



Effect of Free Maternal Health Care Program on Health-seeking Behavior of Women during Pregnancy, Intra-partum and Postpartum Periods in Cross River State of Nigeria: A Mixed Method Study

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Abstract

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BACKGROUND: Increasing the percentage of maternal health service utilization in health facilities, through cost-removal policy is important in reducing maternal deaths. The Cross River State Government of Nigeria introduced a cost-removal policy in 2009, under the umbrella of "PROJECT HOPE" where free maternal health services are provided. Since its inception, there has been no formal evaluation of its effectiveness.

AIM: This study aims to evaluate the effect of the free maternal health care program on the health care-seeking behaviours of pregnant women in Cross River State, Nigeria.

METHOD: A mixed method approach (quantitative and qualitative methods) was used to describe the effect of free maternal health care intervention. The quantitative component uses data on maternal health service utilisation obtained from PROJECT HOPE and Nigeria Demographic Health Survey. The qualitative part uses Focus Group Discussions to examine women's perception of the program.

RESULTS: Results suggest weak evidence of change in maternal health care service utilization, as 95% Confidence Intervals overlap even though point estimate suggest increase in utilization. Results of quantitative data show increase in the percentage of women accessing maternal health services. This increase is greater than the population growth rate of Cross River State which is 2.9%, from 2010 to 2013. This increase is likely to be a genuine increase in maternal health care utilisation. Qualitative results showed that women perceived that there have been increases in the number of women who utilize Antenatal care, delivery and Post Partum Care at health facilities, following the removal of direct cost of maternal health services. There is urban and rural differences as well as between communities closer to health facility and those further off. Perceived barriers to utilization are indirect cost of service utilization, poor information dissemination especially in rural areas, perceived poor quality of care at facilities including drug and consumables stock-outs, geographical barriers, inadequate health work force, and poor attitude of skilled health workers and lack of trust in the health system.

CONCLUSION: Reasons for Maternal health care utilisation even under a cost-removal policy is multi-factorial. Therefore, in addition to fee-removal, the government must be committed to addressing other deterrents so as to significantly increase maternal health care service utilisation

Introduction

Over two decades after the launch of the safe motherhood campaign in India in 1987, approximately 536,000 women die yearly from maternal causes globally [1]. Ninety-nine percent of all maternal deaths occur in developing countries, and almost two-thirds of these deaths (62%) occur in Sub-Saharan Africa (SSA). In 1990, with Millennium Development Goal 5 (MDGs), maternal health became a global priority. Despite considerable efforts, Maternal Mortality Ratio

(MMR) has remained high in SSA, falling by just 1.6% per annum since 1990, while in East Asia there has been an average annual decline of 4.5%. It is expected that a 5.4% decline per annum is required to achieve MDG 5 in SSA [2].

Countries in SSA have low rates of Skilled Birth Attendance (SBA), and low quality of care including stock-outs of equipment, drugs and poor referral systems [3]. The proportion of deliveries assisted by an SBA is an indicator of MDG 5 recommended by World Health Organization (WHO) as a means of reducing maternal mortality [4-6].

Estimates indicate that 60-90% of births in parts of SSA are assisted by Traditional Birth Attendants (TBA) with Nigeria, Chad and Niger reaching very high levels of TBA-attended deliveries [3, 7]. Economic reasons rank strongly in the preference of some Nigerian women for TBA as their services are reported to be more affordable or free in some cases [7, 8]. World Health Organization does not recommend TBAs for delivery, but rather delivery with a skilled birth attendant in a health facility [4].

In Nigeria, despite the minimal reduction in MMR between 2010 and 2013 (from 610 to 560 deaths/100,000 live births) [7], the number of maternal deaths remain high only second to India in the world. Utilisation of SBA during delivery is still low at 38% (95% CI 36.1-40.2%) in Nigeria [7]. In the South-South Zone where Cross River State (CRS) is located, 36% (95% CI 33.9-38.2%) had no antenatal care (ANC) and 48.5% (CI 46.7- 50.3%) delivered at home [7]. This zone has the poorest record of the three Southern zones for compliance with recommended practice (Table 1).

Table 1: Percentage of women utilising ANC, Delivery and PPC from SBA in the 6 geopolitical zones in Nigeria and national figures

GEOPOLITICAL ZONE OF NIGERIA	Percentage of women attending ANC at least once (95% CI*)	Percentage of deliveries in a health facility (95% CI*)	Percentage of women who had postpartum care within two days of delivery (95% CI)
North-west	41.0 (CI 36.3-45.7)	11.5 (10.9-12.1)	17.0 (15.9-18.1)
North-east	49.3 (CI 43.1-55.5)	19.5 (18.5-20.6)	31.8 (29.8-33.8)
North-central	67.0 (CI 61.8-72.3)	45.7 (44.2-47.2)	47.6 (45.2-50.0)
South-south (location of CRS)	73.0 (CI 69.4-76.6)	50.1 (48.3-51.9)	60.3 (57.4-63.1)
South-east	90.8 (CI 87.9-93.3)	78.1 (76.5-79.6)	60.9 (58.0-63.7)
South-west	90.4 (CI 86.4-94.4)	75.0 (73.7-76.3)	72.7 (70.5-74.8)
Nigeria	60.6 (58.1-63.0)	36.0 (35.5-36.5)	39.6 (38.7-40.5)

The CRS Ministry of Health (MOH) has 14 secondary health facilities and 549 primary health centres spread across the state. (0.2 health facility/1000 population) [9]. The state has one of the highest maternal, and infant mortality rates in the country, which El-Khoury and colleagues [10], suggest is due to a brain-drain and shortage of health workers, as well as ill-equipped health facilities. Free maternal health care (MHC) by SBA can only be accessed at the primary healthcare centres (PHC) and secondary health facilities. One estimate of MMR in CRS suggests, it stands at 250 deaths /100,000 live births [11]. Skilled Birth Attendant utilisation is poor in CRS as 59.1% (CI 54.7-63.2) of women deliver at home or with a TBA [7]. Poverty and cost have been identified as major barriers to health care seeking in CRS [7, 12]. It is against this background that the CRS government, through the MOH and Tulsii Chanri Foundation, decided to provide free MHC for all pregnant women in the state, (PROJECT HOPE) in 2009, to improve maternal health service utilisation

and meet MDG5 by 2015. The purpose of such policies is to address equity issues by increasing health facility use and reducing catastrophic out of pocket payment [13-16]. Since its inception, there has been no formal evaluation of the effectiveness of this program.

