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Qualitative interviews with CCPF Hotline Workers

Report on Method 3

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USAID'S HEALTH EVALUATION AND APPLIED RESEARCH DEVELOPMENT (HEARD) PROJECT

Acronyms

CCPF	Chipatala cha pa Foni, or “Health Center by Phone”
COVID-19	Coronavirus disease 2019
HLW	Hotline worker (nurses staffing the call centre)
MOH	Ministry of Health in Malawi
PPH	Postpartum hemorrhage

Background

Despite recent progress, Malawi has one of the highest maternal mortality ratios in Sub-Saharan Africa, with 439 deaths per 100,000 live birthsi. Postpartum hemorrhage (PPH) is the leading cause of maternal mortality, accounting for 25% of all direct maternal mortality in low-income countries like Malawi. Although maternal death due to PPH is a critical public health issue in Malawi, there is little evidence around the behavioral and structural factors that affect PPH prevention and treatment.

In response to the global COVID-19 pandemic, the aims of the study were expanded to explore the intersection of COVID-19 and maternal health. This enabled the researchers to contribute timely, relevant findings to help inform decision-making about maternal health service delivery in the context of COVID-19 in Malawi.

Method 3 was to explore 6 to 10 hotline workers' (HLWs) perceptions of the advice they provided and their ability to counsel callers experiencing an obstetric emergency. Interviews were intended to cover any gaps in the advice they are able to provide, their perceptions of their effectiveness and potential barriers to providing appropriate advice and referrals to callers experiencing obstetric emergencies.

The in-depth interview scope was expanded to include questions related to HLWs' interactions with callers who discussed both COVID-19 and maternal health topics. These questions will aim to better understand myths, fears, and perceptions that callers have related to maternal health within the context of COVID-19, as well hotline operators' self-identified strengths and gaps in responding to caller questions and concerns.

This report summarizes results of:

1. Qualitative analysis of 12 in-depth interviews conducted with HLWs working at the hotline in December 2020 (Method 3)

OBJECTIVE

Method 3 aimed to explore hotline workers' experiences related to the calls regarding maternal health and intersection of maternal health and COVID-19, how they handle the calls, and what challenges they may face.

This method built on the analysis and conclusions of the other methods, allowing an opportunity to represent the hotline worker perspective on the care provided to callers on topics of challenges and advantages covered in other methods.

Overall Recommendations

HLWs were quite willing to engage in discussion, and interviews with HLWs yielded insights into their experiences with and call patterns regarding both obstetric emergencies and COVID-19 generally and regarding maternal health, and their ability to support callers on these topics.

Through the course of the interviews and subsequent analysis, several key recommendations arose regarding CCPF directly and the MOH response more generally:

OBSTETRIC EMERGENCIES

Discuss whether fielding emergency calls should be promoted and if so, how to mitigate callers' challenges in getting through

Most HLWs thought CCPF should handle emergency calls—that said, several noted that it is possible these calls are going to the hotline, but not reaching HLWs due to such heightened call traffic. MOH can consider whether there is value to those already aware they are experiencing an emergency to call CCPF, or whether the recommended course of action should simply be to rush to facility care. Depending on the decision, MOH can tailor promotional materials and messages accordingly. Regardless, MOH can also consider whether there is a mechanism to allow callers experiencing emergencies to be answered promptly without having to wait in the full queue of all callers.

Consider implementing strong referral relationships with facilities and ambulance service

HLWs lamented that they often refer women with danger signs to seek care, but then are unable to link them to a facility directly, and unable to contact the facility to advise them of a patient who will be arriving soon, or to check in on the situation after the woman has presumably sought care. There is also no mechanism to connect women to transport, and it does happen that HLWs refer women to care for danger signs but the women share they do not have access to transport and it is far to the nearest facility. Although it would be a heavy investment to meaningfully establish referral paths with facilities and ambulance or transport services, it continues to be a significant need that the Department of Clinical Services should continue to consider and advocate for with internal and external decision-makers.

Establish clear protocol and any needed resources for following up emergency calls

HLWs need guidance on what to do if a serious call drops mid-conversation, and whether to follow up with emergency calls later on. Although there may be resources and an official protocol for following up with emergency calls as reported by hotline management, most HLWs interviewed were confused on the protocol and whether the phone did have airtime. HLWs need guidance/reminders on what to do if a serious call drops mid-conversation, and whether to follow up with emergency calls later on. If this is ultimately recommended, there will need to be a phone with airtime dedicated to this purpose, which HLWs know how to easily access. MOH should consider whether this should be a core component with dedicated funds so the service does not come and go dependent on external funding.

Provide opportunities for refresher training

Finally, many of the HLWs said they would appreciate refresher trainings in maternal health emergencies, and what they could advise a caller aside from rushing to seek facility care. HLWs were quite knowledgeable and fairly confident, so it should only be a matter of light refresher trainings annually.

COVID-19 AND MATERNAL HEALTH

Invest in further training for all HLWs that includes updated content

All HLWs requested additional training to better serve callers. While many did feel comfortable fielding calls about prevention and transmission, there was little knowledge or confidence across the team on how to answer questions about treatment, vaccines, and some specific questions regarding pregnancy and COVID-19. Thus, an additional round of training with targeted and refreshed content is advised. Also, some HLWs shared that they never received any COVID-19 training—with varied start dates and rotating work shifts it is understandable that not every HLW has received the same training. Moving forward, the hotline management team may want to consider a file audit of sorts to ensure all HLWs have been trained, or onboarding with new staff that are sure to cover current COVID-19 content.

Consider other ways to link HLWs to real-time information

HLWs noted that having internet access at the hotline would allow them to self-study and answer COVID-19 questions that arise that they do not know the answer to. Others suggested that their hotline software interfaces have more searchable content on COVID-19, allowing them to quickly retrieve the needed information.

Continue upholding social distancing at the hotline

With the increased staffing numbers and the second wave of COVID-19, it will be important to continue considering how the hotline can be safely configured to allow for social distancing. At the end of February 2021 the MOH began operations to allow HLWs to take calls remotely, which will promote safe distancing and mitigate exposure to COVID-19 through working at CCPF. The MOH should continue to monitor the success of this added capability and troubleshoot any technological issues that may arise in order to continue this option for HLWs.

