

# Managing Malaria in Pregnancy Policy Interventions in A Challenging Environment: an Ethnographic Study of two Ghanaian Administrative Regions

Matilda Aberese-Ako (✉ [maberese-ako@uhas.edu.gh](mailto:maberese-ako@uhas.edu.gh))

University of Health and Allied Science <https://orcid.org/0000-0002-1577-5939>

Pascal Magnussen

Kobenhavns Universitet

Margaret Gyapong

University of Health and Allied Sciences

Gifty Dufie Ampofo

University of Health and Allied Sciences

Harry Tagbor

University of Health and Allied Sciences

---

## Research

**Keywords:** Malaria in pregnancy (MiP), Insecticide, Malaria

**DOI:** <https://doi.org/10.21203/rs.3.rs-37848/v1>

**License:**   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

**Background:** Malaria in pregnancy (MiP) is an important public health problem across sub Saharan Africa. Regular use of Long-Lasting Insecticide treated bed Nets (LLINs), directly observed administration (DOT) of intermittent preventive treatment with sulphadoxine-pyrimethamine (IPTp-SP) and prompt and effective case management of MiP has constituted the package of measures for its control in Ghana in the last 20 years. Unfortunately, Ghana like other sub Saharan African countries did not achieve the reset Abuja targets of 100% of pregnant women having access to IPTp and 100% use of LLINs by 2015.

**Methods:** This ethnographic study explored how managers dealt with existing MiP policy implementation and arrangement challenges and the consequences on clients' access to MiP interventions, using observations with conversations, in-depth interviews and case studies in eight health facilities and twelve communities for twelve months, in two Administrative regions in Ghana. The University of Health and Allied Sciences' Research Ethics Committee approved the study [UHAS-REC/A.I UI 17-18].

**Results:** Managers addressed frequent stock outs of malaria programme drugs and supplies from the National Malaria Control Programme and delayed reimbursement from the NHIS, by instituting co-payment, rationing drugs and relaxing the DOTs policy. This ensured that facilities had funds to pay creditors, purchase drugs and supplies in order to ensure continued service delivery. Clients who could afford the cost of maternal and MiP services and those who had previously benefitted from such services were happy to access uninterrupted services. Whilst clients who could not afford the cost of services resorted to health care shopping, delaying in starting ANC and skipping scheduled ANC visits. Consequently, some clients did not receive the recommended five+ doses of SP, others did not obtain LLINs early and some did not obtain recommended treatment for MiP. Frontline workers felt frustrated and demotivated, because sometimes they could not provide comprehensive care to clients who could not afford it.

**Conclusion:** For Ghana to achieve her goal of controlling MiP, the Ministry of Health and other supporting institutions need to ensure prompt reimbursement of funds, the supply of programme drugs and medical supplies to public, faith based and private health facilities.

## Introduction

In sub Saharan Africa, where an estimated 25 million pregnant women are at risk of *Plasmodium falciparum* infection annually (1, 2), the World Health Organisation's (WHO) recommended malaria in pregnancy (MiP) interventions have been included as a component of maternal health care (3–7). Ghana adopted the interventions such as regular use of long-lasting insecticide treated bed nets (LLINs), directly observed administration of intermittent preventive treatment (DOT) with sulphadoxine-pyrimethamine (IPTp-SP) and prompt and effective case management of MiP in 2003 (8–12).

Despite such interventions Ghana like other sub Saharan African countries did not achieve the reset Abuja targets of achieving 100% of pregnant women having access to IPTp and 100% use of LLINs by

2015 (13)<sup>i</sup>. Challenges and gaps in the implementation of MiP interventions have been reported in the sub region (13–18). Health facility factors such as poor organization of health delivery, leading to poor quality of care, confusion over the timing of each IPTp dose, stock outs, user fees and negative health worker attitudes contributed to women delaying in accessing health care in the prevention and treatment of MiP (19–26). Poverty, the financial and social cost of antenatal care, women’s lack of power in decision making in the household, socio-cultural practices and women’s poor antenatal attendance affected uptake of MiP interventions (19, 20, 22, 24, 27–29).

Studies in Ghana have equally reported on challenges in implementation such as stock outs of SP, negative client attitudes to accessing IPTp-SP and use of LLINs, socio-cultural practices such as women having less power in decision on the use of LLINs and poverty making it difficult for some women to afford health care and thus missing out on regular ANC attendance and MiP treatment (14, 18, 30, 31). However, there is sparse literature on how health managers deal with MiP implementation and arrangement challenges in health facilities and the consequences on pregnant women’s access to MiP interventions. This ethnographic study contributes to the literature by exploring how managers and health workers deal with MiP policy implementation and arrangement challenges and the consequences on clients’ utilization of MiP and maternal health services in two Administrative regions in Ghana.

## **Context of MiP and maternal health care provision in Ghana**

IPTp-SP (3 tablets), which is given at 16th week of pregnancy every month till delivery and the issuing of LLINs to all ANC registrants have been integrated into Antenatal Care (ANC) service provision in Ghana. They are provided free of charge, alongside the free maternal health care policy intervention, which was introduced in Ghana in 2004 (10, 32). The free maternal health care is factored into the National Health Insurance Scheme (NHIS), which pays for the service charge and drugs for antenatal care (ANC), delivery and post-natal care (PNC) (33). The NHIS is currently operating a retrospective system, where providers (accredited health facilities such as public, faith-based and private for profit) file claims for services provided and are reimbursed through the NHIS (Agyepong and Nagai, 2011). However, the National Malaria Control Programme (NMCP) procures LLINs, RDTs, ACTs, SP and Injection Artesunate for the Central and Regional Medical Stores, which supplies public and faith-based facilities with their medical supplies. To ensure continues distribution, the NMCP conducts periodic physical stock checks at central and regional medical stores (10). Notwithstanding, the Ghana Health Service and Teaching Hospitals Act 525, the legislation that currently governs public sector service delivery, gives health facility managers the power to collect and retain 100% of user fees known as internally generated funds (IGFs). The objective is to ensure the provision of efficient and quality service delivery (34).

## **Analytical concepts: power and trust in health care**

The study uses Mintzberg (35) conceptualization of organisational power and Hall (36) conceptualization of trust in health care systems, as explanatory framework.

Mintzberg (35), defines power in organizations as “...*the capacity to effect (or affect) organizational outcomes.*” How health managers and workers exercise power in everyday decisions on health care shapes health facilities’ internal policies, which determine the quality of health care that clients experience (37–41). Managers are expected to exercise power in the implementation of policies that contribute to the achievement of organizational goals (42, 43). Managers’ sources of power include authority vested in the office of the manager, networks and access to resources (44, 45). Frontline health workers such as nurses, doctors, pharmacists and laboratory technicians exercise power in delivering health care to clients. Their sources of power include their knowledge, expertise, skills and access to the clients who utilize health services (35, 40, 44, 45).

When power is exercised positively, clients develop trust in health providers and the health care system. Where power is exercised negatively clients distrust health providers (41, 46). Trust has been defined as “...*the optimistic acceptance of a vulnerable situation in which the trustor believes the trustee will care for the trustor’s interests*” (36). Effective health care requires a social relation of trust between health providers and clients. Trust directly affects the attitudes and behaviors of clients in decisions on health care (36, 47–49). When clients perceive negative exercise of power in health facilities, they respond by finding alternative sources of health care, refusal to comply with scheduled visits and failure to adhere to treatment. However, when power is exercised positively, clients develop trust in health providers and patronize health services and adhere to treatment. Health manager - worker trust relations has equally been explored (50). When health managers provide the needed resources for health care provision, health workers are able to exercise power positively, by providing quality health care, which enhances their trust in managers. When managers fail to meet workers’ work needs, they lose trust in managers and become demotivated in the provision of health care (46, 50, 51).

