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Community perceptions towards demand-side incentives to promote institutional delivery in Oyam District, Uganda: A qualitative study

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3 **Community perceptions towards demand-side incentives to promote**
4 **institutional delivery in Oyam District, Uganda: A qualitative study**
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Abstract

Objective: To examine the perceptions of community members and other stakeholders towards the use of baby kits and transport vouchers to improve the utilisation of childbirth services.

Design: A qualitative study.

Setting: Oyam District, Uganda.

Participants: We conducted 10 focus group discussions with 59 women and 55 men, and 18 key informant interviews with local leaders, village health team members, health facility staff, and District Health Management Team members. We analysed the data using qualitative content analysis.

Results: Five broad themes emerged: (1) Context; (2) Community support for the interventions; (3) Health seeking behaviours; (4) Undesirable effects of the interventions; and (5) Implementation issues and lessons learned. Context regarded perceived long distances to health facilities, poverty, high transport costs and its threat to household assets and food security, and poor-quality of services. Regarding community support for the interventions, the schemes were perceived to be acceptable and helpful particularly to the most vulnerable. Transport vouchers were preferred over baby kits, although both interventions were perceived to be necessary. Health seeking behaviours entailed perceived increased utilisation of maternal health services and “bypassing”, promotion of collaboration between traditional birth attendants and formal health workers, stimulation of men’s involvement in maternal health, and increased community awareness of maternal health. Undesirable effects of the interventions included extra workload to health workers, sustainability concerns, and perceived encouragement of births and dependency. Implementation issues included information gaps leading to confusion, mistrust and discontent, transport voucher scheme design; implementation; and payment problems, challenging interactions between health workers and community members, insecurity, and a shortage of baby kits. Community involvement was key to solving the challenges.

Conclusions: The study provides further insights into the implementation of incentive schemes to improve maternal health services utilisation. The findings are relevant for planning and implementing similar schemes in low-income countries.

Strengths and limitations of this study

- We collected data from a wide variety of respondents to ensure a cross-sectional representation of viewpoints.
- Triangulation of the results from different categories of respondents and data collection methods increases the validity of our findings.
- Most key informants were male, which might have led to biases in some of the perceptions elicited.

Introduction

Despite decades of implementing interventions to improve maternal health outcomes, complex and multi-faceted barriers still impede progress to achieve set targets in many low and middle-income countries (LMIC), particularly in sub-Saharan Africa (SSA).¹ This situation contributed significantly to the largely unachieved Millennium Development Goals 4 and 5 in the region.² Numerous barriers to obstetric care still exist in SSA, translating into huge coverage gaps, particularly for services that require regular contacts with the health system.² For instance, in 2016, the coverage of at least four antenatal care (ANC) visits in SSA was 52% compared with the global average of 60%, and that of delivery by a skilled birth attendant was about 50% compared with the global average of 78%.³ These average statistics, however, mask stark inequities defined by region, wealth status, and urban/rural place of residence.²⁻⁴

In the quest for practical solutions, several studies on incentive schemes targeting barriers to utilisation of maternal health services have shown positive results.⁵⁻⁹ However, there is a need for context-sensitive approaches. As illustrations, a study in Kenya reported that some women who purchased service vouchers meant to cover direct healthcare costs did not use them because of high transport costs, which were not considered during the study design.¹⁰ A recent study in South Sudan found that women continued to deliver at home despite the availability of free-of-charge delivery services in their county.¹¹ Interventions designed with inputs from the beneficiary communities are more likely to succeed. Early dialogues involving beneficiary communities before and during the design and implementation of interventions may identify and prioritise the needs of the communities, explore and address potential barriers, and promote community engagement, which may generate a sense of ownership among the beneficiaries.¹²⁻¹⁴

Incentive schemes have become popular in Uganda, with promising results. A recent study has shown that offering Mama kits to pregnant women during facility delivery was associated with perceptions of affordable healthcare. Logistical challenges and inconsistent implementation could, however, undermine the desired outcomes of the intervention.¹⁵ Another study has shown that maternal health vouchers have the potential to increase coverage of services through several pathways, such as strengthening public-private partnerships, which in turn can enhance referral networks and shorten distances to service points for potential users.¹⁶

Oyam district has almost 390,000 inhabitants¹⁷ and is situated in a rural post-conflict region in northern Uganda. The district has high levels of illiteracy, poverty and fertility, but a low family planning uptake. Most of its residents live more than 5 km away from a health facility. The health system is weak and relies on regular support from donors /partners to provide basic services. Moreover, the majority of the health facilities are health centre (HC) IIs with limited capacity to provide maternity services.¹⁸ Consequently, some residents have to travel long distances to access higher quality healthcare services. Some pregnant women are compelled to use nearby health facilities that may be providing low-quality maternity services or to deliver at home without skilled care.¹⁹⁻²¹

Considering the barriers to accessing health services in Oyam District, in 2014, Doctors with Africa CUAMM implemented two demand-side incentive schemes — baby kits and transport vouchers — to improve the utilisation of institutional delivery services. The effects of the interventions have been published.²² This study examines the perceptions of the community members and other stakeholders towards those incentive schemes.

Materials and methods

Design

This qualitative study collected data utilising focus group discussions (FGDs) and key informant interviews (KIIs) to explore perceptions of communities about the use of incentive schemes to promote utilisation of maternal health services in Oyam District. The analysis was performed using the content analysis approach to systematically organise data into a structured format. This study is reported according to the consolidated criteria for reporting qualitative research.²³

Setting

This study was conducted in four sub-counties in Oyam District, where baby kit and transport voucher schemes were implemented by Doctors with Africa CUAMM. Details about the setting, the selection of the sub-counties, and the incentive schemes have been described elsewhere²². In brief, two sub-counties with the lowest institutional delivery coverages in the district were purposively selected after consultations with local authorities. After initiating the schemes, subsequent community dialogues were used to discuss and deal with challenges associated with the interventions.

Transport vouchers were given to pregnant women attending ANC and/or delivering in one of the study sub-counties. The vouchers were meant to improve geographical accessibility to health facilities. In the second study sub-county, baby kits were offered to all pregnant women who delivered at the only health facility in that sub-county. The baby kits were meant to encourage facility delivery while easing the cost of newborn care. Two comparable sub-counties were selected as controls.²² Based on the findings, we extended the transport vouchers to the two control sub-counties in 2016 for three more years, whereas, the baby kits were phased out. Thus, the interventions were ongoing at the time of this study.

Participants and sampling

Participants of FGDs consisted of women and their male partners who utilised maternal health services in 2015/2016. These participants were purposively selected through multiple approaches, including face-to-face invitations with the help of village health team (VHT) members, phone calls, and invitation letters. Participants of KIIs were identified through snow-balling and consisted of people considered to be knowledgeable about maternal health service delivery in the study sub-counties or district. They included sub-county chiefs, midwives, health facility in-charges, a politician, VHT focal persons, and members of the District Health Management Team (DHMT). There were no refusals or drop-outs during the study.

Data collection

Data were collected in 2015/2016 utilising pretested and refined open-ended interview guides (Supplementary file 1) by a team of research assistants trained on how to facilitate FGDs and conduct KIIs. The team consisted of a moderator, a translator, an interviewer, a note-taker, and an observer — all conversant with the local language and culture. They were supervised by the principal investigator (WM). Eight out of ten FGDs and sixteen out of eighteen interview sessions were audio recorded. For technical challenges, only field notes were taken for the remaining FGDs and KIIs. FGDs lasted 90-120 minutes while the KIIs lasted 30-40 minutes.²⁴ There were no repeat interviews. Data saturation was achieved when participants had nothing more to say upon probes from the data collectors. We were unable to return transcripts to participants for comments due to logistical challenges.

Data were collected at locations that were considered most convenient by the participants. As most participants of the FGDs were from distant villages, data were collected at health centres. Only one of the men's FGDs was conducted at a trading centre proposed by the participants. At the HCs, a room was allocated to the research team for the discussions and interviews. Since the venues were reserved for the exclusive use by the research team on the selected days, there were no interruptions from other persons. Similarly, KIIs with facility in-charges, midwives, and VHT members were conducted at health centres. Other key informants were interviewed in their respective offices.

This study included 10 FGDs (5 for each gender) consisting of 114 participants, and 18 KIIs (Fig 1). Twelve of the key informants were male.

Fig 1. The number of focus groups discussions, key informant interviews, and participants. FGDs: focus group discussions; KIIs: key informant interviews; HCs: health centres; TC: trading centre; HF: health facility; DHMT: district health management team; VHTs: village health teams; TBAs: traditional birth attendants.

Data analysis

All the audio-recorded interviews and FGDs were transcribed verbatim and translated to English, where applicable, by a professional translator. Field notes, all taken in English, were edited at the end of each day of data collection and typed into a Word document. The transcripts were then cross-checked with the field notes. The study team read through the transcripts, and field notes several times and identified emerging themes. Data were coded by two of the authors (WM and CW) using NVivo 11 (QSR International, Melbourne, Australia). This involved setting up a list of the pre-identified themes in NVivo, coding segments of the text that corresponded to the theme, and updating the list as new themes emerged during coding. Differences between the coders were resolved by consensus. After completing the coding process, segments of text under each theme were then summarised to provide an overview of the content relating to that specific theme. Related themes were categorised into broader themes. We performed triangulation of data sources and methods by comparing information from different sources (categories of respondents) and different data collection methods (KIIs and FGDs). We captured quotations from the participants to illustrate a typical response.

Ethical considerations

This study was approved by Lacor Hospital Research and Ethical Review Committee and registered by the Uganda National Council for Science and Technology (UNCST filed Ref #: SS 4252). The study was also approved by the local authorities in Oyam District. All participants provided written informed consent. For illiterate participants, this was done in the presence of a witness. Each participant received a transportation cost refund.

Patient and public involvement

Patients and/or the public were not involved in setting the research questions and in the design and implementation of the study.

Results

Table 1 displays the characteristics of study participants. Overall, 81% of the participants were 20-49 years; about half (50.8%) were male; 71.2% were married and 40% had no formal education. Most key informants were male (66.7%), with at least secondary education (83.3%), and civil servants (72.2%). On the other hand, slightly more than half (51.8%) of the

participants for the FGDs were female; 46.5% had no formal education, and 64% were farmers.

Table 1. Characteristics of study participants, stratified by FGDs and KIIs

Characteristics	FGDs N=114, n (%)	KIIs N=18, n (%)	Total N=132, n (%)
Gender			
Male	55 (48.2%)	12 (66.7%)	67 (50.8%)
Female	59 (51.8%)	6 (33.3%)	65 (49.2%)
Age category			
<20 years	20 (17.5%)	0 (0%)	20 (15.2%)
20-49 years	93 (81.6%)	14 (77.8%)	107 (81.0%)
50-60 years	1 (0.9%)	4 (22.2%)	5 (3.8%)
Education level			
No formal education	53 (46.5%)	0 (0%)	53 (40.2%)
Primary	41 (36.0%)	0 (0%)	41 (31.0%)
Secondary	20 (17.5%)	15 (83.3%)	35 (26.5%)
Tertiary	0 (0%)	3 (16.7%)	3 (2.3%)
Marital status			
Single	9 (7.9%)	3 (16.7%)	12 (9.1%)
Married	80 (70.2%)	14 (77.8%)	94 (71.2%)
Divorced/Separated	25 (21.9%)	1 (5.5%)	26 (19.7%)
Occupation			
Unemployed	12 (10.5%)	0 (0%)	12 (9.1%)
Farmer	73 (64.0%)	3 (16.7%)	76 (57.6%)
Petty trader	25 (21.9%)	2 (11.1%)	27 (20.4%)
Civil servant	4 (3.5%)	13 (72.2%)	17 (12.9%)

FGDs: focus group discussions; KIIs: key informant interviews

This study exposed a range of issues regarding the perceptions of the community on the use of transport vouchers and baby kits to promote utilisation of maternal health services. We identified five broad themes: (1) Context; (2) Community support for the interventions; (3) Health seeking behaviours; (4) Undesirable effects of the interventions; and (5) Implementation issues and lessons learned. Table 2 summarises the main findings under each broad theme and minor theme.

Table 2. A summary of perceptions towards incentives to promote institutional deliveries

Coding tree	Key findings
1.0. Context	
1.1. Geographical inaccessibility and poverty	Long distances to health facilities and remoteness of some villages. Lack of reliable means of transportation. Transport cost to health facilities imposed a heavy financial burden, led to the loss of household assets, and precipitated household food insecurity. Poverty was the underlying factor.
1.2. Poor quality and inadequate health services	HC IIs, which served a majority of the community members, were perceived to be providing poor quality and inadequate health services
2.0. Community support for the interventions	
2.1. Acceptability and impact of the interventions	Incentives perceived to be reducing maternal and newborn deaths and improving health-seeking behaviours. Interventions perceived to be helpful particularly to the most vulnerable and poor women.
2.2. The need to scale up the incentive schemes	The interventions need to be scaled up to cover the entire district to achieve district-wide increased utilisation of maternal health services.
2.3. Preferred intervention	Transport vouchers preferred over baby kits. However, simultaneous implementation of the two interventions was necessary given the high level of poverty and barriers to access health service in the district.
3.0. Health seeking behaviours	
3.1. Utilisation of antenatal, delivery and referral services	The interventions were perceived to have increased the number of ANC attendance and institutional deliveries. The transport voucher system facilitated efficient referral of women in need of emergency obstetric care to the HC IV and the hospital.
3.2. Bypassing resident health facilities in favour of intervention facilities	The incentives encouraged some women in the neighbouring sub-counties to by-pass health facilities in their own sub-counties for services at health centres in the intervention sub-counties.
3.3. Home deliveries and changing roles of traditional birth attendants	Transport vouchers were perceived to have encouraged some TBAs to escort pregnant women to HCs thereby reducing the number of home deliveries.
3.4. Men's involvements in maternal and newborn healthcare	The incentives motivated men to transport their partners to health facilities for ANC and delivery and to participate in birth preparedness.
3.5. Community health awareness	Health information and education associated with the interventions increased the community's maternal health awareness.
4.0. Perceived undesirable effects of incentives	
4.1. Extra workload for health workers and beyond	Increased utilisation of maternal health services led to an increased workload for health workers and transporters. Concerns over the sustainability of the workloads.
4.2. Sustainability of the interventions	Concerns about the sustainability of the interventions beyond the project period.
4.3. Encouraging "production" of more children	Interventions could encourage more births. Family planning messages not included in the interventions.
4.4. Encouraging dependency	Long-term use of the interventions could encourage dependency.
5.0. Implementation issues and lessons learned	
5.1. Information gaps and consequences	Information gaps during the implementation of interventions leading to confusion, mistrust and discontent among users and transporters.
5.2. Transport voucher design, implementation and payment issues	Transport vouchers designed in English yet most beneficiaries were illiterate. Uncooperative transporters who demanded immediate refunds instead of monthly refunds, delayed refunds, overcharging at night, double payments, and the preferred costing method (negotiable price vs flat rate).
5.3. Insecurity and effects on transport voucher system	Refusal by some transporters to operate at night because of insecurity. Overcharging to 'compensate' for a perceived increased insecurity risk at night.
5.4. Challenging interactions between some health workers and community members	Poor attitudes of some health workers towards transporters and women and their partners. Some community leaders lost interest in the interventions because of unfriendly behaviours of some midwives.
5.5. Shortage of baby kits	Shortages of baby kits. Some women had to make repeat visits to the facility to collect their kits.
5.6. Community involvement addressed implementation challenges	Community dialogues were useful in addressing implementation challenges.

Context

Geographical inaccessibility and poverty

Geographical inaccessibility to health facilities was a major problem in the district. Individuals living in remote and isolated areas had to walk long distances or use bicycles to reach health facilities. Lack of reliable means of transportation exacerbated the problem of geographical inaccessibility.

“... some villages are quite isolated, and the distance is very far away, and sometimes we don't have even a bicycle to send women to the health centres for help, for these reasons we feel that the interventions are extremely helpful.”

(Women, FGD participants, Amwa HC II)

“Most pregnant women who come to deliver here come from places where it is not easy to access transport.”

(Male, KII participant, Alao HC II)

The cost of transport to health facilities imposed a heavy financial burden on the residents. In addition, it led to the loss of household assets and precipitated household food insecurity, as households were forced to sell whatever they owned to carter for transportation costs to health facilities. The most affected households were the poorer ones and those located in remote and hard to reach areas.

“...transport in our area is very expensive, especially in the night when transporters overcharge.”

(Men, FGD participants, Agulurude HC III)

“These [the incentives] are good initiatives because they save some household food and assets like chicken or goats from being sold during the period of labour and delivery.”

(Men, FGD participants, Amwa HC II)

Poor quality and inadequate health services

Geographically, most of the communities were served by HC IIs, which were perceived to be providing poor quality and inadequate health services due to their limited service delivery capacity.

“Some sub-counties are remote with bigger populations, yet they get few health services.”

(Men, FGD participants, Ngai HC III)

“Iceme sub-county is wide with a big population without proper health services.”

(Men, FGD participants, Atipe HC II)

Community support for the interventions

Acceptability and impact of the interventions

There were generally positive sentiments about the incentive schemes. The schemes were perceived to be reducing maternal and newborn deaths and improving health-seeking behaviours in the district. They were also perceived to be helpful particularly to the most vulnerable and poor women, such as single mothers.

“I think it [baby kit] is very useful because it is helping us. Sometimes we do not have enough money to buy these things. Mothers are happy with the basin, soap and cloth to take care of their babies.”

(Female, KII participant, Ngai Sub-County)

1
2
3 *“Single mothers will get help since the voucher facilitates delivery at the health*
4 *facility.”*

5 (Men, FGD participants, Amwa HC II)
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7

8 **The need to scale up the incentive schemes**

9 Owing to the prevailing barriers to utilisation of maternal health services in the district,
10 participants felt that the interventions should be scaled up district-wide, as illustrated below.

11 *“We want to have a district-wide coverage, which can also be recognisable at the*
12 *national level, not just in Ngai sub-County. Because by scaling up to other sub-*
13 *counties, it will be very easy to increase delivery in the facilities, so even the district*
14 *coverage will go up.”*

15 (Male, KII participant, Ngai HC III)
16

17 *“For us, we move around the district [for trade] and when we are in [labour] pain,*
18 *maybe we are in a different sub-county, so we prefer the whole district.”*

19 (Women, FGD participants, Ngai HC III)
20
21

22 **Preferred intervention**

23 Although a majority of the respondents preferred transport vouchers over baby kits, due to
24 poverty and the geographical inaccessibility to health facilities, simultaneous use of the two
25 interventions was perceived to be necessary to improve the utilisation of maternal health
26 services.

27 *“The vouchers are very helpful to us, and with baby kits, we don’t have to buy the*
28 *equipment. So, we need the two schemes.”*

29 (Women, FGD participants, Agulurude HC III)
30
31

32 **Health seeking behaviours**

33 **Utilisation of maternal health services**

34 The interventions were perceived to have increased the use of ANC and institutional delivery
35 services in the intervention areas.
36

37 *“Since the beginning of the implementation of the baby kits scheme in the facility, the*
38 *number of deliveries per month has fast increased. Some of these mothers come just*
39 *for ANC, but while here, they become aware that they are in labour. Moreover, some*
40 *of them come without anything, so the presence of the baby kits in the facility helps*
41 *them a lot. In addition, it encourages them to come to deliver here in the unit.”*

42 (Male, KII participant, Ngai HC III)
43

44 The increased utilisation of maternal health services in the study sub-counties might have
45 resulted from the incentives themselves and from the community mobilisation that was
46 associated with the implementation of the incentive schemes.

47 *“We have seen a real increase in the utilisation of ANC and deliveries in these*
48 *facilities. Even the advocacy within the community using the VHTs, the midwives, the*
49 *peer mothers themselves has increased, so it has created awareness and knowledge*
50 *that facility deliveries are best and attending antenatal care is good.”*

51 (Male, KII participant, Member of Oyam DHMT)
52
53

54 The transport voucher system was perceived to have increased referrals by facilitating
55 transport of women to the nearest health facilities or to the referral centres for the
56 management of pregnancy and labour-related complications.
57
58

1
2
3 *“The transport voucher is good for immediate transportation and management of*
4 *pregnancy-related complications.”*

5 (Men FGD participants, Amwa HC II)

6 *“In the past, they had problems to go to Anyeke HC IV, but now the coupon [transport*
7 *voucher] is also helping them a lot with the referral system.”*

8 (Female, KII participant, Member of Oyam District Local Government)
9

10 **‘Bypassing’ resident health facilities in favour of intervention facilities**

11 The incentives were perceived to have encouraged some women in the neighbouring sub-
12 counties to by-pass health facilities in their resident sub-counties for services at health centres
13 in the intervention sub-counties.

14
15 *“...we have mothers coming from the neighbouring sub-counties, like Abok. You also*
16 *find someone coming from Abok leaving the HCs there and coming to Ngai here*
17 *thinking she will go back with something. Maybe you could do it in all the sub-*
18 *counties so that they can deliver also from there because most of them come here*
19 *because of the baby kits.”*

20 (Female, KII participant, Ngai HC III)
21

22 *“We know some mothers who travel from other sub-counties to come here [Acaba*
23 *sub- county] because of the vouchers. If they also have the vouchers there, it will be*
24 *better.”*

25 (Women, FGD participants, Atipe HC II)
26

27 **Changing roles of traditional birth attendants**

28 The voucher system was perceived to have promoted positive collaboration between some
29 TBAs and HCs resulting in a reduction in home deliveries. Following dialogues with some
30 community leaders and health workers, some TBAs were happy to receive incentives and in
31 return refer and escort pregnant women to the health centres for childbirth instead of assisting
32 them to deliver at home.