Rely on common questions from callers to inform community sensitization messages

HLWs shared that common questions are whether to attend in-person care during pregnancy and delivery, and if/how COVID-19 can be passed to a baby (including whether breastfeeding is recommended). This can be used to inform targeted messaging that goes out to communities through radio and other existing COVID-19 information avenues.

Sensitize the community on the purpose and scope of CCPF

HLWs noted that they are overwhelmed with calls about COVID-19 and it seems that callers do not know that CCPF also fields questions across all health topics. Although COVID-19 is the priority right now, it may be advisable to sensitize the community to CCPF as a whole when promoting the hotline as a source of COVID-19 information.

Methodology

SAMPLE SELECTION

The original intention was to target 6 to 10 hotline workers, and given that it was an easy target group to recruit we planned to interview 10 hotline workers. The hotline supervisor provided a list of 12 potential participants so that the first 2 interviews could serve as pilot data. As it turns out, the initial interviews were strong, produced important insights, and did not yield significant changes to the interview tool, and thus we ended up with a final sample of 12 hotline workers.

Our sampling frame included both male and female hotline workers, and we selected from hotline workers who the hotline supervisor considered to vary in their job performance, in order to capture a cross-section of perspectives since their perceptions and challenges may vary based on general job performance. Finally, we planned to sample HLWs who started working at Chipatala cha pa Foni (CCPF) before the pandemic as well as those who were hired more recently.

All 12 HLWs who were approached to participate consented to the interview. Interviews were conducted by an external consultant so that HLWs could feel more open to talk freely, as opposed to discussing with their supervisor or other VillageReach staff. The majority of interviews were conducted in English, with HLWs occasionally choosing to use phrases in Chichewa. Interviews were recorded and transcribed and translated by a native Chichewa speaker.

ANALYSIS

We used Atlas.ti 8 to conduct qualitative analysis on the 12 in-depth interviews. We performed open coding on themes arising around HLWs' relayed experiences of handling calls related to maternal health emergencies and/or COVID-19 and maternal health, their perceptions of what clients like and dislike about CCPF, how services could be improved, and more.

Findings

DEMOGRAPHIC CHARACTERISTICS OF HLW PARTICIPANTS

In the final sample, there were 6 female and 6 male HLW's, who ranged in age from 22 to 41 years-old. All 12 HLWs possessed a Diploma in Nursing and Midwifery. They had been working at CCPF for a range of 7 months up to 3 years, and their overall total years of experience in the health field ranged from 9 months to 5 years.

Obstetric Emergencies

The first half of the interview guide centered on HLWs' experiences handling obstetric emergencies over the phone, how often they occur, what challenges exist, and more.

HLW KNOWLEDGE OF DANGER SIGNS

HLWs were asked to relay the danger signs for pregnant and post-partum women—nearly without exception, the HLWs quickly and thoroughly rattled off maternal health danger signs. One respondent did have more trouble remembering post-partum

danger signs, stating “After postnatal, yes, after recently given birth, bleeding as well, apart from bleeding will be looking for...others I have forgotten, but bleeding is the major one.”
–Respondent 3.

All HLWs, including R3, cited bleeding as a danger sign after birth, and the majority of them expounded on how thev assess whether the amount or bleedine is expected or abnormal and dangerous. One respondent mentioned "PPH" specifically when discussing danger signs during pregnancy, noting "And also something during giving birth; when a woman is giving birth, that is PPH that is the most dangerous thing happening to a woman. If the woman has PPH, that is post-partum hemorrhage, that one needs to be controlled maybe 30 minutes you need to control that, if you do not do that in 30 minutes or so, that woman can die so mostly it's about blood loss, blood pressure and fever and all what I have said."
-Respondent 9.

Tables 1a and 1b provide a summary of the danger signs cited by HLWs, as well as illustrative quotes demonstrating their knowledge.

TABLE 1A: PREGNANCY DANGER SIGNS

Pregnancy Danger Signs		Illustrative Quotes
	• Bleeding • Swelling • Reduced fetal movement • Heart palpitations • Headaches • Fainting • Convulsions • Fever • Difficulty breathing • Abdominal pains • Blurred vision • Dizziness	R1:“...Or when the mother is having edema of low extremity, we assume low hemoglobin level and also we assume that the mother has high blood pressure. So we call it, we can assume that the, the child and the mother’s life is in danger. And also another danger sign is headache, when the mother is having headache, we assume that there is also high blood pressure and also maybe the mother can also have malaria or high HB or high blood pressure. So we ask that mother to rush to the hospital...”
		R12: “Here at CCPF we look for danger signs that come on pre-eclampsia such as headaches, many women will call that they are experiencing headache and they do not differentiate that the headache they are experiencing is from minor disorder or it is a danger sign so we try to probe more like are they having blurred vision, dizziness so that we can rule out if it is pre-eclampsia or not and also about bleeding. Some may experience bleeding at 20 weeks, maybe they are at 20 weeks gestation, maybe they are gravida 1, so we assess, is it normal or not and also about swelling legs oedema, mainly they have the swelling of the legs, it is normal they say am expecting a baby boy without knowing that it is oedema and may be a health problem.”

TABLE 1B: POST-PARTUM DANGER SIGNS

Post-Partum Danger Signs		Illustrative Quotes
	• Bleeding (excessive or prolonged) • Convulsions • Swelling • Fever • Difficulty breathing	R1: "For women who have recently given birth, we look for danger signs like bleeding, excessive bleeding because for a woman who has recently given birth is suppose to bleed but when the bleeding is excessive we assume that it is a danger sign. Maybe there is a tear somewhere, inside or maybe there are some remaining's inside the uterus. So when there are remaining's it causes the bleeding to prolong so we assume that there is something inside. So we advice the woman for medical checkup."
		R2: "The uterus starts to get back to its normal size and it can happen that we delivering, she delivered normally but a part of the placenta remained and probably there was no proper examination. So when the delivers, she can stay normally for 2 hours or 24 hours without bleeding and then starts to bleed. That one is also an emergency that needs to be attended immediately. Even convulsions it also happens when a woman has delivered."