## Methods

### Selection of research area

The study was conducted in five districts, three in the Ashanti and two in the Volta regions of Ghana. Eight health facilities: (five government and three faith-based) and twelve communities were chosen for the study. A three-stage selection process was used: (i) five districts were selected<sup>ii</sup>; (ii) the district hospitals in the five districts automatically qualified to participate in the study; (iii) the study team visited the hospitals and went through ANC case records. The total number of MiP cases from January, 2015 to March, 2018, in each community were recorded and the community with the highest recorded number of malaria in pregnancy cases in each facility was chosen to participate in the study. Information on communities that each facility served was obtained from the offices of the study districts’ health directorate. Most of the communities had an average population of 10,000. One of the districts in the Volta region had communities with an average of 2,000 inhabitants, so six communities with the highest number of malaria in pregnancy cases were combined to form two large communities (Table 1). A sensitization workshop was held by the research team for the Volta Regional health directorate and the

district health management teams (DHMT) of the participating districts in the Volta region. The regional health director and the directors of the DHMTs approved the study. A sensitization workshop was not carried out in the Ashanti region, because some of the team members in the current study had previously conducted studies in malaria in the same districts and already had established a relationship with the region and districts. Nevertheless, letters were sent to the participating districts health directorates in the Ashanti and Volta regions. The various districts gave written approval for the study. Copies of the approval letters were sent to the participating hospitals and communities to seek permission from the senior medical officers responsible for the hospitals and the chiefs and assembly members of the study communities. Additional letters had to be written to the administrators of the three faith-based facilities before approval was obtained. Community sensitization was done, paying courtesy calls on assembly members and chiefs and holding meetings with a cross section of opinion leaders to inform and seek their permission to conduct the study in their communities. Interactions and interviews with pregnant women revealed that in some communities specific health facilities were preferred for ANC services. Three of such facilities, which are faith-based were included. Also transect walks were carried out in the study communities to identify key places and physical accessibility to health care facilities.

The study design was ethnographic, using non-participant observations, conversations<sup>iii</sup> and in depth interviews (IDIs), to obtain data from health managers, health workers, NHIS personnel, pregnant women and some community members, from April, 2018 to March, 2019. Follow up interviews were conducted in September, 2019. The research team comprised of a post-doctoral researcher (MD) and eight research assistants (RAs)<sup>vi</sup>. MD trained the RAs, and supervised data collection. Each RA was assigned to a facility and a community for data collection. To prevent a Hawthorn effect, observations were conducted intermittently in the eight facilities and 12 communities (52). The Ewe and Twi languages were used for IDIs and conversations with pregnant women and community members in the Volta and Ashanti regions respectively.

## **Selection of study participants**

A research assistant carried out observations in a health facility and interacted with the pregnant women who attended ANC. The study was explained to them and those who were interested voluntarily offered written consent to participate in the study. Pregnant women were also recruited from the study communities, using the snowball method. The first pregnant woman to be identified helped the RA to identify others.

Case studies were purposively selected among women attending ANC every month and those who were irregular or skipped their ANC appointments. The RAs visited them at home, for observations and conversations. ANC providers who had been working in a facility for at least one year, majority of whom were midwives, participated in the study. Conversations were conducted with procurement officers, laboratory personnel and officials at the district health directorate, to clarify some of the issues raised on LLINS in IDIs with health providers and health managers. ANC unit managers commonly referred to as in-charge, facility managers such as senior medical officers, physician assistants and administrators, were

interviewed, to help understand managerial and administrative issues. Visits were made to some of the districts of the national health insurance scheme (NHIS), to converse with some staff members. Conversation was also held with one of the national deputy directors of the scheme, to clarify and verify issues raised by health managers such as delays in reimbursement, legality of charges for some ANC and MiP services (Table 2).

Table 1  
Study health facilities and communities in the Ashanti and Volta Regions with pseudonyms

<b>No of facilities per region</b>	<b>No.</b>
*Ashanti Region	4
#Volta Region	4
<b>Total number of facilities</b>	<b>8</b>
<b>Type of Facility</b>	<b>No.</b>
Hospital	5
Health Centre	3
<b>Ownership of facility</b>	<b>No.</b>
Government owned	5
Mission owned	3
<b>Number of communities</b>	<b>No.</b>
Ashanti region	4
Volta Region	8
<p>*Study facilities in the Ashanti region have been given the pseudonyms: ASFacility01, ASFacility02, ASFacility03 and ASFacility04. Study communities in the Ashanti region have been given pseudonyms: ASCommunity01, ASCommunity02, ASCommunity03, ASCommunity04.</p> <p>#Study facilities in the Volta region have been given the pseudonyms VRFacility01, VRFacility02, VRFacility03, VRFacility04. Study communities in the Volta Region have been given pseudonyms: VRCommunity01, VRCommunity02, VRCommunity03, VRCommunity04.</p>	

Table 2  
Data collection methods and categories of respondents

Region	Category of Respondents	IDIs	Conversations	Case studies
Ashanti				
	Facility Managers	4	0	0
	ANC managers	4	4	
	Health care providers	11	20	0
	Pregnant women	30	25	4
	Procurement officers	1	2	0
	Laboratory officials	0	6	0
	Pharmacy officials	0	4	0
	DHD Officials	0	2	0
	Deputy PRO of a district NHIS	0	1	0
	<b>Total</b>	<b>50</b>	<b>56</b>	<b>4</b>
Volta Region				
	Facility Managers	4	0	0
	ANC managers	6	4	
	Health Care providers	12	20	0
	Pregnant women	40	32	8
	Laboratory officials	0	2	0
	Pharmacy Officials	0	4	0
	DHD Officials	0	2	0
	<b>Total</b>	<b>74</b>	<b>64</b>	<b>8</b>
National Level	Deputy director NHIS	<b>0</b>	<b>1</b>	<b>0</b>

Region	Category of Respondents	IDIs	Conversations	Case studies
Observations were conducted in 8 health facilities and 12 communities in the two regions for 12 months				

## Data analysis

Interviews were tape recorded and transcribed verbatim to preserve interviewees' original messages. Interviews in Ewe and Twi were transcribed into English to enable easy analysis and comparison. This study was conducted as part of a larger study on parasitic infections during pregnancy and community interventions programme in Ghana. The study set out to explore socio-cultural and community factors influencing the utilisation of MiP interventions in Ghanaian communities. However, the initial analysis revealed that multiple community and health system factors influenced utilisation of MiP interventions. This informed the team to return to the study health facilities to explore and understand health system factors influencing MiP service provision.

A grounded theory approach was used in data analysis (53). The first set of data (interviews, observation notes and conversations) was triangulated and an iterative approach was used to code the data, with the assistance of qualitative analysis software, Nvivo Version 11. Key informants such as managers and health workers were visited for further interviews in pursuance of the emerging themes. The coding, analysis and data collection went on until saturation was attained. The emerging themes formed the basis of presentation of findings.