The impact of user fees protects the poor by reducing catastrophic out of pocket payment [13, 16]. Some developing countries with high MMR have adopted free maternal health care (FMHC) policy at national or state levels, as an intervention intended to tackle maternal mortality. Nepal abolished user fees and recorded an impressive 50% decrease in MMR and 10% increase in SBA over 5 years [17]. In Bangladesh, medical cost (direct and hidden) was the principal barrier to care to seek especially among low-income groups [18, 19]. Pronounced disparities existed for maternal healthcare seeking behaviours amongst urban and rural Bangladesh, across the wealth quintiles, with the use of health care increasing with rising socioeconomic status. With free MHC, ANC has steadily increased, but SBA utilisation has not improved much over the last decade, as 90% of deliveries still took place at home [18]. Thailand has very low MMR (26 death/ 100,000 live birth (95% CI 18-38) [20], partially attributable to FMHC policy reducing financial barriers to health care utilisation [21].

In SSA, user fees as a form of financing maternal health have adversely affected health-seeking behaviour among women [16]. Reviews from Ghana, Swaziland, Zaire, Uganda, Kenya, Nigeria and South Africa suggest that use of maternal health care service is greatly affected by introduction or removal of user fees [22-24]. Fall in professional care-seeking utilisation is greater for poorer population and continues for longer periods [16]. In contrast, in South Africa, ANC attendance and health facility delivery improved following the introduction of a free health policy [25, 26]. The impact of free MHC in South Africa showed that the complete exemption policy, implemented by the government for all pregnant women from conception to 42 days postpartum, increased ANC utilisation. However, there was no significant increase in facility delivery. Barriers to uptake of free MHC reported were the poor attitude of frontline health workers and weak referral systems [25, 26].

The effects of a newly implemented free MHC in Kenya have been studied [27-29]. It was found that the complete exemption policy, implemented by the Kenyan government for all pregnant women had increased ANC utilisation but facility delivery and PPC was not improved. Barriers to utilisation were; misconceptions about the quality of care obtained from facilities, geographic and cultural barriers, and poor attitude of health care workers, insufficient infrastructure, equipment and staffing [27-29]. In Burkina Faso, the Government provided a partial

subsidy for pregnant women generally, but complete exemption for the worse-off with transportation cost from health centres to district hospital covered [30-32]. The effect seen were increased ANC, and delivery service utilisation among poor women increased from 40% to 60% (2005-2010), there were also increase caesarian Sections rate and post partum care (PPC) uptake. However, financial barriers (direct and indirect cost), shortage of competent staff, poor equipment and drugs stock-outs forcing the patient to buy medicines in the conventional stores that are expensive and poor referral system deterred utilisation of free MHC. Also, health workers lacked clarity on policy and had issues with transport cost reimbursement to women.

The Burundi government with some external support provided a complete exemption for all pregnant women [33, 34]. This improved ANC by 20% and facility birth by 25%. Barriers reported were low quality of care and shortage of health personnel. Ghana provides a practical example of the feasibility of a free MHC policy in West Africa, where complete exemptions for all MHC services were initially provided by the Ghanaian government but responsibility for the financing of the policy was later transferred to the National Health Insurance Scheme (NHIS) [2, 14, 35-37]. These studies reported an increase in ANC utilisation, improved facility delivery from 48.7% to 67.4 % (2006-2011) and reduced MMR from 230 to 170/ 100000 live births (2007-2011). Barriers to free MHC cited were economic; the cost of transportation, the cost of supplies requested at facilities from women during delivery, distance to health facility and poor quality of care at facilities. The studies reported that free MHC is sustainable when linked with a national health insurance scheme.

Nigeria does not have a general free MHC policy for all pregnant women in the country. However, some States Governments (Anambra, Kano and Ondo) had sponsored free MHC policy [8, 38-40]. The policies did not take the same form in these states, for example, in Kano and Anambra State, full exemptions were provided for all pregnant and postpartum women, whereas Ondo State had an only partial exemption for some services in the government hospitals. In the Nigerian studies [8, 38-40], increase utilisation of ANC and PPC was reported, with no significant increase in health facility delivery. Barriers cited were poor knowledge of service, economic barriers (indirect cost and transportation cost), geographical barrier, drug stock outs, poor referral system, no means of transportation during labour, religious and cultural beliefs, women's low status in the society, poor quality of service, shortage of SBA, poor planning, monitoring and sustainability of programs.

This aim of this study was, therefore, to assess the effect of cost-removal policy on patterns of health-seeking behaviour of women during pregnancy, intrapartum and postpartum periods in CRS of

Nigeria. The specific objective of project is to synthesise current evidence on the effect of free MHC on uptake of facility care in SSA, examine the effect of free MHC on uptake of ANC, delivery care and PPC at primary and secondary health facilities in CRS and explore factors which influence uptake of facility-based maternal health services in CRS and assess the importance of the direct cost of care among those factors.

Material and Methods

Study Design

This is an observational study, using a mixed method approach [41] to describe the effect of FMHC intervention. The quantitative component uses data on maternal health service utilisation obtained from PROJECT HOPE, CRS Ministry of Health and Nigeria DHS. The qualitative part uses Focus Group Discussions (FGD) comprising pregnant and postpartum women, examining their perception of the program.

Study Setting

Cross River State is a coastal state occupying 20,156 square kilometres in the South-South geopolitical zone of Nigeria, with a population of 3,104,446; its capital is at Calabar [42, 43]. The State is made up of 18 Local Government Areas (LGA), 3 senatorial districts, many ethnic/sub-ethnic groups with distinct languages and Culture [42]. The major religion is Christianity. 63.1 % (95%CI 59.5-66.7%) of women have at least a secondary school education and 60 % (95%CI 55.2-64.6) make decisions about their healthcare [7].

