



RESEARCH ARTICLE

# Out-of-pocket payments during childbirth in Kenya under the free maternity services: Perspectives of mothers, healthcare workers and county officials [version 1; peer review: awaiting peer review]

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## Abstract

**Background:** This study seeks to determine the extent of women's out-of-pocket (OOP) payments for delivery under the free maternity policy (FMP).

**Methods:** We conducted a convergent parallel mixed-methods study using quantitative and qualitative data collection. The study was set in three facilities (levels 3, 4, and 5) in Kiambu County, Kenya. The study involved exit interview (EI) surveys with mothers (n = 553) who utilised FMP delivery services and focus group discussions (FGDs) with mothers who returned for postnatal visits (6, 10, and 14 weeks). There were 21 in-depth interviews (IDIs) with county officials and healthcare workers (HCWs). Quantitative data were analysed using descriptive statistics, while qualitative data were audio-recorded, transcribed and analysed using thematic analysis.

**Results:** Despite the FMP being free on paper, mothers incurred OOP payments in practice. The overall mean OOP payments incurred by mothers who underwent normal delivery was 9.50 USD (SD 8.20 USD), and caesarean section (CS) was 10.88 USD (SD 15.16 USD). The main cost drivers were transport, lack of adequate supply and medications, lack of policy clarity by health workers, failure to notify the NHIF office of available clients, and ultrasound scan services. While the OOP payments were not deemed catastrophic, some women perceived it as a barrier to care as they ended up using savings or selling their assets to meet the costs. There were no patient characteristics associated with OOP payments.

**Conclusions:** OOP payments during childbirth in Kenya place a considerable economic burden on mothers and their households. There is need to promote awareness of the policy and provide a sustainable form of transport, especially during emergencies, through

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collaboration with partners. Prioritising the supply of required medication used in maternal services in the universal health care benefits package to which Kenyan citizens are entitled, or sustainably financing the FMP is crucial.

### Keywords

Free maternity policy, Maternal care, Out-of-pocket payment, Kenya



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## Introduction

There are nearly 290,000 maternal deaths due to preventable pregnancy and childbirth-related complications happening globally. Low-and-middle-income countries (LMIC) and low-income countries (LIC), especially those in sub-Saharan Africa, such as Kenya, are the most affected because of poor access to and utilisation of maternal and family planning services. Kenya's maternal and child health status has significantly improved in the last decade. For example, the maternal mortality ratio (MMR) decreased by 52% from 2000 to 2017<sup>1</sup>, and the neonatal mortality rate (NMR) reduced from 33 to 22 deaths per 1,000 live births between 1990 to 2014<sup>2</sup>. However, maternal deaths still make up approximately 15% of all deaths among women of reproductive age (approximated at 7,300 women dying every year), with both mothers and neonates still dying from preventable pregnancy-related complications<sup>2</sup>. One in 76 women in Kenya is at risk of dying from pregnancy complications<sup>1</sup>.

As such, reducing and eliminating pregnancy-related mortality remains a priority to contribute to achieving Sustainable Development Goals (SDGs) goals. There have been various health sector reforms in Kenya seeking to reduce catastrophic expenditure on maternity care and enhance the quality of healthcare service delivery<sup>3</sup>. For example, the government of Kenya (GoK), with the support of the German Development Bank (KfW), piloted an innovative free maternity voucher scheme – output-based approach (OBA) – from 2005 to 2016. The aim was to provide free maternal healthcare services to women identified as poor using poverty indicators across five targeted regions<sup>4</sup>. The approach was phased mainly to smoothen the implementation and evaluate sustainability and expansion to accredited facilities in other districts<sup>5</sup>. The policy increased quality for targeted beneficiaries, access, and coverage<sup>6–11</sup>. In tandem, the GOK abolished all fees charged for delivery in all public facilities in 2007. However, there is no data to show how the policy was implemented and whether it achieved its objective<sup>3</sup>, but lower-level hospitals experienced financial shortages from the policy leading to the rise of unintended consequences of informal charges<sup>12</sup>. Consequently, the government set up a Health Sector Service Fund (HSSF) in 2010 to compensate the health facilities for the lost funds created by abolishing user fees<sup>3,13,14</sup>.

In June 2013, the government initiated a user fees waiver for maternity and primary health care services<sup>3</sup>. Following its initiation, it was estimated that deliveries increased by 10% across the country and up to 50% in certain counties<sup>15</sup>. A process evaluation of this policy showed that it was haphazardly implemented without the full involvement of healthcare workers (HCWs), and the public hospitals were not adequately equipped and prepared to meet the increased number of mothers who came for delivery<sup>16</sup>. Additionally, there were no adequate systems to verify the quality of care (QoC) provided and the reimbursement claims from the hospitals to the government<sup>16</sup>.

Consequently, the National Health Insurance Fund (NHIF) positioning as a driver for UHC saw it manage the FMP from 2017 in a phased approach<sup>17</sup>. The approach aimed to expand the program to provide access to all pregnant women in private, faith-based, and level 3–6 public institutions. Phase one rolled out delivery services only to private and faith-based institutions;

phase two delivery services only to all public health facilities; and phase three, other additional services such as ANC and PNC besides delivery. Since its implementation, several studies have evaluated the current policy process of implementation<sup>18</sup>, the immediate and trend effect of the policies<sup>19</sup>; impacts of the policy on mortality and services<sup>20–22</sup>; and the quality of care aspects – both provision and experience<sup>23,24</sup>. While the process evaluation by Orangi *et al.*<sup>18</sup> highlighted the financial arrangements under the current FMP, it did not evaluate the entirety of the cost components. Therefore, this study sought to determine the extent of the OOP payments that the mothers make for types of delivery under the FMP and, if catastrophic, their cost drivers and the source of the funds/costs; and identify patient factors associated with the payments.

## Methods

### Study design

We utilised the convergent mixed methods design<sup>25</sup>, specifically the parallel-database variant<sup>25</sup>. Qualitative and quantitative data were collected and analysed in tandem and then compared and combined to better understand OOP payments during childbirth in Kenya under the FMP. The study was conducted between November 2018 and June 2019.

### Study setting

The study was conducted in one Kenyan county: Kiambu, heading to its economic and sociodemographic characteristics, health indicators and population size. For instance, Kiambu County is the second-most populous county in Kenya, with a population of 2,417,735, of which 50.59% are female and 49.1% male<sup>26</sup>; and it is 60% urban and 40% rural<sup>27</sup>. The county has 364 health facilities spread across the categorisation levels, with a doctor to population ratio of 1:17,000, nurse to population ratio of 1:1,300, and an average distance to a health facility of seven Kilometres<sup>27</sup>. As of 2014, 93.4% of births were happening in a health facility; 92.6% were under a skilled provider; the median age at first marriage is 21.6 years with a total fertility rate of 2.7<sup>28</sup>. Additionally, the county was considered because of the logistic feasibility of data collection heading to its proximity to Nairobi County and the cost implication that accompanies data collection.

This being part of a bigger mixed-methods study<sup>29</sup>, three facilities (a high-volume referral hospital (Level 5 Hospital), a medium-volume hospital (Level 4 Hospital), and a low-volume hospital (Level 3 Hospital)) were purposefully selected as case study centres (Table 1). The facilities were chosen in consultation with the county team to provide a nuanced understanding of the dynamics of continuity of free maternity services from the previous policy to the current FMP provided across the different government facilities. Additionally, the facilities captured unique sub-counties dynamics given their richness in information and characteristics.