Confidence handling obstetric emergencies

Nearly all of the HLWs said they feel very confident handling obstetric emergencies, with only 3 HLWs citing any hesitancy or gap. These 3 said they were not completely confident because they feel confident helping the woman during the call but then do not know what has become of her, because there might be updated best practices since they received their nursing degree that the HLW should relay, and they might forget the best advice in the urgency of the moment.

The few who lacked confidence shared:

> **"Ok the gap should be, as I have been here for 2 years, they should be something that those who are in direct contact with the patients at the hospital should also advice. Maybe there should be something that I do not know that should be done. It could be that there is new information that we do not know, there is always research and sometimes we have information very late."**
>
> —Respondent 9

> **"Ok, just because it is an emergency I can start to forget some stories and just referring the client to the hospital or I will feel like it is an emergency then I will just be thinking of rushing the client straight forward to the hospital, leaving some other points which can help the woman when she is going to the hospital."**
>
> -Respondent 10

Their colleagues often reported feeling "100% confident" or "very confident," saying:

> **"Ok, in terms of a woman who has just given birth, we are confident enough because we have the knowledge about everything about emergencies, so whenever a woman has a complaint we know. If she is bleeding its either she has got a tear which has not be sutured or there is like hmmmmh, the remaining in the uterus, yeah. We are confident because we have the knowledge and the knowledge can direct us to the problem that has been explained and we know the possible causes of those problems."**
>
> -Respondent 1

> **"100% confident...no gaps, actually I am happy when callers call me with situations that look tough to them. I like giving health education to be with serious problems than these others we just chat because when I help them I am happy that I have assisted someone on the mobile clinic."**
>
> -Respondent 2

ADVICE GIVEN

HLWs were asked to relay any incidences where they fielded an obstetric emergency call, and what they counseled the caller. Nine of the HLWs were able to recall examples of obstetric emergencies, and Respondents 1, 3, and 4 had received calls from women experiencing abnormal bleeding after birth. The tables below highlight the emergency situation and key quotes that describe the situation and what the HLW advised.

Generally, the HLWs assessed the situation to be an emergency based on the signs reported by the callers, informed the caller that they were experiencing a situation that required medical attention, and then advised callers to seek care immediately. In one situation, a woman delivered on her way to the hospital. The husband called and shared that someone assisted them on the side of the road and the woman was OK and so they wanted to return home—the HLW was able to convince the couple to go to the hospital for proper care.

In another situation, Respondent 3 walked through follow-up questions with the caller experiencing bleeding after birth in order to gauge whether the amount of blood was beyond typical. By asking how many times she had changed her pad that day, the HLW was able to determine it was a potentially dangerous situation that warranted medical care and instructed the woman to visit the facility.

TABLE 2A: POST-PARTUM EMERGENCY CALLS AND ADVICE

Post-Partum Emergency Situation	Illustrative quote
Bleeding after birth	R1: "The woman was explaining that she has just recently given birth, and she been discharged from the hospital. She did not know that she was bleeding severely but it was her first birth. So she said that today I have been bleeding excessively. So I asked her how many times has she changed and she said more than 5 times and it was not suppose to be like that so I asked her to go to the hospital for checkup. She went there and she was assisted and she called back then she was saying that she is ok."
	R3: "I can say that, that woman who called was narrating to say that she just delivered two days ago. After being discharged from the hospital that's when she started seeing that blood was still flowing, is coming out...and so, and she said, what should I do? That's when I said ok, I, I tried to access the amount of the blood that was coming to say is it heavy...yeah so, we have to know, because every woman who have just delivered can produce blood to a certain amount but this one was trying to say uh, I am bleeding...so, I tried to say to what extent? is it heavy? So, she said I am experiencing indeed a lot of blood that is coming, So I said did you put some pad?...so that you can know whether the pad is wet or not? so, she said I had two pads today, I had two pads today that I used but the second one was too wet so I said ok you can go to the hospital or ask your husband so that he may take you to the nearest hospital, otherwise watching that blood might look like it's very small but at the end it might cause another problem...yeah so, I said go to the hospital so that you might be assisted and so that you may be accessed what is the main cause that is causing that blood flow."

	R4: "[the client said] I have just given birth and bleeding is not stopping." Interviewer: "What did you say in response?" R4: "Just advise her to go nearest hospital."
Woman experiencing fistula and disorientation	R8: "In this case the guardian is actually calling and I remember there was this case of a woman who just delivered and she was not well monitored and she had fistula. She was not in a state where she can call, I remember her granddaughter called me." Interviewer: "Walk us through that experience." R8: "The granddaughter called me saying that she is just passing urine without control so I tried to probe more from her then I realized that this must be fistula. I tried to tell her that give the phone call to the grandmother, she talked to me but in a way were you could realize that this person is not in a write state. I immediately asked her to go to the nearest facility where they could refer her to Mangochi DHO. And I reported the case to my immediate bosses and I communicated with the fistula guys at Bwaila to take that woman for repair."
Woman gave birth on route to hospital	R3: "Ok there was this guy who called was explaining that he was going to the hospital with the wife and on the way the woman delivered. She started with bleeding and later on the woman delivered on the road, so I tried to assess the life of the baby. Whether the baby was breathing or I just asked them what have they done to the baby or what is the condition of the baby and what is the condition of the woman. Yeah, and after knowing that the baby has been assisted by the nearby personnel. And so, the woman was ok, they wanted to go back home...so, I said no you should not go back home but you should go to the hospital because it might be that she was assisted by the woman but she is not a professional, so you need to go to the hospital so that you can be assisted by the trained personnel and so that you can be safe...so, I referred them to the nearest hospital." Interviewer: "And they took that recommendation?" R3: "Yes, they took that recommendation and later on they called that we are at the hospital. so, the woman is being assisted."

HLWs also shared the calls they have fielded from pregnant women. Table 2b highlights the main danger signs and quotes to show the situation and how the HLW responded.