Study Procedure

Three different methods are used to address the project specific aims and objectives: A purposive literature search was used to synthesise current evidence on the effect of free medical health care (FMHC) on the uptake of health facility care in SSA. A quantitative data audit and analysis was used to examine the effects of FMHC on the uptake of ANC, delivery care and PPC at primary and secondary health facilities in CRS. An FGD was the method used to explore factors which influence uptake of facility-based maternal health services in CRS and assess the importance of the direct cost of care among those factors. The purposive literature was searched using PUBMED, MEDLINE, EMBASE, POPLINE, WHO reproductive health Library, Google Scholar, SCOPUS and Cochrane. Websites of MDG, UNDP, USAID, UNICEF and UNFPA were also

searched. Cited references from original research publications were consulted to get relevant studies. The literature search was limited to 1985-2014. All publications were in English or at least translated into English.

The effect of FMHC on the uptake of ANC, delivery care and PPC at primary and secondary health facilities in CRS was examined using data from 3 sources; the Nigeria Demographic and Health Survey (NDHS) data, data from routine management information system (MIS) of CRS MOH and PROJECT HOPE data. For the CRS MOH and PROJECT HOPE data, the two potential sources of data used were the uptake of ANC, delivery care and postpartum care in CRS before and after the introduction of the free MHC policy. An audit of routine data was undertaken to assess completeness of data flow from facility register to MOH, following the approach used for an audit of HIV-related data conducted in South Africa [44]. Data from September to December 2013 from three facilities were audited: i.e., PHC in Beginning, Obudu (Northern CRS), General Hospital, Ugep (Central CRS), and General Hospital Calabar (Southern CRS). Health facility register data were compared with monthly facility summary sheets; then monthly facility summary sheets were compared with MOH Management Information System (MIS) data. The following data points were examined: (a) number of pregnant women who attended any ANC in the three health facilities. (b) A number of women who delivered at the same three facilities and (c) Number of women who had a postnatal check within 42 days of delivery at same three facilities.

The percentage of women utilising ANC, delivery and PPC services was calculated using the WHO [45] and North Carolina University approach [46]. MOH and PROJECT HOPE data are in absolute numbers of women utilising ANC, delivery and PPC services, and provide us with the numerator for this calculation. The denominator is the number of annual expected births in CRS = Total expected annual population x crude birth rate.

Focus Group Discussions (FGDs) were conducted to provide an understanding of how this policy is perceived by the pregnant and recently-delivered women, how it may have affected women's health seeking behaviour and to help explain why changes in MHCS utilisation may have occurred [47]. A purposive, maximum variation sampling [48] from two geopolitical zones in CRS was used to help understand the perceptions of the policy from the perspective of women from the broader population. Six FGDs were held with 6 women in each group and 8 women in two cases, resulting in a total of 40 women. Pregnant and postpartum women aged 15-49 years were recruited from ANC clinics, PPC/immunisation clinics and at TBA homes while they were waiting to receive MHC, to ensure that the

participants were the intended beneficiaries of the programme. Three FGDs were held in the Central geopolitical zone of CRS and three in the South geopolitical zone, purposively selected to reflect the range of urban, peri-urban and rural areas, as well as different levels of care available to a woman during pregnancy. These were: (a) pregnant women attending ANC clinics at PHC Wula, Boki Local Government Area (LGA) (central); (b) postpartum women at immunization clinics at PHC Wula, Boki LGA (central); (c) women at the TBA home in Biajua, Boki LGA (central); (d) pregnant women attending ANC clinics at PHC Maternity, Akpabuyo LGA (south); (e) postpartum women at immunization clinics at General Hospital Calabar (South); and (f) women at the TBA home in Atimbo, Akpabuyo LGA (south).

The discussion guide was pretested for cultural appropriateness and clarity by holding discussions with six women during ANC at a PHC facility to check if they understood the guide. All the women understood and spoke English, so this was the language of the discussions. The same guide for gathering information was employed throughout with some modifications to reflect findings of former discussions and to strengthen internal validity of results. Thematic analysis was initially structured around seven common themes drawn from the literature. These are: (a) economic (indirect or hidden cost); (b) quality of care; (c) tradition and religion; (d) attitude of health workers; (e) knowledge of the program; (f) perception of complication by women; and (g) reasons for TBA utilization when free care is available. The steps used for analysis were: (a) transcription into MS Word; (b) familiarisation and pattern identification; (c) open coding:-line by line themes identification; (d) charting: - cut and paste under theme; (e) selective coding: - putting the sub categories under major themes; and (f) Interpretation.

Results

The purposive literature search yielded 213 potential articles, but only twenty-two [22] articles were used in this study. Eleven SSA countries were identified as having implemented partial or full exemption policies [49]. In five of these, there were no substantial evaluations.

Table 2: Comparison of DHS estimates of percentage uptake of MHC services in CRS 2003-2008 and 2009-2013

	ANC UTILIZATION (95%CI)	HEALTH FACILITY DELIVERY (95%CI)	PPC UTILISATION (0-41 days) (95%CI)
2003-2008	68 (63.1-72.8)	38.5 (34.4-42.6)	55.1 (50.1-60.4)
2009-2013	72.6 (67.7-77.1)	40.4(36.2-44.7)	69 (62.7-75.3)

Therefore, countries reviewed were: South Africa, Kenya, Burkina Faso, Burundi, Ghana and

some states in Nigeria (Kano, Anambra and Ondo state). See background for information. Table 2 shows the results of NDHS data on ANC, Health Facility Delivery and PPC utilisation trends (2003-2013). Results from NDHS (2003-2013) suggest weak evidence of change as 95% Confidence Intervals overlap even though point estimate suggest an increase in utilisation (Fig. 1).