## Ethical issues

Ethical clearance was obtained from the University of Health and Allied Sciences' Research Ethics Committee [UHAS-REC/A.I UI 17–18]. Written consent was obtained from all interview participants, while verbal consent was obtained from conversation participants<sup>vii</sup>. Permission was obtained from district directors of health, facility and ward managers. To protect informants' identity, besides actual country and region names, individuals and facilities' names used in this article are pseudonyms.

## Findings

### Managers' strategies in dealing with MiP implementation challenges

Managers and health workers exercised power in addressing challenges in MiP policy implementation arrangements such as frequent stock outs of malaria programme drugs and supplies from the National Malaria Control Programme (NMCP), delayed reimbursement from the NHIS and medical consumables from the Ministry of Health (MOH) as follows: 1. instituting co-payment for services that were previously free of charge such as SP and MiP tests, 2. rationing SP and sometimes relaxing the DOT policy, 3. prescribing drugs, which were previously issued under the NHIS for clients to buy from the open market

(Fig. 1). The facilities adopted such coping strategies to ensure that they always had funds to purchase essential medical supplies and drugs, to pay casual laborers and suppliers, in order to sustain service provision.

Resultantly, some clients could not afford the cost of accessing MiP and maternal health services. They resorted to health care shopping, skipping scheduled visits and some started ANC late, which affected access to LLINs, SP intake and adherence to MiP treatment. Clients' expectations of comprehensive MiP was not met, resulting in loss of trust in health providers. Nevertheless, a few clients who could afford the cost of services appreciated the seamless flow of services. However, some health workers felt frustrated, demotivated and lost trust in managers in facilities that were not buying and selling medical products to clients and thus could not afford to buy all the needed medical supplies that workers required to carry out effective health care services. The different issues are further discussed below.

## **How health facilities dealt with challenges in MiP policy implementation arrangement**

Managers and health workers reported in interviews that the National Malaria Control Programme (NMCP) provides both government and faith-based facilities with malaria programme drugs and supplies such as SP, malaria test kits (RDT) and LLINs through the Central Medical Stores (CMS) and the district health directorate (ASFacility01, IDI, Facility Manager; VRFacility02, IDI, Facility Manager). They indicated that they frequently experience stock out of SP from the CMS and they are no longer being supplied with RDTs. However, they had experienced relatively few occasions of stock outs of LLINs from the NMCP. A general stock out was experienced in December 2018 and January 2019, which was as a result of a national mass distribution. Extensive discussion on this issue can be found in another paper (54).

Managers in ASFacility02, ASFacility03 and ASFacility04 in the Ashanti region reported that they decided to use internally generated funds (IGF) to procure SP from private manufacturing companies, whenever there was stock out. To recoup their money, they instituted co-payment dubbed 'top up', where SP, which was previously free of charge, was sold to clients. However, they added that whenever the facilities get SP from the CMS, it is given to pregnant women for free. Two study participants commented:

"We were giving the drug [SP] to pregnant women for free when the government used to provide the SP. But because the facility buys the drug [SP] from its internally generated funds (IGF), it will definitely come at a cost to pregnant women." (ASFacility04, Conversation, Supply Officer, 20/05/2018).

"The district health directorate used to supply us with the SP. The district health directorate no longer supplies us with the SP. Sometimes, we go to the district pharmacy for the SP, but it is not forth coming, so I bought this one (pointing to a box containing SP on the table in the ANC consulting room) from outside market to avert stock out of the SP." (ASFacility02, IDI, ANC manager)

The four study facilities in the Volta Region and one facility in the Ashanti region did not buy SP from the open market, so they run out of stock whenever they were not supplied SP, as a manager explained: "For

*medicines, those that we are supposed to get from the open market are always available, but the programme drugs like the SP...if it is not available at the District Medical Store or Regional Medical store, we cannot get it from anywhere. Sometimes it [unavailability of SP] affects our clients.”* (ASFacility01, IDI, Facility manager 01). Other times clients were told that there was no SP and they were not given alternatives. Some of the facilities issued prescriptions to ANC attendees to buy SP from private outlets. Thus, such facilities could not enforce DOT on such occasions. However, some of the health providers in ASfacility02 and VRfacility04 compelled ANC attendees to return to the facility to take the purchased SP under DOT, by seizing their maternity records booklets, which was only given back to them, after they had returned to take the purchased SP under DOT.

VRFacility02 dealt with stock out of SP by asking clients to go and return at a later date. Some clients returned after a week or more and obtained SP (VRFacility02, Observation notes, 02/07/2019). Another strategy was to borrow SP from other sister government health facilities (VRFacility02, IDI, Facility manager). ASFacility04 dealt with stock outs by rationing SP to clients, such that some clients ended up taking 3 doses of SP by the time of delivering, instead of 5 or more.

Facilities used part of their IGF to buy RDT kits and reagents, so they charged fees in order to recoup the money. Thus the policy of fee free testing for malaria in pregnancy service was changed to a fee paying service.

In three facilities in the Ashanti Region clients paid for anti-malarials such as artesunate-amodiaquine, however in some of the facilities in the Volta Region such as VRFacility04, it was given to women free of charge. Managers explained that they were not readily available, so they had to buy them from the open market and sell them to clients. However quinine was administered free of charge.

Delayed reimbursement from the National Health Insurance Scheme and hidden cost of MiP and maternal health care impacting on access to MiP interventions

Delays in reimbursement of the cost of services provided and in the provision of medical supplies and consumables contributed to facility management instituting fees for some consumables and services. Most of the fees were paid at the pharmacy and most clients were issued receipts. The institution of fees contributed to the increasing cost of ANC services.

The eight facilities explained that the NHIS frequently delays for over six months in reimbursing them for services that they provide. This assertion was confirmed by a senior official of the NHIS, who added that some facilities had only received reimbursement for services provided in early 2018 in 2019 (Conversation with a NHIA deputy director, Accra, 11/03/2019). Yet, managers had to service accumulating debts, buy drugs, pay contract staff and suppliers, buy and service equipment in order to keep their facilities functioning. So managers in all the facilities exercised power by instituting various forms of co-payment dubbed ‘top up’ for services that were previously free. Insured clients in three facilities in the Ashanti region paid half the price of routine drugs such as folic acid, ascorbic acid, fersolate and vitamin B complex, while uninsured clients paid the full cost (ASFacility02, Observation

notes, 27/08/2018; ASFacility04, Observation notes, 16/08/2018; ASFacility03, IDI, Facility Manager). However, all the four facilities in the Volta Region offered routine drugs to ANC clients free in charge.

For clients to access fee free maternal health and MiP services, they had to undergo a urine in pregnancy test (UPT), which costs GH₵5 (1\$). NHIS reimburses facilities for services provided to NHIS registrants and since majority of the women, who attend ANC for the first time are not insured, the facilities could not obtain reimbursement from the NHIS. The facilities thus passed this cost to the clients, as they could not afford to use their limited IGF to offer free UPT to the women. Health providers in interviews explained that a second reason for the mandatory pregnancy test was to prevent non pregnant women from exploiting the free maternal health care service (ASFacility01, Conversation, Midwife, 19/11/2018; ASFacility01, IDI, Facility Manager). Once women tested positive, they were registered on the NHIS and were expected to subsequently enjoy free maternal and MiP services.

