers provides a basis and opportunity for health facilities and districts to budget operational costs for hiring private transporters for emergency referrals.

Another option would be to establish a community-based health insurance (CBHI) scheme. Opportunity exists to

introduce appropriate CBHI schemes now that demand for facility deliveries has gone up in the region. As the transport voucher exits, the CBHI scheme could be initiated to cover transportation, since the quality of services in the facilities has been improved through wider MNH program for Karamoja.

Annex

Annex 1: Districts, sub-counties and villages visited

1. Abim	Lokokor	Lomaran
Alerek	Lomeripus	Lopeeru
Loyoroit Central	Lomerpus	Morunyang
Olem Central	Lorempus	Namatengew
Lotuke	Loroo	Nangolechwa
Adagkolo	Naborokocha	Naseperwa
Adagkolo North	Namosing	Nawoyagum
Adakolo	3. Kaabong	Nayolopak
Obokoloth Central	Kalapata	Kawalokol
Obolokot	Lochoto	Lopeeru
Obolokot Central	Lomonnollo	Loreepu
Odolokot	Lomorangae	Namatengen
Lotukei	Lomoryangae	Lokartwoxi
Adakolo	Moruedikae	Kathile
Magamaba	Moruedikae East	Sangar
Bedata	Moruedikae West	Golopak
Magamaga	Napechokei	Lokial
Bedata	Napeichokey	Lokial
Bedata East	Napeichukei	Lowakus
Bedata South	Kamion	Nagara
Koya Bedata	Kamion Central	Nakwayeiel
Olimlim	Lochoto	Naporukolong
Morulem	Lokiyoto	Narouchom
Odolo East	Moruatap	Sokodokan
Rachkoko	Nachakunet	Sangara
Rachkoko Central	Nawarudo	Lokial
Rackoko Central	Kathile	Lokial
Nyakwae	Kathile	Nagara
Adagkolo North	Kathile East	Nakwayeiel
Agule	Kathile North	Nakwayeiel
Athedar North	Kathile West	Naporukolong
Nyikinyiki	Lemugete	
Nyikinyiki North	Lokariwon	
Nyikinyiki South	Lopelpel	
Okolot	Lopepel	
Teramoth	Nakosowan	
2. Amudat	Narionomoru	
Amudat	Narube	
Alakas	Nasuguru	
Karita	Kathile West	
Cheptapoyo	Kathile	
Kaichom	Kawalokol	
Morunyang	Kabokorio	
Namodo	Kakochi	
Namodoo	Kamadorio	

Annex 2: Vouchers used

Yellow = UGX 5,000/

		
BOOK COPY	MOTHER	TRANSPORTER
RECEIVING SIGNATURE	RECEIVING SIGNATURE	RECEIVING SIGNATURE
Name of Patient: _____	Name of Patient: _____	Name of Patient: _____
Age: _____ Issue Date: _____	Age: _____ Issue Date: _____	Age: _____ Issue Date: _____
Village: _____ Parish: _____	Village: _____ Parish: _____	Village: _____ Parish: _____
Issuing H.U. _____ Sign: _____	Issuing H.U. _____ Sign: _____	Issuing H.U. _____ Sign: _____
Receiving H.U. _____ Sign: _____	Receiving H.U. _____ Sign: _____	Receiving H.U. _____ Sign: _____
Voucher No. _____	Voucher No. _____	Voucher No. _____
		

Yellow = UGX 10,000/

BOOK COPY	MOTHER	TRANSPORTER
Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____	Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____	Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____

Red = UGX 25,000/=

BOOK COPY	MOTHER	TRANSPORTER
Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____	Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____	Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____

BOOK COPY	MOTHER	TRANSPORTER
Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____	Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____	Name of Patient: _____ Age: _____ Issue Date: _____ Village: _____ Parish: _____ Issuing H.U.: _____ Sign: _____ Receiving H.U.: _____ Sign: _____ Voucher No. _____

Blue = UGX 50,000/=

Annex 3: Assessments of ownership of transport means in districts June 2013

Vehicle owners	district								Grand Total
	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Napak		
Church/Mission				1	1	2			4
Government Health Unit ambulance	3			2	3	1	3		12
Government Health Unit other vehicle	1			6		8			15
NGO				2		1			3
NGO Health Unit ambulance	1			1	1	1	1		5
NGO Health Unit other vehicle	1								1
Other government institution (e.g. sub-county, town council, farm, etc.)	1			1	2	12			16
Other private organization				3	1				4
Private company/business organization		5							5
Private individual business person		7		4		17	2		30
Private Individual non-business	1	1	3		3	9			17
unknown		1	5			1			7
Grand Total	8	14	8	20	11	52	6		119

Source: CUAMM Assessment of Availability of Transport options in Karamoja

Annex 4: Transport Voucher Facility Register Distribution List

District	HSD	Sub-counties	HC II	Names HC II	HC III	Names HC III	HC IV	Names HC IV	Hospital	Names Hospitals	Total HU (No. of registers)
Abim	1	6	14	Kiru, Kanu, Amita, Atunga, Koya, Wiilela, Gangming, Awach, Katabok, Adea, Obolokome, Oreta, Pupu kamuya, Opopongo	4	Alerek, Orwamuge, Morulem, Nyakwae	0		1	Abim	19
Kaabong	2	14	17	Lokerui, lomeris, lotim, kamion, lokwakaromoe, kaimese, lomodoch, lokanayona, narengepak, lochom, kakamar, pire, lokori, lobalangit, kocholo, st. Jude kapedo, kalimon	8	lokolia, kaabong mission, kalapata, loyoro, kathile, kopoth (sidok), kidepo, kapedo	1	Kareng α	1	Kaabong	27
Napak	1	7	5	Amedek, Nabwal, Apeitolim, Morulinga, Ngoleriet	6	Iriir, Lorengechora, Lokopo, Lopei, Kangole, Lotome	0		1	Matany	12
Nakapiripirit	2	8	8	Karinga, Moruita, Nabulenger, Nakaale, Lomoronyangae, Nabilatuk mission, Nayonae Angikalio, Natirae,	8	Lemsui, Moruita updf, Nakapiripirit, Namalu, Namalu prison, Amaler, Lolachat, Lorengedwat	2	Tokora, Nabilatuk	0		18
Amudat	1	4	2	Alakas, Cheptapoyo	2	Karita, Loroo	0		1	Amudat	5
Kotido	1	6	11	Lokiding, Losakucha, Losilang, Lookorok, Napumpum, Kamoru, Rikitae, Nakwakwa, Lopuyo, (Mobile: Apalopus (kanangorok), Apa Lopama (Lobanya)	7	Kacheri, Kanawat, Lokitelaebe, Karamoja diocese (KDDS?), KDDO, Nakapelimoru, Panyangara, Rengen	1	Kotido	0		19

Moroto	2	6	6	Kakingol, Lopelipel, Kosiroi, Rupa, DMOs Clinic, Nakapelimen	5	Tapac, Loputuk, Nadunget, Army Baracks, Kidepost Pius	0		1	Moroto RRH, Moroto 3 rd Div Filed Hosp?	12
Karamoja	10	51	63		40		4		5		112

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