### Study population and sampling

The study population used in this study were in three categories, as summarised in Table 1. The first group comprised mothers who had delivered in the three hospitals and had been discharged home (this was to capture all medical expenses for the delivery episode). The sample size of the mothers was estimated using the formula proposed by Gorstein *et al.*<sup>30</sup>:

**Table 1. Hospital characteristics and study population.**

	Level 3 Hospital (Hospital A)	Level 4 Hospital (Hospital B)	Level 5 Hospital (Hospital C)
<b>Hospital characteristics</b>			
Bed and cots capacity <sup>a</sup>	10	46	289
Number of staff <sup>b</sup>	35	115	262
Estimated annual deliveries <sup>c</sup>	1,076	5,635	9,152
Estimated annual outpatient care <sup>c</sup>	88,829	156,108	281,379
Estimated annual inpatient care <sup>c</sup>	764	7,223	14,205
<b>Hospital participants in the study</b>			
EIs	42	170	338
FGDs	3	3	3
IDIs	<b>7</b>	<b>5</b>	<b>6</b>
<i>Facility level managers</i>	1	3	2
<i>Department in charges</i>	1	1	1
<i>Nursing officers</i>	4	0	1
<i>Accounting/ clerical officers</i>	1	1	2
<b>County participants in the study (IDI)</b>			4
Senior level managers			1
Middle level manager			2

**Notes:** Estimates for annual delivery, outpatient care and inpatient care were for the financial year July 2018 – June 2019; The outpatient total is an aggregate of both new and revisits

**EIs:** Exit Interviews; **FGDs:** Focus Group Discussions; **IDIs:** In-depth Interviews

<sup>a</sup>Source: Kenya Master Health Facility List<sup>31</sup>; <sup>b</sup>In-depth interview with health facility in-charges of the individual facilities; <sup>c</sup>Kenya Health Information System (KHIS) for aggregate reporting<sup>32</sup>.

$$n = \frac{1.96^2 p(1-p)(DEFF)}{d^2} \quad (1)$$

Where the proportion of mothers who deliver in healthcare facilities in Kiambu County was  $p = 93.4\%$ <sup>28</sup> ( $p = 129$ ), a 95% confidence interval, a width of  $\pm 3\%$  ( $\pm 0.03$ ) (margin of error/level of absolute precision), an average design effect of 2, and a non-response rate of 5%. The estimated sample size for the three facilities was 553 to ensure that the estimated expenses were representative of the skilled birth attendance under the FMP.

The second category included nine groups of mothers (ranging from 5–12 mothers) purposively selected based on a common interest which was having had a skilled delivery in a hospital setting and had come to the study sites for the 6-, 10-, or 14- weeks postnatal visits.

The third category included purposively selected respondents with knowledge of and experience in the implementation of the FMP at the county (meso) level (including county and the sub-county level officials from the County Department of Health); and the facility (micro) level (including facility in-charge, HCWs in charge of offering maternal care/services, and other cadres of hospital workers) as described in Table 1.

#### Data collection

We collected data between November 2018 and September 2019 through exit interviews (EIs), focus group discussions (FGDs), and in-depth interviews (IDIs).

**Exit interviews.** Four data collectors supervised by one researcher (BO) conducted the EIs. They received two-days training and conducted a pilot test in a non-participating facility in Kiambu County. The EIs targeted mothers who had

delivered in the three hospitals and had been discharged home at their point of exit from the facility. The design of the EI utilised a structured questionnaire, adapted from Dalinjong *et al.*<sup>33</sup>, to elucidate the sociodemographic information of the women; health and related services received at the facility; and the costs – both direct medical costs (DMC) and direct non-medical costs (DNMC) – that the patients incurred while seeking care under the FMP (detailed categorisation is in Table 2). We categorised the OOP payments in childbirth as either DMC or DNMC, as shown in Table 2. DMC was either service the patients incurred as inpatient or outpatient (herein, services paid for (SPF)) or items they were told to buy as either inpatient or outpatient (herein, told to buy (TTB)), and is a sum of the two costs. DNMC were cost incurred due to the admission process (inpatient). The mother's income was estimated by asking them detailed questions about their income and the household income per month, including work-related earnings, welfare payments, or government assistance.

The conduct of the EIs ensured that one researcher (BO) introduced the data collectors to the administration and the maternity department heads of the three facilities; then, each morning of the interview, they identified the mothers that had been discharged (using bed numbers) and were waiting to go home. With the number of mothers identified per day, we generated a random sample done through Stat Trek's Random number generator<sup>34</sup> to identify mothers for the EI. The mothers were then invited to participate in the study, and the interviews were done until we attained the intended sample size. Each mother was taken through the information sheet, and when they were comfortable participating, the consent form was handed to them. Only one mother declined to participate.

**Focus group discussions.** It is postulated that 90% of themes are discoverable in 3 to 6 FGDs and that three FGDs are ideal for identifying prevalent themes<sup>35</sup>. One researcher (BO) conducted all the 9 FGDs in Swahili (given the different level

of knowledge of the participants) using a FGD guide developed in reference to the gaps that had arisen from the EIs; direct medical cost and direct non-medical cost; source of financing payments, perceptions about mothers incurring OOP payments. The mothers in the FGD were recruited from the child welfare clinic of the three facilities when they brought their children for vaccinations. The FGDs in each facility was organised with the help of a nurse from the maternity departments. We engaged the mothers as the children were being vaccinated and asked if they would participate in the study. All the FGDs were conducted in a prebooked room at the facilities and were audiotaped following participants consent using audio recorders in addition to field notes which are part of the underlying data. Each FGD lasted between 45–90 minutes.

**In-depth interviews.** One researcher (BO) conducted all the 22 IDIs in English with the participants from the counties and the facilities using two semi-structured guides (for the county participants and the health facility participants) that was developed to capture the experience of the implementation of FMP. The two semi-structured guides' construct validity was tested in the non-participating facility to check for ambiguity and flow of the questions after which changes were made to enhance the flow and sequence of the questions. All the IDIs (save for one conducted at the place of convenience for the participant) were conducted at the places of work of the participants and were audiotaped following participants consent using audio recorders. Each IDI lasted between 30–60 minutes.

#### Data management and analysis

**Quantitative data.** Data was manually entered from the structured questionnaire to Excel by one researcher (BO), cleaned, checked for completeness, then exported to STATA 15 for coding and analysis. The sociodemographic characteristics and the elements of cost of care (source of funds and proportion of the population paying OOP payments) were analysed

**Table 2. Categorisation of OOP expenditure incurred during childbirth.**

Type of cost	Description	Recall period
<b>Direct medical cost (DMC)</b>	The summation of the services paid for yet should be free and things mothers are told to buy.	Calculated
<b>Services paid for (SPF)</b>	Cost of service received by the patient during the birth process, defined as the period during ANC, birth and PNC. The costs include registration fees, hospital card, consultation, admission, lab tests, ultrasound, payment for surgery (caesarean section or any theatre fees), blood and drugs, and other related costs. The cost is either inpatient or outpatient.	Birth process
<b>Told to Buy (TTB)</b>	Cost of payment for items that the patient was told to buy. The costs include cotton wool, basin, bandages/gauze rolls, syringe, drugs and other related costs. The cost is either inpatient or outpatient.	Birth process
<b>Direct non-medical cost (DNMC)</b>	Costs such as transport cost to and from the hospital, accommodation cost for self and a companion while the patient is admitted, and any form of informal payments. The cost is either inpatient	Birth process
<b>Overall direct expenses (ODE)</b>	Is the summation of the direct medical cost and direct non-medical cost	Calculated

descriptively using proportions. Association was done using a one-way ANOVA test for categorical value with more than two categories and a chi-square test for categorical data with two categories to determine the difference in the mean overall direct expenses (ODE) based on patients' characteristics. The ODE is a sum of DMC and DNMC and was expressed in descriptive statistics of mean, standard deviation, median, maximum and minimum.