33
34 *“With this programme, even some TBAs are escorting pregnant mothers to the health*
35 *centre.”*

36 (Women, FGD participants, Atipe HC II)
37

38 **Men’s involvement in maternal and newborn healthcare services**

39 Transport vouchers motivated men to transport or escort their wives to health facilities for
40 ANC and delivery, and to participate in birth preparedness.

41 *“The voucher system has encouraged husbands to transport their wives to the nearest*
42 *HCs for ANC and delivery.”*

43 (Men, FGD participants, Ngai, Abere Trading Centre)

44 *“They [interventions] motivate couples from the period of conception to delivery to*
45 *actively seek health services.”*

46 (Men, FGD participants, Amwa HC II)
47

48 **Community health awareness**

49 Health information and education messages associated with the baby kits and transport
50 voucher schemes sensitised the communities and improved community health awareness
51 beyond improving the use of facility delivery services.

52 *“.....the educative message they receive from there [HCs] will make them understand*
53 *the importance of bringing mothers to the health facility. It is mainly important for*
54 *men. Secondly, they spread the message about what they received to the community.”*

55 (Male, KII participant, Myene Sub-County)
56
57
58
59

Perceived undesirable effects of the incentives

Extra workload for health workers and beyond

The interventions increased utilisation of maternal health services as well as the workload of transporters and health workers. Whereas this was perceived to be a good effect for transporters, it led to overwork and stress among health workers. To cope with the situation, it was necessary to increase the number of staff working in the facilities implementing the interventions.

“We need an additional midwife and regular supplies to meet the workload.”

(Female, KII participant, Atipe HC II)

“In terms of human resources, the [number of] health staff is not enough; it makes an overwork. The workload has increased, giving stress. The midwives in those health facilities are working alone, and current workloads are not sustainable.”

(Male KII participant, Member of Oyam DHMT)

Sustainability of the interventions

There were concerns about the sustainability of the interventions and their effects beyond the funding period.

“The biggest challenge for me is the issue of sustainability. We are dealing with vulnerable and poor people, and we are giving it like a hand out; so, the greatest challenge is the issue of sustainability. When the programme stops, are we able to sustain it?”

(Male, KII participant, Member of Oyam DHMT)

“The bad part is the sustainability because when people are used to certain things, when they are used to gifts, you need to maintain it.”

(Male, KII participant, Agulurude HC III)

Encouraging “production” of more children

Considering the low family planning uptake and the high fertility rate in the district, some leaders were concerned that the interventions could encourage reproduction.

“You know how much we have advocated for family planning, but it is still the second-lowest activity in the district, so the rate of reproduction is too high.”

(Female, KII participant, Oyam District Local Government)

“...the family planning messages are not included in the intervention because sometime this intervention could be a motivating factor to produce more children.”

(Male, KII participant, Loro Sub- County)

Encouraging dependency

Although the interventions were considered useful in the short term, there were concerns that long-term implementation would encourage dependency in the community.

“It is a useful system, but if the initiative continues the community will become too much dependent on NGOs. I think it should be stopped after some time because it will encourage dependency among our community.”

(Male, KII participant, Myene Sub- County)

Improving the socio-economic status of the community, for example, through setting up income generating activities for women, was a potential solution to dependency.

“I think that after delivering, women should be encouraged to have another source of income to take care of the baby, so that in case incentives will not be there, they will be able to go to the facility even without vouchers.”

(Male, KII participant, Loro Sub- County)

Implementation issues and lessons learned

Information gaps and consequences

Information gaps, mainly at the start of the interventions led to undesirable consequences such as confusion, mistrust and discontent, principally regarding payment of the transporters.

“Two transporters of Akaoidebe village were not paid for two times after transporting pregnant mothers to deliver at Ngai HC. One of the transporters was told the money was only paid to transporters who use motorbikes to transport mothers, not bicycles, and the other transporter was told that he delayed and so the organisation took back the money. All major complains are on staff attitudes: bad language and refusal to pay money.”

(Men, FGD participants, Abere Trading Centre, Ngai)

“The staff concerned with the payment of the vouchers are reluctant to pay the transporters even after the time expected has passed.”

(Men, FGD participants, Agulurude HC III)

Transport voucher design, implementation and payment issues

The implementation of the transport voucher system was associated with several issues, primarily about the amount of money to be paid and the timing of refunds. The vouchers were designed in English, but most beneficiaries could not read English. Some transporters were uncooperative and demanded immediate refunds instead of monthly refunds according to the voucher system guidelines. Other issues included delayed voucher refunds, overcharging at night, double payments and the preferred method to determine the cost (a negotiable amount vs a flat amount). There was a need for more community sensitisation on the operations of the voucher system.

“From my experience with the local community, the main challenge that we are facing is the management of the money for the refund. Some men who transport patients [pregnant women and mothers] here ask for money immediately even before we have seen the patient, or they ask for money while you are working with other patients, and they do not like to wait.”

(Male, KII participant, Alao HC II)

“Sometimes the transporters are paid twice due to lack of awareness. Some boda bodas ask mothers to pay for fuel to be transported to the health unit and later sign for the voucher refund at the HC.”

(Men, FGD participants, Alao HC II)

Challenging interactions between health workers and community members

Inadequate sensitisation, miscommunication and poor health worker attitudes often resulted in challenging interactions between health workers and community members.

“Some women fear to attend ANC and delivery at the facility because of the aggressive character and unwelcome attitudes of some midwives. The issues with the voucher system have been abandoned by some community members because of the bad attitudes and language used against men and women by the health workers.”

(Men, FGD participants, Abere Trade Centre, Ngai)

“Staff, especially health centre midwives should be trained on how to handle mothers and transporters because there are complaints of harsh treatment.”

(Men, FGD participants, Agulurude HC III)

Insecurity and effects on transport voucher system

Some transporters refused to operate at night because of insecurity. Alternatively, the transporter would overcharge women to ‘compensate’ for the perceived increased insecurity risk at night.

“Some boda bodas don’t like to come to our villages in the night because they are afraid of robbers.”

(Women, FGD participants, Atipe HC II)

“Transporters overcharge mothers, especially at night, when labour occurs.”

(Men, FGD participants, Agulurude HC III & Amwa HC II)

Shortage of baby kits

Increased facility deliveries led to shortages of baby kits and some women had to make repeat visits to the facility to collect their kits.

“For the challenges, let me start from the baby kits. The rate of reproduction is too high, so the demand is still too high, and those things are there, but you find it is not enough.”

(Female, KII participant, Oyam District Local Government)

“Sometimes the midwives tell us that the kits are finished so we have to come and collect them when they bring more.”

(Women, FGD participants, Ngai HC III)

Community involvement addressed implementation challenges

Community meetings provided platforms for open discussions to address implementation challenges such as information gaps, regulation, selection of transporters, adherence to the voucher system guidelines, voucher refund, and personal conduct.

“A copy [records] of the baby kits supplied should be available to the sub-county to guarantee easy monitoring and supervision.”

(Male, KII participant, Ngai Sub-County)

“There should be a clear separation between mothers who pay their transporters immediately and those unable to pay immediately. Mothers who negotiate and pay their transporters before reaching the health facility should later sign for the transport refund to avoid double payment.”

(Men, FGD participant, Abere Trade Centre, Ngai)

“A copy of the voucher given to the person escorting the mother should be translated into Luo language for easy and better understanding.”

(Men, FGD participants, Abere Trading Centre, Ngai)

Discussion

We examined community perceptions on the use of baby kits and transport vouchers to improve the utilisation of facility-based delivery services in Oyam District. We identified five broad themes namely: the context of the study, community support for the interventions, health-seeking behaviours, undesirable effects of the incentives, and lessons learned from the implementation of the incentive schemes.

Context

Geographical inaccessibility to health facilities remains a major problem in the district, and it featured prominently in all discussions and interviews. Many villages were in remote areas that could not be easily accessed due to bad and seasonally unmotorable roads. Residents in such villages often had to travel long distances by foot or on bicycles to access healthcare services. This geographical inaccessibility led to poor utilisation of maternal health services. Distance to health facilities is known to be inversely associated with utilisation of skilled

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3 birth care in SSA.²⁵ Given the high poverty levels in the district, the cost of transport
4 frequently emerged as a barrier to accessing health services. This is consistent with what has
5 been reported in a recent review on barriers to obstetric care access in SSA.²⁶ Transport costs
6 also threatened household food security and asset ownership, further aggravating the poverty
7 status.

8 **Community support for the interventions**

9
10 Participants perceived the incentive schemes to be saving lives by reducing maternal and
11 newborn deaths and improving health-seeking behaviours in the district. This may be more
12 apparent for the transport voucher system, which ensured immediate transport of pregnant
13 women from their homes to the nearest health facility, and onward transfer by an ambulance
14 to the referral facilities for women in need of emergency obstetric care. In many rural
15 settings, considerable delays in reaching health facilities have resulted in avoidable maternal
16 deaths.²⁵ The schemes were also seen to be very helpful to the most vulnerable and
17 disadvantaged groups such as single mothers.²⁷

18
19 The incentives eliminated important barriers to the utilisation of maternal health services
20 thereby promoting the use of these services in the study area. This might explain the mostly
21 positive sentiments about the interventions among the respondents. Understandably, there
22 was a sense of district-wide need for the interventions due to the existence of the above-
23 mentioned barriers in the entire district.

24 **Health seeking behaviours**

25
26 Apart from being perceived to have increased utilisation of maternal health services, the
27 interventions were perceived to have increased referrals and “bypassing” and promoted
28 collaboration between TBAs and formal health workers. Of note, they were also perceived to
29 have stimulated men’s involvement in maternal health and increased community awareness
30 of maternal health issues. These findings are consistent with those of the quantitative study
31 that evaluated the effects of the incentives.²² Notwithstanding, this study provides further
32 insights into the pathways through which the interventions helped to achieve the effects —i.e.
33 through changing the role of TBAs, the involvement of men in maternal health issues, and
34 increased community awareness.

35
36
37 The voucher system promoted unexpected collaboration between some TBAs and formal
38 health workers. TBAs who referred and escorted pregnant women to deliver at the health
39 facilities implementing the voucher system were recognised as ‘transporters’ and received
40 voucher refunds. This collaboration might have contributed to reduced home deliveries.
41 Studies show that TBAs can change their role from attending to home births to promoting
42 institutional childbirth if given the right incentives, training, and a conducive working
43 environment.^{11 28-31} Thus, there is a great potential to achieve higher utilisation of maternal
44 health services in this context through appropriate involvement of TBAs.

45
46 Community health awareness of maternal health issues was perceived to have improved
47 during the implementation of the incentive schemes. The implementation of the incentive
48 schemes was associated with community sensitisation and mobilisation using diverse
49 strategies, individuals, and community structures. These included community dialogues, local
50 radio broadcasts, health facilities and health workers, VHT members, transporters, and peer
51 mothers. These measures lead to behavioural changes with communities including husbands
52 of expectant mothers playing more direct roles in the interventions.

Perceived undesirable effects of the incentives

There were concerns about undesirable intervention's effects such as extra workloads for health workers, sustainability, encouraging "production" of more children, and encouraging dependency among communities. By improving utilisation of maternal health services, the interventions increased workloads for transporters, health workers, social workers, and VHT members. Even though transporters experienced increased workload, which translated into more economic gains, some villages had a shortage of transporters, especially at night. Among health workers, midwives were the most affected, as no additional staffs were recruited during the project. In line with our findings, a review has pointed out that demand-side incentive schemes can improve the utilisation of maternal healthcare services but there is need to simultaneously strengthen the supply-side to achieve the desirable outcomes.⁵ Unsustainability of the interventions was a major concern among respondents. Doctors with Africa CUAMM has initiated dialogues with the district local government, health authorities and community leaders to explore ways of mitigating some of the potential untoward effects of the interventions.¹⁴ Furthermore, a study investigating the feasibility of setting up a community health insurance scheme in the district has been conducted.³²

Oyam district has high poverty and fertility levels with a low uptake of family planning services. Consequently, some respondents were concerned that the interventions could motivate "production of more children." A survey conducted in conflict-affected areas of Sudan, northern Uganda and the Democratic Republic of Congo found low knowledge and use of family planning services. Major barriers to family planning use included health system inadequacies, fear of side effects of the methods and insecurity. As a post-conflict setting with high maternal, newborn and child deaths,¹⁸ the desire for large family sizes in Oyam is understandable. Therefore improving maternal and child survival can sustain the demand for family planning services in the district.³³⁻³⁶ Although the incentive schemes were not vertical interventions that needed separate family planning promotion, concerted efforts to strengthen family planning services across the district may resolve the low uptake of family planning services.

There were also concerns that long-term implementation of the interventions could encourage dependency in the communities. In 2013 the district reported a maternal mortality ratio of 500/100,000 live births; one of the highest in the country. Moreover, the district is under-resourced and depends regularly on donors to provide basic services.¹⁸ Therefore, donor supported interventions such as the incentive schemes, which may improve utilisation of maternal health services and reduce maternal and newborn deaths may continue to be a 'necessary evil' until the district can afford the needed services to improve its health indicators.

Implementation issues and lessons learned

A wide range of issues related to the implementation of the schemes emerged. Information gaps led to inadequate sensitisation and miscommunication while poor health worker attitudes resulted in challenging interactions between health workers and community members. Of all these concerns, poor health worker attitudes were the most lamented about. Studies show that fear of being maltreated by health workers constitutes a barrier to utilising facility delivery services.^{37,38} In some communities, health workers were perceived as obstacles to the smooth implementation of the incentive schemes. Hence, it may not be surprising that some community leaders lost interest in the interventions out of frustration. As community involvement gradually strengthened, it encouraged ownership and resulted in communities taking on more direct roles in the regulation and implementation of the voucher system, as has also happened elsewhere.¹²⁻¹⁴ For example, some villages selected and

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3 registered their transporters who were willing to operate within the existing transport voucher
4 guidelines. Because transporters played a central role in the voucher system, many of the
5 implementation issues revolved around them. Hence, having the communities regulating their
6 transporters was a vital achievement that addressed several key issues in operating the
7 voucher system. Community dialogues also provided suggestions to improve the design of
8 the transport voucher system and to phase out baby kits and replace them with vouchers,
9 which were found to be more useful and less costly.
10

11 **Strengths and limitations**

12 The focus group discussions and key informant interviews engaged different categories of
13 study participants and collected a wide range of perceptions to ensure a cross-sectional
14 representation of viewpoints. Triangulation of the results from different categories of
15 respondents and data collection methods increases the validity of our findings. Even though
16 we made efforts to achieve a gender-balanced representation for the KIIs, this was not
17 possible as most key informants were male. This reflects the largely male-dominated society
18 where the study was conducted. This situation might have led to potential biases in some of
19 the perceptions elicited.
20

21 **Conclusions**

22 This study provides further insights into the implementation of incentive schemes to improve
23 maternal health services utilisation in Uganda. To be successful, the design and
24 implementation of such schemes should involve the beneficiary communities at the earliest
25 stage. Moreover, working with beneficiaries and stakeholders can mitigate potentially
26 undesirable effects of such schemes. The findings of this study are relevant for planning and
27 implementing similar schemes in low-income countries.
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34 to Mrs Sarah Awor (district biostatistician), for providing us with data and inputs from the
35 district office.
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40 **References**

- 41
42 1. WHO, The World Bank. Tracking universal health coverage: first global monitoring report:
43 Geneva; 2015 [Available from:
44 http://www.who.int/healthinfo/universal_health_coverage/report/2015/en accessed 10 Dec
45 2017.
- 46 2. WHO, UNICEF. A Decade of Tracking Progress for Maternal, Newborn and Child Survival: The
47 2015 Report Geneva: WHO; 2015 [Available from:
48 http://countdown2015mnch.org/documents/2015Report/Countdown_to_2015_final_report.pdf
49 [f](#) accessed 10 Dec 2017.
- 50 3. UNICEF. Maternal Health Current Status and Update: Antenatal Care New York: UNICEF; 2017
51 [updated Jan 2018. Available from: [https://data.unicef.org/topic/maternal-health/antenatal-](https://data.unicef.org/topic/maternal-health/antenatal-care/#)
52 [care/#](#)
- 53 4. WHO. Skilled Attendance at Birth: Situation and trends Geneva: WHO; 2017 [Available from:
54 http://www.who.int/gho/maternal_health/skilled_care/skilled_birth_attendance_text/en/
55 accessed 15 Dec 2017.
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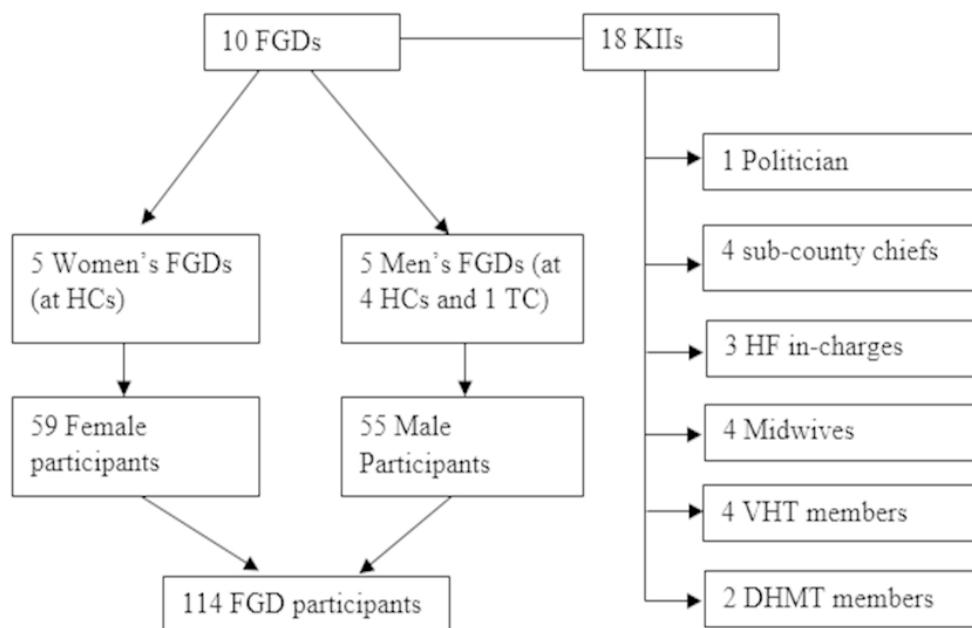
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 - 50
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5. Murray SF, Hunter BM, Bisht R, et al. Effects of demand-side financing on utilisation, experiences and outcomes of maternity care in low- and middle-income countries: a systematic review. *BMC pregnancy and childbirth* 2014;14:30. doi: 10.1186/1471-2393-14-30 [published Online First: 2014/01/21]
6. Ir P, Horemans D, Souk N, et al. Using targeted vouchers and health equity funds to improve access to skilled birth attendants for poor women: a case study in three rural health districts in Cambodia. *BMC pregnancy and childbirth* 2010;10:1. doi: 10.1186/1471-2393-10-1 [published Online First: 2010/01/12]
7. Gopalan SS, Durairaj V. Addressing maternal healthcare through demand side financial incentives: experience of Janani Suraksha Yojana program in India. *BMC health services research* 2012;12:319. doi: 10.1186/1472-6963-12-319 [published Online First: 2012/09/18]
8. Bellows B, Kyobutungi C, Mutua MK, et al. Increase in facility-based deliveries associated with a maternal health voucher programme in informal settlements in Nairobi, Kenya. *Health policy and planning* 2013;28(2):134-42. doi: 10.1093/heapol/czs030 [published Online First: 2012/03/23]
9. Ekirapa-Kiracho E, Waiswa P, Rahman MH, et al. Increasing access to institutional deliveries using demand and supply side incentives: early results from a quasi-experimental study. *BMC international health and human rights* 2011;11 Suppl 1:S11. doi: 10.1186/1472-698x-11-s1-s11 [published Online First: 2011/03/18]
10. Obare F, Warren C, Abuya T, et al. Assessing the population-level impact of vouchers on access to health facility delivery for women in Kenya. *Social science & medicine (1982)* 2014;102:183-9. doi: 10.1016/j.socscimed.2013.12.007 [published Online First: 2014/02/26]
11. Wilunda C, Scanagatta C, Putoto G, et al. Barriers to Institutional Childbirth in Rumbek North County, South Sudan: A Qualitative Study. *PloS one* 2016;11(12):e0168083. doi: 10.1371/journal.pone.0168083 [published Online First: 2016/12/16]
12. Ekirapa-Kiracho E, Namazzi G, Tetui M, et al. Unlocking community capabilities for improving maternal and newborn health: participatory action research to improve birth preparedness, health facility access, and newborn care in rural Uganda. *BMC health services research* 2016;16(Suppl 7):638. doi: 10.1186/s12913-016-1864-x [published Online First: 2017/02/12]
13. Howard-Grabman L, Miltenburg AS, Marston C, et al. Factors affecting effective community participation in maternal and newborn health programme planning, implementation and quality of care interventions. *BMC pregnancy and childbirth* 2017;17(1):268. doi: 10.1186/s12884-017-1443-0 [published Online First: 2017/09/01]
14. Katahoire AR, Henriksson DK, Ssegujja E, et al. Improving child survival through a district management strengthening and community empowerment intervention: early implementation experiences from Uganda. *BMC public health* 2015;15:797. doi: 10.1186/s12889-015-2129-z [published Online First: 2015/08/20]
15. Austin-Evelyn K, Sacks E, Atuyambe L, et al. The promise of Mama Kits: Perceptions of in-kind goods as incentives for facility deliveries in Uganda. *Global public health* 2017;12(5):565-78. doi: 10.1080/17441692.2016.1149597 [published Online First: 2016/03/08]
16. Okal J, Kanya L, Obare F, et al. An assessment of opportunities and challenges for public sector involvement in the maternal health voucher program in Uganda. *Health research policy and systems* 2013;11:38. doi: 10.1186/1478-4505-11-38 [published Online First: 2013/10/22]
17. Uganda Bureau of Statistics (UBoS). National Population and Housing Census: Census 2014 Final Results Kampala: UBOS; 2017 [Available from: <http://www.ubos.org/?s=Final+Results> accessed 3 Jan 2018 2017].
18. Republic of Uganda. Oyam District Local Government Statistical Abstract 2012/13 Kampala: Republic of Uganda; [updated 17 June 2014. Available from: <http://www.ubos.org/statistical-activities/community-systems/district-profiling/district-profiling-and-administrative-records/>].
19. Fisseha G, Berhane Y, Worku A, et al. Distance from health facility and mothers' perception of quality related to skilled delivery service utilization in northern Ethiopia. *International journal of women's health* 2017;9:749-56. doi: 10.2147/ijwh.s140366 [published Online First: 2017/10/19]