TABLE 2B: PREGNANCY EMERGENCY CALLS AND ADVICE

Pregnancy Emergency Situation	Illustrative quote
Bleeding during pregnancy	R6: "The client called, they said there were bleeding, I advised her to go to hospital to seek medical help right now because it's an emergency, because they know the viability of the fetus, yaah."
	R5: "A client called, she was six months pregnant and she was bleeding upon getting more fist treat, there was no injuries but she was just bleeding and she has even gone to hospital. I tried to probe more if the hospital is very close and it was closer. I managed to, she said she was with guardian and manage to talk to guardian that they should rush to the hospital. So that they should get proper examination and see where the bleeding is coming from and get prompt management in the hospital...so, right after that call they said they will rush to the hospital because I manage to talk to caretaker who around there."
	R8: "I remember this woman called me and was complaining bleeding vaginally and this one was a pregnant woman. I cannot actually recall the dates. I know I once met this case, upon calling she was complaining about bleeding vaginally. When she was calling she just thought it was normal and upon hearing her story I realized that this is a problem and then it was an emergency which she needs to be assisted. And so I advised her and I told the immediate people which was with her to take to the hospital. I tried to take the contacts of this woman to call back."
	R10: "Ok, there was this other time a certain woman called that she was bleeding vaginally. Of course it was 4 months pregnancy and the woman was complaining of vaginal bleeding." Interviewer: "How did you assist the person?" R10: "Ok I discussed with the person, the woman that is a danger sign for her so and I actually told him that they should put on a pad and actually go to the hospital for management urgently."
Swelling & Heart Palpitations	R9: "So mostly they call us about swollen legs, that is the most common call, swollen legs and heart palpitations, mostly they do that so. So most of them if they call about swollen legs, mostly they call us at an advance level saying I started 3 months ago, swollen legs and now it is getting worse, to them it is like there is a certain myth happening around it and so they feel ok and say maybe it is a baby boy or girl something like that. So we advise them to seek medical advice and most of them they go."
	R12: "And the other woman who had swelling and that she had the misconception that she is expecting a baby boy, she had 2 deliveries and it was all girls and this pregnancy that is when she starting experiencing the oedema of the legs and slight oedema in the hands and in the face and I also asked her are you having headaches and she said yeah but not normally and on and off. So I had to tell her that she had to go to the hospital, they had to check on your blood pressure, it may be a sign of pre-eclampsia and also you have to check on your urine if there is any proteins. So she assured me that she will go to the hospital."
	R1: "Yeah there was this woman who had been having heart palpitations because heart palpitations is one of the danger signs and also edema of low extremities. And I asked her to go back to the hospital for checkup because she said that I was scheduled to go the next of the next month and I advise her that when there is a danger sign you do not wait for the date they had scheduled you for revisit so you have to go to the hospital now because that is a danger sign and can put you at risk, that can put you in danger and the life of the child. I told her to go back to the hospital and she was diagnosed with blood pressure and that is eclampsia and blood pressure and she was assisted and she was ok."

No fetal movement	R12: "There was this woman who called and gestation she was around 8 months and then she called that on 2 days she did not feel any heart beat or any movements of her baby, she had fetal distress and she also said that she could not differentiate when she could hear her baby if it was kicking or not. So I had to counsel her and remind her if she has a danger sign and it is one of it and she should be noticing of the baby movement or heartbeat. She said she normally does not go early because she is scared of queue because they are many women and when she is going to the hospital, they have already given the health talk. And on the day that she saw that the baby is not moving, she said that it is normal and tomorrow she will be able to hear the heartbeat of the baby and it went on for 2 days and then I told her that she should rush to the hospital and maybe the baby has been distressed. And she said ooh I did not know that it may also be a danger sign to the baby."

What HLWs would advise if they encountered callers with PPH

Aside from the actual advice dispensed, the interviewer asked the 9 HLWs who had not fielded a call about PPH, what advice they would give if faced with such a call.

HLWs reported that they would:

- Try to calm the caller, advise her to restrict her movement, apply pressure on the uterus or vagina to control bleeding (R6)
- Refer them to the hospital immediately and do not waste time explaining why the bleeding may be occurring (R7, R11)
- Ask the woman questions to assess how much she is bleeding and what color and consistency the blood is since some bleeding after birth is normal. If not normal then refer to care immediately (R8, R12)

FREQUENCY OF OBSTETRIC EMERGENCY CALLS

HLWs were asked to share how common or rare it is for them to field calls in which there are maternal danger signs. Generally, HLWs reported that it is fairly common to receive general questions about pregnancy but that it is pretty rare to receive calls in which a woman is currently experiencing maternal danger signs. The interviewer asked whether it sounded accurate to HLWs that only 28 obstetric emergencies were identified in the database over a 13-month period—while a couple HLWs thought that sounded lower than what they think is the case based on their experience, the majority of respondents felt that could be possible. Then again, Respondent 9 said that danger sign calls are not very common, but then estimated that 3 or 4 in 10 calls are with danger signs, which seems fairly common. A different respondent stated that obstetric emergency calls are very rare but might make up 1 in 10 calls—at this rate, it would lead to many more than the 28 calls in the 13-month period.

Another respondent was more adamant that the 28 calls figure was not accurate and said they "couldn't buy it." When the interviewer asked the HLW to break down how many obstetric emergency calls he had answered recently, the respondent acknowledged that he had not answered any in the last 6 weeks and so perhaps the report of 28 calls was correct. Ultimately, it was not clear how often obstetric emergency calls actually go to CCPF, but the overall sense was that it is infrequent.

When asked why there may not be many obstetric emergency calls, several respondents had hypotheses to share, featured in Table 3. Respondents 7, 8, and 11 felt that they used to receive more obstetric emergency calls, and 7 and 8 raised the notion that perhaps CCPF does receive emergency calls, but they do not get through to the HLWs due to congested call lines during COVID-19 times.