To measure financial risk protection, we estimated the extent of catastrophic expenditure. Catastrophic expenditure is defined as having healthcare expenditure of care-seeking episodes equal to or exceeding a threshold of household resources, either expenditure or income<sup>33</sup>. Several authors have described the threshold as varying from 5–40%<sup>36–39</sup>. In this study, we estimated the impact of the OOP payments on the overall monthly household income by taking the ODE incurred divided by the monthly household income and defined it as catastrophic if it was more than 10% of the overall income as has been described in other studies<sup>39–41</sup>. The cost data in this study was collected in Kenya shillings (KES) but were converted to US dollars (USD) using an exchange rate of 1 USD = 101.555 KES, which was an average exchange rate from September 2018 – March 2019 as obtained from OANDA currency converter<sup>42</sup>.

The final set of cost analyses was a log-linear regression to determine if the characteristics of the patients were predictors or determinants of the ODE used in the facility. The variables are as shown in Table 3. The basic log-linear model was:

$$\ln Y = \beta_0 + \beta_1 X_\pi \quad (2)$$

Where  $\ln Y$  is log of ODE;  $\beta_0$  is the intercept and  $X_\pi$  are the patients characteristics. The model was differentiated for ease of interpretation as:

$$\frac{\delta Y}{Y} = \beta_1 \delta X_\pi \quad (3)$$

Where  $\beta_1$  provides an instantaneous change (a percentage change in ODE) for  $Y$  is associated with a unit change in  $X_\pi$  patient characteristics.

**Qualitative data.** All recorded FGDs were translated from Swahili to English, while the IDIs were transcribed verbatim in English. All transcripts were compared against their respective audio files by BO for transcription and translation accuracy. All the validated transcripts were imported into NVivo 12 for ease of management and transparency of the analysis process and organised according to source respondents. The data was analysed using a thematic approach because it provided a clear, succinct, and transparent methodical account of coding that is epistemologically neutral<sup>43–45</sup>, allowed for both theoretical flexibility and flexibility in 'approaches to meaning generation'; and was used 'within a "critical" framework' that permitted interrogation of the patterns around the topic<sup>44</sup>. We specifically followed the steps involved in the framework thematic approach for applied policy research<sup>46</sup>. One researcher (BO) familiarised himself with the data through immersion and repeatedly read and reread the transcripts. He then started by developing 'lower-order premises evident in the text'<sup>47</sup> through open coding (assigning codes to portions of data)<sup>48</sup>, thereby creating an initial coding framework. Study team members (SK and SP) reviewed and discussed the initial coding framework, and any discrepancies

**Table 3. Definition and measurement of variables used in the log-linear model.**

Variable definition	Measurement
<b>Outcome variable</b> Overall direct expenses (ODE)	Continuous
<b>Independent variable</b> Age	1 = 24 and below; 2 = 25-34; 3 = 35 and above
Number of people in the household	0 = Three and below; 1 = More than 3
Household income per month (KES)	1 = 5,000 and below; 2 = 5,001 – 10,000; 3 = 10,001 – 15,000; 4 = 15,001 – 20,000; 5 = 20,001 and above
Occupation	1 = Student; 2 = Unemployed; 3 = Self-employed; 4 = Salaried/formal employment; 5 = Other (Casual labourer)
Parity	1 = Primigravida; 2 = Para 2-5; 3 = Parity of above 5+
Religion	1 = Christian protestant; 2 = Christian Catholic; 3 = Other or no religion
Marital status	0 = Single; 1 = Married
Number of ANC visits attended	0 = Two or less; 1 = Three times or more
Education	1 = Primary or no education; 2 = Secondary; 3 = Tertiary
Means of delivery	1 = Vaginal (normal delivery); 2 = Caesarian section; 3 = Assisted vacuum delivery
Type of hospital	1 = Level 3; 2 = Level 4; 3 = Level 5



were appropriately reconciled. The final coding framework was applied by (BO) to the data and later charted the data to allow the emergence of themes through comparisons and interpretations.

To enhance the interpretive rigour, we ensured credibility (also referred to as internal validity) through the convergence of evidence of the two methods utilised and triangulation (investigator, theoretical, and methodological) of data at the interpretive stage<sup>49</sup>.

### Ethical considerations

This study was part of a larger study<sup>29</sup> which obtained ethical approval from the University of Kent, SSPSSR Students Ethics Committee and AMREF Scientific and Ethics Review Unit in Kenya (Ref: AMREF – ESRC P537/2018). We obtained both written, and oral informed consent from all the potential participants before the interviews were conducted (FGDs, EIs, and IDs). All the study participants were presented with information sheets on the conduct of the study, the researchers involved, the purpose of the study, the right to withdraw, and measures of confidentiality ensured before they gave their written informed consent. Participants were informed that data would be reported in an aggregated format, and anonymity would be ensured in storage and publication of the study's findings.

## Results

### Sociodemographic characteristics of the mothers

Overall, 550 mothers were included in the analysis (three were excluded because of the incompleteness of data). A majority of the respondents were aged 24 years and below overall (46.18%), A – (42.86%), and B – (54.12%), and between 25-34 years in C – (47.34%). Most of the respondents in all the hospitals (A – (69.05%), B – (56.47%), C – (65.99%) and general (63.27%)) had a household income of between 5,001 – 10,000 KES (49.24 – 98.47 USD) (27.09%); and had more than three people in their households. 49.64% of all respondents were unemployed, and 64.00% had a parity of 2-5. A majority in all the hospitals and overall were Christian protestants (A – (66.67%), B – (72.94%), C – (75.15%), and overall (73.82%)); had attained secondary education (A – (52.38%), B – (43.53%), C – (45.27%), and overall (45.27%)); and were married ((A – (71.43%), B – (85.88%), C – (82.84%), and overall (82.91%)) (Table 4).

### Mothers making out of pocket payments despite the policy being free and Informal payment

Mothers, HCWs, and county officials revealed that mothers still make some OOPs payments despite the policy being free. 98% of all the mothers interviewed in the EIs (n=541) made some OOP payments. A majority of the mothers who made the most OOP payments were aged between 25 – 34 years (USD 10.36); had three and below people in their households (USD 10.29); had a household income of between KES 5,001 – 10,000 (USD 10.52); had other forms of employment or were casual labourers (USD 11.36) and had an assisted vacuum delivery (USD 16.25). Other characteristics of mothers who made OOP are as shown in Table 5. No mothers'

characteristics showed any statistically significant difference in the OOP payments made (Table 5), and the characteristics of the mothers in the sub-group analysis were not predictors of the OOP payments (Extended data).

While not a common occurrence, some mothers made informal payments (under the table payments) for notification of birth and security. Some mothers were being made to pay non-existent fees and costs because of misrepresentation of the costs aggravated by their poor knowledge of the policy. Some mothers were making some informal payments that were inexplicable: 'I was charged. So, I don't know, and the baby was not taken anywhere, and I didn't leave here with any medicine. Even if it is free maternity after that I must go back to my pocket, and you see I am still paying for NHIF and I have never been late, initially I paid in advance by three months.' – (FGD 005 Hospital C)

### Estimated / cost drivers of OOP payments in delivery

The estimated OOP made by mothers, who had normal delivery and CS, are shown in Table 6 and Table 7. The majority of women (98.35%, n=416) who had normal delivery incurred a mean OOP expenditure of USD 9.50 in childbirth, while 98.41% (n=124) of the women who had a CS, incurred a mean OOP of USD 10.88.