In four facilities ANC clients paid 5GHS (1\$) for a maternity record booklet. The facilities explained that maternity booklets were offered free of charge, when they were supplied by the MOH. However, the MOH had failed to supply any in the last six months. The facilities said that they did not want women to use ordinary books for ANC as it could compromise the quality of care, consequently the facilities paid for the cost of printing the books, which was passed on to clients (VRFacility03, conversation, Facility Manager, 30/11/2018; ASFacility01; IDI, Facility Manager 02). A manager explained:

“...those booklets used to be printed by the Ministry of Health and sent to us for them [clients] to take it for free. But over time those booklets don't come... So you just print it at a cost... then the little money that they pay help you defray that cost. In essence it is supposed to ensure quality health care.” (VRFacility03, conversation with hospital administrator, 30/11/2018)

Women who were up to four months pregnant were due to receive SP. To access the service, women were required to undergo a Glucose-6-Phosphate Dehydrogenase (G6PD) test (the test assists in determining whether a client could be put on SP). In four facilities the test cost between GH₵15.00 and GH₵20.00 (\$2.8 - \$3.72). Three of these facilities said it was not covered by the NHIS. However, in VRFacility03 insured clients paid a top-up of 5GH (1\$) for the test and the uninsured paid 15 GH₵ (\$3). A facility manager explained that the charges were effected in 2019, because the government stopped reimbursing the facility for G6PD services provided to clients from the middle of 2018 (VRFacility03, IDI, Facility Manager).

In some facilities before women were given their first dose of SP, they were required to undertake a microscopic examination of blood for malaria parasites, utilising blood films (BFF test), which cost 5 GH₵ (1\$).

Perceived negative influences of strategies adopted by health facilities on maternal and MiP health seeking behaviour of clients

Some women could not access comprehensive maternal health care, because they could not afford the fees charged for drugs, laboratory and ANC services. Observations in VRFacility04 and ASFacility0 illustrate the challenges that ANC clients experienced in paying for maternal and MiP services: Client Ajo\*, a pregnant woman was referred to the laboratory for haemoglobin (Hb) test. However, she was reluctant to go, because her husband did not give her enough money to pay for the test, as she explained to the midwife (VRFacility04, observation notes, 30/07/2018). Client Cynthia, who was four months pregnant, complained of loss of appetite for a number of days, feeling weak and dizzy. So a midwife referred her to the resident obstetrician-gynecologist, on suspicion of malaria. Client Cynthia was seen sneaking out of the facility. When she was confronted by a research assistant, she explained that she would not be able to pay for the laboratory test and treatment, if the diagnoses confirmed that she had malaria, so she was going home to seek alternative treatment (ASFacility01, observation notes, 20/08/2018).

Some ANC attendees skipped scheduled ANC appointments, because they could not afford the cost of care. The research team visited two case studies, a 17 year old adolescent and a woman of about 27 years old in VRCommunity02. Both of them were insured and their houses were a walking distance to facility VRFacility02. But they had missed their scheduled ANC visits, because they could not afford the charges that insured clients paid (VRCommunity02, conversation with two case studies, 19/07/2018).

Other ANC attendees who could not afford the cost of comprehensive ANC combined ANC visits with taking herbal medicine, visits to prayer camps and prayers. A respondent whose house was equally close to her preferred ANC facility (ASFacility02) stated:

“At the early stage of my pregnancy, I felt weak and I was unable to do anything that is why I am no longer working. When I asked my husband to give me money to go to hospital, he told me he doesn’t have money... So I was using my own money. I have been there [hospital] 3 times and now I don’t have money to go again. ...I don’t go to hospital and I have been using local medicine. I pray to God to give me life, strength and protect my child and myself, so that nothing bad happens to us.” (ASCommunity02, IDI, Pregnant Woman 02).

Some women were happy to take the prescription forms, because once they left the hospital, the health workers ceased to have power to compel them to purchase the prescribed drugs. Sometimes such measures led to women visiting the same facility with the same complaints: “... *those who want to buy will buy. Others will also leave the prescriptions in their ANC booklet and come with the same complaints on their next visit.*” (VRFacility02, IDI, Maternity Department Manager).

Some women waited till they were nearly due to deliver before attending ANC. So they did not receive LLINs and the mandatory five doses of SP (ASFacility01, IDI, Health worker01). Others who had never attended ANC were informed by friends, acquaintances and relatives who had ever attended ANC that one had to make payments, which deterred them from starting ANC early. This contributed to late uptake of IPTp-SP and use of LLINs, as both are offered at the ANC clinics. An IDI with a pregnant 16 year old adolescent, who was seven months pregnant, but had never attended ANC revealed:

Interviewer: "Why don't you go for ANC?"

Adolescent: "I don't have money."

Interviewer: "You said you haven't started ANC, so how did you know you pay money there?"

Adolescent: "One of my sisters told me."

Interviewer: "So if you had the money, would you have gone?"

Adolescent: "Yes, as for the ANC it is good. When you go they give drugs."

(ASCommunity03, IDI, Pregnant Woman 12)

Several pregnant women who could not afford the cost of maternal health care services and those who were given prescriptions to purchase certain drugs from the open market, perceived that the health care system was not responsive to their health needs, thus they lost trust in it. Some engaged in health shopping such as visiting other health facilities when they were told that more drugs were being provided in those facilities. Others supplemented ANC visits with visits to prayer camps, herbal centres and some engaged in self-medication. A seventeen year old adolescent, who was six months pregnant explained to the research team that she skipped her last scheduled ANC visit, because she did not have money, yet she went to the prayer camp every Thursday. She shared her high trust in the prayer camps as follows:

"The hospital will only see the physical and the best that they can do for you is to prescribe drugs for you to go and buy and take. But the prophet can see both physical and spiritual. After consultation, he would give you herbs to go and take and after three days you will be well. He can also foresee and avert any misfortune that can happen in the course of the pregnancy. So for me I trust the prophet more."

(VRCommunity02, Conversation, Case Study, 19/09/2018)

## **Perceived positive aspects of initiatives taken to facilitate MiP and maternal health care delivery**

It was observed that some women [at least one in five] in both regions, were happy to access maternal and malaria in pregnancy services. They included some of those who were gainfully employed, women whose husbands encouraged them or gave them financial support to access health care. Others received financial support and encouragement from extended family members such as mothers and fathers-in-law, or encouragement from their social networks such as friends to use ANC services. An ANC attendee stated: "*My friend who influenced me to come to ANC said something about the drug [SP] at the time she [her friend] was advising me to come for ANC.*" (ASFacility02, Observation notes, 23/08/2018).

Some women attended ANC regularly, because they had built trust in the health care system, resulting from having experienced positive effects of utilising health care in previous pregnancies. Others had trust in the health care system and voluntarily accessed health care and so did not complain about the cost of

MiP and other maternal health services. A respondent stated: *"I decided to start attending ANC by my own will, but not for economic, or distance factors."*(VRCommunity04, IDI, Pregnant Woman 05)

An initiative known as "last mile" was introduced in the second quarter of 2019. The CMS sends medical commodities to the door steps of the health facilities every two months. Facilities are offered their requisitioned commodities to last for three months, so that they do not run short of supplies before the next visit. So a facility makes a requisition and the CMS uses tally cards to distribute them according to requests made. The initiative is to ensure that far off facilities or hard-to-reach facilities do not run short of medical supplies including MiP drugs and other maternal health drugs (VRFacility02, IDI, Facility Manager; VRFacility04, IDI, Facility Manager). However facilities are still in shortfall of medical consumables such as gloves, gauze etcetera.