TABLE 3: REASONS FOR FEW OBSTETRIC EMERGENCY CALLS

Reason for few calls	Illustrative quote
 Lack of awareness	R2: "It is very rare." Interviewer: "Why is that the case?" R2: "Sensitization." Interviewer: "And how do [obstetric emergency calls] compare to other calls?" R2: "1 to 10, why I am saying 1 to 10, because per day we can have 50 calls talking about COVID-19 and zero talking about emergencies in obs. So look at the way COVID-19 was sensitized, you could find poster written call 547 for call for COVID information while for emergency of pregnant women is not sticked in hospitals so that they can know if they have these and these problems, they can call CCPF and because of this we have very few calls because if it was sticked at OPD, a pregnant woman who see that if you have this and this problem you can call the mobile clinic so pregnant women would have been calling us but they did not consider on things like sensitization. So there is a need for others to assist us on things like sensitization because you know about corona virus but not for a pregnant woman, so they need to consider us on that one."
 Women know to seek care at facilities immediately	R9: "I feel like mostly women, mostly in the rural areas now have been sensitized to seek medical intervention so people are aware of visiting the clinic when they are pregnant. So I think when something happens like that they rush to the hospital." Interviewer: "Do you have a way of justifying that response?" R9: "Yeah, like I said it is 3 or 4 so most people will call after that; this, this happened and we went to the hospital and this is what they have told us. So they call afterwards and when they call afterwards maybe they want to understand something they were told and they did not understand there and they just want to understand better mostly and even if they go there maybe it is still progressing that why is it that it is progressing when they went to the hospital."
	R8: "Maybe being an emergency thing, people think of going to the hospital rather than calling CCPF, this is one of the reason that CCPF cannot register as many [danger sign calls] as you would say it."

May be calling but unable to get through

Interviewer: "First question, comparing the period we did not have COVID that is before March 2020. Have you experienced the changes in women calling about obs emergency and delivery? Have you seen a change?"

R8: "Yeah, change is there, I will explain it like this; in my own opinion I feel change is there just because a lot of people these days are calling about COVID-19. So if the lines are congested, few women who are calling about pregnancy are not getting in touch just because our lines are always busy. And maybe they end up giving up, saying we are not communicating with these guys...Maybe if we could have a specific line where an individual should be taking only emergency calls that can also help. Because you find that somebody with an emergency is calling and you are on a phone with somebody who is asking that what are the symptoms of malaria and that one with an emergency is on queue and you are not taking her call just because you ae speaking to somebody. You can have a specific line of obstetric emergency that can also help."

Interviewer: "How common or rare would you say it is for women to call CCP if there's an obs emergency, is it common is it rare?"

R7: "Yeah, it is common, yeah...except in these periods of COVID, I can't know why, is it people are concentrating on COVID or caller's of obstetric emergency are those that are hanging up due to the congestion I don't know."

Interviewer: "But your view in the past you used t?"

R7: "Yeah, I could answer like, 'am feeling stomach pains, am losing blood."

Interviewer: "So how common or rare would you say it is for women to call CCP during an obs emergency?"

R11: "How common, comparing with other emergencies, usually I think they call, so I would say it's common that they call us especially on the bleeding, bleeding part they usually to say am pregnant but am bleeding so there's always that, I've said its common you cannot come here for two weeks without getting that call, may now because of CORONA thing but before CORONA those calls."

CCPF HANDLING EMERGENCIES

How Emergency Calls are Handled Differently

The interviewer asked if/how emergency calls are handled differently from non-emergency calls, to which HLWs shared the ways they proceed differently.

TABLE 4: HOW EMERGENCY CALLS ARE TREATED DIFFERENTLY

How emergency calls are handled differently	Illustrative quote
 Skip the typical registration process	R1: "But if sometimes we see that there is a danger sign, we tell them that tell her to go to the hospital after you come back that is when we can proceed with the call. We cannot continue registering the client when the issue needs immediate medical attention."
	R9: "If a woman calls I am having heavy bleeding, immediately I do not continue with the details of the woman. The only thing I need is the name of the woman and I tell the woman to go immediately and not waiting for someone to take her there. And if there is someone around then maybe to escort her and not waiting for more hours because the moment she is saying I am having bleeding it means she started long time ago in 2 or 3 hours. So immediately she says that I am bleeding that is a danger sign and she needs to go immediately and you need to stop recording her and refer her as a hotline worker." Interviewer: "Is it a protocol here?" R9: "Yeah, because if it is something like an emergency, you just take the name of the client and if they say that I am bleeding then you need to tell her that we are not continuing this, am letting you go and if anything you will call us back on how it went at the hospital."
	R11: "Okay, so usually if, where they tell you or you hear this one is distressed or they tell you what they're feeling or they've danger signs, there's nothing you can do, the 1st thing to tell them is to go to the hospital now because these things they're life threatening it might be for the woman or for the baby so we tell them right away you have to go to the hospital." Interviewer: "Okay, how does that differ with any other call?" R11: "With any other call, okay usually on this call we say when ever a caller calls, we say you've to register the what, what, but on this one we say it's an emergency there's always no time for registering this patient of what, what, if you take their name and their number that's enough so that you can follow up with them but the other things that we go to like them it is we can say go to the hospital and then you can follow up with them later."
 Find out whether there is someone nearby to help	R5: "Okay, we try to tell them not really try to feel for them whilst doing that you also ask if there is someone around whom they can feel that will be of help that you talk to the person and help if not then you help then together."
	R8: "I usually ask her to visit the nearest health facility with a guardian or if the guardian is present, I will pass the right information to the guardian to take her to the hospital immediately. That is the only thing I can do as a hotline worker. Ask if the guardian is present and if the guardian is present I will pass all the right information to the guardian and if possible they can put the phone on the loud speaker, so that the information we are giving, the guardian can hear, the patient and the guardian can get it. If anything you advise them to go to the nearest facility immediately."