The mean DMC and DNMC incurred by mothers who had CS were similar at USD 4.70 with the highest cost driver of the services paid for being an ultrasound at USD 15.76; highest cost driver of what mothers were told to buy was the syringe at USD 2.95, whereas the highest DNMC being transport at USD 5.95 (Table 7). Transport component was confirmed by FGD respondents: 'R6: Especially that transport issue, when someone comes here, they are in pain and they have been referred to [a referral hospital in the county of study]. They are told to look for their own transport... ; R8: I want to say transport is very expensive because let's say someone who has undergone CS from [a referral hospital in the county of study], you cannot board a matatu [public transport] because of the bumps, and if you use a taxi...you see that is an expense' – (FGD 009 Hospital A).

On the other hand, the mean DMC and DNMC incurred by mothers who had a normal delivery were USD 4.26 and USD 5.69, respectively, with the highest cost driver for service paid for being drugs (particularly, Anti-D) at USD 49.23, as was also acknowledged by the mothers in the FGDs and HCWS: 'R3: Like this injection drug now [Anti-D], it's like they normally don't have it so someone told me to buy.....You are injected twice and that is 10,000 [USD 196.94].' – (FGD 008 Hospital B). While the highest cost driver of what mothers were told to buy was drugs prescriptions at USD 7.66, and the highest DNMC was transport at USD 5.13 (Table 6). The commonest drug the mothers were told to buy was Hexicord used to clean the umbilical cord as it was not available across the hospitals: 'Yes. Like when a mother delivers, they are supposed to... use surgical spirit because of care of the cord, which we are asking them to buy the Hexi-cord. And, if there are no drugs, maybe a mother is

**Table 4. Sociodemographic characteristics of the mothers across the three facilities.**

Variable		Total Frequency (%) n=550	Hospital A n (%) n=42	Hospital B n (%) n=170	Hospital C n (%) n=338
Age	24 and below	254 (46.18)	18 (42.86)	92 (54.12)	144 (42.60)
	25–34	242 (44.00)	16 (38.10)	66 (38.82)	160 (47.34)
	35 and above	54 (9.82)	8 (19.05)	12 (7.06)	34 (10.06)
Number of people in the household	Three and below	202 (36.73)	13 (30.95)	74 (43.53)	115 (34.02)
	More than 3	348 (63.27)	29 (69.05)	96 (56.47)	223 (65.99)
Household income per month (KES)	5,000 and below (below 49.23 USD)	107 (19.45)	12 (28.57)	29 (17.06)	66 (19.58)
	5,001 – 10,000 (49.24 – 98.47 USD)	149 (27.09)	12 (28.57)	34 (20.00)	103 (30.47)
	10,001 – 15,000 (98.48 – 147.70 USD)	89 (16.18)	5 (11.90)	26 (15.29)	58 (17.16)
	15,001 – 20,000 (147.71 – 196.94)	95 (17.27)	5 (11.90)	34 (20.00)	56 (16.57)
	20,001 and above (196.95 and above)	110 (20.00)	8 (19.05)	47 (27.65)	55 (16.27)
Occupation	Student	19 (3.45)	2 (4.76)	9 (5.29)	8 (2.37)
	Unemployed	273 (49.64)	12 (28.57)	86 (50.59)	175 (51.78)
	Self-employed	197 (35.82)	18 (42.86)	53 (31.18)	126 (37.28)
	Salaried/formal employment	55 (10.00)	9 (21.43)	20 (11.76)	26 (7.69)
	Other (Casual labourer)	6 (1.09)	1 (2.38)	2 (1.18)	3 (0.89)
Parity	Primigravida	192 (34.91)	15 (35.71)	63 (37.06)	114 (33.73)
	Para 2-5	352 (64.00)	27 (64.29)	107 (62.94)	218 (64.50)
	Parity of above 5+	6 (1.09)	-	-	6 (1.09)
Religion	Christian protestant	406 (73.82)	28 (66.67)	124 (72.94)	254 (75.15)
	Christian Catholic	131 (23.82)	12 (28.57)	42 (24.71)	77 (22.78)
	Other or no religion	13 (2.36)	2 (4.76)	4 (2.35)	7 (2.07)
Marital status	Single	94 (17.09)	12 (28.57)	24 (14.12)	58 (17.16)
	Married	456 (82.91)	30 (71.43)	146 (85.88)	280 (82.84)
Number of ANC visits attended	Two or less	85 (15.45)	6 (14.29)	25 (14.71)	54 (15.98)
	Three times or more	465 (85.55)	36 (85.71)	145 (85.29)	284 (84.02)
Education	Primary or no education	197 (35.82)	11 (26.19)	63 (37.06)	123 (36.39)
	Secondary	249 (45.27)	22 (52.38)	74 (43.53)	153 (45.27)
	Tertiary	104 (18.91)	9 (21.43)	33 (19.41)	62 (18.34)

sick, has an infection and we do not have that drug in pharmacy they have to buy.’ – (**Respondent 005, Department In-charge**).

Other OOPs expenditures were the failure of the hospital to notify the NHIF offices that they had an NHIF paying client within 24 hours of admission as was required: ‘**R6**: I paid

8,000...**I**: What were you told it was for? **R6**: I wasn’t told what it was for, because when...we were told we had been given permission [discharged home] the bill was brought, and we went to pay. **I**: And did they use the NHIF card as well? **R6**: No, they did not use NHIF.... They told me because...they give 24 hours right, and mine had already elapsed. **I**: They didn’t even try to follow up. **R6**: I tried



**Table 5. The differences in the OOP payment made by the mothers based on the social-demographic characteristics.**

Variable		n (%) n=541	Mean OOP (USD)	p-value*
Age	24 and below	249 (46.03)	9.29	0.2973
	25–34	239 (44.18)	10.36	
	35 and above	53 (9.80)	8.30	
Number of people in the household	Three and below	195 (36.04)	10.29	0.2703
	More than 3	346 (63.96)	9.30	
Household income per month (KES)	5,000 and below (below 49.23 USD)	103 (19.04)	8.76	0.6665
	5,001 – 10,000 (49.24 – 98.47 USD)	148 (27.36)	10.52	
	10,001 – 15,000 (98.48 – 147.70 USD)	88 (16.27)	9.84	
	15,001 – 20,000 (147.71 – 196.94)	93 (17.19)	8.96	
	20,001 and above (196.95 and above)	109 (20.15)	9.85	
Occupation	Student	19 (3.51)	10.96	0.8204
	Unemployed	266 (49.17)	9.28	
	Self-employed	195 (35.04)	9.70	
	Salaried/formal employment	55 (10.17)	10.80	
	Other (Casual labourer)	6 (1.11)	11.36	
Parity	Primigravida	188 (34.74)	9.73	0.9515
	Para 2-5	347 (64.14)	9.65	
	Parity of above 5+	6 (1.11)	8.40	
Religion	Christian protestant	401 (74.12)	9.68	0.9843
	Christian Catholic	128 (23.66)	9.67	
	Other or no religion	12 (2.22)	9.17	
Marital status	Single	93 (17.19)	8.54	0.2399
	Married	448 (82.81)	9.90	
Number of ANC visits attended	Two or less	85 (15.71)	9.24	0.6810
	Three times or more	456 (84.29)	9.74	
Education	Primary or no education	193 (35.67)	8.74	0.2849
	Secondary	246 (45.47)	10.14	
	Tertiary	102 (18.85)	10.27	
Means of delivery	(Vaginal (normal delivery))	416 (76.89)	9.34	0.3404
	Caesarian section	124 (22.92)	10.71	
	Assisted vacuum delivery	1 (0.18)	16.25	
Type of hospital	Level 3	42 (7.76)	9.46	0.9587
	Level 4	170 (31.42)	9.85	
	Level 5	329 (60.81)	9.60	

\*obtained from *one-way ANOVA* test for categorical value with more than two categories and *chi-square* test for categorical data with two categories. The p-value compared the OOP payment made by the mothers using mothers social demographic characteristics. The analysis only focuses on the mothers who made OOP payments (n=541/ out of the total sample of 551). The nine mothers who did not make any OOP payments were excluded from the analysis.