20. Pfeiffer C, Mwaipopo R. Delivering at home or in a health facility? health-seeking behaviour of women and the role of traditional birth attendants in Tanzania. *BMC pregnancy and childbirth* 2013;13:55. doi: 10.1186/1471-2393-13-55 [published Online First: 2013/03/02]
21. Titley CR, Hunter CL, Dibley MJ, et al. Why do some women still prefer traditional birth attendants and home delivery?: a qualitative study on delivery care services in West Java Province, Indonesia. *BMC pregnancy and childbirth* 2010;10:43. doi: 10.1186/1471-2393-10-43 [published Online First: 2010/08/13]
22. Massavon W, Wilunda C, Nannini M, et al. Effects of demand-side incentives in improving the utilisation of delivery services in Oyam District in northern Uganda: a quasi-experimental study. *BMC pregnancy and childbirth* 2017;17(1):431. doi: 10.1186/s12884-017-1623-y [published Online First: 2017/12/21]
23. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care : journal of the International Society for Quality in Health Care* 2007;19(6):349-57. doi: 10.1093/intqhc/mzm042 [published Online First: 2007/09/18]
24. Dawson S, Manderson L, Tallo VL. A Manual for the use of Focus Groups. Boston, MA, USA: by International Nutrition Foundation for Developing Countries 1993.
25. Wong KLM, Benova L, Campbell OMR. A look back on how far to walk: Systematic review and meta-analysis of physical access to skilled care for childbirth in Sub-Saharan Africa. *PloS one* 2017;12(9):e0184432. doi: 10.1371/journal.pone.0184432 [published Online First: 2017/09/15]
26. Kyei-Nimakoh M, Carolan-Olah M, McCann TV. Access barriers to obstetric care at health facilities in sub-Saharan Africa—a systematic review. *Systematic reviews* 2017;6(1):110. doi: 10.1186/s13643-017-0503-x [published Online First: 2017/06/08]
27. Kiwanuka SN, Ekirapa EK, Peterson S, et al. Access to and utilisation of health services for the poor in Uganda: a systematic review of available evidence. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 2008;102(11):1067-74. doi: 10.1016/j.trstmh.2008.04.023 [published Online First: 2008/06/21]
28. Rudrum S. Traditional Birth Attendants in Rural Northern Uganda: Policy, Practice, and Ethics. *Health care for women international* 2016;37(2):250-69. doi: 10.1080/07399332.2015.1020539 [published Online First: 2015/02/27]
29. Wilunda C, Dall'Oglio G, Scanagatta C, et al. Changing the role of traditional birth attendants in Yirol West County, South Sudan. *PloS one* 2017;12(11):e0185726. doi: 10.1371/journal.pone.0185726 [published Online First: 2017/11/03]
30. Pyone T, Adaji S, Madaj B, et al. Changing the role of the traditional birth attendant in Somaliland. *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics* 2014;127(1):41-6. doi: 10.1016/j.ijgo.2014.04.009 [published Online First: 2014/06/19]
31. Kyomuhendo GB. Low use of rural maternity services in Uganda: impact of women's status, traditional beliefs and limited resources. *Reproductive health matters* 2003;11(21):16-26. [published Online First: 2003/06/13]
32. Biggeri M, Nannini M, Putoto G. Assessing the feasibility of community health insurance in Uganda: A mixed-methods exploratory analysis. *Social science & medicine (1982)* 2018;200:145-55. doi: 10.1016/j.socscimed.2018.01.027 [published Online First: 2018/02/09]
33. McGinn T, Austin J, Anfinson K, et al. Family planning in conflict: results of cross-sectional baseline surveys in three African countries. *Conflict and health* 2011;5:11. doi: 10.1186/1752-1505-5-11 [published Online First: 2011/07/15]
34. Ouma S, Turyasima M, Acca H, et al. Obstacles to family planning use among rural women in Atiak health center IV, Amuru District, northern Uganda. *East African medical journal* 2015;92(8):394-400. [published Online First: 2015/01/01]
35. Orach CG, Otim G, Aporomon JF, et al. Perceptions, attitude and use of family planning services in post conflict Gulu district, northern Uganda. *Conflict and health* 2015;9:24. doi: 10.1186/s13031-015-0050-9 [published Online First: 2015/08/13]

- 1
2
3 36. Elmusharaf K, Byrne E, O'Donovan D. Social and traditional practices and their implications for
4 family planning: a participatory ethnographic study in Renk, South Sudan. *Reproductive*
5 *health* 2017;14(1):10. doi: 10.1186/s12978-016-0273-2 [published Online First: 2017/01/18]
6 37. Kwagala B. Birthing choices among the Sabiny of Uganda. *Culture, health & sexuality* 2013;15
7 Suppl 3:S401-14. doi: 10.1080/13691058.2013.799232 [published Online First: 2013/06/20]
8 38. Anastasi E, Borchert M, Campbell OM, et al. Losing women along the path to safe motherhood:
9 why is there such a gap between women's use of antenatal care and skilled birth attendance?
10 A mixed methods study in northern Uganda. *BMC pregnancy and childbirth* 2015;15:287.
11 doi: 10.1186/s12884-015-0695-9 [published Online First: 2015/11/06]
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14 **Supplementary file**

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17 **Supplementary file 1. Interview guide for focus group discussions and key informant**
18 **interviews**
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The number of focus groups discussions, key informant interviews, and participants. FGDs: focus group discussions; KIIs: key informant interviews; HCs: health centres; TC: trading centre; HF: health facility; DHMT: district health management team; VHTs: village health teams; TBAs: traditional birth attendants.

72x47mm (300 x 300 DPI)

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3 **Questionnaire for Focus Group Discussions and Key Informants Interviews**
4 **CUAMM Incentives Study, Oyam District**
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8 *Notes for interviewers
9

10 **NB: Please go through the brief notes for interviewers below (page 2) before starting discussions**
11 **or interviews**
12

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15 **Q1. What can you tell us (your general impression) about the Baby kits and Transport vouchers**
16 **that CUAMM implemented in ACABA and NGAI Sub-counties?**
17

18
19 *-explore how they got to know (information) about the interventions, if not covered

20 *-find out the benefits of the interventions (baby kits and transport vouchers), if not covered

21 *-watch for non-verbal clues (signs) and make notes
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26 **Q2. What do you think were some of the challenges or problems with the interventions?**
27

28 *-explore for baby kits, if not covered

29 *-explore for transport vouchers, if not covered

30 *-explore for any other issues

31 *-watch for non-verbal clues (signs) and make notes
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36 **Q3. Please feel free to tell us how we can improve these interventions in the future, considering**
37 **the challenges or problems that you mentioned.**
38

39 *-let them make recommendations or suggestions for improving the interventions

40 *-watch for non-verbal clues (signs) and make notes
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46 **Q4. We implemented (gave out) the baby kits and transport vouchers in 2 of the 12 sub-counties**
47 **in the district because of limited resources. If more resources become available in future, how**
48 **many sub-counties should we consider for scaling up the interventions?**
49

50 *-watch for non-verbal clues (signs) and make notes
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54 **Q5. What are your reasons for your answer to Q4?**
55

56 *-explore the reasons; 1 to a maximum of 5 reasons should be fine,
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59 **THANK YOU VERY MUCH FOR YOUR INPUTS AND TIME!**
60

****Brief guiding points for interviewers**

- ✚ Greet participants and make them comfortable,
- ✚ Introduce yourself,
- ✚ Introduce the purpose of the discussion or interview,
- ✚ Tell them it is **anonymous** (private and confidential)-no personal information will be collected or used to identify them,
- ✚ Tell them about a small incentive (e.g. a transport refund) at the end of the discussion/interview,
- ✚ Introduce the **INFORMED CONSENT FORM AND EXPLAIN CLEARLY, its purpose. If they voluntarily accept to participate then**
- ✚ Kindly ask them to sign or thumbprint (depending on which is applicable) and give them copies to keep,
- ✚ Kindly request their permission to record (take notes), especially if you are using a recorder,
- ✚ **NB: NO INTERVIEW OR DISCUSSION WITHOUT OBTAINING INFORMED CONSENT FIRST,**
- ✚ **For the FGDs the team may consist of three people, i.e. a moderator, a translator and a note taker (recorder),**
- ✚ **The FGDs could last for about one and half to two hours,**
- ✚ **For the Key Informant interviews, the team may include an interviewer, a translator and a note taker (recorder),**
- ✚ **The Key Informant interviews could take about 30-40 minutes to complete,**
- ✚ **Thank participant(s) at the end of the discussion or interview,**
- ✚ **Remember to leave your contact mobile phone number(s), in case it becomes necessary for them to contact you for further information.**

Sources:

- 1) The Focus Group Manual
(<http://apps.who.int/iris/bitstream/10665/41795/1/0963552228.pdf>)
- 2) Key Informant Guide (www.TexasMotherFriendly.org)
- 3) Guidelines for conducting a Focus Group
(https://assessment.trinity.duke.edu/documents/How_to_Conduct_a_Focus_Group.pdf)

Consolidated criteria for reporting qualitative studies: 32-item checklist

No. Item	Guide questions/description	Reported on page
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	Page 7
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	The journal does not require this to be specified. The credentials of the researchers are as follows; WM: PhD, CW: DrPH; MN: MSc; CA: SA: JBO: MPH; EV: MD, MPH; PL: MBChB, MSc; and GP: MD
3. Occupation	What was their occupation at the time of the study?	Page 1 provides information on affiliations. WM, CA, SA, JBO and EV were project staff. PL was the country director. CW was a doctoral candidate, MN was a researcher and GP was the head of operational research
4. Gender	Was the researcher male or female?	MN, CA, EV are female. All the other authors are male.
5. Experience and training	What experience or training did the researcher have?	WM and CW have experience in conducting qualitative studies
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	There was no prior relationship between data collectors and FGD study participants. On the contrary, some of the key informants especially members of the District Health Management Team and health care workers were known to the

		research team members.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Specific information about the interviewer were provided during data collection
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	The interviewers introduced themselves as staff of the NGO CUAMM. They then provided basic information about the study and the intended utility of the findings.
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Pages 6&8
<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 7
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Page 7
12. Sample size	How many participants were in the study?	Page 8
13. Non-participation	How many people refused to participate or dropped out? Reasons?	There were no refusals or drop-outs
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Page 6
15. Presence of non-participants	Was anyone else present	There were no non-participants

	besides the participants and researchers?	
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Pages 9 & 10
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Page 7 and Supplementary 1 file
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	There no repeat interviews
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Page 7
20. Field notes	Were field notes made during and/or after the interview or focus group?	Page 7
21. Duration	What was the duration of the interviews or focus group?	Page 7
22. Data saturation	Was data saturation discussed?	Page 7
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Page 7
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	Page 8
25. Description of the coding tree	Did authors provide a description of the coding tree?	Not provided. Documentation is available upon request.
26. Derivation of themes	Were themes identified in advance or derived from the data?	Page 8
27. Software	What software, if applicable, was used to manage the data?	Page 8
28. Participant checking	Did participants provide feedback on the findings?	This was not done for logistical constraints

<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Pages 11-22.
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Major themes and sub-themes were presented

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Community perceptions on demand-side incentives to promote institutional delivery in Oyam District, Uganda: A qualitative study

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Abstract

Objective: To examine the perceptions of community members and other stakeholders on the use of baby kits and transport vouchers to improve the utilisation of childbirth services.

Design: A qualitative study.

Setting: Oyam District, Uganda.

Participants: We conducted 10 focus group discussions with 59 women and 55 men, and 18 key informant interviews with local leaders, village health team members, health facility staff, and District Health Management Team members. We analysed the data using qualitative content analysis.

Results: Five broad themes emerged: (1) Context; (2) Community support for the interventions; (3) Health seeking behaviours post-intervention; (4) Undesirable effects of the interventions; and (5) Implementation issues and lessons learned. Context regarded perceived long distances to health facilities and high transport costs. Regarding community support for the interventions, the schemes were perceived to be acceptable and helpful particularly to the most vulnerable. Transport vouchers were preferred over baby kits, although both interventions were perceived to be necessary. Health seeking behaviours entailed perceived increased utilisation of maternal health services and “bypassing”, promotion of collaboration between traditional birth attendants and formal health workers, stimulation of men’s involvement in maternal health, and increased community awareness of maternal health. Undesirable effects of the interventions included increased workload for health workers, sustainability concerns, and perceived encouragement to reproduce and dependency. Implementation issues included information gaps leading to confusion, mistrust and discontent, transport voucher scheme design; implementation; and payment problems, poor attitudes of some health workers and poor quality of care, insecurity, and a shortage of baby kits. Community involvement was key to solving the challenges.

Conclusions: The study provides further insights into the implementation of incentive schemes to improve maternal health services utilisation. The findings are relevant for planning and implementing similar schemes in low-income countries.

Strengths and limitations of this study

- We collected data from a wide variety of respondents to ensure a cross-sectional representation of viewpoints.
- Triangulation of the results from different categories of respondents and data collection methods increases the validity of our findings.
- Most key informants were male, which might have led to biases in some of the perceptions elicited.
- The venues for FGDs might have limited the freedom of expression for some participants.

Introduction

Despite decades of implementing interventions to improve maternal health outcomes, complex and multi-faceted barriers still impede progress to achieve set targets in many low and middle-income countries (LMIC), particularly in sub-Saharan Africa (SSA).¹ This situation contributed significantly to the largely unachieved Millennium Development Goals 4 and 5 in the region.² Numerous barriers to obstetric care still exist in SSA, translating into huge coverage gaps, particularly for services that require regular contacts with the health system.² For instance, in 2016, the coverage of at least four antenatal care (ANC) visits in SSA was 52% compared with the global average of 60%, and that of delivery by a skilled birth attendant was about 50% compared with the global average of 78%.³ These average statistics, however, mask stark inequities defined by region, wealth status, and urban/rural place of residence.²⁻⁴

In the quest for practical solutions, several studies on incentive schemes targeting barriers to utilisation of maternal health services have shown positive results.⁵⁻⁹ However, there is a need for context-sensitive approaches. As illustrations, a study in Kenya reported that some women who purchased service vouchers meant to cover direct healthcare costs did not use them because of high transport costs, which were not considered during the study design.¹⁰ A recent study in South Sudan found that women continued to deliver at home despite the availability of free-of-charge delivery services in their county.¹¹

Interventions designed with inputs from the beneficiary communities are more likely to succeed. Early dialogues involving beneficiary communities before and during the design and implementation of interventions may identify and prioritise the needs of the communities, explore and address potential barriers, and promote community engagement, which may generate a sense of ownership among the beneficiaries.¹²⁻¹⁴

Incentive schemes have become popular in Uganda, with promising results. A recent study has shown that offering Maama kits to pregnant women during facility delivery was associated with perceptions of affordable healthcare. However, logistical challenges and inconsistent implementation could undermine the desired outcomes of the intervention.¹⁵ Another study has shown that maternal health vouchers have the potential to increase coverage of services through several pathways, such as strengthening public-private partnerships, which in turn can enhance referral networks and shorten distances to service points for potential users.¹⁶

Oyam district has almost 390,000 inhabitants¹⁷ and is situated in a rural post-conflict region in northern Uganda. The district has high levels of illiteracy, poverty and fertility, but a low family planning uptake. In 2016, 42% of women delivered in a health facility according to routine data, whereas the region-wide (Lango) contraceptive prevalence rate was 41% according to a household survey.¹⁸ Most of its residents live more than 5 km away from a health facility. The health system is weak and relies on regular support from donors/partners to provide basic services. Moreover, the majority of the health facilities are health centre (HC) level two with limited capacity to provide maternity services.¹⁹ Consequently, some residents have to travel long distances to access higher quality healthcare. Some pregnant women are compelled to use nearby health facilities that may be providing low-quality maternity services or to deliver at home without skilled care.²⁰⁻²²

Considering the barriers to accessing health services in Oyam District, in 2014, Doctors with Africa *Collegio Universitario Aspiranti e Medici Missionari* (CUAMM), hereafter referred to as CUAMM, implemented two demand-side incentive schemes — baby kits and transport vouchers — to improve the utilisation of institutional delivery services. A study on the effects

of the interventions has been published.²³ The present study examines the perceptions of the community members and other stakeholders on those incentive schemes.

Materials and methods

Design

This qualitative study collected data utilising focus group discussions (FGDs) and key informant interviews (KIIs). FGDs were used to explore the general perceptions of community members whereas KIIs were used to gather in-depth information from other stakeholders and to triangulate some of the information gathered through FGDs. Data were analysed using qualitative content analysis approach, which is an efficient method to analyse a large volume of textual data, yielding a condensed and broad description of phenomenon inform of structured concepts or categories.²⁴ We report this study according to the consolidated criteria for reporting qualitative research.²⁵

Setting

This study was conducted in four sub-counties in Oyam District, where baby kit and transport voucher schemes were implemented by CUAMM. Details about the setting, the selection of the sub-counties, and the incentive schemes have been described elsewhere.²³ In brief, two sub-counties with the lowest institutional delivery coverages in the district were purposively selected after consultations with local authorities. Community dialogues played a crucial role in the design, implementation and improvement of the interventions. The dialogues were open gatherings involving local community leaders, members of the village health teams, social workers, the research team, the project staff of CUAMM and other stakeholders. The meetings also availed an opportunity to provide feedback to the community on the interventions and to highlight the challenges that needed solutions from the community. The discussions yielded suggestions to improve the interventions, particularly the transport voucher system, and to phase out the baby kits.

Transport vouchers were given to pregnant women attending ANC and/or delivering in one of the study sub-counties. The vouchers were meant to improve geographical accessibility to health facilities. In the second study sub-county, baby kits were offered to all pregnant women who delivered at the only health facility in that sub-county. The baby kits were meant to encourage facility delivery while easing the cost of newborn care. Each baby kit consisted of a plastic basin, a bar of soap, a polythene bag, 1/2 kg of sugar, and a piece of cotton cloth for wrapping the baby. Each voucher was valued at US\$ 4.²³ Two comparable sub-counties were selected as controls.²³ Based on the findings, we extended the transport vouchers to the two control sub-counties in 2016 for three more years, whereas, the baby kits were phased out. Thus, the interventions were ongoing at the time of this study.

Participants and sampling

Participants of FGDs consisted of women who utilised maternal health services in 2015/2016 and their male partners. These participants were purposively selected through multiple approaches, including face-to-face invitations with the help of village health team (VHT) members, phone calls, and invitation letters. Participants of KIIs were identified through snow-balling and consisted of people considered to be knowledgeable about maternal health service delivery in the study sub-counties or district. They included sub-county chiefs, midwives, health facility in-charges, a politician, VHT focal persons, and members of the District Health Management Team (DHMT). There were no refusals or drop-outs during the study.

Data collection

Data were collected in 2015/2016 utilising pretested and refined open-ended interview guides (Supplementary file 1) by a team of research assistants trained on how to facilitate FGDs. The FGD data collection team consisted of a moderator, a translator, a note-taker— all conversant with the local language and culture —and two of the investigators (WM and MN). The investigators supervised data collection and followed the discussions through the translator. WM and MN conducted all KIIs in English. For technical challenges, eight out of ten FGDs and sixteen out of eighteen interview sessions were audio recorded and field notes were taken for the rest. FGDs lasted 90-120 minutes while the KIIs lasted 30-40 minutes.²⁶ There were no repeat interviews. Data saturation was achieved when participants had nothing more to say upon probes from the data collectors. We were unable to return transcripts to participants for comments due to logistical challenges.

Data were collected at locations that were considered most convenient by the participants. As most participants of the FGDs were from distant villages, data were collected at HCs. Only one of the men's FGDs was conducted at a trading centre proposed by the participants. At the HCs, a room was allocated to the research team and the discussions and interviews were conducted behind closed doors. Since the venues were reserved for the exclusive use by the research team on the selected days, there were no interruptions from intruders including health facility staff. The FGD at the trading centre was also conducted in a venue that ensured privacy. Similarly, KIIs with facility in-charges, midwives, and VHT members were conducted at health centres. Other key informants were interviewed in their respective offices.