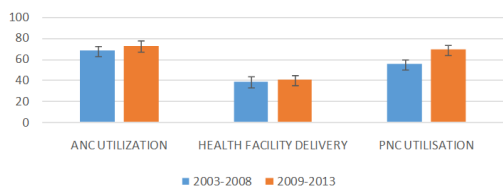


Figure 1: NDHS trends in MHCS utilisation in all health facilities in CRS (2003-2008 and 2009-2013)

The result of data audit from health facility register, MOH and PROJECT HOPE obtained from the three health facilities when compared with those obtained from MOH and PROJECT HOPE for ANC, health facility delivery and PPC of the same facilities between September and December 2013 are represented in Figures 2 and 3.

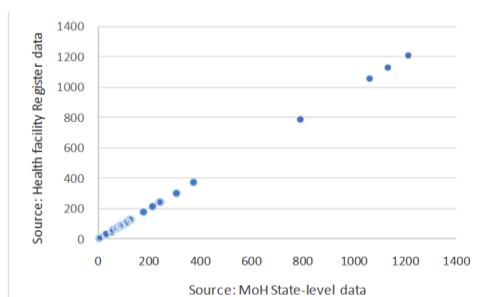


Figure 2: Match of MIS data from health facility register to state MoH for number of women attending ANC, facility delivery and post-partum care in three facilities in CRS in September, October, November and December 2013

Results show a close match and good quality of data flow regarding completeness of reporting from the health facility registers to the state MOH. However, PROJECT HOPE data reports about 5% fewer women attending than MOH data.

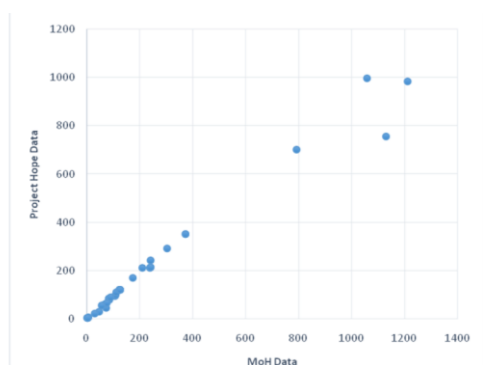


Figure 3: Data from State MoH and Project Hope for number of women attending ANC, facility delivery and post-partum care in three facilities in CRS in September, October, November and December 2013

The results of MOH and PROJECT HOPE data analysis were obtained from the calculation of percentage utilisation of ANC, health facility delivery and PPC by women in CRS (Table 3).

Table 3: Calculated annual total expected population in CRS, crude birth rate and annual total expected births INCRS

	TOTAL EXPECTED ANNUAL POPULATION (USING CRS POPULATION GROWTH RATE OF 2.9)	CRUDE BIRTH RATE	TOTAL ANNUAL EXPECTED BIRTHS IN CROSS RIVER STATE
2008	3,063,214	42.2	129,268
2009	3,152,048	42.1	132,701
2010	3,243,457	41.9	135,901
2011	3,337,517	41.76	139,375
2012	3,434,305	41.5	142,524
2013	3,533,900	39	137,822

SOURCES: National population commission, World Bank, NDHS2013, UNFPA.

The results of the percentage of women who utilise ANC in CRS from 2008 to 2013 shows an initial decline in ANC utilisation from 2008 to 2010 and then a gradual increase from 2010 to 2012, with a 63.8% increase from 2012 to 2013 (Fig. 4). The trend in the percentage of women utilising delivery care at state health facility follows the ANC trend, with 60% increase between 2012 and 2013. PPC utilisation rate has been low until 2013 where there was a 95% increase. Results show that increase in the number of women accessing MHCS is greater than the population growth rate of CRS which is 2.9%, from 2010 to 2013 (Fig. 4). Since there have been no major events to swell the population, this increase is likely to be a genuine increase in maternal health care utilisation.

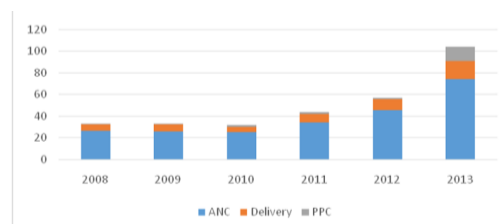


Figure 4: Estimated percentages of women who utilise ANC, delivery and PPC in state primary and secondary health facilities in CRS 2008-2013

Focus Group Discussions (FGD)

Perception of participants of free MHC

The results of FGDs showed that women across all groups perceived that there had been an increase in the number of women who utilise ANC, delivery and PPC at health facilities, following the removal of the direct cost of maternal health services at health facilities. But the rate of uptake differs between urban and rural areas as well as between communities closer to a health facility and those further off.

"Many more people now come to the health centres for ANC and delivery because it is now free. As you can see the clinic is so full and I have to wait for a

longer time like yesterday two people gave birth here. It never uses to be like this in the past. It is getting harder to see women deliver at home or with TBAs." (Participant #6, ANC clinic, rural area)

"Free care means a lot to me, as no cost is charged for ANC services, tetanus immunisation, and delivery services." (Participant #3, ANC clinic, rural area)

Some women felt the range of services available to them and willingness to provide services has increased due to the free MHC because previously, the care they got depends on the ability to pay.

"In the past, the cost was too much for most of us, and you can even be deprived of some necessary drugs or caesarian section because you could not afford it, even if it would save your life. But now the doctors and midwives do not hesitate to do anything possible to save your life because it is free." (Participant #13, PPC clinic, urban area)

Women in urban areas or those living close to the city got the information over the radio or television (TV), while those who reside close to PHC got informed by community health workers outreach, town criers or when they visited health centres for other services as well as routine ANC registration. Others had been informed by friends in the community.

"I heard the governor say it on TV that was why I decided to come. Previously I delivered at our church with the help of a nurse who attends our church" (Participant # 19, ANC clinic, urban area)

"This is my first time of coming to the health centre for ANC; I was directed by my friend to come here. She said she delivered here, and they did not collect money from her". (Participant # 2, ANC clinic, rural area)

However, some of the women had no idea of free MHC especially those in more remote areas.