**Table 6. Estimated out-of-pocket payments in normal delivery (number = 423).**

OOP expenditure incurred during childbirth		Observations (%)	Mean USD (SD)	Median USD	Min USD	Max USD	As a % of total direct cost
<b>Direct medical cost (Services paid for + Told to Buy)</b>		<b>397 (93.85)</b>	<b>4.26 (4.66)</b>	<b>3.45</b>	<b>0.98</b>	<b>56.13</b>	<b>94.23%</b>
Services paid for	Consultation	1 (0.24)	3.94 (0.00)	3.94	3.94	3.94	<b>6.61%</b>
	Lab-tests	5 (1.18)	4.92 (1.87)	4.92	2.46	7.39	<b>12.41%</b>
	Ultrasound	6 (1.42)	14.28 (5.49)	12.8	9.85	24.62	<b>41.33%</b>
	Drugs	1 (0.24)	49.23 (0.00)	49.23	49.23	49.23	<b>82.64%</b>
	Other costs	2 (0.47)	6.31 (0.56)	6.31	5.91	6.7	<b>11.25%</b>
<b>Total services paid for</b>		<b>14 (3.31)</b>	<b>12.58 (12.20)</b>	<b>8.62</b>	<b>3.94</b>	<b>49.23</b>	<b>82.64%</b>
Told to Buy	Cotton wool	390 (92.20)	2.46 (0.88)	2.46	0.49	6.89	<b>11.57%</b>
	Basin	367 (86.76)	1.07 (0.26)	0.98	0.49	2.95	<b>4.95%</b>
	Drugs	18 (4.26)	7.66 (15.14)	2.95	0.59	49.23	<b>82.64%</b>
	Other	89 (21.04)	2.24 (5.48)	0.98	0.20	50.71	<b>85.13%</b>
<b>Total Told to Buy</b>		<b>397 (93.85)</b>	<b>4.26 (4.65)</b>	<b>3.45</b>	<b>0.98</b>	<b>56.13</b>	<b>94.23%</b>
<b>Direct non-medical cost</b>		<b>366 (86.52)</b>	<b>5.69 (6.21)</b>	<b>3.59</b>	<b>0.20</b>	<b>41.36</b>	<b>69.43%</b>
	Transport	355 (83.92)	5.13 (5.85)	2.95	0.20	39.39	<b>66.12%</b>
	Food	28 (6.62)	2.91 (2.81)	1.97	0.20	11.82	<b>19.84%</b>
	Other	90 (21.28)	1.96 (3.56)	0.98	0.20	29.54	<b>49.59%</b>
	Unofficial payments	1 (0.24)	1.97 (0.00)	1.97	1.97	1.97	<b>3.31%</b>
<b>Overall direct expenses</b>		<b>416 (98.35)</b>	<b>9.50 (8.20)</b>	<b>6.89</b>	<b>0.98</b>	<b>59.57</b>	<b>100.00%</b>

Note: Average Exchange rate (September 2018 - March 2019) 1USD=101.555; Overall number of mothers who had normal delivery is 423; People who had a normal delivery but did not make any OOP is 7

following up at NHIF, but they told me because I had not identified anything, they said they cannot help me.’ – (FGD 008 Hospital B). Others were unforeseen complications requiring admission of neonates in NBU: ‘R5: NBU [newborn unit], I paid for the child. I paid 4500’ - (FGD 005 Hospital C); and obstetric scans during ANC. Mainly, some of the reasons mothers were incurring costs was due to inadequate or lack of supplies and medication in the hospital: ‘R2: When I was sent to the lab we paid for the things, we were told which was four hundred and then took then took them to the doctor, nothing else.’ – (FGD 006 Hospital C).

Lack of clarity of the policy amongst the clerks and accountants handling the FMP registration and HCWs was shown as a driver of OOP payments by the mothers. For instance, while the policy states that the infant is cared for under FMP for up to a year<sup>50</sup>, the clerks and HCWs – because of lack of awareness or clarity of the policy – were making the mothers incur OOP payment despite being free: ‘R1: I came here with a sick child one month old, the place where we pay for the card and asked that my baby is one month old if I could use Linda Mama and I was told here they do not use

Linda Mama so I paid’ – (FGD 001 Hospital B). Also, the unclearness of the policy among the HCWs and clerks was making the hospitals lose the money they are incurring for treating complications. It is not clear in the policy on whether the mothers are supposed to pay the cost: ‘We are yet to get feedback from the office because we have had three cases of such. Yes, we tried to claim but it’s quite a job, so they had to clear the air on the same issue because on the guideline policy for level 3 facility it’s hard.’ – (Respondent 006 Accounting officer).

#### Mixed perception about mothers incurring OOP payments

There was a mixed perception amongst the respondents on incurring OOP expenditures. Some mothers felt that the OOP payments for basic purchases pushed mothers in need of financial aid into catastrophic expenditure as they could not afford some basic items: ‘R12: Okay I think those cotton wool and things we are told to buy, because we have Linda Mama, it should support the mother in every way and even provide those things. Because not everyone is financially stable. There are people who cannot afford the cotton, or they are over

**Table 7.** Estimated out-of-pocket payments in caesarean section delivery (number = 126).

OOP expenditure incurred during childbirth		Observations (%) (overall n=126)	Mean USD (SD)	Median USD	Min USD	Max USD	As a % of total direct cost
<b>Direct medical cost (Services paid for + Told to Buy)</b>		<b>121 (96.03)</b>	<b>4.70 (4.09)</b>	<b>3.45</b>	<b>1.97</b>	<b>31.51</b>	<b>20.53%</b>
Services paid for	Consultation	1 (0.79)	0.98 (0.00)	0.98	0.98	0.98	<b>0.64%</b>
	Admission	1 (0.79)	0.98 (0.00)	0.98	0.98	0.98	<b>0.64%</b>
	Lab-tests	6 (4.76)	8.86 (6.29)	7.39	3.94	19.69	<b>12.83%</b>
	Ultrasound	2 (1.59)	15.76 (8.35)	15.76	9.85	21.66	<b>14.11%</b>
	Drugs	1 (0.79)	1.97 (0.00)	1.97	1.97	1.97	<b>1.28%</b>
	Other costs	2 (1.59)	12.80 (2.79)	12.80	10.83	14.77	<b>9.62%</b>
<b>Total services paid for</b>		<b>9 (7.14)</b>	<b>12.69 (7.78)</b>	<b>10.83</b>	<b>0.98</b>	<b>26.59</b>	<b>17.32%</b>
Told to Buy	Cotton wool	121 (96.03)	2.37 (0.86)	2.46	0.98	7.88	<b>5.13%</b>
	Basin	117 (92.86)	1.11 (0.37)	0.98	0.59	3.54	<b>2.31%</b>
	Syringe	1 (0.79)	2.95 (0.00)	2.95	2.95	2.25	<b>1.47%</b>
	Drugs	9 (7.14)	2.29 (0.42)	2.46	1.48	2.95	<b>1.92%</b>
	Other	9 (7.14)	1.43 (0.69)	0.98	0.49	2.56	<b>1.67%</b>
<b>Total told to Buy</b>		<b>121 (96.03)</b>	<b>3.75 (1.25)</b>	<b>3.45</b>	<b>1.97</b>	<b>8.86</b>	<b>5.77%</b>
<b>Direct non-medical cost</b>		<b>121 (96.03)</b>	<b>4.70 (4.09)</b>	<b>3.45</b>	<b>1.97</b>	<b>32.52</b>	<b>21.18%</b>
	Transport	110 (87.30)	5.95 (15.03)	1.97	0.20	147.70	<b>96.22%</b>
	Food	4 (3.17)	3.13 (2.31)	3.45	0.69	4.92	<b>3.21%</b>
	Other	42 (33.33)	2.70 (4.14)	0.98	0.30	19.69	<b>12.83%</b>
<b>Overall direct expenses</b>		<b>124 (98.41)</b>	<b>10.88 (15.16)</b>	<b>6.89</b>	<b>0.98</b>	<b>153.51</b>	<b>100.00%</b>