This study included 10 FGDs (5 for each gender) consisting of 114 participants, and 18 KIIs (Fig 1). Twelve of the key informants were male.

Data analysis

All the audio-recorded interviews and FGDs were transcribed verbatim and translated to English, where applicable, by a professional translator. Field notes, all taken in English, were edited at the end of each day of data collection and typed into a Word document. The transcripts were then cross-checked with the field notes. Data were coded by two of the authors (WM and CW) using NVivo 11 (QSR International, Melbourne, Australia). Qualitative content analysis approach suggested by Gläser & Laudel²⁷ was used. This approach, which is arguably more efficient and open than other alternatives,²⁷ involved reading through transcripts and field notes several times to identify emerging themes, setting up a list of the pre-identified themes in NVivo, coding segments of the text that corresponded to the theme, and updating the list as new themes emerged during coding. Differences between the coders were resolved by consensus. After completing the coding process, segments of text under each theme were then summarised to provide an overview of the content relating to that specific theme. Related themes were categorised into broader themes. We performed triangulation of data sources and methods by comparing information from different sources (categories of respondents) and different data collection methods (KIIs and FGDs). We captured quotations from the participants to illustrate typical responses.

Ethical considerations

This study was approved by Lacor Hospital Research and Ethical Review Committee and registered by the Uganda National Council for Science and Technology (UNCST filed Ref #: SS 4252). The study was also approved by the local authorities in Oyam District. All

participants provided written informed consent. For illiterate participants, this was done in the presence of a witness. Each participant received a transportation cost refund.

Patient and public involvement

Patients and/or the public were not involved in setting the research questions and in the design and implementation of the study.

Results

Table 1 displays the characteristics of study participants. Overall, 81% of the participants were aged 20-49 years; about half (50.8%) were male; 71.2% were married and 40% had no formal education. Most key informants were male (66.7%), with at least secondary education (83.3%), and civil servants (72.2%). On the other hand, slightly more than half (51.8%) of the participants for the FGDs were female; 46.5% had no formal education, and 64% were farmers.

Table 1. Characteristics of study participants, stratified by FGDs and KIIs

Characteristics	FGDs N=114, n (%)	KIIs N=18, n (%)	Total N=132, n (%)
Gender			
Male	55 (48.2)	12 (66.7)	67 (50.8)
Female	59 (51.8)	6 (33.3)	65 (49.2)
Age category			
<20 years	20 (17.5)	0 (0)	20 (15.2)
20-49 years	93 (81.6)	14 (77.8)	107 (81.0)
50-60 years	1 (0.9)	4 (22.2)	5 (3.8)
Education level			
No formal education	53 (46.5)	0 (0)	53 (40.2)
Primary	41 (36.0)	0 (0)	41 (31.0)
Secondary	20 (17.5)	15 (83.3)	35 (26.5)
Tertiary	0 (0)	3 (16.7)	3 (2.3)
Marital status			
Single	9 (7.9)	3 (16.7)	12 (9.1)
Married	80 (70.2)	14 (77.8)	94 (71.2)
Divorced/Separated	25 (21.9)	1 (5.5)	26 (19.7)
Occupation			
Unemployed	12 (10.5)	0 (0)	12 (9.1)
Farmer	73 (64.0)	3 (16.7)	76 (57.6)
Petty trader	25 (21.9)	2 (11.1)	27 (20.4)
Civil servant	4 (3.5)	13 (72.2)	17 (12.9)

FGDs: focus group discussions; KIIs: key informant interviews

This study exposed a range of issues regarding the perceptions of the community on the use of transport vouchers and baby kits to promote utilisation of maternal health services. We identified five broad themes: (1) Context; (2) Community support for the interventions; (3) Health seeking behaviours post-intervention; (4) Undesirable effects of the interventions; and (5) Implementation issues and lessons learned. Table 2 summarises the main findings under each broad theme and minor theme.

Table 2. A summary of perceptions towards incentives to promote institutional deliveries

Coding tree	Key findings
1.0. Context	
1.1. Geographical inaccessibility	Long distances to health facilities and remoteness of some villages. Lack of reliable means of transportation and high transportation costs.
1.2. Poor quality and inadequate health services	HC IIs, which served a majority of the community members, were perceived to be providing poor quality and inadequate health services
2.0. Community support for the interventions	
2.1. Acceptability and impact of the interventions	Incentives perceived to be reducing maternal and newborn deaths and improving health-seeking behaviours. Incentives also perceived to have reduced a financial burden on families, which prevented loss of household assets and household food insecurity. Interventions perceived to be helpful particularly to the most vulnerable and poor women.
2.2. The need to scale up the incentive schemes	The interventions need to be scaled up to cover the entire district to achieve district-wide increased utilisation of maternal health services.
2.3. Preferred intervention	Transport vouchers preferred over baby kits. However, simultaneous implementation of the two interventions was necessary given the high level of poverty and barriers to access health service in the district.
3.0. Health seeking behaviours post-intervention	
3.1. Increased utilisation of maternal health services	The interventions were perceived to have increased the number of ANC attendance and institutional deliveries. The transport voucher system facilitated efficient referral of women in need of emergency obstetric care to the HC IV and the hospital.
3.2. Bypassing resident health facilities in favour of intervention facilities	The incentives encouraged some women in the neighbouring sub-counties to by-pass health facilities in their own sub-counties for services at health centres in the intervention sub-counties.
3.3. Home deliveries and changing roles of traditional birth attendants	Transport vouchers were perceived to have encouraged some TBAs to escort pregnant women to HCs thereby reducing the number of home deliveries.
3.4. Men's involvements in maternal and newborn healthcare	The incentives motivated men to transport their partners to health facilities for ANC and delivery and to participate in birth preparedness.
3.5. Community health awareness	Health information and education associated with the interventions increased the community's maternal health awareness.
4.0. Perceived undesirable effects of incentives	
4.1. Increased workload for health workers and beyond	Increased utilisation of maternal health services led to an increased workload for health workers and transporters. Concerns over the sustainability of the workloads.
4.2. Sustainability of the interventions	Concerns about the sustainability of the interventions beyond the project period.
4.3. Encouraging "increased fertility"	Interventions could encourage more births. Family planning messages not included in the interventions.
4.4. Encouraging dependency	Long-term use of the interventions could encourage dependency.
5.0. Implementation issues and lessons learned	
5.1. Information gaps and consequences	Information gaps during the implementation of interventions leading to confusion, mistrust and discontent among users and transporters.
5.2. Transport voucher design, implementation and payment issues	Transport vouchers designed in English yet most beneficiaries were illiterate. Uncooperative transporters who demanded immediate refunds instead of monthly refunds, delayed refunds, overcharging at night, double payments, and the preferred costing method (negotiable price vs flat rate).
5.3. Insecurity and effects on transport voucher system	Refusal by some transporters to operate at night because of insecurity. Overcharging to 'compensate' for a perceived increased insecurity risk at night.
5.4. Poor attitudes and poor quality of care	Poor attitudes of some health workers towards transporters and women and their partners. Some community leaders lost interest in the interventions because of unfriendly behaviours of some midwives.
5.5. Shortage of baby kits	Shortages of baby kits. Some women had to make repeat visits to the facility to collect their kits.
5.6. Community suggestions for improvement	Community dialogues generated useful suggestions to address implementation challenges.

Context

Geographical inaccessibility

Geographical inaccessibility to health facilities was a major problem in the district. Individuals living in remote and isolated areas had to walk long distances or use bicycles to reach health facilities. Lack of reliable means of transportation and unaffordable transportation costs exacerbated the problem of geographical inaccessibility.

“... some villages are quite isolated, and the distance is very far away, and sometimes we don't have even a bicycle to send women to the health centres for help, for these reasons we feel that the interventions are extremely helpful.”

(Female FGD participant, HC II)

“Most pregnant women who come to deliver here come from places where it is not easy to access transport.”

(Male key informant, HC II)

Poor quality and inadequate health services

Geographically, most of the communities were served by HC IIs, which were perceived to be providing poor quality and inadequate health services due to their limited service delivery capacity.

“Some sub-counties are remote with bigger populations, yet they get few health services.”

(Male FGD participant, HC III)

“Iceme sub-county is wide with a big population without proper health services.”

(Male FGD participant, HC II)

Community support for the interventions

Acceptability and impact of the interventions

There were generally positive sentiments about the incentive schemes. The schemes were perceived to be reducing maternal and newborn deaths and improving health-seeking behaviours in the district. They were also perceived to be helpful particularly to the most vulnerable and poor women, such as single mothers.

“I think it [baby kit] is very useful because it is helping us. Sometimes we do not have enough money to buy these things. Mothers are happy with the basin, soap and cloth to take care of their babies.”

(Female key informant, Ngai Sub-County)

“Single mothers will get help since the voucher facilitates delivery at the health facility.”

(Male FGD participant, HC II)

Besides improving maternal and newborn health, the interventions were perceived to be reducing a financial burden on families. The cost of transport to health facilities imposed a heavy financial burden on the residents leading to loss of household assets and precipitating household food insecurity, as households were forced to sell their belongings to carter for transportation costs. This mainly affected households that were poorer or located in remote and hard to reach areas.

“These [the incentives] are good initiatives because they save some household food and assets like chicken or goats from being sold during the period of labour and delivery.”

(Male FGD participant, HC II)

The need to scale up the incentive schemes

Owing to the prevailing barriers to utilisation of maternal health services in the district, participants felt that the interventions should be scaled up district-wide, as illustrated below.

“We want to have a district-wide coverage, which can also be recognisable at the national level, not just in Ngai sub-County. Because by scaling up to other sub-counties, it will be very easy to increase delivery in the facilities, so even the district coverage will go up.”

(Male key informant, HC III)

“For us, we move around the district [for trade] and when we are in [labour] pain, maybe we are in a different sub-county, so we prefer the whole district.”

(Female FGD participant, HC III)

Preferred intervention

Although a majority of the respondents preferred transport vouchers over baby kits, due to poverty and the geographical inaccessibility to health facilities, simultaneous use of the two interventions was perceived to be necessary to improve the utilisation of maternal health services.

“The vouchers are very helpful to us, and with baby kits, we don’t have to buy the equipment. So, we need the two schemes.”

(Female FGD participant, HC III)

Health seeking behaviours post-intervention

Increased utilisation of maternal health services

The interventions were perceived to have increased the use of ANC and institutional delivery services in the intervention areas.

“Since the beginning of the implementation of the baby kits scheme in the facility, the number of deliveries per month has fast increased. Some of these mothers come just for ANC, but while here, they become aware that they are in labour. Moreover, some of them come without anything, so the presence of the baby kits in the facility helps them a lot. In addition, it encourages them to come to deliver here in the unit.”

(Male key informant, HC III)

The increased utilisation of maternal health services in the study sub-counties might have resulted from the incentives themselves and from the community mobilisation that was associated with the implementation of the incentive schemes.

“We have seen a real increase in the utilisation of ANC and deliveries in these facilities. Even the advocacy within the community using the VHTs, the midwives, the peer mothers themselves has increased, so it has created awareness and knowledge that facility deliveries are best and attending antenatal care is good.”

(Male key informant, Member of DHMT)

The transport voucher system was perceived to have increased referrals by facilitating the transport of women to the nearest health facilities or to the referral centres for the management of pregnancy and labour-related complications.

“The transport voucher is good for immediate transportation and management of pregnancy-related complications.”

(Male FGD participant, HC II)

“In the past, they had problems to go to Anyeke HC IV, but now the coupon [transport voucher] is also helping them a lot with the referral system.”

(Female key informant, District Local Government)

‘Bypassing’ resident health facilities in favour of intervention facilities

The incentives were perceived to have encouraged some women in the neighbouring sub-counties to by-pass health facilities in their resident sub-counties for services at health centres in the intervention sub-counties.

“...we have mothers coming from the neighbouring sub-counties, like Abok. You also find someone coming from Abok leaving the HCs there and coming to Ngai here thinking she will go back with something. Maybe you could do it in all the sub-counties so that they can deliver also from there because most of them come here because of the baby kits.”

(Female key informant, HC III)

“We know some mothers who travel from other sub-counties to come here [Acaba sub-county] because of the vouchers. If they also have the vouchers there, it will be better.”

(Female FGD participant, HC II)

Changing roles of traditional birth attendants

The voucher system was perceived to have promoted positive collaboration between some TBAs and HCs resulting in a reduction in home deliveries. Following dialogues with some community leaders and health workers, some TBAs were happy to receive incentives and in return refer and escort pregnant women to HCs for childbirth instead of assisting them to deliver at home.

“With this programme, even some TBAs are escorting pregnant mothers to the health centre.”

(Female FGD participant, HC II)

Men’s involvement in maternal and newborn healthcare services

Transport vouchers motivated men to transport or escort their wives to health facilities for ANC and delivery, and to participate in birth preparedness.

“The voucher system has encouraged husbands to transport their wives to the nearest HCs for ANC and delivery.”

(Male FGD participant, Abere Trading Centre)

“They [interventions] motivate couples from the period of conception to delivery to actively seek health services.”

(Male FGD participant, HC II)

Community health awareness

Health information and education messages associated with the baby kits and transport voucher schemes sensitised the communities and improved community health awareness beyond improving the use of facility delivery services.

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“.....the educative message they receive from there [HCs] will make them understand the importance of bringing mothers to the health facility. It is mainly important for men. Secondly, they spread the message about what they received to the community.”
(Male key informant, Myene Sub-County)

Perceived undesirable effects of the incentives

Increased workload for health workers and beyond

The interventions increased utilisation of maternal health services as well as the workload of transporters and health workers. Whereas this was perceived to be a good effect for transporters, it led to overwork and stress among health workers. To cope with the situation, it was necessary to increase the number of staff working in the facilities implementing the interventions.

“We need an additional midwife and regular supplies to meet the workload.”
(Female key informant, HC II)

“In terms of human resources, the [number of] health staff is not enough; it makes an overwork. The workload has increased, giving stress. The midwives in those health facilities are working alone, and current workloads are not sustainable.”
(Male key informant, Member of DHMT)

Sustainability of the interventions

There were concerns about the sustainability of the interventions and their effects beyond the funding period.

“The biggest challenge for me is the issue of sustainability. We are dealing with vulnerable and poor people, and we are giving it like a handout; so, the greatest challenge is the issue of sustainability. When the programme stops, are we able to sustain it?”

(Male key informant, Member of DHMT)

“The bad part is the sustainability because when people are used to certain things, when they are used to gifts, you need to maintain it.”

(Male key informant, HC III)

Encouraging “increased fertility”

Considering the low family planning uptake and the high fertility rate in the district, some leaders were concerned that the interventions could increase fertility.

“You know how much we have advocated for family planning, but it is still the second-lowest activity in the district, so the rate of reproduction is too high.”

(Female key informant, District Local Government)

“...the family planning messages are not included in the intervention because sometime this intervention could be a motivating factor to produce more children.”

(Male key informant, Loro Sub-County)

Encouraging dependency

Although the interventions were considered useful in the short term, there were concerns that long-term implementation would encourage dependency in the community.

“It is a useful system, but if the initiative continues the community will become too much dependent on NGOs. I think it should be stopped after some time because it will encourage dependency among our community.”

(Male key informant, Myene Sub-County)

Improving the socio-economic status of the community, for example, by setting up income generating activities for women, was a potential solution to dependency.

“I think that after delivering, women should be encouraged to have another source of income to take care of the baby so that in case incentives will not be there, they will be able to go to the facility even without vouchers.”

(Male key informant, Loro Sub-County)

Implementation issues and lessons learned

Information gaps and consequences

Information gaps, mainly at the start of the interventions led to undesirable consequences such as confusion, mistrust and discontent, principally related to payment of the transporters.

“Two transporters of Akaoidebe village were not paid for two times after transporting pregnant mothers to deliver at Ngai HC. One of the transporters was told the money was only paid to transporters who use motorbikes to transport mothers, not bicycles, and the other transporter was told that he delayed and so the organisation took back the money. All major complains are on staff attitudes: bad language and refusal to pay money.”

(Male FGD participant, Abere Trading Centre)

“The staff concerned with the payment of the vouchers are reluctant to pay the transporters even after the time expected has passed.”

(Male FGD participant, HC III)

Transport voucher design, implementation and payment issues

The implementation of the transport voucher system was associated with several issues, primarily about the amount of money to be paid and the timing of refunds. The vouchers were designed in English, but most beneficiaries could not read English. Some transporters were uncooperative and demanded immediate refunds instead of monthly refunds according to the voucher system guidelines. Other issues included delayed voucher refunds, overcharging at night, double payments and the preferred method to determine the cost (i.e. a negotiable amount vs a flat amount). There was a need for more community sensitisation on the operations of the voucher system.

“From my experience with the local community, the main challenge that we are facing is the management of the money for the refund. Some men who transport patients [pregnant women and mothers] here ask for money immediately even before we have seen the patient, or they ask for money while you are working with other patients, and they do not like to wait.”

(Male key informant, HC II)

“Sometimes the transporters are paid twice due to lack of awareness. Some boda bodas ask mothers to pay for fuel to be transported to the health unit and later sign for the voucher refund at the HC.”

(Male FGD participant, HC II)

Poor attitudes and poor quality of care

Inadequate sensitisation, miscommunication and poor health worker attitudes often resulted in poor quality of care.

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“Some women fear to attend ANC and delivery at the facility because of the aggressive character and unwelcome attitudes of some midwives. The issues with the voucher system have been abandoned by some community members because of the bad attitudes and language used against men and women by the health workers.”

(Male FGD participant, Abere Trade Centre)

“Staff, especially health centre midwives should be trained on how to handle mothers and transporters because there are complaints of harsh treatment.”

(Male FGD participant, HC III)

Insecurity and effects on transport voucher system

Some transporters refused to operate at night because of insecurity. Alternatively, the transporter would overcharge women to ‘compensate’ for the perceived increased insecurity risk at night.

“Some boda bodas don’t like to come to our villages in the night because they are afraid of robbers.”

(Female FGD participant, HC II)

“Transporters overcharge mothers, especially at night, when labour occurs.”

(Male FGD participant, HC III)

Shortage of baby kits

Increased facility deliveries led to shortages of baby kits and some women had to make repeat visits to the facility to collect their kits.

“For the challenges, let me start from the baby kits. The rate of reproduction is too high, so the demand is still too high, and those things are there, but you find it is not enough.”

(Female key informant, District Local Government)

“Sometimes the midwives tell us that the kits are finished so we have to come and collect them when they bring more.”

(Female FGD participant, HC III)

Community suggestions for improvement

Community dialogues provided platforms for open discussions to address implementation challenges such as information gaps, regulation, selection of transporters, adherence to the voucher system guidelines, voucher refund, and personal conduct.

“A copy [records] of the baby kits supplied should be available to the sub-county to guarantee easy monitoring and supervision.”

(Male key informant, Ngai Sub-County)

“There should be a clear separation between mothers who pay their transporters immediately and those unable to pay immediately. Mothers who negotiate and pay their transporters before reaching the health facility should later sign for the transport refund to avoid double payment.”

(Male FGD participant, Abere Trade Centre)

“A copy of the voucher given to the person escorting the mother should be translated into Luo [Lango] language for easy and better understanding.”

(Male FGD participant, Abere Trading Centre)

Discussion

We examined community perceptions on the use of baby kits and transport vouchers to improve the utilisation of facility-based delivery services in Oyam District. We identified five broad themes namely: the context of the study, community support for the interventions, health-seeking behaviours post-intervention, undesirable effects of the incentives, and lessons learned from the implementation of the incentive schemes.

Geographical inaccessibility to health facilities featured prominently during data collection and is likely to be a major barrier of access to maternal health services in the district. Many villages were in remote areas that could not be easily accessed due to bad and seasonally unmotorable roads. Residents in such villages often had to travel long distances by foot or on bicycles to access healthcare services. This geographical inaccessibility led to poor utilisation of maternal health services. Distance to health facilities is known to be inversely associated with the utilisation of skilled birth care in SSA.²⁸ Given the high poverty levels in the district, the cost of transport frequently emerged as a barrier to accessing health services. This is consistent with what has been reported in a recent review on barriers to obstetric care access in SSA.²⁹

Participants perceived the incentive schemes to be saving lives by reducing maternal and newborn deaths and improving health-seeking behaviours in the district. This may be more apparent for the transport voucher system, which ensured immediate transport of pregnant women from their homes to the nearest health facility, and onward transfer by an ambulance to the referral facilities for women in need of emergency obstetric care. In many rural settings, considerable delays in reaching health facilities have resulted in avoidable maternal deaths.²⁸ The schemes were also seen to be very helpful to the most vulnerable and disadvantaged groups such as single mothers.³⁰ Because families often had to sell household assets and food to raise money for transport, provision of vouchers had an indirect effect of reducing the financial burden on families and preventing household food insecurity.

The incentives eliminated important barriers to the utilisation of maternal health services thereby promoting the use of these services in the study area. This might explain the mostly positive sentiments about the interventions among the respondents. Understandably, there was a sense of district-wide need for the interventions due to the existence of the above-mentioned barriers in the entire district.