"I did not know of any free treatment at the health centre, if not I would have gone. I thought of the money I will spend at the health centre since I did not have, I decided to deliver here at the TBAs home where it is free." (Participant # 25, TBA's home, rural area).

Reasons for increase ANC uptake

Economic: Participants thought that more women utilise a broader range of ANC services following the cost-removal policy. They had accessed free tetanus immunisation, free laboratory test, haematinics and other drugs during this period. Complications had been identified early and the right referral given on time for free. The women equally recognise that this range of care will benefit their babies also.

"Am glad that most women in our community can now have free medicine, lab test and tetanus injection that will protect their babies later. Today I was given these drugs for free". (Participant # 1, ANC clinic, rural area)

The women suggested that increased ANC utilisation has been influenced by other factors besides cost removal. These include HIV/AIDS campaigns in communities that encourage pregnant women to get tested at health facilities during pregnancy, Roll Back Malaria which distributes free bed nets through the health facilities, women's perception of danger during pregnancy or knowledge of complication in their previous pregnancy that could have been avoided through ANC. Interestingly, uptake of ANC services has also increased due to referrals from TBAs in some communities as they direct their clients to health facilities for immunisations.

"The main reasons why some of us come here despite the harsh attitude of these nurses is to collect free bed net, free immunisations and do free HIV test". (Participant # 4, ANC clinic, rural area)

Reasons for increased utilisation of health facility delivery services

Economic: The main reason indicated by some women across groups for delivering in the health facility was cost-removal on delivery. Others felt they should take advantage of the free services and experience birthing in a health facility.

"When I came to deliver here (health facility), they did not collect any money from me, and this made me happy as I thought the whole free thing was a lie." (Participant # 34, ANC clinic, rural area)

Other reasons for delivery at health facilities are women's perception of better quality of care, kind attitude of some SBA and confidence in SBA to handle any complication that may arise in them or their babies during delivery. Experience of complications like severe postpartum haemorrhage during delivery with TBA and dissatisfaction with the quality of services offered by some TBAs play a role.

"Some of us prefer health facility delivery to TBA, like in my case when I want to deliver if they don't give me drip (Intra Venous fluid) I will not have the energy to push the baby out. Also, our new nurse here is very kind and caring, she can make you laugh in labour." (Participant # 12, PPC clinic, rural area)

"I gave birth to the child before this one at home with the help of a TBA, but I almost died from serious bleeding. In fact, at the end, I was rushed to the hospital and given blood that's how I survived."(Participant # 9, PPC clinic, rural area)

Reasons for increase PPC utilisation

Economic: Few women utilise PPC services because it is free. Most of them had PPC uptake as an extension of other health services.

"Since the PPC services are free and I can afford to transport myself easily down here, why not" (Participant # 15, PPC Clinic, Urban area)

Other reasons: Most women utilise PPC when they go to immunise their children. Some utilise PPC only when complications arise in them or their children after delivery. Others attend to enable them to register their children under-five for free health care.

"I feel there is no reason to come unless am coming to immunise my child, register the child for free health care or am ill or my baby is ill; then I can come."

Barriers to utilisation of ANC, delivery care and PPC under an FMHC program:

In general, most women across groups felt the health facility is the ideal place for a pregnant or postpartum woman, but pragmatically, several barriers to utilisation exist.

Barriers to ANC strongly suggested by the women across various groups were indirect cost, informal (under-table) charges, distance to health facility and poor quality of care received at a health facility.

Indirect costs mentioned are the cost of transportation and cost of buying medications at the local vendor during drug-stock-out in the health facility. Some women also raised concerns on the informal ("under-the-table") charges collected from them at some health facility for a laboratory test, drugs, ANC consultation, and registration.

"We were told in the community that we should come to a health facility as the treatment is now free. I came and registered, but when I came weeks later, a nurse asked me to pay 500 Naira (\$2.50), I told her I didn't have, and she refused to attend to me." (Participant # 36, ANC clinic, rural area)

"The health centre is far from here, and I do not have transport to go there often for ANC. Sometime even if we manage to get there, they will write out the prescription for us to buy at the local chemist shop, which is not reliable and we do not have money to buy." (Participant # 29, TBA home, rural area)

The perceived quality of care has reduced as health professionals spend less time with women to attend to a large number of women in a clinic. There is also an issue of drug stock-outs most times of haematinics or anti malarials. Some of the women have a low perception of the quality of available drugs given during ANC.

"This day the nurses don't take their time to listen to us again, it is just "rush and rush" (Participant # 24, ANC clinic, urban area)

"I prefer to even buy my drugs outside from the pharmacy because the drugs given to us for free here is no longer as good as it used to be. Everything just feels of lesser quality now." (Participant # 20, ANC clinic, urban area)

The major barrier to delivery service uptake as strongly suggested across all groups was an indirect cost of delivery requirements. Other barriers were informal charges at a health facility, unfriendly attitude of SBA, poor quality of services at a health facility, geographic barriers, religious and cultural barriers.

Women in all FGDs strongly suggested the cost of items required for delivery, not covered by the free MHC, as a major barrier to health facility delivery utilisation. These items that cost 2,850 Naira (\$14.25) or more are a compulsory requirement for facility delivery.

"If you want to deliver in the hospital the nurses will give you a very long list that includes soap, razor blade, thread to tie cord or cord clamp, kerosene for a lantern in case of no electricity, groundnut oil, bleach, spirit, sanitary pad, detergent, hand towel disinfectant among others. Where will one get the money to buy all these? And if you come without them they will send you back with insults. That is why when we do ANC here we go to deliver with TBA" (Participant # 34, ANC clinic, rural area)

Health workers also collect money informally for drugs during labour, emergency obstetric injections and sometimes for services.

"I was bleeding after delivery, and the asked my husband to pay 500 Naira (\$2.50) before the can give me that injection to stop bleeding". (Participant # 39, PPC clinic, rural area)

Another barrier highlighted was the unfriendly attitude of SBA especially when a woman goes to a health facility in labour. The women complained that instead of encouraging and pampering them, they are being shouted at or treated harshly. They reported that harsh treatment is worse if you do not have the complete delivery equipment. They also extend these harsh treatments to a patient's relatives who may wish to help.