 Emphasize the importance of seeking care immediately	R3: "Ok uh the difference can only be that we emphasize...yeah on what steps should they take immediately... so we emphasizing on what steps they should take it gives them hint that we should not wait let's do this fast just as the doctor has instructed."
	R7: "We have some techniques, like the calming down techniques, yeah most of caller's sometimes even calls with panics because they're in a situation, in that case of medical emergency of obs we handle them calm them down to the point of understanding if we still, if we're still having problems in understanding with each other we can only advise her to give the phone to someone who's nearby so that we talk to the other person and the other person will talk also until we reach a compromise so we always handle them like, we calm them down...we explain to them of their situation, we explain to them of the need to go to the hospital, the disadvantages of delaying, the complications that can come after the delays, or even after going things doesn't work to the needful, yeah, we always give them, we give them full package of the information on their condition, what the condition is, sure."

Should CCPF be used for Emergencies

When asked whether CCPF should be used for emergencies or not, all but one of the respondents agreed that it should be. However, most HLW proponents of using CCPF for emergencies justified their response because CCPF could help a woman identify that she is experiencing a health emergency and know that she should seek care immediately. If the woman is already aware she needs to seek care urgently, it is possible that the HLWs would agree with their colleague, Respondent 2, who did not think CCPF should be called during an emergency. Respondent 2 replied:

> **"For me I think it is not necessary to call the mobile clinic but they should call our friends EMS 118 because 118 responds fast while us we concentrate on giving health education, advice on what to do, so I do not think it is necessary to call us because when they call us, we divert into another channel by saying you can call so and so hospital or you can do this. So the time we are discussing with that do this and that, the 1 minute we are discussing, someone can lose life. So it's good to call 118, they will be assisted immediately and they will respond there and then."**

When asked later whether he would recommend that a friend or family member call CCPF in an emergency he continued:

> **"Like I said when we are dealing with emergencies, we can save a life by a minute and also lose a life per minute, so since it's a mobile clinic, emergencies are not right but they should call when they are pregnant and then we can tell them that these are the danger signs and if they happen to you, do a,b c, d . I do not know if you can understand me because when they call us that they are bleeding or fainting, even having breathlessness, the child is not kicking because, for a pregnant woman if the child is not kicking, it's a danger sign because if the child stays long in the stomach whilst dead then it's a complication to the woman so if a woman calls you with this danger sign then you can direct them to go the hospital immediately but for a woman is who fainting and then they are calling you at the call center there is nothing that you can do immediately so it needs us to teach the women because I believe a lot of women do not have information about the danger signs."**

TABLE 5: WHY CCPF SHOULD BE CALLED IN EMERGENCIES

Why CCPF should be used in emergencies	Illustrative quote
 HLW can identify danger signs and refer to immediate facility care	Interviewer: "Ok, so do you think that the handling of the emergency calls should still be under the mobile clinic?" R1: "Yes...because an emergency needs help, I think help which is immediate. So for a person to walk that distance, maybe she does not know that this is a danger sign. So when she calls she gets the right information, that this is a danger sign and needs medical."
	R12: "The other women may not know that what I am experiencing is a danger sign, they may think that it is a minor disorder and it will be too late and if they call us we might elaborate that they need to go to the hospital. I gave an example that headache; headache is a minor disorder but severe headache may also be a danger sign. So someone may also be huh maybe it is headache, it is a minor disorder without knowing that it might be a danger sign."
	R8: "This is very necessary because some of them will tend to think it is very normal. For instance, I will say heavy bleeding, some may think it is normal to bleed while pregnancy. They think it is just something as they normally do. This is a problem that needs to be taken care of and they need to call so they should have right direction, right advice."
	R11: "Okay, as I said there are some people that literally as I presented by guess to say some people would say am menstruating yet they're bleeding it's not menstruating they are pregnant they don't have to bleed, if there's that lack of information people may end up staying at home they are supposed to go to the hospital so if, usually when they call us we give them the information, then they should be able to make an informed decision say that this is what I have to do based on what now I know so I really think they should be calling us, I think it's necessary."
 HLW can advise what to do while on route to facility care	R8: "In terms of advice giving, so perfect, in terms of advice giving because even if it is an emergency, they can be calling CCPF while they are going to the hospital. It also perfect, you can advise them, she is bleeding, do like this and this, and on the way you are going to the hospital."
 HLW can provide information and calm them down before reaching facility	R5: "Because for some they are, when they are experiencing that emergency, they are really scared... they don't know what's happening so if they call mobile clinic, we try to give them that assurance we try to give them information as we have been repeating you tell them why is happening and the possible causes, so when they are going to the hospital, they really know that maybe it can be that serious but still you have uh hope that in pregnancy anything canhappensoyouwouldencouragethemforthemtobegoing tothehospitalwithfull confidence of what is happening and that they get help when they get to the hospital."

Advantages

HLWs were also asked pointedly about what advantages there are to calling CCPF, whether generally or in an emergency. The key advantage cited by several HLWs was that CCPF allows callers to have extended time talking to health workers, as opposed to the typically busy and rushed service at facilities. HLWs were also asked to comment on what they think callers like about CCPF.

Several HLWs explained that CCPF provides an opportunity for callers to get personalized, in-depth health information in conversations that last much longer than the hurried consultations at antenatal clinics and hospitals. HLWs added that the rapport built over the conversation can make women more likely to ask their questions and share what symptoms they are experiencing. HLWs said they think women feel more comfortable and informed talking to CCPF and that sometimes facility staff will give a woman a medication but not explain why and how to manage the underlying condition. Illustrative quotes are featured in Table 5 below.