Besides being perceived to have increased utilisation of maternal health services, the interventions were thought to have increased referrals and “bypassing” and promoted collaboration between TBAs and formal health workers. Of note, they were also perceived to have stimulated men’s involvement in maternal health and increased community awareness of maternal health issues. These findings are consistent with those of the quantitative study that evaluated the effects of the incentives.²³ Notwithstanding, this study provides further insights into the pathways through which the interventions helped to achieve the effects —i.e. through changing the role of TBAs, the involvement of men in maternal health issues, and increased community awareness.

The voucher system promoted unexpected collaboration between some TBAs and formal health workers. TBAs who referred and escorted pregnant women to deliver at the health facilities implementing the voucher system were recognised as ‘transporters’ and received voucher refunds. This collaboration might have contributed to reduced home deliveries. Studies show that TBAs can change their role from attending to home births to promoting

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3 institutional childbirth if given the right incentives, training, and a conducive working
4 environment.^{11 31-34} Thus, there is a great potential to achieve higher utilisation of maternal
5 health services in this context through the appropriate involvement of TBAs.
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8 Community health awareness of maternal health issues was perceived to have improved
9 during the implementation of the incentive schemes. The implementation of the incentive
10 schemes was associated with community sensitisation and mobilisation using diverse
11 strategies, individuals, and community structures. These included community dialogues, local
12 radio broadcasts, health facilities and health workers, VHT members, transporters, and peer
13 mothers. In both the FGDs and KIIs, respondents said there had been behavioural changes
14 such as men escorting their wives to the health centres for antenatal and delivery services,
15 which was uncommon before the interventions. Community mobilisation may explain the
16 perceived improvements in maternal health awareness and perceived behaviour change over a
17 relatively short period.
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20 There were concerns about undesirable intervention's effects such as increased workloads for
21 health workers, sustainability, encouraging "increased fertility" and dependency in the
22 community. By improving the utilisation of maternal health services, the interventions also
23 increased workloads for transporters, health workers, social workers, and VHT members.
24 Even though transporters experienced an increased workload, which translated into more
25 economic gains, some villages had a shortage of transporters, especially at night. Among
26 health workers, midwives were the most affected, as no additional staffs were recruited
27 during the project. In line with our findings, a review has pointed out that demand-side
28 incentive schemes can improve the utilisation of maternal healthcare services but there is a
29 need to simultaneously strengthen the supply-side to achieve the desired outcomes.⁵
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33 Given the concern of unsustainability of the interventions beyond the funded period,
34 CUAMM (the implementing non-governmental organisation) initiated dialogues with the
35 district local government, health authorities and community leaders to explore ways of
36 mitigating some of the potential untoward effects of the interventions.¹⁴ Furthermore, the
37 organisation commissioned a study to investigate the feasibility of setting up a community
38 health insurance scheme that could support the transport voucher scheme in the district.³⁵
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41 Oyam District has high poverty and fertility levels with low uptake of family planning
42 services. Consequently, some key informants were concerned that the interventions could
43 increase fertility. A survey conducted in conflict-affected areas of Sudan, northern Uganda
44 and the Democratic Republic of Congo found low knowledge and use of family planning
45 services. Major barriers to family planning use included health system inadequacies, fear of
46 side effects of the methods and insecurity. As a post-conflict setting with high maternal,
47 newborn and child deaths,¹⁹ the desire for large family sizes in Oyam is understandable.
48 Therefore improving maternal and child survival can sustain the demand for family planning
49 services in the district.³⁶⁻³⁹ Although the incentive schemes were not vertical interventions
50 that needed separate family planning promotion, concerted efforts to strengthen family
51 planning services across the district may resolve the low uptake of family planning services.
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55 There were also concerns that long-term implementation of the interventions could encourage
56 dependency in the communities. In 2013 the district reported a maternal mortality ratio of
57 500/100,000 live births, which is one of the highest in the country. Moreover, the district is
58 under-resourced and depends regularly on donors to provide basic services.¹⁹ Therefore,
59 donor-supported interventions such as the incentive schemes, which may improve utilisation
60 of maternal health services and reduce maternal and newborn deaths may continue to be a

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3 ‘necessary evil’ until such a time when the district can afford to provide adequate services to
4 improve its health indicators.
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6 A wide range of issues related to the implementation of the schemes emerged. Information
7 gaps led to inadequate sensitisation and miscommunication while poor attitudes of some
8 health workers resulted in a poor quality of care. Of all these concerns, poor health worker
9 attitudes were the most lamented about. Studies show that fear of being maltreated by health
10 workers constitutes a barrier to utilising facility delivery services.^{24 40} In some communities,
11 health workers were perceived as obstacles to the smooth implementation of the incentive
12 schemes. Hence, it may not be surprising that some community leaders lost interest in the
13 interventions out of frustration.
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15 As community involvement gradually strengthened, it encouraged ownership and resulted in
16 communities taking on more direct roles in the regulation and implementation of the voucher
17 system, as has also happened elsewhere.¹²⁻¹⁴ For example, some villages selected and
18 registered their transporters who were willing to operate within the existing transport voucher
19 guidelines. Because transporters played a central role in the voucher system, many of the
20 implementation issues revolved around them. Hence, having the communities regulating their
21 transporters was a vital achievement that addressed several key issues in operating the
22 voucher system. Community dialogues also provided suggestions to improve the design of
23 the transport voucher system and to phase out baby kits and replace them with vouchers,
24 which were found to be more useful and less costly.
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27 **Strengths and limitations**

28 The FGDs and KIIs engaged different categories of study participants and collected a wide
29 range of perceptions to ensure a cross-sectional representation of viewpoints. Triangulation of
30 the results from different categories of respondents and data collection methods and the use
31 of two coders to analyse the data increases the validity and reliability of our findings. FGDs
32 were conducted mainly in HCs, which might have restricted the freedom of expression. To
33 mitigate this problem, all the discussions were performed in a quiet and closed room in the
34 absence of any health facility staff. Participants were assured of confidentiality and were
35 encouraged to freely express themselves without fear of victimization or future prejudice.
36 Some information might have been lost during note taking for the few FGD and KII sessions
37 that were not audio-recorded. Even though we made efforts to achieve a gender-balanced
38 representation for the KIIs, this was not possible as most key informants were male. This
39 reflects the largely male-dominated society where the study was conducted. This situation
40 might have led to potential biases in some of the perceptions elicited. Furthermore, increasing
41 the utilisation of health services in a health resource-limited setting such as Oyam may not
42 necessarily lead to improved maternal and newborn health outcomes, particularly if the
43 quality of care is sub-standard.⁴¹
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48 **Conclusions**

49 This study provides further insights into the implementation of incentive schemes to improve
50 maternal health services utilisation in Uganda. To be successful, the design and
51 implementation of such schemes should involve the beneficiary communities at the earliest
52 stage. Moreover, working with beneficiaries and stakeholders can mitigate potentially
53 undesirable effects of such schemes. The findings of this study are relevant for planning and
54 implementing similar schemes in low-income countries.
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Contributorship statement

WM conceived and designed the study, contributed to the data collection, participated in the data analysis, drafted the manuscript, and participated in the interpretation of the findings and revision of the manuscript. CW drafted the abstract, reviewed the Methods section, contributed to the data analysis, interpretation of the findings and revision of the manuscript. ED, MN, JBO and SA contributed to the data collection, interpretation of findings and revision of the manuscript. CA participated in the editing of the manuscript and interpretation of findings. PL and GP contributed to the interpretation of the findings and revision of the manuscript. All authors read and approved the final version of the manuscript.

Competing interests

The authors have no competing interests to declare.

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Data sharing statement

We cannot publicly provide individual data due to participant's privacy concerns. Additionally, the informed consent we obtained did not include a provision for publicly sharing data. However, the de-identified data, inform of transcripts, underlying this study are available to qualified researchers upon request by contacting William Massavon (wmassavon@gmail.com) or Giovanni Putoto (g.putoto@cuamm.org).

References

1. WHO, The World Bank. Tracking universal health coverage: first global monitoring report: Geneva; 2015 [Available from: http://www.who.int/healthinfo/universal_health_coverage/report/2015/en accessed 10 Dec 2017.
2. WHO, UNICEF. A Decade of Tracking Progress for Maternal, Newborn and Child Survival: The 2015 Report Geneva: WHO; 2015 [Available from: http://countdown2015mnch.org/documents/2015Report/Countdown_to_2015_final_report.pdf accessed 10 Dec 2017.
3. UNICEF. Maternal Health Current Status and Update: Antenatal Care New York: UNICEF; 2017 [updated Jan 2018. Available from: <https://data.unicef.org/topic/maternal-health/antenatal-care/#>
4. WHO. Skilled Attendance at Birth: Situation and trends Geneva: WHO; 2017 [Available from: http://www.who.int/gho/maternal_health/skilled_care/skilled_birth_attendance_text/en/ accessed 15 Dec 2017.
5. Murray SF, Hunter BM, Bisht R, et al. Effects of demand-side financing on utilisation, experiences and outcomes of maternity care in low- and middle-income countries: a systematic review. *BMC pregnancy and childbirth* 2014;14:30. doi: 10.1186/1471-2393-14-30 [published Online First: 2014/01/21]
6. Ir P, Horemans D, Souk N, et al. Using targeted vouchers and health equity funds to improve access to skilled birth attendants for poor women: a case study in three rural health districts in Cambodia. *BMC pregnancy and childbirth* 2010;10:1. doi: 10.1186/1471-2393-10-1 [published Online First: 2010/01/12]
7. Gopalan SS, Durairaj V. Addressing maternal healthcare through demand side financial incentives: experience of Janani Suraksha Yojana program in India. *BMC health services research* 2012;12:319. doi: 10.1186/1472-6963-12-319 [published Online First: 2012/09/18]
8. Bellows B, Kyobutungi C, Mutua MK, et al. Increase in facility-based deliveries associated with a maternal health voucher programme in informal settlements in Nairobi, Kenya. *Health policy and planning* 2013;28(2):134-42. doi: 10.1093/heapol/czs030 [published Online First: 2012/03/23]
9. Ekirapa-Kiracho E, Waiswa P, Rahman MH, et al. Increasing access to institutional deliveries using demand and supply side incentives: early results from a quasi-experimental study. *BMC international health and human rights* 2011;11 Suppl 1:S11. doi: 10.1186/1472-698x-11-s1-s11 [published Online First: 2011/03/18]
10. Obare F, Warren C, Abuya T, et al. Assessing the population-level impact of vouchers on access to health facility delivery for women in Kenya. *Social science & medicine (1982)* 2014;102:183-9. doi: 10.1016/j.socscimed.2013.12.007 [published Online First: 2014/02/26]
11. Wilunda C, Scanagatta C, Putoto G, et al. Barriers to Institutional Childbirth in Rumbek North County, South Sudan: A Qualitative Study. *PloS one* 2016;11(12):e0168083. doi: 10.1371/journal.pone.0168083 [published Online First: 2016/12/16]
12. Ekirapa-Kiracho E, Namazzi G, Tetui M, et al. Unlocking community capabilities for improving maternal and newborn health: participatory action research to improve birth preparedness, health facility access, and newborn care in rural Uganda. *BMC health services research* 2016;16(Suppl 7):638. doi: 10.1186/s12913-016-1864-x [published Online First: 2017/02/12]
13. Howard-Grabman L, Miltenburg AS, Marston C, et al. Factors affecting effective community participation in maternal and newborn health programme planning, implementation and quality of care interventions. *BMC pregnancy and childbirth* 2017;17(1):268. doi: 10.1186/s12884-017-1443-0 [published Online First: 2017/09/01]
14. Katahoire AR, Henriksson DK, Ssegujja E, et al. Improving child survival through a district management strengthening and community empowerment intervention: early

- 1
2
3 implementation experiences from Uganda. *BMC public health* 2015;15:797. doi:
4 10.1186/s12889-015-2129-z [published Online First: 2015/08/20]
5
6 15. Austin-Evelyn K, Sacks E, Atuyambe L, et al. The promise of Mama
7 Kits: Perceptions of in-kind goods as incentives for facility deliveries in Uganda. *Global public health*
8 2017;12(5):565-78. doi: 10.1080/17441692.2016.1149597 [published Online First:
9 2016/03/08]
- 10
11 16. Okal J, Kanya L, Obare F, et al. An assessment of opportunities and challenges for public sector
12 involvement in the maternal health voucher program in Uganda. *Health research policy and*
13 *systems* 2013;11:38. doi: 10.1186/1478-4505-11-38 [published Online First: 2013/10/22]
- 14
15 17. Uganda Bureau of Statistics (UBoS). National Population and Housing Census: Census 2014 Final
16 Results Kampala: UBOS; 2017 [Available from: <http://www.ubos.org/?s=Final+Results>
17 accessed 3 Jan 2018 2017].
- 18
19 18. Uganda Bureau of Statistics and ICF. Uganda Demographic and Health Survey 2016. Kampala,
20 Uganda and Rockville, Maryland, USA: UBOS and ICF 2018.
- 21
22 19. Republic of Uganda. Oyam District Local Government Statistical Abstract 2012/13 Kampala:
23 Republic of Uganda; [updated 17 June 2014. Available from:
24 [http://www.ubos.org/statistical-activities/community-systems/district-profiling/district-
25 profiling-and-administrative-records/](http://www.ubos.org/statistical-activities/community-systems/district-profiling/district-profiling-and-administrative-records/).
26
27 20. Fisseha G, Berhane Y, Worku A, et al. Distance from health facility and mothers' perception of
28 quality related to skilled delivery service utilization in northern Ethiopia. *International*
29 *journal of women's health* 2017;9:749-56. doi: 10.2147/ijwh.s140366 [published Online First:
30 2017/10/19]
- 31
32 21. Pfeiffer C, Mwaipopo R. Delivering at home or in a health facility? health-seeking behaviour of
33 women and the role of traditional birth attendants in Tanzania. *BMC pregnancy and*
34 *childbirth* 2013;13:55. doi: 10.1186/1471-2393-13-55 [published Online First: 2013/03/02]
- 35
36 22. Titaley CR, Hunter CL, Dibley MJ, et al. Why do some women still prefer traditional birth
37 attendants and home delivery?: a qualitative study on delivery care services in West Java
38 Province, Indonesia. *BMC pregnancy and childbirth* 2010;10:43. doi: 10.1186/1471-2393-10-
39 43 [published Online First: 2010/08/13]
- 40
41 23. Massavon W, Wilunda C, Nannini M, et al. Effects of demand-side incentives in improving the
42 utilisation of delivery services in Oyam District in northern Uganda: a quasi-experimental
43 study. *BMC pregnancy and childbirth* 2017;17(1):431. doi: 10.1186/s12884-017-1623-y
44 [published Online First: 2017/12/21]
- 45
46 24. Anastasi E, Borchert M, Campbell OM, et al. Losing women along the path to safe motherhood:
47 why is there such a gap between women's use of antenatal care and skilled birth
48 attendance? A mixed methods study in northern Uganda. *BMC pregnancy and childbirth*
49 2015;15:287. doi: 10.1186/s12884-015-0695-9 [published Online First: 2015/11/06]
- 50
51 25. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a
52 32-item checklist for interviews and focus groups. *International journal for quality in health*
53 *care : journal of the International Society for Quality in Health Care* 2007;19(6):349-57. doi:
54 10.1093/intqhc/mzm042 [published Online First: 2007/09/18]
- 55
56 26. Dawson S, Manderson L, Tallo VL. A Manual for the use of Focus Groups. Boston, MA, USA: by
57 International Nutrition Foundation for Developing Countries 1993.
- 58
59 27. Gläser J, Laudel G. Life With and Without Coding: Two Methods for Early-Stage Data Analysis in
60 Qualitative Research Aiming at Causal Explanations. *Forum Qualitative Sozialforschung /*
Forum: Qualitative Social Research 2013;14(2) doi: 10.17169/fqs-14.2.1886 [published
Online First: 2013-03-31]
28. Wong KLM, Benova L, Campbell OMR. A look back on how far to walk: Systematic review and
meta-analysis of physical access to skilled care for childbirth in Sub-Saharan Africa. *PLoS one*
2017;12(9):e0184432. doi: 10.1371/journal.pone.0184432 [published Online First:
2017/09/15]

- 1
2
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32
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34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
29. Kyei-Nimakoh M, Carolan-Olah M, McCann TV. Access barriers to obstetric care at health facilities in sub-Saharan Africa-a systematic review. *Systematic reviews* 2017;6(1):110. doi: 10.1186/s13643-017-0503-x [published Online First: 2017/06/08]
 30. Kiwanuka SN, Ekirapa EK, Peterson S, et al. Access to and utilisation of health services for the poor in Uganda: a systematic review of available evidence. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 2008;102(11):1067-74. doi: 10.1016/j.trstmh.2008.04.023 [published Online First: 2008/06/21]
 31. Rudrum S. Traditional Birth Attendants in Rural Northern Uganda: Policy, Practice, and Ethics. *Health care for women international* 2016;37(2):250-69. doi: 10.1080/07399332.2015.1020539 [published Online First: 2015/02/27]
 32. Wilunda C, Dall'Oglio G, Scanagatta C, et al. Changing the role of traditional birth attendants in Yirol West County, South Sudan. *PloS one* 2017;12(11):e0185726. doi: 10.1371/journal.pone.0185726 [published Online First: 2017/11/03]
 33. Pyone T, Adaji S, Madaj B, et al. Changing the role of the traditional birth attendant in Somaliland. *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics* 2014;127(1):41-6. doi: 10.1016/j.ijgo.2014.04.009 [published Online First: 2014/06/19]
 34. Kyomuhendo GB. Low use of rural maternity services in Uganda: impact of women's status, traditional beliefs and limited resources. *Reproductive health matters* 2003;11(21):16-26. [published Online First: 2003/06/13]
 35. Biggeri M, Nannini M, Putoto G. Assessing the feasibility of community health insurance in Uganda: A mixed-methods exploratory analysis. *Social science & medicine (1982)* 2018;200:145-55. doi: 10.1016/j.socscimed.2018.01.027 [published Online First: 2018/02/09]
 36. McGinn T, Austin J, Anfinson K, et al. Family planning in conflict: results of cross-sectional baseline surveys in three African countries. *Conflict and health* 2011;5:11. doi: 10.1186/1752-1505-5-11 [published Online First: 2011/07/15]
 37. Ouma S, Turyasima M, Acca H, et al. Obstacles to family planning use among rural women in Atiak health center IV, Amuru District, northern Uganda. *East African medical journal* 2015;92(8):394-400. [published Online First: 2015/01/01]
 38. Orach CG, Otim G, Aporomon JF, et al. Perceptions, attitude and use of family planning services in post conflict Gulu district, northern Uganda. *Conflict and health* 2015;9:24. doi: 10.1186/s13031-015-0050-9 [published Online First: 2015/08/13]
 39. Elmusharaf K, Byrne E, O'Donovan D. Social and traditional practices and their implications for family planning: a participatory ethnographic study in Renk, South Sudan. *Reproductive health* 2017;14(1):10. doi: 10.1186/s12978-016-0273-2 [published Online First: 2017/01/18]
 40. Kwagala B. Birthing choices among the Sabiny of Uganda. *Culture, health & sexuality* 2013;15 Suppl 3:S401-14. doi: 10.1080/13691058.2013.799232 [published Online First: 2013/06/20]
 41. Souza JP, Gulmezoglu AM, Vogel J, et al. Moving beyond essential interventions for reduction of maternal mortality (the WHO Multicountry Survey on Maternal and Newborn Health): a cross-sectional study. *Lancet (London, England)* 2013;381(9879):1747-55. doi: 10.1016/s0140-6736(13)60686-8 [published Online First: 2013/05/21]

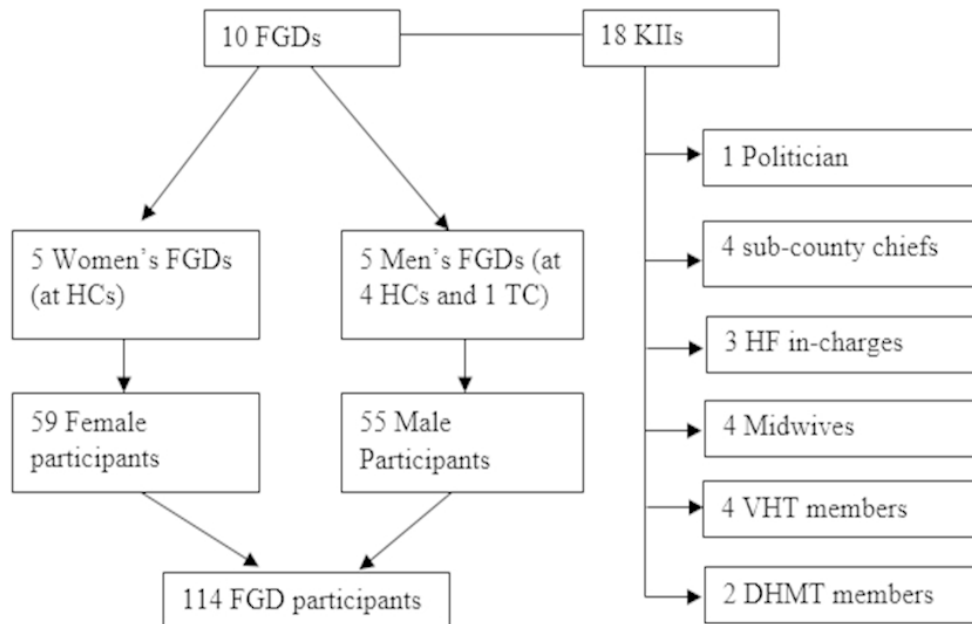
Legends

Fig 1 legend. FGDs: focus group discussions; KIIs: key informant interviews; HCs: health centres; TC: trading centre; HF: health facility; DHMT: district health management team; VHTs: village health teams; TBAs: traditional birth attendants.