Effects of initiatives on managers and health workers' experiences in maternal health and MiP services provision

Managers perceived the initiative of cost-sharing such as clients buying maternal health care products, SP, and other malaria drugs as beneficial, for it contributed greatly to the facilities' internally generated funds. Facilities could thus afford to buy requisite drugs, medical supplies and consumables for effective and uninterrupted service delivery.

However, department managers and workers felt frustrated, as these initiatives affected clinical decision making and adherence to treatment. Some of the midwives reported in interviews that pregnant women who visited the ANC were always reluctant to undertake laboratory tests, because of the fees involved. On one occasion, when a client was reluctant to undergo an hb test, because of the cost involved a health provider stated: *"...the pregnant women in this town [VRCommunity04] ... do not like paying at all for health care services."* (VRFacility04, observation notes, 30/07/2019). Health providers lamented that it made their work difficult, because refusal to conduct necessary lab tests, hampered health providers' ability to diagnose the medical conditions of clients, in order to provide appropriate medical care (VRFacility04, observation notes, 30/07/2018).

Health providers perceived that clients distrusted them and believed that they benefitted from the payments. They perceived that was the reason for the reluctance towards any payment, as evidenced in a conversation with two midwives: *"They think that we use the money for ourselves."* (VRFacility04, conversation with two midwives, 29/08/2019)

Health managers and workers felt frustrated that sometimes the women ended up buying the wrong drugs or were offered expired drugs by drug stores who exploited the women (VRFacility02, IDI, ANC Manager; VRFacility02, IDI, Facility Manager). An ANC manager lamented: *'You write for them to go and buy [drugs] and when they go they come back with another drug, so it's a serious thing* (VRFacility02, IDI ANC Manager 01). Such actions compromised adherence to treatment.

Some health workers believed that the reason for the shortage of drugs and supplies was because the district health directorate, which they perceive has power to ensure their availability was not responsive to the facilities' needs. An ANC Manager expressed her frustration:

...you know the routine drugs are not available all the time (folic acid, multivite and ferrox and iron capsules... It's a challenge, but unless the authority get up, because we have been complaining and since they [district health directorate] are not on the ground, I don't know if they don't feel the pain, but we do feel the pains of the pregnant women. You can't get up and do what you want to do, because they said all initiatives should come from the directorate (VRFacility02, IDI, ANC Manager).

Two ANC managers in VRFacility04, reported in interviews that they did not trust that their facility manager was responsive to health providers' needs for resources to work with. They believed that she did not always include the requisition for drugs and medical consumables made by the ANC to the DHA and the CMS.

Facility managers on the other hand explained that the stock outs and unavailability of medical supplies were a result of failure to reimburse facilities and delays from the CMS (VRFacility02, IDI, Facility Manager; VRFacility04, IDI, Facility Manager).

## Discussion

Managers dealt with MiP policy intervention and arrangement challenges such as frequent stock outs, delayed reimbursement and procedures not were not reimbursable by instituting charges on services and drugs that were previously offered for free. Clients experienced direct cost of MiP services such as paying for SP and buying drugs that were previously given for free at health facilities. They also experienced indirect cost of MiP services such as paying for UPT test, BFF test and G6PD and scanning services to facilitate effective MiP and other maternal health services. Those who could not afford the cost delayed ANC visits, skipped ANC appointments and others defaulted or declined to access recommended laboratory tests. Thus, managers' initiative defeats the objective of MiP and maternal health policies, which aim at improving maternal health care by ensuring equity of access to all pregnant women. Nevertheless, women who could afford the cost of MiP and Maternal health care found the effective functioning of maternal health and MiP services worthwhile.

MiP policy interventions are offered as part of comprehensive ANC care. So hidden cost of maternal health care and MiP service provisions such as UPT and G6PD tests were being passed on to clients, since they could not be charged to the NHIS and the state. Some of the clients who had to pay for such services perceived it as expensive, which discouraged them from accessing maternal health services. Consequently some missed the opportunity of receiving LLINs early and early uptake of IPTp-SP. Similarly, Klein, Harvey (55) and Hurley, Harvey (56) found that facilities charged lump sums for ANC services, which contributed to women's limited access to IPTp-SP services in Mali.

Managers' exercise of power by instituting fees for maternal health and MiP services, in order to address stock outs and delayed reimbursement, compromised the fee free maternal health service and the MiP policy. Nevertheless, the initiative ensured that facilities functioned and offered uninterrupted services. Women who obtained support from family members and friends and those who earned an income were able to afford the cost of comprehensive ANC service and were appreciative of effective maternal health service delivery. Some of them started ANC early and stuck to their scheduled visits, which enabled them to obtain ITNs early, to start taking SP early and were thus able to complete at least five doses of SP. Similarly, studies on exemptions policies for under five year olds and maternal health services in Ghana and elsewhere found that health care managers dealt with irregular funding and delays in reimbursement from government, which resulted in facilities incurring debt, by modifying exemption policies to selective fee payment (32, 37, 57, 58).

Some women who were unemployed or earned low incomes failed to attend ANC, others delayed initiating ANC attendance, while others skipped scheduled ANC visits, due to their inability to pay for ANC services. Consequently, they did not receive LLINs early, started taking SP late and some did not receive prompt testing and treatment of MiP. Similarly, studies have reported on low uptake of IPTp-SP and access to LLINs among unemployed women and those who could not afford to pay for MiP and other ANC services (30, 59)

Some ANC clients coped with perceived high cost of MiP and maternal health services by combining visits to health facilities with self-medication, herbal medicines and visiting prayer camps. Similarly, studies in other parts of sub Saharan Africa report that high cost of MiP interventions and maternal health care services demotivated women from accessing them (5, 60–62). Hill, Kayentao (60), also reported that due to the high cost of maternal health care, women sought alternative care through self-medication and using herbal medicines.

Some ANC attendees could not pay the full cost of the maternal health care package, so they skipped some aspects. Consequently, health providers could not make informed clinical decisions in order to offer them appropriate treatment. This was a source of frustration and demotivation to health care providers, because they could not exercise power positively, since they could not fully utilize their skills and experiences in the provision of quality maternal health care. Health workers losing motivation as a result of lack of health resources to provide optimum care to clients has been reported (63–67).

Facilities that did not charge for SP and other medical products, were sometimes cash strapped and could not provide adequate resources for health workers, to enable them provide quality health care to clients. Health providers channeled blame to their managers and district health administration and lost trust in their managers and the health care system, which they perceived as not being responsive to their work news. Gilson (50), has reported on the crucial role of trust in health care institutions, especially between managers and health workers, in ensuring effective health care delivery. Clients equally lost trust in health care providers, as their expectation of accessing comprehensive maternal health care was not met. This affected adherence to treatment, as some women did not purchase the prescribed drugs, so the

medical conditions recurred and they believed that health care was not effective. Thus some of the negative outcomes of MiP such as illness, miscarriages and anemia were given spiritual explanation, which encouraged clients to seek alternative sources of health care. The role of trust in provider-client relations and client adherence to treatment have been noted (36, 46, 68, 69). Instituted charges also contributed to clients distrusting health providers, as some believed that health providers benefitted. This probably contributed to the reluctance to pay for maternal health services. Tibandebage and Mackintosh (70) and (Topp and Chipukuma (71)), reported that illegal charges contributed to clients developing distrust of health care providers.