Aside from liking the slower pace and more tailored health information, HLWs also shared that callers often call CCPF again to thank the HLWs for how they have assisted them—Respondent 7 shared,

> **"Always, they'll always praise CCP and the services we give them, and they'll always do like, we always receive some calls just appraising us for what we did to them how helpful the information have been, always praises" and that it makes them feel "motivated and eager to help someone again."**

TABLE 6: ADVANTAGES AND WHAT CLIENTS LIKE

Advantages	Illustrative quote
Callers get extended time with health care workers	R1: "Ok, they like the mobile clinic because whenever they go to the hospital the queue, a nurse cannot sit down with one patient for 30 minutes speaking to his or her problem. So whenever they call, they speak things they cannot speak to a person face to face and also we are able to talk to them for 15 to 20 minutes without interruption so they feel comfortable speaking to us because we can speak to them for some time and they speak everything they want to speak unlike those health centers."
	R11: "It's very important because, okay for some when they go to the, usually in Malawi when they say go to the hospital, people are always in a hurry to do things quickly but when they call us here we are able to interact with them as you answer as many questions as you can, whatever they feel like is bothering them you try to make sure that they understand so if they call they should be able to get whatever information they really want to get on a specific thing so there's that freedom of time where you are able to discuss anything ...it should continue as I said earlier to say, when people go to the hospital, they don't have usually in private hospitals but in government hospitals people don't ask questions, they just get assisted..." Interviewer: "So, it's one-way traffic?" R11: "Yeah, so usually that's that, but then you say this is this, explain to them but usually if they call us here you can explain to them anything like however they wanted to say may be this, why does this why does this happen, why does this happen, so you are able to explain, so I still feel It's open here than it is out there and usually there are so many people out there and one is working on time I need to assist this one then another so I think we should continue handling."

Feel more comfortable asking questions

R9: “Ok, most clients call, they visit antenatal clinic and some of them feel shy or maybe they are threatened by the way health workers are talking to them so they are not free to express whatever they are feeling when they go for ante natal visits, it takes longer to be attended to. The only check the basic things maybe the fetus, how old it is and just the basic and if the women don’t tell that I am having heart palpitations, am having fever at times, the woman feel free to call us and tell us that I went to ante natal visits but am having these signs and if I ask the woman did you go to ante natal visit and the woman say yes I went there but I was not able to express myself , we always advice to feel free to tell them because they are the ones that are immediate near to them.”

...

Interviewer: "Now if you are to think about the services that you provide, from the perspectives of your clients, what would they say about services of CCPF?"

R9: "I think it is all positive because mostly say that we are free to express ourselves here and we cannot do that at the clinic because of attitude."

Interviewer: "Where do they say it? On the phone?"

R9: "On the phone, sometimes we ask did you go to the hospital and where did you go to the hospitals and they say yea and when we say did you ask the nurse they say no because of the attitude and they did not express ourselves. They say we are free to express ourselves because we do not see you and we are free to express ourselves. They always say that so I think it is very positive.”

Interviewer: “So the ones that told you they were happy when you assisted them, did they point out something they liked about CCPF?"

R10: "Mostly whenever they are sick and they go to the hospital, they will say panado you will drink but here at CCPF we will explain in details and why the details, why it was caused and how it can be managed and so they are very thankful that you explained to them than in the hospitals.”

Disadvantages or challenges

When it comes to challenges to leveraging CCPF in emergency situations, HLWs laid out several challenging aspects. While most of the challenges apply regardless of whether there is an emergency occurring or not, the consequences are heightened if dealing with a health emergency.

TABLE 7: DISADVANTAGES OR CHALLENGES TO CCPF BEING USED IN EMERGENCIES

Disadvantages/ Challenges	Illustrative quote
 High call traffic means emergency calls might not get through	R7: "Okay challenges, mostly during a period like this one CORONA virus period there are congested calls, people calling, calling, calling, so one can call for several times without being picked and may think that they are not attending to him or her of which we're just congested with calls, it was a demand that is so high, that's a challenge in this one, some they need assessment but they cant pass through because of congestion, there are some challenges like network challenges, people calling we pick their calls but finding it hard to hear them clearly where they're they may have network problems, even here we may have network problems according to the providers, that can be a challenge, let me say that is a challenge as well, yeah."
	R8: "The challenges can be lack of phones to our callers and as well congestion. It is not just automatically when you call, your caller will be picked just because we are attending to so many people. You find out to wait, you are online, you are on line so people get bored and there phones are taking time to be responded. And not that we do not want to attend to them but we attend to so many calls. I think this is a challenge for an emergency situation to be assisted."
 No access to phones or do not have Airtel (which provides free access)	R2: "We have TNM and Airtel and in some areas only TNM works and airtel does not and I also think that when some women have the knowledge that there is a mobile clinic and they want to call to know about the danger signs but they do not have a phone with TNM but Airtel only so it's a challenge."
 Network issues prevent clear communication	R7: "Issues of network, failure to understand each other due to network, sometimes as you say some distress though we can overcome it in some people, yeah, you talk of some people calling from the villages sometimes they could call with their phones having low power, we could go sometimes without finishing conversations, some of them."
 Language barriers can prevent clear communication	R6: "Yaah we have a challenge a lot, most of the clients the way they explain things, sometimes its difficult to get what they want, what they meaning, yaah Interviewer: do you have any ideas on how to address or minimize those challenges? R6: another one it's a language barrier, yaah because other, let's say the caller they know that frighten to say in their local language, when they say you know, 'we have dis, dat' the terms they use to describe a condition, then we take more time to probe more to know exactly they meaning, what they mean, yaah so that's why they say there's a caller, you say certain thing I don't know I put on hold, I ask, 'is this the certain culture or they say in chiyao they say, this is what they mean, they're now they mean someone, oryt then we continue but it takes 3-7 seconds or 15 seconds."

 Difficult to give proper medical care without observing the client	R4: "Oh yeah, the difficulties is that maybe they are certain emergencies like convulsion yah May be certain position that the mother needs to lie down so you can't explain well on the phone. So need to be physically there so you can position that a woman in that position...also, may be the client may be complaining to you she is draining liquior but you haven't seen it may be is vaginal discharges, so she is confusing vaginal discharges or liquor. So, it difficult to differentiate these two."
	R11: "We're not with the patient, so we're limited to what we can do."
 No referral system to link callers to facilities	R2: "Ok mode of referrals, you had asked me that what would I do if a woman who has an emergency calls? A person calls and is calling from chitipa and yet I am here at the call center, I would not know what could be the distance from where they are calling from to the district and how will that person be assisted. So the referral is a challenge for us and at the sometime. And it could not only be emergencies but someone could have cancer and needs help but then how do I do the referral to go to the hospital. So I think the referral is not ok, if we had people at the hospital who attend to emergencies immediately then we could be calling them to network. When could say there is client needing this and this and they could also give us feedback to understand how they have been assisted, so I think there is a challenge there."