Note: Average Exchange rate (September 2018 - March 2019) 1USD=101.555

bleeding and they need a lot of cotton. So, it should support us in every way.’ – (FGD 009 Hospital A). While the analysis of EIs shows that there are no OOP payments that exceeded the 10% threshold (Table 8), meaning there was no catastrophic expenditure, the average total DMC and the total non-medical costs were estimated to be 2.36% and 2.79% of the average monthly household income. The overall direct expenses in all the hospitals were estimated to be 5.16% of the average monthly household income. However, hospitals A and C had a higher ODE of 6.36% and 6.17%, respectively, of the average monthly household income, while Hospital B had 3.78% (Table 8).

Interestingly, some mothers and HCWs thought that the mothers should take some responsibility and prepare for birth as the government cannot take care of everything and that it was common sense to come with baby clothing before birth: ‘We have not reached there, that GoK facilities, we will give people basins and slippers and towel and bathing towel, no.

**Table 8.** Impact of OOP on average monthly household income.

Mean OOP payments	% of monthly household income
Total direct medical cost	<b>2.36 %</b>
Total non-medical cost	<b>2.79 %</b>
Overall direct expenses	<b>5.16 %</b>
Overall direct expenses (Hospital A)	<b>6.38 %</b>
Overall direct expenses (Hospital B)	<b>3.78 %</b>
Overall direct expenses (Hospital C)	<b>6.17 %</b>

Baby wrappers, maybe we will get there.’ – (Respondent 018 Facility-Level Manager). Other mothers observed that because the HCWs, during their ANC clinic in preparation for birth,

adequately prepared them for what was needed at birth, it was justifiable for mothers to purchase some things for delivery. Additionally, the mothers felt that it was okay for them to buy the personal effects as they had to use them during their stay (and after in their homes). They considered buying them for the feeling that they were ‘small things’ and inexpensive because they were not paying for hospital delivery: ‘R4: It is better to buy for yourself because those are not very expensive things.’ – (FGD 004 Hospital A). Moreover, both mothers and HCWs were convinced that it was okay to purchase the basic elements such as basins as they perceived sharing with other mothers as being unhealthy and a potential source of nosocomial infection: ‘R4: Because if they provide for you, you will be using like a single basin like 10 of you, it’s not healthy.’ – (FGD 005 Hospital C).

On the other hand, others perceived that because of the increased number of mothers seeking birth services, they were happy to incur the cost of some services such as ultrasounds and lab tests outside the public health facilities to avoid queueing. ‘R2: What I did, I saw the line that is usually at the lab and I did my math as a Kenyan. I came with the results from outside the hospital and gave them to the doctor. We did not pay anything to see him...’ – (FGD 006 Hospital C).

Some mothers noted that while they needed to purchase some of their personal effects, they felt that in cases where the mothers were admitted due to an emergency before the actual delivery date, the hospitals were in a position to provide content. The HCWs indicated that they had an adequate supply of maternity packs given to mothers who were very poor and in need or those who came in as emergencies. The decision not to give all mothers maternity packs was for the hospital to be able to maintain the supply: ‘most of the things we used to tell the mothers to buy, but you see now sometimes,

yes they will buy but in case of emergency especially from the mothers who come in the second stage or the mothers who cannot be able to afford. You know there are those mothers even to buy a cotton wool is an issue. So, we help them with those things.’ – (Respondent 008 Nursing Officer)

Despite providing FMP services, the mothers felt that private hospitals had some hidden costs: ‘Yeah, pay 5000 and after delivery you pay another 5000, if you deliver through Cesarean you pay another five’ – (FGD 005 Hospital C) which as a result incentivises the mothers to seek services from the public facilities rather than private as one respondent noted: ‘I went for clinic [ANC] at a private hospital. The last two clinics I came here because of that Linda Mama card, because it’s free. I was told over there [private hospital] the amount I was to pay was 20,000 to deliver that’s why I preferred coming here’ – (FGD 008 Hospital B). Some of the charges incurred by the mothers, particularly those that had sought some services from the private hospitals, were due to a lack of sincerity on the part of the private providers who indicated to them that possession of FMP cards excluded them from making any payments. Still, they ended up incurring costs at discharge: ‘Not in government facilities, like I told you there are some people who are very cheeky go in the FBOs [Faith based facilities], some in the private. And I think there is need for closer supervision from your side because these things should not happen, yeah.’ – (Respondent 016 County Senior-Level Manager).

Sources of funds for meeting OOP payments

The majority of the mothers are using donations from friends and family to meet the OOP expenses (Figure 1).

Also, most of the respondents in the EI were registered with the NHIF to access FMP services across the three hospitals

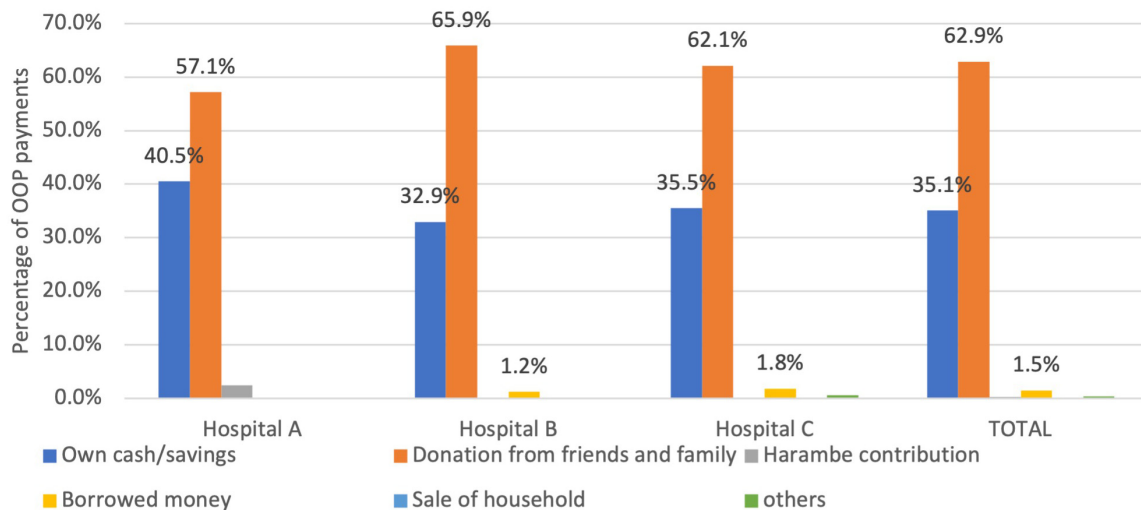


Figure 1. Sources of funds for the OOP payments.

of study, as compared to those paying for childbirth services by NHIF card where they pay monthly fees and a minority that have private health insurance (Figure 2). The mothers in the FGDs acknowledged that NHIF, where the mothers pay monthly fees, catered for the cost of complications that arose after the baby was born and not FMP. Those who did not own the NHIF cards ended up paying OOP in cases of complication: ‘They calculated the bill and returned them to the doctor. I did not pay anything. Since when my baby was born, he did not cry. He was taken to NBU and stayed there for two days of which NHIF paid.’ – (FGD 006 Hospital C).