## **Conclusion And Implication**

Managers exercised power by taking initiatives to address MiP policy implementation and arrangement challenges such as stock outs of programme drugs and medical supplies, delayed reimbursement from the NHIS and failure of the MOH to provide medical consumables. The consequences were mixed. Some clients could not access comprehensive MiP care, which affected their trust in the health care system. Those who could afford services appreciated the uninterrupted flow of services. Health workers sometimes felt frustrated that their clients could not afford comprehensive care, which affected their motivation and trust in their managers.

Policy arrangements in the provision of MiP and Maternal health resources to facilities appears to be changing over time and managers seem to be initiating strategies to cope with this changing trend. The main strategy is passing on some of the cost of the previously free service components of MiP and maternal health service to clients. Consequently, to be able to find a lasting solution to the MiP and Maternal health policy intervention arrangement challenges, there is the need for a broader policy response to facilities' needs.

The last mile initiative is commendable, but it is not enough, because the initiative only provides drugs to the facilities. So facilities still need to find money to buy consumables, reagents, to pay casual labour etcetera. This puts a stress on health managers who have to combine managing and supervising staff with the additional burden of finding money to run their facilities. Another important consequence is the increasing burden of the cost of MiP and Maternal health care on clients and the uncertainty of what is free and what should be paid for. This affects the trust relationship between the health system and communities.

Government needs to ensure prompt reimbursement from the NHIS and supply of programme drugs and medical supplies to both government and faith-based facilities, as this is crucial to effective implementation of the MiP intervention. Such a measure will boost facilities' ability to effectively manage and deal with MiP and other maternal health intervention demands, towards the achievement of the reset Abuja targets for IPTp-SP and LLINs in Ghana.

Also, effective and regular communication between the health facilities and the various agencies responsible for providing essential resources for health care is crucial. Effective communication will give

the facilities the forum to communicate implementation and arrangement challenges, so that more lasting solutions could be explored.

## **Limitation of the study**

This qualitative study was conducted in five districts in Ghana and thus cannot be generalized. Nevertheless, review of literature reveal that similar experiences are rife in other parts of the sub region and for that matter the lessons are relevant to the fight against MiP in the sub region.

## **Declarations**

### **Ethics approval and consent to participate**

Ethical clearance was obtained from the University of Health and Allied Sciences' Research Ethics Committee [UHAS-REC/A.I UI 17-18] and the study was conducted according to the principles of the Declaration of Helsinki and good clinical Practice. Written consent was obtained from all interview participants, while oral consent was obtained from study participants that we had conversations with and for observations.

### **Consent for publication**

The manuscript does not contain any individual's data.

### **Availability of data and material**

The datasets used and/or analyzed during the current study are available from the corresponding author's institution on reasonable request.

### **Competing interests**

The authors declare no competing interest.

### **Funding**

This work was supported through the DELTAS Africa Initiative [MARCAD Grant Number: DEL-15-010]. The DELTAS Africa Initiative is an independent funding scheme of the African Academy of Sciences (AAS)'s Alliance for Accelerating Excellence in Science in Africa (AESA) and supported by the New Partnership for Africa's Development Planning and Coordinating Agency (NEPAD Agency) with funding from the Wellcome Trust [WT: 107741/A/15/Z] and the UK government.

### **Disclaimer**

The views expressed in this publication are those of the author(s) and not necessarily those of AAS, NEPAD Agency, Wellcome Trust or the UK government.

### **Authors' contributions**

The study was conceptualized by MD, PM, GA and HT. HT and MG guided the data collection process. MD collected and analysed the data and drafted the manuscript. PM, GA, MG and HT critically revised and commented on the manuscript.

## Acknowledgements

We thank the nine research assistants, the Ashanti and Volta Regional Health directorates, the participating district health directorates, health facilities and staff for their support and cooperation. We are grateful to the community leaders and members for the cooperation and support in the conduct of this study.

## Authors' information

MD is a medical anthropologist. She is a postdoctoral fellow with the Institute of Health Research at the University of Health and Allied Sciences in Ghana. She is also a MARCAD postdoctoral research fellow.

PM is a clinician and a specialist in Tropical medicine and Infectious diseases. He is a Professor Emeritus at the Copenhagen University in Denmark.

MG is a Medical Anthropologist and is the Director of the Institute of Health Research at the University of Health and Allied Sciences in Ghana.

GDA is a clinician and an Epidemiologist. She is a lecturer at the School of Medicine of the University of Health and Allied Sciences in Ghana She is also a MARCAD postdoctoral fellow.

HT is a clinician and a professor of Epidemiology. He is the Dean of the School of Medicine of the University of Health and Allied Sciences in Ghana.

## Endnotes

<sup>i</sup> In 2000 African leaders met in Abuja under the Roll Back malaria Partnership and set targets that 60% of pregnant women would have access antimalarial chemoprophylaxis or intermittent preventive treatment (IPTp) and 80% use of insecticide-treated nets by 2005. Subsequently, more ambitious targets were reset to 100 % use of both interventions by 2015 (72). <sup>ii</sup>An urban and a rural district were selected in each region in order to reflect the diverse cultural experiences. The initial plan was to select a rural and an urban district in each region, however upon our visit to the Ashanti region, we realized that one of the districts had recently been divided into two, so we went ahead to work in the two districts. <sup>iii</sup>Conversation is defined as: *'An informal conversational interview is an unplanned and unanticipated interaction between an interviewer and a respondent that occurs naturally during the course of fieldwork observation. It is the most open-ended form of interviewing (73:464).* <sup>iv</sup> MD initially trained the RAs on ethnographic immersion in study communities, transect walks, observation and taking field notes, indepth interviews and conversations. Two more training sessions were held for the research assistants during the data collection phase. <sup>v</sup> While written consent is recommended for study participants, verbal consent can be

used in situations where time is of the essence. LAWTON, J., HALLOWELL, N., SNOWDON, C., NORMAN, J. E., CARRUTHERS, K. & DENISON, F. C. 2017. Written versus verbal consent: a qualitative study of stakeholder views of consent procedures used at the time of recruitment into a peripartum trial conducted in an emergency setting. *BMC Medical Ethics*, 18, 1-13. In this study women who were visiting ANC were approached for conversations and indepth interviews. Those who had ample time for an interview were given time to reflect and to consent. They were followed to their homes at a later date for interviews. However those who did not have time for interviews were offered the option of conversations and oral consent was conducted on such occasions.

## References

1. Desai M, ter Kuile FO, Nosten F, McGready R, Asamoah K, Brabin B, et al. Epidemiology and burden of malaria in pregnancy. *Lancet Inf Dis* 2007;7.
2. Mendis C, Garcia R, Enemark U. Evaluation of the Malaria Programme funded by the Global Fund in Ghana (2003–2011) (Final Draft Evaluation Report). Søborg: The Global Fund to Fight AIDS, Tuberculosis and Malaria, 2011.
3. de Savigny D, Webster J, Agyepong IA, Mwita A, Bart-Plange C, Baffoe-Wilmot A, et al. Introducing vouchers for malaria prevention in Ghana and Tanzania: context and adoption of innovation in health systems. *Health Policy Plann.* 2012;27:iv32–43.
4. Mwandama D, Gutman J, Wolkon A, Luka M, Jafali J, Ali D, et al. The use of intermittent preventive treatment in pregnancy and insecticide-treated bed nets for malaria prevention by women of child-bearing age in eight districts in Malawi. *Malar J.* 2015;14:316.
5. Mubyazi GM, Bloch P, Magnussen P, Olsen ØE, Byskov J, Hansen KS, et al. Women's experiences and views about costs of seeking malaria chemoprevention and other antenatal services: a qualitative study from two districts in rural Tanzania. *Malar J.* 2010;9:54.
6. Ndjinga JK, Minakawa N. The importance of education to increase the use of bed nets in villages outside of Kinshasa, Democratic Republic of the Congo. *Malaria J.* 2010;9:279.
7. Osungbade K, Oginni S, Olumide A. Content of antenatal care services in secondary health care facilities in Nigeria: implication for quality of maternal health care. *Inter J for Quality in Health Care.* 2008;20:5.
8. Bosu W, Bell J, Armar-Klemesu M, Ansong-Tornui J. Effect of Delivery Care User Fee Exemption Policy on Institutional Maternal Deaths in the Central and Volta Regions of Ghana. *Ghana Med J.* 2007;41:3.
9. National Malaria Control Programme. 2010 Annual Report. Accra: Ghana Health Service and Ministry of Health 2010.
10. National Malaria Control Programme. 2017 Annual Report: National Malaria Control Programme Accra: Ghana Health Service 2018.