"The nurses at the health centre are not friendly at all, they shouted at me and hit my laps while I was trying to push the baby out. They won't even let you stay in a comfortable position restricting you to the bed, neither will they let your relatives support you during labour and after delivery. That is the reason why some of my friends don't deliver at a health facility, they warned

me." (Participant # 40, PPC clinic, rural area)

"If a woman is stubborn and not cooperative in labour, the nurses are harsh and will beat the woman, so it drives us away." (Participant # 38, PPC clinic, rural area)

Women perceived that some facilities especially in the villages have frequent drug stock out, inadequate equipment and no emergency medications. They reported that sometimes a TBA might be called to take delivery at the PHC if the SBA is unavailable and that they do not have places in some health facilities for patient's relatives to wait.

"I rather pay my way to the bigger hospital when am in labour because here they have nothing good to use on us in the case of a complication. They keep complaining of no drugs." (Participant # 37, ANC clinic, rural area)

A deviant point in one of the FGD was the lack of trust in SBA as they fear their babies could be exchanged or stolen and a dead baby was given to them in replacement.

"Am scared because the SBA can exchange my baby or steal the baby when I deliver and give me a dead baby saying my baby died. I hear many of those stories and am worried" (Participant # 24, ANC, urban area)

The distance was a barrier as the women said the health facility is too far and if labour occurs suddenly especially at night, they had no means of getting to health facility, so they call a TBA to assist them at home.

"Most of us know that the health facility is the ideal place to deliver, but if the labour hold you especially at night and the baby is already coming out you have to quickly send for the TBA to deliver you at home." (Participant # 26, TBA home, rural area)

"I tried to come to the hospital to deliver, but the distance was far. On the way, I couldn't hold it anymore, so they had to put leaves on the ground for me and call the TBA to help me" (Participant # 27, TBA home, rural area)

Some women feel that despite the free MHC and even if everything was completely functional in the free MHC program, some women for religious and cultural reasons will still patronise churches, TBAs or deliver at home by themselves.

"Even if government does everything, it is not everybody that like to give birth at health facilities, some will still go to church because their pastor said so, and they have strong faith that God will help them better to deliver safely there, while others will go to

TBA or stay at home because their mothers did same." (Participant # 11, PPC clinic, rural area)

"My mother delivered here; my grandmother also delivered with TBA, so that's why am here. After all, nothing happened to them" (Participant # 28 TBA home, rural area)

The barrier to PPC utilisation was the perception of need as expressed by the women across most FGDs. They felt they did not need PPC because nothing was wrong with them or their babies post-delivery.

"If a woman has no problem after deliver why will she need to go for a postnatal check-up?" (Participant # 14, PPC clinic, urban area)

Reasons for TBA utilisation despite free MHC

Economic: Sixty percent (60%) of women across various groups suggested indirect and hidden cost as the principal reason why they will prefer to patronise the TBA. They emphasised that even if the services were free, items required for delivery are still beyond their reach.

"That list is too costly, most of us don't have, and it is worst for the younger girls that don't have husbands or anyone to support them, yet got pregnant by mistake. You just have to use TBA that won't charge you. Afterwards, you can give soap or chicken as appreciation." (Participant # 30, TBA home, rural area)

Misconceptions, geographic barriers, experience and trust in TBAs:

Other reasons were given by the women as for why they patronise TBAs are, no means of transportation at night, the perception of no risk associated with the pregnancy, misconceptions that the TBAs are more experienced and can handle complications like postpartum haemorrhage better. Also, women feel TBAs pamper and psychologically care for them more when in labour compared to SBA. Also, family members are allowed to come along and give their support. Furthermore, some women trust the TBA to refer them to a health facility if the labour gets complicated.

"This our mama here (TBA) has been birthing our children for over 35 years, so she knows how to handle any problem that may arise in labour. Also, she will allow you to stay anyhow you like and will rub your back when you feel pain." (Participant # 31, TBA home, rural area)

"I was told by my TBA to come here for immunisation and other free things, but I will deliver with the TBA because she has more experience." (Participant # 32, ANC clinic, rural area)

Discussion

Creating new policies often follow the change in government, as new leaders come up with lofty policies from their campaign promises. The concern and challenge remain in the implementation and sustainability of these policies [50, 51]. The pro-poor free MHC policy in CRS came following a window of opportunity in 2007 with the election of a new Governor, Senator Lyiel Imoke. This government had a vision and mission to improve maternal health in the state by providing free MHC, but as in the case of Kenya, implementation and coverage have been poor [27, 28]. To ensure proper implementation of this policy, however, more commitment is required than what has been shown.

Currently, free MHC is still a policy funded by the CRS government instead of a health insurance scheme. The policy has not yet been enacted into law. Thus, the sustainability of this policy, especially when a new government took over in 2015 is not certain. In Ghana, free MHC policy has been institutionalised, and the sustainability is strongly linked to the NHIS [14, 36]. Furthermore, the impact of free MHC in CRS still needs to be assessed in the longer term as short term changes may not be sustainable over longer periods.

Results from quantitative and qualitative work show an increase in the number of women who utilise health facilities for their care. This is similar to reports from studies in South Africa, Ghana and Burundi [25, 33]. However, increase service utilisation cannot be solely attributed to cost-removal. To study causality, a randomised control trial would be needed.

Apart from cost, several other factors affect health seeking behaviours that may increase or decrease utilisation. According to Andersen's behavioural model [52], these factors could be predisposing factors (an individuals' characteristics; age, sex, parity, educational attainment, status in society, occupation, etc.), enabling factors (resources available to aid health service utilization; finance for direct and indirect cost, availability of health facility and personnel as well as distance to health facility) or need-base factors (an individual's perception of need to utilize MHCS that may be based on previous experience, self-reported need or health professional's advice). From this model, it is obvious that the cost-removal in CRS addresses just a part of the enabling factor. Other factors will need to be considered to experience a surge in maternal health care service utilisation in CRS.