Being complementary, the NHIF card (where the mother pays monthly fees) gives the mother more choice and relieves childbirth costs. However, late payments of NHIF monthly fees result in penalty charges, making mothers and their families choose FMP cover to meet the cost despite having NHIF cards for which they pay monthly fees. On the other hand, defaulting to pay the monthly fees may result in non-access to other schemes of childbirth services: ‘R2: But you see NHIF is something that you pay for and Linda Mama is something free, you do not pay. So, they should look properly into it because I would have been served using NHIF, but it turned out I had not paid for one month, so it had a penalty and we used Linda Mama because I had both [schemes]. So, I can say

that NHIF should also look at the people they serve because like now she [fellow FGD respondent] was charged nine thousand, what was it for? We delivered like on the same day and I wasn’t charged, and she was charged; R1: I had NHIF, but I had failed one day without paying so I had a penalty, so they said I won’t use NHIF and I filled Linda Mama and it was settled’ – (FGD 005 Hospital C)

The other source of funds for childbirth services is private health insurance, mostly for people in formal jobs, giving mothers a good choice of the type of services and better treatment: ‘R4: I used Jubilee card medical cover from work. So, I went there and found their services good, the food was good, they treat mothers who deliver, and they serve you.’ – (FGD 001 Hospital B).

Hospitals are using their network of ambulances and community health volunteers to ensure that the transport cost incurred by the mothers to the facility is reduced. In addition, the facilities are utilising funds set up by the administrators or personal contributions from HCWs to help meet the transport costs and prevent mothers from incurring OOP expenditure: ‘we take them, in fact there are those cases that I had said, you use the ambulance or sometimes we even ask and contribute and help that mother. And if there is money in the office

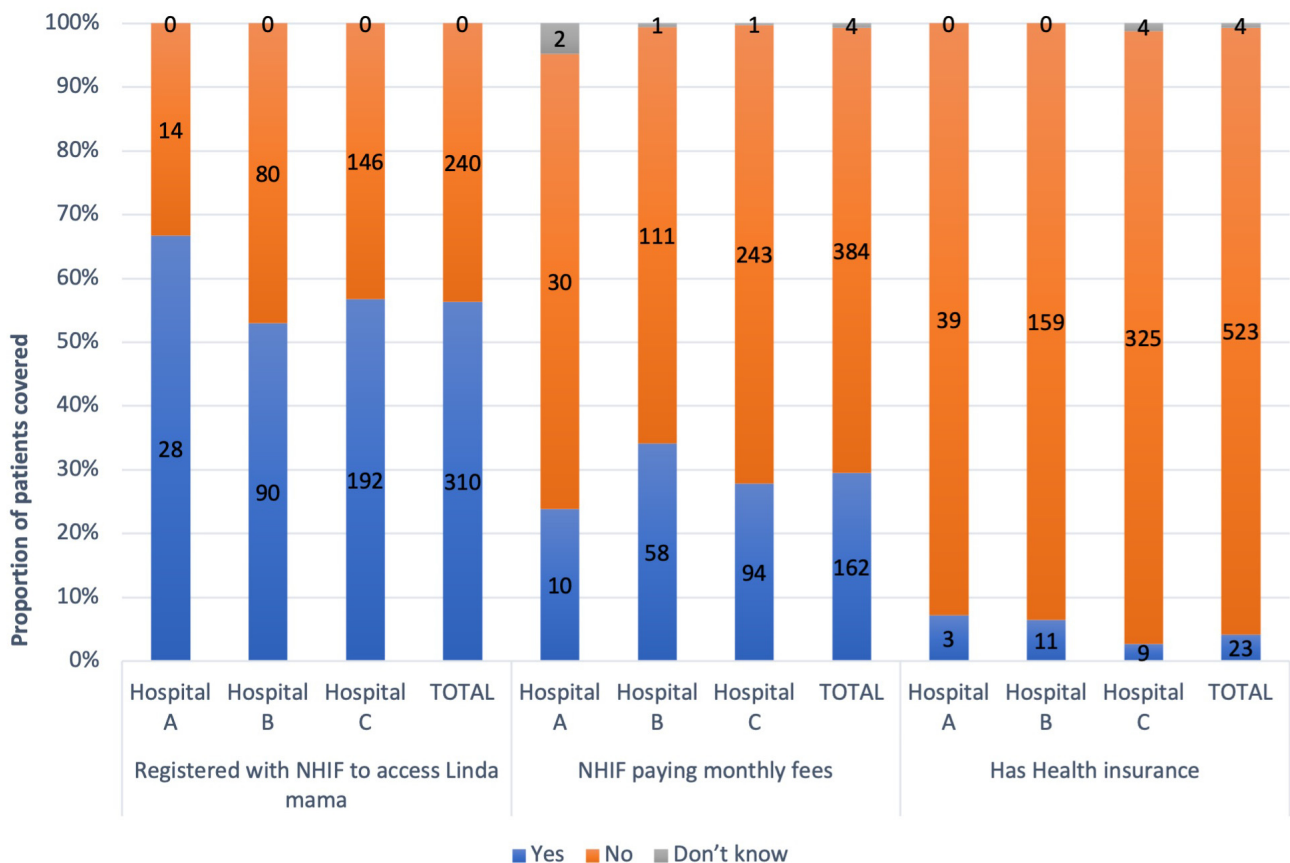


Figure 2. Proportion under Linda mama, other NHIF claims, has health insurance (n=550).



the administrator can give the mother something small.... If the mother is not in a position to be able to travel to home, the ambulance is here. And also, there is also another vehicle.’ – **(Respondent 008 Nursing Officer)**. Also: ‘although the Community Health Workers [are in] level 1 [community level] they take part...such that if there is someone who has a problem, they have contacts for the hospital, they are able to escort the patients to the hospital.’ – **(Respondent 003 Nursing Officer)**.

## Discussion

This study has documented the OOP payments during childbirth in Kenya based on the perspectives of mothers, HCWs, and county officials. Our finding shows that nearly all mothers incurred OOP payments despite the policy being free on paper. Similar results have been reported in many other settings as reviewed by other researchers<sup>51</sup>; however, the proportion of mothers who have made the OOP is very high under Kenya’s FMP. In Tanzania, 73% of the mothers in the EI made OOP payments<sup>52</sup>, while in Ghana, 69% in the EIs did make OOP payments<sup>33</sup>. The mean OOP payments made by both mothers who have undergone CS and vaginal delivery was USD 10.88 and USD 9.50, respectively. The cost drivers are mainly the indirect costs from drugs purchased (particularly, Anti-D and Hecicord that the facilities are not stocking), transport which is not part of the policy (but that every mother needs) and ultrasound (that is not part of the policy, but that facilities are trying to invest in and capture many mothers to come in and utilise). Similar cost drivers have been reported in other studies<sup>51</sup>. However, in our research, we find that a deliberate or unintentional failure by the hospital to notify the NHIF office of a paying client timely.