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6 **Supplementary file**
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8 **Supplementary file 1. Interview guide for focus group discussions and key informant**
9 **interviews**
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For peer review only



The number of focus groups discussions, key informant interviews, and participants. FGDs: focus group discussions; KIIs: key informant interviews; HCs: health centres; TC: trading centre; HF: health facility; DHMT: district health management team; VHTs: village health teams; TBAs: traditional birth attendants.

72x47mm (300 x 300 DPI)

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2
3 **Questionnaire for Focus Group Discussions and Key Informants Interviews**
4 **CUAMM Incentives Study, Oyam District**
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8 *Notes for interviewers
9

10 **NB: Please go through the brief notes for interviewers below (page 2) before starting discussions**
11 **or interviews**
12

13
14
15 **Q1. What can you tell us (your general impression) about the Baby kits and Transport vouchers**
16 **that CUAMM implemented in ACABA and NGAI Sub-counties?**
17

18
19 *-explore how they got to know (information) about the interventions, if not covered

20 *-find out the benefits of the interventions (baby kits and transport vouchers), if not covered

21 *-watch for non-verbal clues (signs) and make notes
22
23
24
25

26 **Q2. What do you think were some of the challenges or problems with the interventions?**
27

28 *-explore for baby kits, if not covered

29 *-explore for transport vouchers, if not covered

30 *-explore for any other issues

31 *-watch for non-verbal clues (signs) and make notes
32
33
34
35

36 **Q3. Please feel free to tell us how we can improve these interventions in the future, considering**
37 **the challenges or problems that you mentioned.**
38

39
40 *-let them make recommendations or suggestions for improving the interventions

41 *-watch for non-verbal clues (signs) and make notes
42
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44
45

46 **Q4. We implemented (gave out) the baby kits and transport vouchers in 2 of the 12 sub-counties**
47 **in the district because of limited resources. If more resources become available in future, how**
48 **many sub-counties should we consider for scaling up the interventions?**
49

50
51 *-watch for non-verbal clues (signs) and make notes
52
53

54 **Q5. What are your reasons for your answer to Q4?**
55

56 *-explore the reasons; 1 to a maximum of 5 reasons should be fine,
57
58

59 **THANK YOU VERY MUCH FOR YOUR INPUTS AND TIME!**
60

****Brief guiding points for interviewers**

- ✚ Greet participants and make them comfortable,
- ✚ Introduce yourself,
- ✚ Introduce the purpose of the discussion or interview,
- ✚ Tell them it is **anonymous** (private and confidential)-no personal information will be collected or used to identify them,
- ✚ Tell them about a small incentive (e.g. a transport refund) at the end of the discussion/interview,
- ✚ Introduce the **INFORMED CONSENT FORM AND EXPLAIN CLEARLY, its purpose. If they voluntarily accept to participate then**
- ✚ Kindly ask them to sign or thumbprint (depending on which is applicable) and give them copies to keep,
- ✚ Kindly request their permission to record (take notes), especially if you are using a recorder,
- ✚ **NB: NO INTERVIEW OR DISCUSSION WITHOUT OBTAINING INFORMED CONSENT FIRST,**
- ✚ **For the FGDs the team may consist of three people, i.e. a moderator, a translator and a note taker (recorder),**
- ✚ **The FGDs could last for about one and half to two hours,**
- ✚ **For the Key Informant interviews, the team may include an interviewer, a translator and a note taker (recorder),**
- ✚ **The Key Informant interviews could take about 30-40 minutes to complete,**
- ✚ **Thank participant(s) at the end of the discussion or interview,**
- ✚ **Remember to leave your contact mobile phone number(s), in case it becomes necessary for them to contact you for further information.**

Sources:

- 1) The Focus Group Manual
(<http://apps.who.int/iris/bitstream/10665/41795/1/0963552228.pdf>)
- 2) Key Informant Guide (www.TexasMotherFriendly.org)
- 3) Guidelines for conducting a Focus Group
(https://assessment.trinity.duke.edu/documents/How_to_Conduct_a_Focus_Group.pdf)

Consolidated criteria for reporting qualitative studies: 32-item checklist

No. Item	Guide questions/description	Reported on page
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	Page 7
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	The journal does not require this to be specified. The credentials of the researchers are as follows; WM: PhD, CW: DrPH; MN: MSc; CA: SA: JBO: MPH; EV: MD, MPH; PL: MBChB, MSc; and GP: MD
3. Occupation	What was their occupation at the time of the study?	Page 1 provides information on affiliations. WM, CA, SA, JBO and EV were project staff. PL was the country director. CW was a doctoral candidate, MN was a researcher and GP was the head of operational research
4. Gender	Was the researcher male or female?	MN, CA, EV are female. All the other authors are male.
5. Experience and training	What experience or training did the researcher have?	WM and CW have experience in conducting qualitative studies
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	There was no prior relationship between data collectors and FGD study participants. On the contrary, some of the key informants especially members of the District Health Management Team and health care workers were known to the

		research team members.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Specific information about the interviewer were provided during data collection
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	The interviewers introduced themselves as staff of the NGO CUAMM. They then provided basic information about the study and the intended utility of the findings.
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Pages 6&8
<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 7
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Page 7
12. Sample size	How many participants were in the study?	Page 8
13. Non-participation	How many people refused to participate or dropped out? Reasons?	There were no refusals or drop-outs
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Page 6
15. Presence of non-participants	Was anyone else present	There were no non-participants

	besides the participants and researchers?	
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Pages 9 & 10
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Page 7 and Supplementary 1 file
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	There no repeat interviews
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Page 7
20. Field notes	Were field notes made during and/or after the interview or focus group?	Page 7
21. Duration	What was the duration of the interviews or focus group?	Page 7
22. Data saturation	Was data saturation discussed?	Page 7
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Page 7
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	Page 8
25. Description of the coding tree	Did authors provide a description of the coding tree?	Not provided. Documentation is available upon request.
26. Derivation of themes	Were themes identified in advance or derived from the data?	Page 8
27. Software	What software, if applicable, was used to manage the data?	Page 8
28. Participant checking	Did participants provide feedback on the findings?	This was not done for logistical constraints

<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Pages 11-22.
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Major themes and sub-themes were presented

BMJ Open

Community perceptions on demand-side incentives to promote institutional delivery in Oyam District, Uganda: A qualitative study

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Community perceptions on demand-side incentives to promote institutional delivery in Oyam District, Uganda: A qualitative study

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Abstract

Objective: To examine the perceptions of community members and other stakeholders on the use of baby kits and transport vouchers to improve the utilisation of childbirth services.

Design: A qualitative study.

Setting: Oyam District, Uganda.

Participants: We conducted 10 focus group discussions with 59 women and 55 men, and 18 key informant interviews with local leaders, village health team members, health facility staff, and District Health Management Team members. We analysed the data using qualitative content analysis.

Results: Five broad themes emerged: (1) Context; (2) Community support for the interventions; (3) Health seeking behaviours post-intervention; (4) Undesirable effects of the interventions; and (5) Implementation issues and lessons learned. Context regarded perceived long distances to health facilities and high transport costs. Regarding community support for the interventions, the schemes were perceived to be acceptable and helpful particularly to the most vulnerable. Transport vouchers were preferred over baby kits, although both interventions were perceived to be necessary. Health seeking behaviours entailed perceived increased utilisation of maternal health services and “bypassing”, promotion of collaboration between traditional birth attendants and formal health workers, stimulation of men’s involvement in maternal health, and increased community awareness of maternal health. Undesirable effects of the interventions included increased workload for health workers, sustainability concerns, and perceived encouragement to reproduce and dependency. Implementation issues included information gaps leading to confusion, mistrust and discontent, transport voucher scheme design; implementation; and payment problems, poor attitude of some health workers and poor quality of care, insecurity, and a shortage of baby kits. Community involvement was key to solving the challenges.

Conclusions: The study provides further insights into the implementation of incentive schemes to improve maternal health services utilisation. The findings are relevant for planning and implementing similar schemes in low-income countries.

Strengths and limitations of this study

- We collected data from a wide variety of respondents to ensure a cross-sectional representation of viewpoints.
- Triangulation of the results from different categories of respondents and data collection methods increases the validity of our findings.
- Most key informants were male, which might have led to biases in some of the perceptions elicited.
- The venues for FGDs might have limited the freedom of expression for some participants.

Introduction

Despite decades of implementing interventions to improve maternal health outcomes, complex and multi-faceted barriers still impede progress to achieve set targets in many low and middle-income countries (LMIC), particularly in sub-Saharan Africa (SSA).¹ This situation contributed significantly to the largely unachieved Millennium Development Goals 4 and 5 in the region.² Numerous barriers to obstetric care still exist in SSA, translating into huge coverage gaps, particularly for services that require regular contacts with the health system.² For instance, in 2016, the coverage of at least four antenatal care (ANC) visits in SSA was 52% compared with the global average of 60%, and that of delivery by a skilled birth attendant was about 50% compared with the global average of 78%.³ These average statistics, however, mask stark inequities defined by region, wealth status, and urban/rural place of residence.²⁻⁴

In the quest for practical solutions, several studies on incentive schemes targeting barriers to utilisation of maternal health services have shown positive results.⁵⁻⁹ However, there is a need for context-sensitive approaches. As illustrations, a study in Kenya reported that some women who purchased service vouchers meant to cover direct healthcare costs did not use them because of high transport costs, which were not considered during the study design.¹⁰ A recent study in South Sudan found that women continued to deliver at home despite the availability of free-of-charge delivery services in their county.¹¹

Interventions designed with inputs from the beneficiary communities are more likely to succeed. Early dialogues involving beneficiary communities before and during the design and implementation of interventions may identify and prioritise the needs of the communities, explore and address potential barriers, and promote community engagement, which may generate a sense of ownership among the beneficiaries.¹²⁻¹⁴

Incentive schemes have become popular in Uganda, with promising results. A recent study has shown that offering Maama kits to pregnant women during facility delivery was associated with perceptions of affordable healthcare. However, logistical challenges and inconsistent implementation could undermine the desired outcomes of the intervention.¹⁵ Another study has shown that maternal health vouchers have the potential to increase coverage of services through several pathways, such as strengthening public-private partnerships, which in turn can enhance referral networks and shorten distances to service points for potential users.¹⁶

Oyam district has almost 390,000 inhabitants¹⁷ and is situated in a rural post-conflict region in northern Uganda. The district has high levels of illiteracy, poverty and fertility, but a low family planning uptake. In 2016, 42% of women delivered in a health facility according to routine data, whereas the region-wide (Lango) contraceptive prevalence rate was 41% according to a household survey.¹⁸ Most of its residents live more than 5km away from a health facility. The health system is weak and relies on regular support from donors/partners to provide basic services. Moreover, the majority of the health facilities are health centre (HC) level two with limited capacity to provide maternity services.¹⁹ Consequently, some residents have to travel long distances to access higher quality healthcare. Some pregnant women are compelled to use nearby health facilities that may be providing low-quality maternity services or to deliver at home without skilled care.²⁰⁻²²

Considering the barriers to accessing health services in Oyam District, in 2014, Doctors with Africa *Collegio Universitario Aspiranti e Medici Missionari* (CUAMM), hereafter referred to as CUAMM, implemented two demand-side incentive schemes—baby kits and transport vouchers—to improve the utilisation of institutional delivery services. A study on the effects

of the interventions has been published.²³ The present study examines the perceptions of the community members and other stakeholders on those incentive schemes.

Materials and methods

Design

This qualitative study collected data utilising focus group discussions (FGDs) and key informant interviews (KIIs). FGDs were used to explore the general perceptions of community members whereas KIIs were used to gather in-depth information from other stakeholders and to triangulate some of the information gathered through FGDs. Data were analysed using qualitative content analysis approach, which is an efficient method to analyse a large volume of textual data, yielding a condensed and broad description of phenomenon inform of structured concepts or categories.²⁴ We report this study according to the consolidated criteria for reporting qualitative research.²⁵

Setting

This study was conducted in four sub-counties in Oyam District, where baby kit and transport voucher schemes were implemented by CUAMM. Details about the setting, the selection of the sub-counties, and the incentive schemes have been described elsewhere.²³ In brief, two sub-counties with the lowest institutional delivery coverages in the district were purposively selected after consultations with local authorities. Community dialogues played a crucial role in the design, implementation and improvement of the interventions. The dialogues were open gatherings involving local community leaders, members of the village health teams, social workers, the research team, the project staff of CUAMM and other stakeholders. The meetings also availed an opportunity to provide feedback to the community on the interventions and to highlight the challenges that needed solutions from the community. The discussions yielded suggestions to improve the interventions, particularly the transport voucher system, and to phase out the baby kits.

Transport vouchers were given to pregnant women attending ANC and/or delivering in one of the study sub-counties. The vouchers were meant to improve geographical accessibility to health facilities. In the second study sub-county, baby kits were offered to all pregnant women who delivered at the only health facility in that sub-county. The baby kits were meant to encourage facility delivery while easing the cost of newborn care. Each baby kit consisted of a plastic basin, a bar of soap, a polythene bag, 1/2 kg of sugar, and a piece of cotton cloth for wrapping the baby. Each voucher was valued at US\$ 4.²³ Two comparable sub-counties were selected as controls.²³ Based on the findings, we extended the transport vouchers to the two control sub-counties in 2016 for three more years, whereas, the baby kits were phased out. Thus, the interventions were ongoing at the time of this study.

Participants and sampling

Participants of FGDs consisted of women who utilised maternal health services in 2015/2016 and their male partners. These participants were purposively selected through multiple approaches, including face-to-face invitations with the help of village health team (VHT) members, phone calls, and invitation letters. Participants of KIIs were identified through snow-balling and consisted of people considered to be knowledgeable about maternal health service delivery in the study sub-counties or district. They included sub-county chiefs, midwives, health facility in-charges, a politician, VHT focal persons, and members of the District Health Management Team (DHMT). There were no refusals or drop-outs during the study.

Data collection

Data were collected in 2015/2016 utilising pretested and refined open-ended interview guides (Supplementary file 1) by a team of research assistants trained on how to facilitate FGDs. The FGD data collection team consisted of a moderator, a translator, a note-taker— all conversant with the local language and culture—and two of the investigators (WM and MN). The investigators supervised data collection and followed the discussions through the translator. WM and MN conducted all KIIs in English. For technical challenges, eight out of ten FGDs and sixteen out of eighteen interview sessions were audio recorded and field notes were taken for the rest. FGDs lasted 90-120 minutes while the KIIs lasted 30-40 minutes.²⁶ There were no repeat interviews. Data saturation was achieved when participants had nothing more to say upon probes from the data collectors. We were unable to return transcripts to participants for comments due to logistical challenges.

Data were collected at locations that were considered most convenient by the participants. As most participants of the FGDs were from distant villages, data were collected at HCs. Only one of the men's FGDs was conducted at a trading centre proposed by the participants. At the HCs, a room was allocated to the research team and the discussions and interviews were conducted behind closed doors. Since the venues were reserved for the exclusive use by the research team on the selected days, there were no interruptions from intruders including health facility staff. The FGD at the trading centre was also conducted in a venue that ensured privacy. Similarly, KIIs with facility in-charges, midwives, and VHT members were conducted at health centres. Other key informants were interviewed in their respective offices.

This study included 10 FGDs (5 for each gender) consisting of 114 participants, and 18 KIIs (Fig 1). Twelve of the key informants were male.

Data analysis

All the audio-recorded interviews and FGDs were transcribed verbatim and translated into English, where applicable, by a professional translator. Field notes, all taken in English, were edited at the end of each day of data collection and typed into a Word document. The transcripts were then cross-checked with the field notes. Data were coded by two of the authors (WM and CW) using NVivo11 (QSR International, Melbourne, Australia). Qualitative content analysis approach suggested by Gläser & Laudel²⁷ was used. This approach, which is arguably more efficient and open than other alternatives,²⁷ involved reading through transcripts and field notes several times to identify emerging themes, setting up a list of the pre-identified themes in NVivo, coding segments of the text that corresponded to the theme, and updating the list as new themes emerged during coding. Differences between the coders were resolved by consensus. After completing the coding process, segments of text under each theme were then summarised to provide an overview of the content relating to that specific theme. Related themes were categorised into broader themes. We performed triangulation of data sources and methods by comparing information from different sources (categories of respondents) and different data collection methods (KIIs and FGDs). We captured quotations from the participants to illustrate typical responses.

Ethical considerations

This study was approved by Lacor Hospital Research and Ethical Review Committee and registered by the Uganda National Council for Science and Technology (UNCST filed Ref #: SS 4252). The study was also approved by the local authorities in Oyam District. All

participants provided written informed consent. For illiterate participants, this was done in the presence of a witness. Each participant received a transportation cost refund.

Patient and public involvement

Patients and/or the public were not involved in setting the research questions and in the design and implementation of the study.

Results

Table 1 displays the characteristics of study participants. Overall, 81% of the participants were aged 20-49 years; about half (50.8%) were male; 71.2% were married and 40% had no formal education. Most key informants were male (66.7%), with at least secondary education (83.3%), and civil servants (72.2%). On the other hand, slightly more than half (51.8%) of the participants for the FGDs were female; 46.5% had no formal education, and 64% were farmers.

Table 1. Characteristics of study participants, stratified by FGDs and KIIs

Characteristics	FGDs N=114, n (%)	KIIs N=18, n (%)	Total N=132, n (%)
Gender			
Male	55 (48.2)	12 (66.7)	67 (50.8)
Female	59 (51.8)	6 (33.3)	65 (49.2)
Age category			
<20 years	20 (17.5)	0 (0)	20 (15.2)
20-49 years	93 (81.6)	14 (77.8)	107 (81.0)
50-60 years	1 (0.9)	4 (22.2)	5 (3.8)
Education level			
No formal education	53 (46.5)	0 (0)	53 (40.2)
Primary	41 (36.0)	0 (0)	41 (31.0)
Secondary	20 (17.5)	15 (83.3)	35 (26.5)
Tertiary	0 (0)	3 (16.7)	3 (2.3)
Marital status			
Single	9 (7.9)	3 (16.7)	12 (9.1)
Married	80 (70.2)	14 (77.8)	94 (71.2)
Divorced/Separated	25 (21.9)	1 (5.5)	26 (19.7)
Occupation			
Unemployed	12 (10.5)	0 (0)	12 (9.1)
Farmer	73 (64.0)	3 (16.7)	76 (57.6)
Petty trader	25 (21.9)	2 (11.1)	27 (20.4)
Civil servant	4 (3.5)	13 (72.2)	17 (12.9)

FGDs: focus group discussions; KIIs: key informant interviews

This study exposed a range of issues regarding the perceptions of the community on the use of transport vouchers and baby kits to promote utilisation of maternal health services. We identified five broad themes: (1) Context; (2) Community support for the interventions; (3) Health seeking behaviours post-intervention; (4) Undesirable effects of the interventions; and (5) Implementation issues and lessons learned. Table 2 summarises the main findings under each broad theme and minor theme.

Table 2. A summary of perceptions towards incentives to promote institutional deliveries

Coding tree	Key findings
1.0. Context	
1.1. Geographical inaccessibility	Long distances to health facilities and remoteness of some villages. Lack of reliable means of transportation and high transportation costs.
1.2. Poor quality and inadequate health services	HC IIs, which served a majority of the community members, were perceived to be providing poor quality and inadequate health services
2.0. Community support for the interventions	
2.1. Acceptability and impact of the interventions	Incentives perceived to be reducing maternal and newborn deaths and improving health-seeking behaviours. Incentives also perceived to have reduced a financial burden on families, which prevented loss of household assets and household food insecurity. Interventions perceived to be helpful particularly to the most vulnerable and poor women.
2.2. The need to scale up the incentive schemes	The interventions need to be scaled up to cover the entire district to achieve district-wide increased utilisation of maternal health services.
2.3. Preferred intervention	Transport vouchers preferred over baby kits. However, simultaneous implementation of the two interventions was necessary given the high level of poverty and barriers to access health services in the district.
3.0. Health seeking behaviours post-intervention	
3.1. Increased utilisation of maternal health services	The interventions were perceived to have increased the number of ANC attendance and institutional deliveries. The transport voucher system facilitated efficient referral of women in need of emergency obstetric care to the HC IV and the hospital.
3.2. Bypassing resident health facilities in favour of intervention facilities	The incentives encouraged some women in the neighbouring sub-counties to by-pass health facilities in their own sub-counties for services at health centres in the intervention sub-counties.
3.3. Home deliveries and changing roles of traditional birth attendants	Transport vouchers were perceived to have encouraged some TBAs to escort pregnant women to HCs thereby reducing the number of home deliveries.
3.4. Men's involvements in maternal and newborn healthcare	The incentives motivated men to transport their partners to health facilities for ANC and delivery and to participate in birth preparedness.
3.5. Community health awareness	Health information and education associated with the interventions increased the community's maternal health awareness.
4.0. Perceived undesirable effects of incentives	
4.1. Increased workload for health workers and beyond	Increased utilisation of maternal health services led to an increased workload for health workers and transporters. Concerns over the sustainability of the workloads.
4.2. Sustainability of the interventions	Concerns about the sustainability of the interventions beyond the project period.
4.3. Encouraging "increased fertility"	Interventions could encourage more births. Family planning messages not included in the interventions.
4.4. Encouraging dependency	Long-term use of the interventions could encourage dependency.
5.0. Implementation issues and lessons learned	
5.1. Information gaps and consequences	Information gaps during the implementation of interventions leading to confusion, mistrust and discontent among users and transporters.
5.2. Transport voucher design, implementation and payment issues	Transport vouchers designed in English, yet most beneficiaries were illiterate. Uncooperative transporters who demanded immediate refunds instead of monthly refunds, delayed refunds, overcharging at night, double payments, and the preferred costing method (negotiable price vs flat rate).
5.3. Insecurity and effects on transport voucher system	Refusal by some transporters to operate at night because of insecurity. Overcharging to 'compensate' for a perceived increased insecurity risk at night.
5.4. Poor attitudes and poor quality of care	Poor attitudes of some health workers towards transporters and women and their partners. Some community leaders lost interest in the interventions because of unfriendly behaviours of some midwives.
5.5. Shortage of baby kits	Shortages of baby kits. Some women had to make repeat visits to the facility to collect their kits.
5.6. Community suggestions for improvement	Community dialogues generated useful suggestions to address implementation challenges.