11. Witter S, Kusi A, Aikins M. Working practices and incomes of health workers: evidence from an evaluation of a delivery fee exemption scheme in Ghana. *Human Resources for Health*. 2007;5:2.
12. Ministry of Health. *Malaria in Pregnancy: Training Manual for Health Providers* Accra: Ghana Government. <http://www.ghanahealthservice.org/ghs-item-details.php?cid=5&scid=55&iid=60>. Accessed 30 Oct 2019.
13. Menéndez C, Ferenchick E, Bardají A, Mangiaterra V. Current Challenges and Research Gaps. *Encyclopedia of Malaria*. New York: Springer Science + Business Media; 2015. pp. 1–9.
14. Aberese–Ako M, Magnussen P, Ampofo GD, Tagbor H. Health system, socio–cultural, economic, environmental and individual factors influencing bed net use in the prevention of malaria in pregnancy in two Ghanaian regions. *Malar J*. 2019;18:363.
15. Gomez PP, Gutman J, Roman E, Dickerson A, Andre ZH, Youll S, et al. Assessment of the consistency of national-level policies and guidelines for malaria in pregnancy in five African countries. *Malar J*. 2014;13:212.
16. Hill J, Dellicour S, Bruce J, Ouma P, Smedley J, Otieno P, et al. Effectiveness of Antenatal Clinics to Deliver Intermittent Preventive Treatment and Insecticide Treated Nets for the Control of Malaria in Pregnancy in Kenya. *PLoS ONE*. 2013;8(6):8:6. e64913 doi:.
17. Mubyazi GM, Bygbjerg IC, Magnussen P, Olsen Ø, Byskov J, Hansen KS, et al. Prospects, achievements, challenges and opportunities for scaling-up malaria chemoprevention in pregnancy in Tanzania: the perspective of national level officers. *Malar J* 2008, 7:135 doi:.. 2008;7:135.
18. Vandy AO, Peprah NY, Jerela JY, Titiati P, Manu A, Akamah J, et al. Factors influencing adherence to the new intermittent preventive treatment of malaria in pregnancy policy in Keta District of the Volta region. *Ghana BMC Preg Childbirth*. 2019;19:424.
19. Hill J, D'Mello-Guyett L, Hoyt J, van Eijk AM, ter Kuile FO, Webster J. Women's Access and Provider Practices for the Case Management of Malaria during Pregnancy: A Systematic Review and Meta-Analysis. *PLoS Med*. 2014;11:e1001688.
20. Diala CC, Pennas T, Marin C, Belay KA. Perceptions of intermittent preventive treatment of malaria in pregnancy (IPTp) and barriers to adherence in Nasarawa and Cross River States in Nigeria. *Malar J*. 2013;12:342.
21. Doku DT, Zankawah MM, Adu-Gyamfi AB. Factors influencing dropout rate of intermittent preventive treatment of malaria during pregnancy. *BMC Research Notes*. 2016;9:460.
22. Mubyazi GM, Bloch P, Magnussen P, Olsen ØE, Byskov J, Hansen KS, et al. Women's experiences and views about costs of seeking malaria chemoprevention and other antenatal services: a qualitative study from two districts in rural Tanzania. *Malar J*. 2010;9:54.
23. Maheu-Giroux M, Castro MC. Factors affecting providers' delivery of intermittent preventive treatment for malaria in pregnancy: a five-country analysis of national service provision assessment surveys. *Malaria Journal*. 2014;13:440.
24. Chukwuocha U, Dozie I, Onwuliri C, Ukaga C, Nwoke B, Nwankwo B, et al. Perceptions on the Use of Insecticide Treated Nets in Parts of the Imo River Basin, Nigeria: Implications for Preventing Malaria

- in Pregnancy. *Afr J Reprod Health*. 2010;14:1.
25. Mubyazi GM, Bloch P. Psychosocial, behavioural and health system barriers to delivery and uptake of intermittent preventive treatment of malaria in pregnancy in Tanzania – viewpoints of service providers in Mkuranga and Mufindi districts. *BMC Health Services Research*. 2014;14(15):1–16.
  26. Mubyazi GM. Knowledge and perceptions of antenatal services need and delivery and reasons for seeking such services among women in Tanzania: Implications for utilization and coverage of intermittent presumptive treatment of malaria in pregnancy in two districts. *Rwanda J Series F: Medicine Health Sciences*. 2015;2:1.
  27. Hill J, Kayentao K, Achieng F, Diarra S, Dellicour S, Diawara SI, et al. Access and Use of Interventions to Prevent and Treat Malaria among Pregnant Women in Kenya and Mali: A Qualitative Study. *PLoS ONE*. 2015;10:e0119848.
  28. Rassi C, Graham K, Mufubenga P, King R, Meier J, Gudozi SS. Assessing supply-side barriers to uptake of intermittent preventive treatment for malaria in pregnancy: a qualitative study and document and record review in two regions of Uganda. *Malar J*. 2016;15:341:1–16.
  29. Gomez PP, Gutman J, Roman E, Dickerson A, Andre ZH, Youll S, et al. Assessment of the consistency of national-level policies and guidelines for malaria in pregnancy in five African countries. *Malar J*. 2014;13:212.
  30. Atasige AS, Wurapa F, Afari EA, Sackey SO, Malm KL, Nyarko KM. Factors influencing utilization of intermittent preventive treatment for pregnancy in the Gushegu district, Ghana, 2013 *The Pan African Medical J*. 2016;25(Supp 1):4.
  31. Anto F, Agongo IH, Asoala V, Awini E, Oduro AR. Intermittent Preventive Treatment of Malaria in Pregnancy: Assessment of the Sulfadoxine-Pyrimethamine Three-Dose Policy on Birth Outcomes in Rural Northern Ghana. *J of Tropical Med*. 2019;ID 6712685.
  32. Witter S, Arhinful DK, Kusi A, Zakariah-Akoto S. The Experience of Ghana in Implementing a User Fee Exemption Policy to Provide Free Delivery Care. *Reproductive Health Matters*. 2007;15:30.
  33. Witter S, Garshong B, Ridde V. An exploratory study of the policy process and early implementation of the free NHIS coverage for pregnant women in Ghana. *International J for Equity in Health*. 2013;12:16.
  34. Republic of Ghana Act 525. Ghana Health Service and Teaching Hospitals Act In: Ghana, PotRo, editors. Accra: Government Printer Assembly Press; 1996. pp. 1–24.
  35. Mintzberg H. Power in and around organisations. USA: Prentice-Hall; 1983.
  36. Hall MA. The importance of trust for ethics, law and public policy. *Camb Q Healthc Ethics*. 2005;14:2.
  37. Agyepong IA, Nagai RA. “We charge them; otherwise we cannot run the hospital” front line workers, clients and health financing policy implementation gaps in Ghana. *Health Policy* 2011;99.
  38. Buse K, Mays N, Walt G. Making Health Policy. London: Open University Press; 2010. 1–199 p.
  39. Erasmus E, Gilson L. How to start thinking about investigating power in the organizational settings of policy implementation. *Health Policy and Planning*. 2008;23.