While new FMP has expanded the benefits package, the lack of stocking of certain medication such as anti-D could be due to the perception by the providers that the reimbursements are significantly low and yet the drugs are costly. For other medication such as Hecicord – for cleaning the cord – it could be because the demand exceeds the supply hence a significant gap that should be filled. Similar findings and explanations have also been shown in other settings such as Burkina Faso<sup>53</sup>. Some OOP payments are also mainly due to a lack of clarity of the policy among the providers resulting in the mothers incurring unnecessary costs. The poor clarity of the policy may have been because of the poor cascade (inadequate or poor communication) from the national to the facility level. The lack of clarity has been reported in other settings<sup>54–56</sup>. Some informal payments are reported under FMP, although from a few mothers. Given these findings, some mothers may be discouraged from seeking SBA due to OOP payments, as was shown in a study in Ghana where the women accessing free care revealed that the direct costs related to the policy were entirely free, but ANC and indirect costs were still hampering utilisation<sup>57</sup>.

While the results showed that OOP expenditure incurred by mothers was not catastrophic at 10%, this may not be the case since Orangi *et al.*<sup>18</sup>, have shown that the FMP has disproportionately benefited the mothers in the higher quintile than the lower ones. Also, Mbau *et al.*<sup>58</sup> has posited that the contracting

of facilities by the NHIF has created some inequality in access between urban and marginalised areas; hence these results could have underestimated the level of catastrophic expenditure. Ataguba<sup>59</sup> has also argued that the choice of the poverty line (for calculating the catastrophic expenditure and impoverishment) could affect the true ascertainment of the level of catastrophic expenditure and impoverishment. The OOP may severely affect the poor households pushing them to impoverishment, as also revealed by Salari *et al.*<sup>60</sup>. Evidence that the OOP expenditure may be impoverishing the mothers is demonstrated by the fact that a majority are relying on donations from friends and family and own savings to meet the OOP expenses, thus depleting funds that can be used for other priority areas such as food. A systematic review of the health system and patients costs of managing birth-related complications in SSA showed that patients costs are catastrophic at 10% of national per capita income and were impoverishing to households<sup>61,62</sup>. The OOP payments have continued to be reported in the FMP despite being free<sup>53</sup>; thus, it is synonymous with the Kenyan FMP; however, the extent of the OOP payments are greater. The complementarity of FMP provided by other NHIF benefit packages was able to cater for costs not taken care of in the benefits package. However, it still has a challenge because those who default in paying the monthly fees are locked out of accessing services; or there is a potential incentive for the selection of lucrative sector. With 48% active contributors in the NHIF, only 27% in the informal sector had active membership with the high premium rates cited as a barrier to access services<sup>58</sup>; thus, they have a high attrition rate<sup>63</sup>.

## Conclusion

A key limitation of this study is the EIs conducted in one county, as it is plausible that there could be varied practices across other counties. The implication for this study is that it may be difficult to generalise the findings to all the other 47 counties in Kenya. Nonetheless, the use of IDIs and FGDs in this study provides an opportunity to unpack the issue at hand (of interest) within its context and be analytically generalisable. The meta-issues identified by the study are likely to be found in other counties, even though they might manifest in different ways. The limitation notwithstanding, the study demonstrates that OOP payments during childbirth in Kenya place a considerable economic burden on mothers and their households in Kenya.

As Kenya continues to reform its health system to prioritise UHC attainment, and drawing from the results, we make the following recommendations that could strengthen the policy:

- a) **Enhance the promotion of the awareness of the policy to different stakeholders.** For instance, enhance teaching about the benefits package to the mothers by the NHIF through various means. Given the penetration of social media and radios in the country, this could be done through talk shows on local channels (e.g., local stations popular with the youths, Twitter, and Facebook groups) where experts are invited to provide education in a simplified language for the populace to understand. On the other hand, NHIF also needs to enhance the training of the



policy processes to the implementers (could be through workshops etc.) so that there is uniformity in the implementation of the process across the different hospitals or counties. Once done, the hospitals should develop further initiatives, such as morning talks with the mothers focused on advancing knowledge to the beneficiaries. Another strategy is having dedicated workers to follow up on the maternity patients (both Linda Mama and NHIF).

- b) **Addressing health facility distances.** The NHIF could do this through additional accreditation of additional facilities to enhance access to the service, especially where accredited facilities are far from the patients. This will ensure that the beneficiaries travel only a short distance to seek services. This can also be done collaboratively with the county governments where local healthcare facilities are adequately incentivised by equipping them adequately and employing additional HCWs.
- c) **Adequate stocking of medication.** Given that medicines are a key cost driver for the OOP costs, one approach would be to explicitly prioritise the required medication used in maternal services in the universal health care benefits package that Kenyan citizens are entitled to; or sustainably financing the FMP.
- d) **Collaborate with other partners.** To help narrow the inequality gap on the utilisation of FMP, the facilities should work with partners to provide a sustainable form of transport as a form of incentive, especially targeting impoverished households. While this may not be sustainable in the long run, there may be innovative ways to meet this objective. For instance, develop an initiative whereby, from the moment a client joins the policy, they could be incentivised and educated to have monthly savings (especially those in the informal employment and setup) in mobile money (e.g., Safaricom). Through economies of scale and honest partnerships, this initiative can cater for transport for the women and relieve them of the overwhelming feeling of having to use other means to cater/ pay for delivery.
- e) **Adequate birth preparation early on in pregnancy.** Education on the mothers' expectations during birth should start immediately after the mothers start antenatal care so that the birth process focuses on the actual delivery rather than the means of payment. This may help relieve the pressure from the mothers during birth and could include preparation on the needs and expectations to avoid any informal payments at birth.

used in this study (with de-identified respondent information) will be available from the first author upon reasonable request for research purposes only ([b.oyugi@kent.ac.uk](mailto:b.oyugi@kent.ac.uk)).

### Extended data

All extended data are part of the first author's PhD thesis under the University of Kent, Centre for Health Services Studies. The thesis is under embargo until February 2024 to allow the first author to publish all the papers and book chapters from it. In the meantime, access to it can be requested by clicking the link on the DOI of the thesis and sending a message to the University of Kent repository staff in the pop-up dialogue box.

Kent Academic Repository (KAR): Oyugi, Boniface (2021) The Policy Process, Quality and Cost of Free Maternal Healthcare in Kenya: A Mixed Methods Analysis of Maternity Policy. Doctor of Philosophy (PhD) thesis, University of Kent. (doi:[10.22024/UniKent/01.02.88358](https://doi.org/10.22024/UniKent/01.02.88358)): <https://kar.kent.ac.uk/88358/>

This project contains the following extended data:

- Appendix 8: Information sheets
  - A. Ministry of Health officials, National Health Insurance Funds, donors, civil society including representatives of health service providers
  - B. County and sub-county officials, facility in-charges, and health-care providers
- Appendix 9: Consent forms
  - A. Ministry of Health officials, National Health Insurance Funds, donors, civil society including representatives of health service providers
  - B. County and sub-county officials, facility in-charges, and health-care providers
- Appendix 10: Semi-structured interview guide with Ministry of Health officials, National Health Insurance Funds officials, donors, civil society including representatives of health service providers
- Appendix 11: Semi-structured interview guide with County and sub-county officials
- Appendix 12: Semi-structured interview guide with facility in-charges and health-care providers
- Appendix 13: FGD guide with patients
- Appendix 14: Exit interview tool
- Appendix 16: Example of a diary entry

Data are available under the terms of the [Creative Commons Attribution 4.0 International license](https://creativecommons.org/licenses/by/4.0/) (CC-BY 4.0).

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### Data availability

#### Underlying data

All data from the exit interviews are not publicly available because they contain personal identifying information that could compromise research participant privacy. Hence, the datasets

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