Context

Geographical inaccessibility, poor quality of health services and inadequate health facilities were perceived to be the major contextual issues affecting health service access in the district. Individuals living in remote and isolated areas had to walk long distances or use bicycles to reach health facilities. Lack of reliable means of transportation and unaffordable transportation costs exacerbated the problem of geographical inaccessibility.

“...some villages are quite isolated, and the distance is very far away, and sometimes we don't have even a bicycle to send women to the health centres for help, for these reasons we feel that the interventions are extremely helpful.”

(Female FGD participant, HC II)

“Most pregnant women who come to deliver here come from places where it is not easy to access transport.”

(Male key informant, HC II)

Most of the communities were served by HC IIs, which were perceived to be providing poor quality and inadequate health services due to their limited service delivery capacity.

“Some sub-counties are remote with bigger populations, yet they get few health services.”

(Male FGD participant, HC III)

“Iceme sub-county is wide with a big population without proper health services.”

(Male FGD participant, HC II)

Community support for the interventions

The incentive schemes were widely acceptable in the community. This was linked to their perceived positive impact and hence the desire to have them scaled-up to achieve a district-wide coverage. The schemes were perceived to be reducing maternal and newborn deaths and improving health-seeking behaviours (see below). They were also perceived to be helpful particularly to the most vulnerable and poor women, such as single mothers.

“I think it [baby kit] is very useful because it is helping us. Sometimes we do not have enough money to buy these things. Mothers are happy with the basin, soap and cloth to take care of their babies.”

(Female key informant, Ngai Sub-County)

“Single mothers will get help since the voucher facilitates delivery at the health facility.”

(Male FGD participant, HC II)

Besides improving maternal and newborn health, the interventions were perceived to be reducing a financial burden on families. The cost of transport to health facilities imposed a heavy financial burden on the residents leading to loss of household assets and precipitating household food insecurity, as households were forced to sell their belongings to carter for transportation costs. This mainly affected households that were poorer or located in remote and hard to reach areas.

“These [the incentives] are good initiatives because they save some household food and assets like chicken or goats from being sold during the period of labour and delivery.”

(Male FGD participant, HC II)

Owing to the prevailing barriers to utilisation of maternal health services in the district, participants felt that the interventions should be scaled up district-wide, as illustrated below.

“We want to have a district-wide coverage, which can also be recognisable at the national level, not just in Ngai sub-County. Because by scaling up to other sub-counties, it will be very easy to increase delivery in the facilities, so even the district coverage will go up.”

(Male key informant, HC III)

“For us, we move around the district [for trade] and when we are in [labour]pain, maybe we are in a different sub-county, so we prefer the whole district.”

(Female FGD participant, HC III)

Although most of the respondents, particularly women, preferred transport vouchers over baby kits, due to poverty and the geographical inaccessibility to health facilities, simultaneous use of the two interventions was perceived to be necessary to improve the utilisation of maternal health services.

“The vouchers are very helpful to us, and with baby kits, we don’t have to buy the equipment. So, we need the two schemes.”

(Female FGD participant, HC III)

Health seeking behaviours post-intervention

The interventions were perceived to have increased the use of ANC and institutional delivery services, promoted ‘bypassing’ of resident health facilities in favour of intervention facilities, facilitated positive collaborations between some TBAs and HCs, encouraged men’s involvement in maternal and newborn healthcare services, and improved community health awareness. Views regarding increased health services utilisation were expressed mainly by key informants, some of them with access to routine data.

“Since the beginning of the implementation of the baby kits scheme in the facility, the number of deliveries per month has fast increased. Some of these mothers come just for ANC, but while here, they become aware that they are in labour. Moreover, some of them come without anything, so the presence of the baby kits in the facility helps them a lot. In addition, it encourages them to come to deliver here in the unit.”

(Male key informant, HC III)

The increased utilisation of maternal health services in the study sub-counties might have resulted from the incentives themselves and from the community mobilisation that was associated with the implementation of the incentive schemes.

“We have seen a real increase in the utilisation of ANC and deliveries in these facilities. Even the advocacy within the community using the VHTs, the midwives, and the peer mothers themselves has increased, so it has created awareness and knowledge that facility deliveries are best and attending antenatal care is good.”

(Male key informant, Member of DHMT)

The transport voucher system was perceived to have increased referrals by facilitating the transport of women to the nearest health facilities or to the referral centres for the management of pregnancy and labour-related complications.

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3 *“The transport voucher is good for immediate transportation and management of*
4 *pregnancy-related complications.”*
5 (Male FGD participant, HC II)
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8 *“In the past, they had problems to go to Anyeke HC IV, but now the coupon [transport*
9 *voucher] is also helping them a lot with the referral system.”*
10 (Female key informant, District Local Government)
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12 The incentives were perceived to have encouraged some women in the neighbouring sub-
13 counties to by-pass health facilities in their resident sub-counties for services at health centres
14 in the intervention sub-counties.
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17 *“...we have mothers coming from the neighbouring sub-counties, like Abok. You also*
18 *find someone coming from Abok leaving the HCs there and coming to Ngai here*
19 *thinking she will go back with something. Maybe you could do it in all the sub-*
20 *counties so that they can deliver also from there because most of them come here*
21 *because of the baby kits.”*
22 (Female key informant, HC III)
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24 *“We know some mothers who travel from other sub-counties to come here [Acaba*
25 *sub- county] because of the vouchers. If they also have the vouchers there, it will be*
26 *better.”*
27 (Female FGD participant, HC II)
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31 The voucher system was perceived to have promoted positive collaboration between some
32 TBAs and HCs resulting in a reduction in home deliveries. Following dialogues with some
33 community leaders and health workers, some TBAs were happy to receive incentives and in
34 return refer and escort pregnant women to HCs for childbirth instead of assisting them to
35 deliver at home.
36

37 *“With this programme, even some TBAs are escorting pregnant mothers to the health*
38 *centre.”*
39 (Female FGD participant, HC II)
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42 Transport vouchers motivated men to transport or escort their wives to health facilities for
43 ANC and delivery, and to participate in birth preparedness.
44

45 *“The voucher system has encouraged husbands to transport their wives to the nearest*
46 *HCs for ANC and delivery.”*
47 (Male FGD participant, Abere Trading Centre)
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49 *“They [interventions] motivate couples from the period of conception to delivery to*
50 *actively seek health services.”*
51 (Male FGD participant, HC II)
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54 Health information and education messages associated with the baby kits and transport
55 voucher schemes sensitised the communities and improved community health awareness
56 beyond improving the use of facility delivery services.
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“.....the educative message they receive from there [HCs] will make them understand the importance of bringing mothers to the health facility. It is mainly important for men. Secondly, they spread the message about what they received to the community.”
(Male key informant, Myene Sub-County)

Perceived undesirable effects of the incentives

Perceived undesirable effects of the schemes included increased workload for health workers and beyond, sustainability of the interventions, encouraging “increased fertility”, and encouraging dependency. Unlike the other views, these views were expressed exclusively by key informants. The interventions were perceived to have increased utilisation of maternal health services as well as the workload of transporters and health workers. Whereas this was a good effect for transporters, it was perceived to have led to overwork and stress among health workers. To cope with the situation, it was suggested that the number of staff working in the facilities implementing the interventions should be increased.

“We need an additional midwife and regular supplies to meet the workload.”
(Female key informant, HC II)

“In terms of human resources, the [number of] health staff is not enough; it makes an overwork. The workload has increased, giving stress. The midwives in those health facilities are working alone, and current workloads are not sustainable.”
(Male key informant, Member of DHMT)

There were concerns about the sustainability of the interventions and their effects beyond the funding period.

“The biggest challenge for me is the issue of sustainability. We are dealing with vulnerable and poor people, and we are giving it like a handout; so, the greatest challenge is the issue of sustainability. When the programme stops, are we able to sustain it?”
(Male key informant, Member of DHMT)

“The bad part is the sustainability because when people are used to certain things, when they are used to gifts, you need to maintain it.”
(Male key informant, HC III)

Considering the low family planning uptake and the high fertility rate in the district, some leaders were concerned that the interventions could increase fertility.

“You know how much we have advocated for family planning, but it is still the second-lowest activity in the district, so the rate of reproduction is too high.”
(Female key informant, District Local Government)

“...the family planning messages are not included in the intervention because sometime this intervention could be a motivating factor to produce more children.”
(Male key informant, Loro Sub-County)

Although the interventions were considered useful in the short term, there were concerns that long-term implementation would encourage dependency in the community.

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“It is a useful system, but if the initiative continues the community will become too much dependent on NGOs. I think it should be stopped after some time because it will encourage dependency among our community.”

(Male key informant, Myene Sub-County)

Improving the socio-economic status of the community, for example, by setting up income generating activities for women, was a potential solution to dependency.

“I think that after delivering, women should be encouraged to have another source of income to take care of the baby so that in case incentives will not be there, they will be able to go to the facility even without vouchers.”

(Male key informant, Loro Sub-County)

Implementation issues and lessons learned

Several issues emerged with the implementation of the interventions. They included: information gaps and consequences, transport voucher design, implementation and payment, poor attitudes and poor quality of care, insecurity and its effects on transport voucher system, and shortage of baby kits. The community suggested ways to improve the implementation of the schemes.

Information gaps, mainly at the start of the interventions, led to undesirable consequences such as confusion, mistrust and discontent, principally related to payment of the transporters.

“Two transporters of Akaoidebe village were not paid for two times after transporting pregnant mothers to deliver at Ngai HC. One of the transporters was told the money was only paid to transporters who use motorbikes to transport mothers, not bicycles, and the other transporter was told that he delayed and so the organisation took back the money. All major complains are on staff attitudes: bad language and refusal to pay money.”

(Male FGD participant, Abere Trading Centre)

“The staff concerned with the payment of the vouchers are reluctant to pay the transporters even after the time expected has passed.”

(Male FGD participant, HC III)

The implementation of the transport voucher system was associated with several issues, primarily about the amount of money to be paid and the timing of refunds. The vouchers were designed in English, but most beneficiaries could not read English. Some transporters were uncooperative and demanded immediate refunds instead of monthly refunds according to the voucher system guidelines. Other issues included delayed voucher refunds, overcharging at night, double payments and the preferred method to determine the cost (i.e. a negotiable amount vs a flat amount).

“From my experience with the local community, the main challenge that we are facing is the management of the money for the refund. Some men who transport patients [pregnant women and mothers] here ask for money immediately even before we have seen the patient, or they ask for money while you are working with other patients, and they do not like to wait.”

(Male key informant, HC II)

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“Sometimes the transporters are paid twice due to lack of awareness. Some boda bodas ask mothers to pay for fuel to be transported to the health unit and later sign for the voucher refund at the HC.”

(Male FGD participant, HC II)

Inadequate sensitisation, miscommunication and poor health worker attitudes often resulted in poor quality of care.

“Some women fear to attend ANC and delivery at the facility because of the aggressive character and unwelcome attitudes of some midwives. The issues with the voucher system have been abandoned by some community members because of the bad attitudes and language used against men and women by the health workers.”

(Male FGD participant, Abere Trade Centre)

“Staff, especially health centre midwives should be trained on how to handle mothers and transporters because there are complaints of harsh treatment.”

(Male FGD participant, HC III)

Some transporters refused to operate at night because of insecurity. Alternatively, the transporter would overcharge women to ‘compensate’ for the perceived increased insecurity risk at night.

“Some boda bodas don’t like to come to our villages in the night because they are afraid of robbers.”

(Female FGD participant, HC II)

“Transporters overcharge mothers, especially at night, when labour occurs.”

(Male FGD participant, HC III)

Increased facility deliveries led to shortages of baby kits and some women had to make repeat visits to the facility to collect their kits.

“For the challenges, let me start from the baby kits. The rate of reproduction is too high, so the demand is still too high, and those things are there, but you find it is not enough.”

(Female key informant, District Local Government)

“Sometimes the midwives tell us that the kits are finished so we have to come and collect them when they bring more.”

(Female FGD participant, HC III)

Community dialogues provided platforms for open discussions to address implementation challenges such as information gaps, regulation, selection of transporters, and adherence to the voucher system guidelines, voucher refund, and personal conduct.

“A copy [records] of the baby kits supplied should be available to the sub-county to guarantee easy monitoring and supervision.”

(Male key informant, Ngai Sub-County)

“There should be a clear separation between mothers who pay their transporters immediately and those unable to pay immediately. Mothers who negotiate and pay their transporters before reaching the health facility should later sign for the transport refund to avoid double payment.”

(Male FGD participant, Abere Trade Centre)

“A copy of the voucher given to the person escorting the mother should be translated into Luo [Lango] language for easy and better understanding.”

(Male FGD participant, Abere Trading Centre)

Discussion

We examined community perceptions on the use of baby kits and transport vouchers to improve the utilisation of facility-based delivery services in Oyam District. Generally, participants perceived the interventions to be improving the utilisation of maternal health services through addressing major barriers such as geographical inaccessibility to health facilities and delays in transferring obstetric emergencies from the lower level health facilities to the higher levels of care.

Distance to health facilities is known to be inversely associated with the utilisation of skilled birth care in SSA.²⁸ Given the high poverty levels in the district, the cost of transport frequently emerged as a barrier to accessing health services. This is consistent with what has been reported in a recent review on barriers to obstetric care access in SSA.²⁹ In many rural settings, considerable delays in reaching health facilities have resulted in avoidable maternal deaths.²⁸ The schemes were also seen to be very helpful to the most vulnerable and disadvantaged groups such as single mothers.³⁰ These findings are consistent with those of the quantitative study that evaluated the effects of the incentives.²³ Notwithstanding, this study provides further insights into the pathways through which the interventions helped to achieve the effects i.e. through changing the role of TBAs, the involvement of men in maternal health issues, and community involvements in the interventions. We also elaborate on the community concerns related to the perceived negative impacts of the interventions.

The voucher system promoted unexpected collaborations between some TBAs and formal health workers. The TBAs who referred and escorted pregnant women to deliver at the health facilities implementing the voucher system were recognised as ‘transporters’ and received voucher refunds. This collaboration might have contributed to reduced home deliveries. Studies show that TBAs can change their role from attending to home births to promoting institutional childbirth if given the right incentives, training, and a conducive working environment.^{11 31-34} Thus, there is a great potential to achieve higher utilisation of maternal health services in this context through the appropriate involvement of TBAs.

Community health awareness of maternal health issues was perceived to have improved during the implementation of the incentive schemes. The implementation of the incentive schemes was associated with community sensitisation and mobilisation using diverse strategies, individuals, and community structures. These included community dialogues, local radio broadcasts, health facilities and health workers, VHT members, transporters, and peer mothers. In both the FGDs and KIIs, respondents said there had been behavioural changes such as men escorting their wives to the health centres for antenatal and delivery services, which was uncommon before the interventions. Thus, the various forms of community involvements may explain the perceived improvements in maternal health awareness and perceived behaviour changes over a relatively short period.

By improving the utilisation of maternal health services, the interventions also increased workloads for transporters, health workers, social workers, and VHT members. Even though transporters experienced an increased workload, which translated into more economic gains,

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3 some villages had a shortage of transporters, especially at night. Among health workers,
4 midwives were the most affected, as no additional staffs were recruited during the project. In
5 line with our findings, a review has pointed out that demand-side incentive schemes can
6 improve the utilisation of maternal healthcare services but there is a need to simultaneously
7 strengthen the supply-side to achieve the desired outcomes.⁵
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10 Given the concerns of some community leaders regarding sustainability of the interventions
11 beyond the funded period, CUAMM (the implementing non-governmental organisation)
12 initiated dialogues with the district local government, health authorities and community
13 leaders to explore ways of mitigating some of the potential untoward effects of the
14 interventions.¹⁴ Furthermore, the organisation commissioned a study to investigate the
15 feasibility of setting up a community health insurance scheme that could support the transport
16 voucher scheme in the district.³⁵
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19 Oyam District has high poverty and fertility levels with low uptake of family planning
20 services. Consequently, some key informants were concerned that the interventions could
21 increase fertility. A survey conducted in conflict-affected areas of Sudan, northern Uganda
22 and the Democratic Republic of Congo found low knowledge and use of family planning
23 services. Major barriers to family planning use included health system inadequacies, fear of
24 side effects of the methods and insecurity. As a post-conflict setting with high maternal,
25 newborn and child deaths,¹⁹ the desire for large family sizes in Oyam is understandable.
26 Therefore improving maternal and child survival can sustain the demand for family planning
27 services in the district.³⁶⁻³⁹ Although, the incentive schemes were not vertical interventions
28 that needed separate family planning promotion, concerted efforts to strengthen family
29 planning services across the district may resolve the low uptake of family planning services.
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32 There were also concerns that long-term implementation of the interventions could encourage
33 dependency in the communities. In 2013 the district reported a maternal mortality ratio of
34 500/100,000 live births, which was one of the highest in the country. Moreover, the district is
35 under-resourced and depends regularly on donors to provide basic services.¹⁹ Therefore,
36 donor-supported interventions such as the incentive schemes, which may improve utilisation
37 of maternal health services and reduce maternal and newborn deaths may continue to be a
38 'necessary evil' until such a time when the district can afford to provide adequate services to
39 improve its health indicators.
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42 Community dialogues were crucial in dealing with a wide range of issues related to the
43 implementation of the schemes. Information gaps led to inadequate sensitisation and
44 miscommunication while poor attitudes of some health workers resulted in a poor quality of
45 care. Of all these concerns, poor health worker attitudes were the most lamented about.
46 Studies show that fear of being maltreated by health workers constitutes a barrier to utilising
47 facility delivery services.^{24 40} In some communities, health workers were perceived as
48 obstacles to the smooth implementation of the incentive schemes. Hence, it may not be
49 surprising that some community leaders lost interest in the interventions out of frustration.
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53 Nonetheless, as community involvement gradually strengthened, it encouraged ownership
54 and resulted in communities taking on more direct roles in the regulation and implementation
55 of the voucher system, as has also happened elsewhere.¹²⁻¹⁴ For example, some villages
56 selected and registered their transporters who were willing to operate within the existing
57 transport voucher guidelines. Because transporters played a central role in the voucher
58 system, many of the implementation issues revolved around them. Hence, having the
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3 communities regulating their transporters was a vital achievement that addressed several key
4 issues in operating the voucher system. Community dialogues also provided suggestions to
5 improve the design of the transport voucher system and to phase out baby kits and replace
6 them with vouchers, which were found to be more useful and less costly.
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8 **Strengths and limitations**

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10 The FGDs and KIIs engaged different categories of study participants and collected a wide
11 range of perceptions to ensure a cross-sectional representation of viewpoints. Triangulation of
12 the results from different categories of respondents and data collection methods and the use
13 of two coders to analyse the data increases the validity and reliability of our findings. FGDs
14 were conducted mainly in HCs, which might have restricted the freedom of expression. To
15 mitigate this problem, all the discussions were performed in a quiet and closed room in the
16 absence of any health facility staff. Participants were assured of confidentiality and were
17 encouraged to freely express themselves without fear of victimization or future prejudice.
18 Despite these precautionary measures, it is possible that some of the participants might have
19 been reluctant to voice negative aspects of the intervention as staff members of the NGO that
20 implemented the intervention and funded the study, carried out the data collection while the
21 intervention was ongoing. In addition, some information might have been lost during note
22 taking for the few FGD and KII sessions that were not audio-recorded.
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26 Even though we made efforts to achieve a gender-balanced representation for the KIIs, this
27 was not possible as most key informants were male. Additionally, even though there were
28 more female participants than males in the FGDs, analysis of the viewpoints that we captured
29 show male dominance. This observation may be reflective of the largely male-dominated
30 society where the study was conducted. This situation might have led to potential biases in
31 some of the perceptions elicited. Furthermore, increasing the utilisation of health services in a
32 health resource-limited setting such as Oyam may not necessarily lead to improved maternal
33 and newborn health outcomes, particularly if the quality of care is sub-standard.⁴¹ Finally,
34 this study could have benefited from the views of TBAs concerning the influence of the
35 schemes on their roles. Information on their changed role emerged mainly from mothers and
36 key informants.
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39 **Conclusions**

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41 This study provides further insights into the implementation of incentive schemes to improve
42 maternal health services utilisation in Uganda. For a successful implementation of similar
43 interventions, we recommend the active involvement of the beneficiary communities and
44 stakeholders throughout the design and implementation of the schemes. Moreover, working
45 with beneficiaries and stakeholders can mitigate potentially undesirable effects of such
46 schemes. The findings of this study are relevant for planning and implementing similar
47 schemes in low-income countries.
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51
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54 participants, facilitating the focus group discussions and helping during interviews. We are
55 grateful to Mrs Sarah Awor (district biostatistician) for providing us with data and inputs
56 from the district office.
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Contributorship statement

WM conceived and designed the study, contributed to the data collection, participated in the data analysis, drafted the manuscript, and participated in the interpretation of the findings and revision of the manuscript. CW drafted the abstract, reviewed the Methods section, contributed to the data analysis, interpretation of the findings and revision of the manuscript. ED, MN, JBO and SA contributed to the data collection, interpretation of findings and revision of the manuscript. CA participated in the editing of the manuscript and interpretation of findings. PL and GP contributed to the interpretation of the findings and revision of the manuscript. All authors read and approved the final version of the manuscript.