40. Lipsky M. *Street-level Bureaucracy: Dilemmas of the individual in Public services*. New York: Russell Sage Foundation; 1980.
41. Pot H, de Kok BC, Finyiza G. When things fall apart: local responses to the reintroduction of user-fees for maternal health services in rural Malawi. *Reproductive Health Matters*. 2018;26:54.
42. Pfeffer J. *Power in Organisations*. Massachusetts: Ballinger Publishing Company; 1981.
43. Pfeffer J. *Managing with Power: Politics and influence in Organizations*. Massachusetts: Harvard business school press; 1992.
44. Mintzberg H. *The Structuring of Organisations*. United States of America: Printice-Hall; 1979.
45. Sriram V, Topp SM, Schaaf M, Mishra A, Flores W, Rajasulochana SR, et al. 10 best resources on power in health policy and systems in low- and middle-income countries. *Health Policy and Planning* 2018;33.
46. Goudge J, Gilson L. How can trust be investigated? Drawing lessons from past experience. *Soc Sci Med*. 2005;61:7.
47. Gilson L. Trust and the development of health care as a social institution *Social Science and Medicine*. 2003;56.
48. Hall MA, Camacho F, Dugan E, Balkrishnan R. Trust in the Medical Profession: Conceptual and Measurement Issues. *HSR: Health Services Res*. 2002;37:5.
49. Naidu A. Factors affecting patient satisfaction and healthcare quality. *International Journal of Health Care Quality Assurance*. 2009;22:4.
50. Gilson L. Health systems and institutions. In: Smith R, Hanson K, editors. *Health systems in low- and middle-income countries: an economic and policy perspective*. Oxford: Oxford University Press; 2011.
51. Aberese-Ako M, VanDijk H, Gerrits T, Arhinful DK, Agyepong IA. 'Your Health Our Concern, Our Health Whose Concern?': Perceptions of injustice in organizational relationships and processes and frontline health worker motivation in Ghana *Health Policy and Planning*. 2014;29(Suppl 2).
52. Cook DL. *The impact of the Hawthorne effect in Experimental design in Educational research: Final report Ohio*. Columbus: US department of Health, Education and Welfare, Research OoEBo; 1967. p. 1757. Contract No..
53. Charmaz K. *Constructing Grounded Theory*. Silverman D, editor. London: SAGE; 2012.
54. Aberese-Ako M, Magnussen P, Ampofo GD, Tagbor H. Health system, socio-cultural, economic, environmental and individual factors influencing bed net use in the prevention of malaria in pregnancy in two Ghanaian Regions. *Malar J*. 2019;18:363.
55. Klein MC, Harvey SA, Diarra H, Hurley EA, Rao N, Diop S, et al. "There is no free here, you have to pay": actual and perceived costs as barriers to intermittent preventive treatment of malaria in pregnancy in Mali. *Malar J*. 2016;15:158.
56. Hurley EA, Harvey SA, Rao N, Diarra NH, Klein MC, Diop SI, et al. Underreporting and Missed Opportunities for Uptake of Intermittent Preventative Treatment of Malaria in Pregnancy (IPTp) in Mali. *PLoS ONE*. 2016;11:e0160008.

57. Ghana Statistical Service (GSS). Ghana Health Service (GHS), ICF. Ghana Maternal Health Survey 2017: Key Findings. Rockville. Maryland: GSS, GHS, and ICF., 2018.
58. Hatt LE, Makinen M, Madhavan S, Conlon CM. Effects of User Fee Exemptions on the Provision and Use of Maternal Health Services: A Review of Literature. *J of Health Population Nutr.* 2013;31:4.
59. Mubyazi GM, Bloch P, Magnussen P, Olsen ØE, Byskov J, Hansen KS, et al. Women's experiences and views about costs of seeking malaria chemoprevention and other antenatal services: a qualitative study from two districts in rural Tanzania. *Malar J* 2010, 9:54. 2010;9:54.
60. Hill J, Kayentao K, Achieng F, Diarra S, Dellicour S, Diawara SI, et al. Access and Use of Interventions to Prevent and Treat Malaria among Pregnant Women in Kenya and Mali: A Qualitative Study. *PLoS ONE.* 2015;10:0119848.
61. Klein MC, Harvey SA, Diarra H, Hurley EA, Rao N, Diop SI, et al. "There is no free here, you have to pay": actual and perceived costs as barriers to intermittent preventive treatment of malaria in pregnancy in Mali. *Malar J.* 2016;15:158.
62. Mutagonda R, Kamuhabwa AA, Massawe S, Mpembeni R. Intermittent Preventive Therapy and Treatment of Malaria during Pregnancy: A Study of Knowledge among Pregnant Women in Rufiji District, Southern Tanzania. *Tropical J of Pharmaceutical Res.* 2012;11:5.
63. Aberese-Ako M. Frontline health worker motivation in the provision of maternal and neonatal health care in Ghana. The Netherlands: Wageningen University and Research; 2016.
64. Agyepong I, Anafi P, Ansah E, Ashon D, Na-Dometey C. Health Worker (internal customer) satisfaction and motivation in the public sector in Ghana. *International J of health planning Management.* 2004;19:4.
65. Franco LM, Bennett S, Kanfer R. Health sector reform and public sector health worker motivation: a conceptual framework. *Soc Science Med.* 2002;54:8.
66. Mbindyo P, Gilson L, Blaauw D, English M. Contextual influences on health worker motivation in district hospitals in Kenya. *Implementation Science.* 2009;4:43.
67. Okello DRO, Gilson L. Exploring the influence of trust relationships on motivation in the health sector: a systematic review. *Resources for Health.* 2015;13:16.
68. Hall M, Zheng B, Dugan E, Camacho F, Kidd K, Mishra A, et al. Measuring patients' trust in their primary care providers. *Med Care Res & Rev.* 2002;59.
69. Gilson L, Palmer N, Schneider H. Trust and health worker performance: exploring a conceptual framework using South African evidence. *Soc Science Med.* 2005;61:7.
70. Tibandebage P, Mackintosh M. The market shaping of charges, trust and abuse: health care transactions in Tanzania. *Soc Science Med.* 2005;61:7.
71. Topp SM, Chipukuma JM. A qualitative study of the role of workplace and interpersonal trust in shaping service quality and responsiveness in Zambian primary health centres. *Health Policy and Planning.* 2016;31.

72. Menéndez C, Ferenchick E, Bardajía A, Mangiaterra V. Current Challenges and Research Gaps. Encyclopedia of Malaria. New York Springer Science Business Media 2015.
73. Rubin A, Babbie ER. Research Methods for Social Work. 7 ed. Belmont, CA Brooks/Cole 2011.