There is a risk that if coverage rises substantially, the current health system will not be in a position to meet demand. For the free MHC policy to be effective, all the WHO building blocks of the health system must be improved [13, 53]. The CRS health force of 0.8 doctors and midwives/ 1000 women of

reproductive age is inadequate and insufficient to handle maternal health needs based on a WHO threshold of 2.28 doctors and nurses/midwives per 1000 population [54]. More health professionals need to be trained and employed in the state health work force, the salaries of these professionals need to be upgraded to match those of their counterparts in the federal health institution so it can attract more health workers to cope with the increasing number of women utilising free MHC.

Health system service delivery is of low quality as perceived by the women. The health sector is allocated less than 15% of state budget recommended by WHO [13] which is not sufficient to sustain implementation of the program. There are stock-outs of drugs and equipment, increasing indirect cost for the women accessing care. Maternal health information dissemination, as suggested by women in the FGDs is beginning to gain momentum and should be channelled through schools, village meetings, faith-based organisation and spiritual homes as their influence has a lot of effect on care seeking.

Improved maternal health requires a continuum of care that transcends even to the care of the new born. Channelling intervention solely to MHC services may remove attention from other health care services which may directly or indirectly affect the health of a woman. For instance, if malaria is not properly controlled in the community, it may affect the health of pregnant women in the community even though they utilise free MHC. This could result in poor outcomes for mother and child.

An audit on free maternal health service utilisation data from health facility register, MOH and PROJECT HOPE, showed that project hope did not have reliable data from 2009 to 2011. This may be due to poor data collection at the inception of the program as no base line data was collected at the start. Data from PROJECT HOPE between 2012 and 2013 show slight variation from data obtained at health facility register and MOH. Reasons for this suggested by the PROJECT HOPE coordinator and health facility staff is that few women are yet to register at health facilities for the free MHC and as such data on their utilisation are not reflected in the PROJECT HOPE data.

The quantitative result from MOH showed an initial reduction in the percentage of women utilising ANC from 2008 to 2010. This can be attributed to slow roll-out of the programme with user fees still collected at some health facilities. User-fees reduce utilisation of health services especially among women, who most often are less empowered in the society [16]. Also, some women, especially in remote areas, still do not have knowledge of the new policy, so utilisation may remain low even in centres that have started implementation. After 2010, there has been a steady rise in the percentage of women utilising ANC, with values rising from 45.1 % (2012) to 73.9 % (2013).

The qualitative study equally showed that women perceived increase in free MHC utilisation, as clinics are full; this they believe is mainly due to cost-removal policy. Other reasons for the perceived increase in number of women utilizing ANC may be due to increase spread of information on free MHC in the communities in the last two years, other health promotion services in the communities that encourage women to visit health centres so as to benefit from free services like HIV/AIDS counselling/testing and free bed-net for pregnant women.

Furthermore, women in communities have become aware of the need to take tetanus toxoid immunisation during ANC periods to protect their babies from tetanus. This has been a compelling reason why some of them utilise ANC. Interestingly; TBAs in the communities have played an important role in the increase of ANC attendance. Some TBAs have attended workshops and training sections organised by the state government calling for their collaboration to make motherhood safer. Sequel to this, they encourage their client to attend ANC at health facilities so as to access free immunisation, bed nets and free haematinics.

Since a democratic government took over in 1999, there has been an improvement in the standard of living of women in the state. Other studies suggest that standard of living has an impact on healthcare utilisation as people are more likely to utilise ANC with improved social, economic status and education [12, 16, 19]. Furthermore, the increase might be due to chance or a usual trend in ANC utilisation that might be seen if ANC attendance is studied over a longer period in the state. However, women felt that the quality of services obtained at the ANC clinics have dropped as the health workers spend less time with them, and health facilities have incessant drug and health equipment stock-outs. This is similar to what is experienced in Burkina Faso, Burundi and Ghana [33, 35]. Less time spent with each woman may be due to the limited number of health workers available to cope with the surge in patronage and stock-outs are either due to poor funding or poor distribution system that prevent products from getting to facilities on time. It also reflects poor planning and implementation as this drugs or consumables could have been stocked long before the get exhausted. Other barriers to ANC perceived by women in FGD were a lack of knowledge about free Health services especially for those in remote areas, informal charges, distance to health facilities and the poor attitude of the health worker to women who attend ANC. These shortfalls need to be addressed soon to increase ANC or gains achieved over the years might begin to fall.

Quantitative results of the percentage of women utilising health facility delivery follow similar pattern to the ANC except for a small rise in 2009, followed by a fall in attendance in 2010 and subsequent rise after that to 16.8% in 2013. However,

the figures are small compared to ANC attendance. This was the case in South Africa and Kenya [25, 27]. This calls for greater attention to this aspect of MHC services since in an ideal situation, increase utilisation of ANC is supposed to increase the chances of a health facility delivery [3, 15, 55]. Reasons for the increase health facility delivery were mostly due to cost-removal as a woman previously spent on average 5,000 Naira (\$25) for vaginal delivery and 18,000 Naira (\$90) for Caesarean Section [50]. These costs are not affordable for most women especially those in the villages. Other reasons for increase health facility delivery besides cost-removal may be due to increasing implementation coverage of free MHC in the state, increase free MHC information dissemination and increase HIV campaigns in the state that encourage women who are HIV positive to deliver in a health facility in order to prevent mother to child transmission. The Qualitative aspect highlighted reasons suggested by the women in the FGDs on why they would utilise or not utilise health facility delivery services. They felt strongly that the increase utilisation was linked with cost removal. Other reasons were better care received at the health facility especially when they anticipate danger or had a bad delivery experience in the past. However, other issues as seen in the case of Kenya, Burkina Faso and Ghana, deterred them from utilising facility-based delivery services [14, 27-30, 32]. Seventy percent (70%) across groups strongly suggested that the cost of materials needed for a facility delivery is a major deterrent. Other barriers were a lack of information on free MHC in remote areas, poor quality of service at a health facility (unstable electricity, no water at facilities and inadequate equipment for delivery) and the harsh treatment given to women by SBA when they come to deliver. Religious and cultural influence from their spiritual leaders and family also plays a major role in deterring women.