Competing interests

CW, MN, CA, JBO, and SA have no competing interests to declare. At the time of this study, WM, ED, PL, and GP were employees of Doctors with Africa CUAMM. The views expressed in this document are solely the responsibility of the authors and do not necessarily represent the views of Doctors with Africa CUAMM.

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Data sharing statement

We cannot publicly provide individual data due to participant's privacy concerns. Additionally, the informed consent we obtained did not include a provision for publicly sharing data. However, the de-identified data, inform of transcripts, underlying this study are available to qualified researchers upon request by contacting William Massavon (wmassavon@gmail.com) or Giovanni Putoto (g.putoto@cuamm.org).

References

1. WHO, The World Bank. Tracking universal health coverage: first global monitoring report: Geneva; 2015 [Available from: http://www.who.int/healthinfo/universal_health_coverage/report/2015/en accessed 10 Dec 2017.
2. WHO, UNICEF. A Decade of Tracking Progress for Maternal, Newborn and Child Survival: The 2015 Report Geneva: WHO; 2015 [Available from: http://countdown2015mnch.org/documents/2015Report/Countdown_to_2015_final_report.pdf accessed 10 Dec 2017.
3. UNICEF. Maternal Health Current Status and Update: Antenatal Care New York: UNICEF; 2017 [updated Jan 2018. Available from: <https://data.unicef.org/topic/maternal-health/antenatal-care/#>
4. WHO. Skilled Attendance at Birth: Situation and trends Geneva: WHO; 2017 [Available from: http://www.who.int/gho/maternal_health/skilled_care/skilled_birth_attendance_text/en/ accessed 15 Dec 2017.
5. Murray SF, Hunter BM, Bisht R, et al. Effects of demand-side financing on utilisation, experiences and outcomes of maternity care in low- and middle-income countries: a systematic review. *BMC pregnancy and childbirth* 2014;14:30. doi: 10.1186/1471-2393-14-30 [published Online First: 2014/01/21]
6. Ir P, Horemans D, Souk N, et al. Using targeted vouchers and health equity funds to improve access to skilled birth attendants for poor women: a case study in three rural health districts in Cambodia. *BMC pregnancy and childbirth* 2010;10:1. doi: 10.1186/1471-2393-10-1 [published Online First: 2010/01/12]
7. Gopalan SS, Durairaj V. Addressing maternal healthcare through demand side financial incentives: experience of Janani Suraksha Yojana program in India. *BMC health services research* 2012;12:319. doi: 10.1186/1472-6963-12-319 [published Online First: 2012/09/18]
8. Bellows B, Kyobutungi C, Mutua MK, et al. Increase in facility-based deliveries associated with a maternal health voucher programme in informal settlements in Nairobi, Kenya. *Health policy and planning* 2013;28(2):134-42. doi: 10.1093/heapol/czs030 [published Online First: 2012/03/23]
9. Ekirapa-Kiracho E, Waiswa P, Rahman MH, et al. Increasing access to institutional deliveries using demand and supply side incentives: early results from a quasi-experimental study. *BMC international health and human rights* 2011;11 Suppl 1:S11. doi: 10.1186/1472-698x-11-s1-s11 [published Online First: 2011/03/18]
10. Obare F, Warren C, Abuya T, et al. Assessing the population-level impact of vouchers on access to health facility delivery for women in Kenya. *Social science & medicine (1982)* 2014;102:183-9. doi: 10.1016/j.socscimed.2013.12.007 [published Online First: 2014/02/26]
11. Wilunda C, Scanagatta C, Putoto G, et al. Barriers to Institutional Childbirth in Rumbek North County, South Sudan: A Qualitative Study. *PloS one* 2016;11(12):e0168083. doi: 10.1371/journal.pone.0168083 [published Online First: 2016/12/16]
12. Ekirapa-Kiracho E, Namazzi G, Tetui M, et al. Unlocking community capabilities for improving maternal and newborn health: participatory action research to improve birth preparedness, health facility access, and newborn care in rural Uganda. *BMC health services research* 2016;16(Suppl 7):638. doi: 10.1186/s12913-016-1864-x [published Online First: 2017/02/12]
13. Howard-Grabman L, Miltenburg AS, Marston C, et al. Factors affecting effective community participation in maternal and newborn health programme planning, implementation and quality of care interventions. *BMC pregnancy and childbirth* 2017;17(1):268. doi: 10.1186/s12884-017-1443-0 [published Online First: 2017/09/01]
14. Katahoire AR, Henriksson DK, Ssegujja E, et al. Improving child survival through a district management strengthening and community empowerment intervention: early

- implementation experiences from Uganda. *BMC public health* 2015;15:797. doi: 10.1186/s12889-015-2129-z [published Online First: 2015/08/20]
15. Austin-Evelyn K, Sacks E, Atuyambe L, et al. The promise of Mama Kits: Perceptions of in-kind goods as incentives for facility deliveries in Uganda. *Global public health* 2017;12(5):565-78. doi: 10.1080/17441692.2016.1149597 [published Online First: 2016/03/08]
16. Okal J, Kanya L, Obare F, et al. An assessment of opportunities and challenges for public sector involvement in the maternal health voucher program in Uganda. *Health research policy and systems* 2013;11:38. doi: 10.1186/1478-4505-11-38 [published Online First: 2013/10/22]
17. Uganda Bureau of Statistics (UBoS). National Population and Housing Census: Census 2014 Final Results Kampala: UBOS; 2017 [Available from: <http://www.ubos.org/?s=Final+Results> accessed 3 Jan 2018 2017.
18. Uganda Bureau of Statistics and ICF. Uganda Demographic and Health Survey 2016. Kampala, Uganda and Rockville, Maryland, USA: UBOS and ICF 2018.
19. Republic of Uganda. Oyam District Local Government Statistical Abstract 2012/13 Kampala: Republic of Uganda; [updated 17 June 2014. Available from: <http://www.ubos.org/statistical-activities/community-systems/district-profiling/district-profiling-and-administrative-records/>.
20. Fisseha G, Berhane Y, Worku A, et al. Distance from health facility and mothers' perception of quality related to skilled delivery service utilization in northern Ethiopia. *International journal of women's health* 2017;9:749-56. doi: 10.2147/ijwh.s140366 [published Online First: 2017/10/19]
21. Pfeiffer C, Mwaipopo R. Delivering at home or in a health facility? health-seeking behaviour of women and the role of traditional birth attendants in Tanzania. *BMC pregnancy and childbirth* 2013;13:55. doi: 10.1186/1471-2393-13-55 [published Online First: 2013/03/02]
22. Titaley CR, Hunter CL, Dibley MJ, et al. Why do some women still prefer traditional birth attendants and home delivery?: a qualitative study on delivery care services in West Java Province, Indonesia. *BMC pregnancy and childbirth* 2010;10:43. doi: 10.1186/1471-2393-10-43 [published Online First: 2010/08/13]
23. Massavon W, Wilunda C, Nannini M, et al. Effects of demand-side incentives in improving the utilisation of delivery services in Oyam District in northern Uganda: a quasi-experimental study. *BMC pregnancy and childbirth* 2017;17(1):431. doi: 10.1186/s12884-017-1623-y [published Online First: 2017/12/21]
24. Anastasi E, Borchert M, Campbell OM, et al. Losing women along the path to safe motherhood: why is there such a gap between women's use of antenatal care and skilled birth attendance? A mixed methods study in northern Uganda. *BMC pregnancy and childbirth* 2015;15:287. doi: 10.1186/s12884-015-0695-9 [published Online First: 2015/11/06]
25. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care : journal of the International Society for Quality in Health Care* 2007;19(6):349-57. doi: 10.1093/intqhc/mzm042 [published Online First: 2007/09/18]
26. Dawson S, Manderson L, Tallo VL. A Manual for the use of Focus Groups. Boston, MA, USA: by International Nutrition Foundation for Developing Countries 1993.
27. Gläser J, Laudel G. Life With and Without Coding: Two Methods for Early-Stage Data Analysis in Qualitative Research Aiming at Causal Explanations. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 2013;14(2) doi: 10.17169/fqs-14.2.1886 [published Online First: 2013-03-31]
28. Wong KLM, Benova L, Campbell OMR. A look back on how far to walk: Systematic review and meta-analysis of physical access to skilled care for childbirth in Sub-Saharan Africa. *PloS one* 2017;12(9):e0184432. doi: 10.1371/journal.pone.0184432 [published Online First: 2017/09/15]

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29. Kyei-Nimakoh M, Carolan-Olah M, McCann TV. Access barriers to obstetric care at health facilities in sub-Saharan Africa-a systematic review. *Systematic reviews* 2017;6(1):110. doi: 10.1186/s13643-017-0503-x [published Online First: 2017/06/08]
 30. Kiwanuka SN, Ekirapa EK, Peterson S, et al. Access to and utilisation of health services for the poor in Uganda: a systematic review of available evidence. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 2008;102(11):1067-74. doi: 10.1016/j.trstmh.2008.04.023 [published Online First: 2008/06/21]
 31. Rudrum S. Traditional Birth Attendants in Rural Northern Uganda: Policy, Practice, and Ethics. *Health care for women international* 2016;37(2):250-69. doi: 10.1080/07399332.2015.1020539 [published Online First: 2015/02/27]
 32. Wilunda C, Dall'Oglio G, Scanagatta C, et al. Changing the role of traditional birth attendants in Yirol West County, South Sudan. *PloS one* 2017;12(11):e0185726. doi: 10.1371/journal.pone.0185726 [published Online First: 2017/11/03]
 33. Pyone T, Adaji S, Madaj B, et al. Changing the role of the traditional birth attendant in Somaliland. *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics* 2014;127(1):41-6. doi: 10.1016/j.ijgo.2014.04.009 [published Online First: 2014/06/19]
 34. Kyomuhendo GB. Low use of rural maternity services in Uganda: impact of women's status, traditional beliefs and limited resources. *Reproductive health matters* 2003;11(21):16-26. [published Online First: 2003/06/13]
 35. Biggeri M, Nannini M, Putoto G. Assessing the feasibility of community health insurance in Uganda: A mixed-methods exploratory analysis. *Social science & medicine (1982)* 2018;200:145-55. doi: 10.1016/j.socscimed.2018.01.027 [published Online First: 2018/02/09]
 36. McGinn T, Austin J, Anfinson K, et al. Family planning in conflict: results of cross-sectional baseline surveys in three African countries. *Conflict and health* 2011;5:11. doi: 10.1186/1752-1505-5-11 [published Online First: 2011/07/15]
 37. Ouma S, Turyasima M, Acca H, et al. Obstacles to family planning use among rural women in Atiak health center IV, Amuru District, northern Uganda. *East African medical journal* 2015;92(8):394-400. [published Online First: 2015/01/01]
 38. Orach CG, Otim G, Aporomon JF, et al. Perceptions, attitude and use of family planning services in post conflict Gulu district, northern Uganda. *Conflict and health* 2015;9:24. doi: 10.1186/s13031-015-0050-9 [published Online First: 2015/08/13]
 39. Elmusharaf K, Byrne E, O'Donovan D. Social and traditional practices and their implications for family planning: a participatory ethnographic study in Renk, South Sudan. *Reproductive health* 2017;14(1):10. doi: 10.1186/s12978-016-0273-2 [published Online First: 2017/01/18]
 40. Kwagala B. Birthing choices among the Sabiny of Uganda. *Culture, health & sexuality* 2013;15 Suppl 3:S401-14. doi: 10.1080/13691058.2013.799232 [published Online First: 2013/06/20]
 41. Souza JP, Gulmezoglu AM, Vogel J, et al. Moving beyond essential interventions for reduction of maternal mortality (the WHO Multicountry Survey on Maternal and Newborn Health): a cross-sectional study. *Lancet (London, England)* 2013;381(9879):1747-55. doi: 10.1016/s0140-6736(13)60686-8 [published Online First: 2013/05/21]

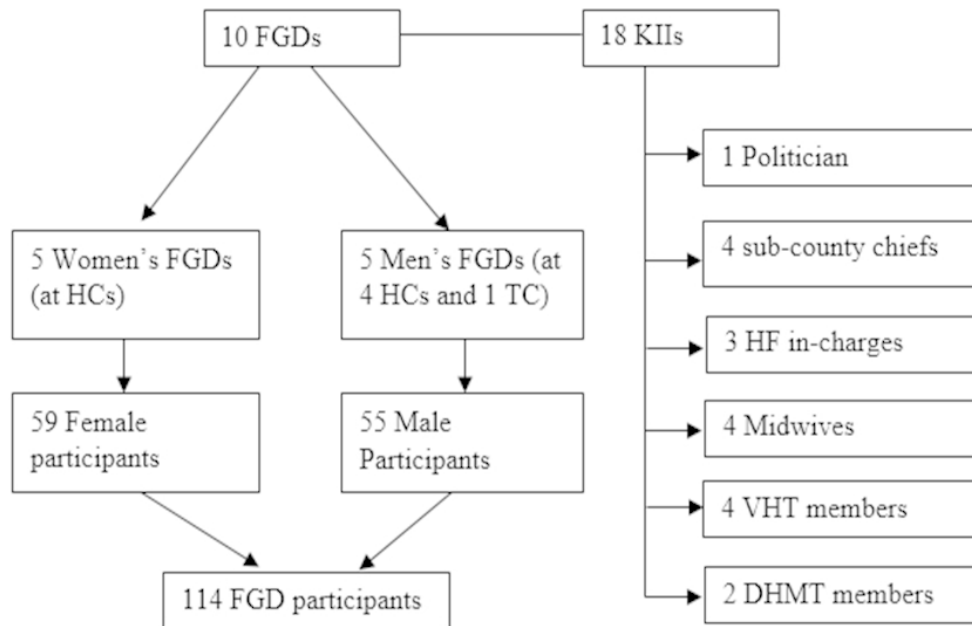
Legends

Fig 1 legend. FGDs: focus group discussions; KIIs: key informant interviews; HCs: health centres; TC: trading centre; HF: health facility; DHMT: district health management team; VHTs: village health teams; TBAs: traditional birth attendants.

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6 **Supplementary file**
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8 **Supplementary file 1. Interview guide for focus group discussions and key informant**
9 **interviews**
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For peer review only



The number of focus groups discussions, key informant interviews, and participants. FGDs: focus group discussions; KIIs: key informant interviews; HCs: health centres; TC: trading centre; HF: health facility; DHMT: district health management team; VHTs: village health teams; TBAs: traditional birth attendants.

72x47mm (300 x 300 DPI)

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3 **Questionnaire for Focus Group Discussions and Key Informants Interviews**
4 **CUAMM Incentives Study, Oyam District**
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8 *Notes for interviewers
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10 **NB: Please go through the brief notes for interviewers below (page 2) before starting discussions**
11 **or interviews**
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15 **Q1. What can you tell us (your general impression) about the Baby kits and Transport vouchers**
16 **that CUAMM implemented in ACABA and NGAI Sub-counties?**
17

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19 *-explore how they got to know (information) about the interventions, if not covered

20 *-find out the benefits of the interventions (baby kits and transport vouchers), if not covered

21 *-watch for non-verbal clues (signs) and make notes
22
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26 **Q2. What do you think were some of the challenges or problems with the interventions?**
27

28 *-explore for baby kits, if not covered

29 *-explore for transport vouchers, if not covered

30 *-explore for any other issues

31 *-watch for non-verbal clues (signs) and make notes
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36 **Q3. Please feel free to tell us how we can improve these interventions in the future, considering**
37 **the challenges or problems that you mentioned.**
38

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40 *-let them make recommendations or suggestions for improving the interventions

41 *-watch for non-verbal clues (signs) and make notes
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46 **Q4. We implemented (gave out) the baby kits and transport vouchers in 2 of the 12 sub-counties**
47 **in the district because of limited resources. If more resources become available in future, how**
48 **many sub-counties should we consider for scaling up the interventions?**
49

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51 *-watch for non-verbal clues (signs) and make notes
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54 **Q5. What are your reasons for your answer to Q4?**
55

56 *-explore the reasons; 1 to a maximum of 5 reasons should be fine,
57
58

59 **THANK YOU VERY MUCH FOR YOUR INPUTS AND TIME!**
60

****Brief guiding points for interviewers**

- ✚ Greet participants and make them comfortable,
- ✚ Introduce yourself,
- ✚ Introduce the purpose of the discussion or interview,
- ✚ Tell them it is **anonymous** (private and confidential)-no personal information will be collected or used to identify them,
- ✚ Tell them about a small incentive (e.g. a transport refund) at the end of the discussion/interview,
- ✚ Introduce the **INFORMED CONSENT FORM AND EXPLAIN CLEARLY, its purpose. If they voluntarily accept to participate then**
- ✚ Kindly ask them to sign or thumbprint (depending on which is applicable) and give them copies to keep,
- ✚ Kindly request their permission to record (take notes), especially if you are using a recorder,
- ✚ **NB: NO INTERVIEW OR DISCUSSION WITHOUT OBTAINING INFORMED CONSENT FIRST,**
- ✚ **For the FGDs the team may consist of three people, i.e. a moderator, a translator and a note taker (recorder),**
- ✚ **The FGDs could last for about one and half to two hours,**
- ✚ **For the Key Informant interviews, the team may include an interviewer, a translator and a note taker (recorder),**
- ✚ **The Key Informant interviews could take about 30-40 minutes to complete,**
- ✚ **Thank participant(s) at the end of the discussion or interview,**
- ✚ **Remember to leave your contact mobile phone number(s), in case it becomes necessary for them to contact you for further information.**

Sources:

- 1) The Focus Group Manual
(<http://apps.who.int/iris/bitstream/10665/41795/1/0963552228.pdf>)
- 2) Key Informant Guide (www.TexasMotherFriendly.org)
- 3) Guidelines for conducting a Focus Group
(https://assessment.trinity.duke.edu/documents/How_to_Conduct_a_Focus_Group.pdf)

Consolidated criteria for reporting qualitative studies: 32-item checklist

No. Item	Guide questions/description	Reported on page
Domain 1: Research team and reflexivity		
<i>Personal Characteristics</i>		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	Page 7
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	The journal does not require this to be specified. The credentials of the researchers are as follows; WM: PhD, CW: DrPH; MN: MSc; CA: SA: JBO: MPH; EV: MD, MPH; PL: MBChB, MSc; and GP: MD
3. Occupation	What was their occupation at the time of the study?	Page 1 provides information on affiliations. WM, CA, SA, JBO and EV were project staff. PL was the country director. CW was a doctoral candidate, MN was a researcher and GP was the head of operational research
4. Gender	Was the researcher male or female?	MN, CA, EV are female. All the other authors are male.
5. Experience and training	What experience or training did the researcher have?	WM and CW have experience in conducting qualitative studies
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	There was no prior relationship between data collectors and FGD study participants. On the contrary, some of the key informants especially members of the District Health Management Team and health care workers were known to the

		research team members.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Specific information about the interviewer were provided during data collection
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	The interviewers introduced themselves as staff of the NGO CUAMM. They then provided basic information about the study and the intended utility of the findings.
Domain 2: study design		
<i>Theoretical framework</i>		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Pages 6&8
<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 7
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Page 7
12. Sample size	How many participants were in the study?	Page 8
13. Non-participation	How many people refused to participate or dropped out? Reasons?	There were no refusals or drop-outs
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Page 6
15. Presence of non-participants	Was anyone else present	There were no non-participants

	besides the participants and researchers?	
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Pages 9 & 10
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Page 7 and Supplementary 1 file
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	There no repeat interviews
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Page 7
20. Field notes	Were field notes made during and/or after the interview or focus group?	Page 7
21. Duration	What was the duration of the interviews or focus group?	Page 7
22. Data saturation	Was data saturation discussed?	Page 7
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Page 7
Domain 3: analysis and findings		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	Page 8
25. Description of the coding tree	Did authors provide a description of the coding tree?	Not provided. Documentation is available upon request.
26. Derivation of themes	Were themes identified in advance or derived from the data?	Page 8
27. Software	What software, if applicable, was used to manage the data?	Page 8
28. Participant checking	Did participants provide feedback on the findings?	This was not done for logistical constraints

<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Pages 11-22.
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Major themes and sub-themes were presented