Postpartum care utilisation like in all the countries included in our literature review has been poor compared to ANC and health facility delivery. Quantitative results show less patronage that has gradually increased over the last two years. Reasons for this increase may be due to increase coverage of PPC implementation in the state and improved information dissemination on importance of PPC in the state, it can also be linked to the new penta-4 vaccine introduced for children which attract mothers and gives them an opportunity to attend PPC and immunization clinic in one health facility visit. As in other countries reviewed, women's perceived need is a major deterrent to PPC utilisation. The FGD participants feel that if they are not experiencing any complications in postpartum periods, then PPC is not necessary. Other barriers suggested from the FGD are the indirect cost of transportation to a health facility for PPC, women who utilise TBA services for delivery, have their PPC there, while cultural practices of utilising the care of their mothers or any experience

elderly woman in the family also deter PPC utilisation.

Limitation of study: The study only can only infer an association between exposure (free MHC) and outcome (increase MHCS utilisation) but not causality. Furthermore, Changes seen may be due to chance, improvement in the quality of life, educational status of women or the economy in general. Further studies will be required to assume causality between free MHC and increase utilisation. The NDHS CRS data are not available for stratification by wealth quintile, rural and urban residence, which are considered as potential cofounders. In estimating the percentage uptake of service, there was no data for crude birth rate (CBR) for CRS, so the national figure was used for estimation. There was no available data on service user's demographic characteristics, socioeconomic status, and maternal age, all of which are possible confounding factors to utilisation.

In general as seen in Andersen's health seeking model, reasons for MHCS utilisation even under a cost-removal policy is multifactorial, also behavioural change in culture regarding the use of health facility takes time and require a lot of co-ordinated effort on the part of the government, the community, family as well as the woman. Fee removal is not enough. Therefore in addition to fee-removal, the government must be committed to addressing other deterrents so as to increase the number of MHC service utilisation which should result in improved maternal health in CRS.

At the level of CRS government:

- Improving maternal health requires a high commitment to a continuum of care that begins the day a female child is born. As such a strong political will and the more financial backing is required in CRS to improve maternal health.
- The government should ensure that this useful policy is passed into law. That way, the sustainability of this program is ensured even when a new government takes over in 2015 and subsequently.
- A proper baseline data and evaluation of maternal health should have been done before the start of this program. Since that was not done, a robust provisional evaluation should be done immediately to provide bases to compare and monitor the progress of the program.
- For this program as well as other programs in future, a costing study must be done, to help the government understand the cost implications of the policy and plan adequately. Furthermore, a cost-effectiveness evaluation should be done to compare this intervention with other interventions aimed at improving maternal health. This will guide policy makers in their decisions.

- Adequate funding to the health sector is necessary. The government needs to allocate 15% of the total state budget to the health sector. Furthermore, an increase allocation to maternal and child health is required to ensure sustainability of this program. These funds may be raised by strengthening the taxation system, introducing a health insurance scheme at both community and state level (as in the case of Ghana's NHIS that made the program sustainable), as well as sourcing for funds from external donors.
- The government should carry out realistic and pragmatic planning, implementation and regular monitoring and evaluation of the program to detect where improvements and adjustments are needed. Proper audit/ cost-monitoring mechanisms should be put in place to avoid waste, ensure sustainability of the program and prevent informal charges on the patient.

Implementation:

- Intense information dissemination on free MHC everywhere in the state is key. Women should be informed about the benefits and how they can access the services. This information should be channelled through their social, religious and traditional gatherings as well as through the media.
- CRS needs to increase its health workforce to cope with the surge in maternal health facility utilisation. This they can achieve by training more doctors that should sign a bond with the state to work in the state health facilities at the end of their training.
- The government needs to create more nursing and midwifery schools to train more nurses who will equally be obliged by a bond to work for the state. Other colleges involved in training health workers in the state like the college of health technology should be boasted to train more health workers.
- Health professionals should be trained and incentivised to improve attitudes towards women, especially in labour.
- The quality of care provided at all state health facilities must be improved and monitored.
- Some young TBAs can also be trained formally and co-opted into the health workforce as community health extension workers. Asides training, the health workers, should be incentivised through increased salaries, monetary incentives, promotions and awards for their efforts. These will attract other health workers into the sector as well as motivate them to provide quality service and discourage informal charges and corruption in the sector.
- More health facilities should be built

especially in remote areas; existing facilities should be adequately equipped to handle maternal needs and improve the quality of maternity services. Proper drug and consumable distribution should be ensured and monitored to avoid drug and consumables stock-outs. Facilities should also be funded to sustain daily operational cost thus preventing informal charges on the women. Constant electricity should be provided at these facilities especially at night through solar energy or other means, as well as steady water supply to ensure optimal hygiene and good quality of care for women that come in labour.

- The exemption should address some of the indirect cost barriers. Delivery packs containing all delivery requirements should be provided for the women in labour and transportation provided for referred cases. The government may consider reimbursement of transportation for women coming from very far remote areas; however, this has to be done with caution to avoid perverse incentive.
- Waiting areas should be provided in health facilities for patient's relatives to stay while providing the necessary support to the women during labour.
- Broader support should be provided to educate and empower women in the society so they can make appropriate decisions about their maternity care.

List of Abbreviations: ANC-Antenatal Care, CI-Confidence Interval, CRS-Cross River State, CBR-crude birth rate. FGD-Focus Group Discussion, FMHC-free maternal health care. MHC-Maternal Health Care, LGA-Local Government Area, MDG-Millennium Development Goals, MHCS-Maternal Health Care Service, MMR-Maternal Mortality Ratio, MOH-Ministry of Health, NDHS-Nigeria Demographic Health Survey, NHIS-National Health Insurance Scheme, PHC-Primary Healthcare Centers, PPC-Post Partum Care, SBA-Skilled Birth Attendant, SSA-Sub Saharan Africa. TBA-Traditional Birth Attendant, WHO-World Health Organization.

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