Client dislikes

HLWs were also asked about what clients might dislike about CCPF. The two main responses were long wait times or difficulty connecting to a HLW, and being frustrated when they realize CCPF cannot dispense medicine or connect them to care immediately, and instead they are just advised to seek facility care.

TABLE 8: CLIENT DISLIKES ABOUT CCPF

Client dislikes about CCPF	Illustrative quote
 Long wait times to connect to a HLW	R6: "That time they received a call, the angry call, they say, 'I have been trying the whole day, you say you work the whole day, you say you work 24hrs, I have been trying to get help on your phone but you're not going to lock, then I will calm her down, saying we had network problem, if you have a network problem." Interviewer: "In that case you have assess there's a network problem?"
	R6: "Yaah, there's a network problem, it's one of the challenges here, yaah when the network is down, yaah a lot of people suffer."
	R7: "Issues of network, issues of congestion like calling cell without being picked, something that no one can tolerate, issues of people expecting us to give them drugs sometimes they call us, we need drug for this or may be for us to give them immediate solution."
 Expecting to receive medicine or immediate care through CCPF and being disappointed	R8: "Uuh, I think they can dislike the issue of referring them because most of them when they call, they believe they will get assisted when they call and when they call again I say go to the nearest health facility, that thing they can dislike it because they think if I call CCP I will get help immediately, and the other thing is network challenges, it can be both, on their phones and from us, because the other days we used to have network problems and we are not picking up calls. And also congestion as I said, those you are calling are busy, those who are calling busy, those are one of the things they can dislike."
	R9: "I think mostly it's about the queue, they will always complain about taking long to be assisted, they would say I have been on line longer , I tried several times to be assisted, it took long to be assisted." Interviewer: "So all these are emergencies" R9: "Yeah, they will say we waited for long and we were not assisted and we always assure them that keep on trying because it is the whole Malawi calling."
	R11: "Maybe sometimes it takes long for their call to come in, yeah, that might be one of those especially this time around if the may be in just a few weeks ago because of CORONA, there were just so many calls coming in it means when they call they have to wait on the call for a long period and some they usually complain to say I've been trying to call you for along time."
	R4: "Maybe we don't answer them quickly yah...maybe we don't meet their expectation, like other people will call us I thought you will give us medicine, so we don't meet their expectation."
	R1: "The problem is that, most of them they complain that they do not have access to go to the hospital, they do not have transport but there is need for them to go the hospital. They assume that when they call us we are going to go there and pick them to go to the hospital. So they get frustrated that why calling them and they tell us something that we can do on our own."

Dropped calls

Relating to network challenges, when the interviewer asked what happens when a call drops, several HLWs shared that they are supposed to call the woman back but that there is no longer a phone with airtime to make outgoing calls. Responded 8 stated they are supposed to call her back, but when the interviewer (who learned from earlier in the interview and in previous interviews) raised the fact that there were not phones charged for call-backs, R8 conceded that the protocol used to be to call back but now only the supervisor has a phone with airtime and so they need to approach the supervisor if an instance requires an outgoing call for follow-up.

R8 even used his own phone to call a client back—he said, "ahah, I am saying like this because previously, each and every phone, we use to have 3 or 5 phones we use to follow up clients .These days we do not have because of lack of funds of airtime. Right now we just have one phone which is being kept by the supervisor. We come and ask from the supervisor and call her back but this case of Mangochi I used my own phone to call back because we lost touch with the client." And when asked, "Why did you find it proper to call back? To use your own phone?" he replied, "I was interested to know more from the client that is why I used my phone. I really wanted to help that woman that is why I used my phone."

Respondent 4, who had been at the hotline about 2.5 years, was unclear of the proper protocol and said,

"Here we don't even call because I think that point, I think we don't know what to do and we haven't oriented what should we do when the call drops take that number and calls. We haven't been orientated on that I think there…may be our bosses can direct us what to do, sometimes we can't do things without our Bosses" and when asked for a suggestion said, "Okay, in ideal situation we supposed to take that number and call again cause it is an Emergency so that we can tell them what to do since they seek our help.

Ultimately, there was confusion over what should and can be done when a call drops, with Respondent 11 sharing,

> **"There was a time we used to have a phone where we call back, we could call the caller but I don't see it these days, yeah, I don't know whether it is still here or not but there was that time where we would call them back, so you can continue talking to them again."**

SOLUTIONS TO IMPROVE MATERNAL CARE

HLWs were asked what ideas they have across the community, health system, hotline, and HLW levels that would increase quality of maternal and obstetric emergency care.

TABLE 9: HOW TO IMPROVE MATERNAL CARE ACROSS LEVELS

Level	Illustrative quote
 **Community** • Sensitization on danger signs • Adjust norms on women not being able to make their own decisions to seek care • Stop propagating myths • Shared responsibility for getting a woman to the facility	R4: "I think the role of the community it is like having village meetings they can may be request for health worker just tell the community about the danger signs of the woman and what can be done first before the woman goes to the hospital…when an individual has fallen or has fainted and whom has seen her should take responsibility of taking the woman to the hospital despite she is your relative or not." R6: "You cannot tackle the large community on the phone only counseling but you do the campaigns, the community will be aware of it, they see emergencies they will be, you see emergencies these will actually be followed, they don't rush to say let's go before what, if they emergencies lets go to the hospital because a community have a hierarchy or in a family, others most of them are ladies they are not decision makers, they need a someone a husband or a uncle or a what, we get information to that community, instead to get information to uncle to make a decision, a husband can make a decision or a woman can make a decision or everyone close to her can make a decision, let's take this woman to the hospital by doing that you can help the woman to get good care or quality care in the community."

	R2: "The first thing that I see is, we should not rush in solving the problem, we should look at the root. So the first thing is, first of all, we need to sensitize the community, the men also need to know when this happens there is a problem because other men do not know that what happens when a woman is pregnant and may say I do not have transport go to so and so they give traditional medicine, so we have not helped here. So we need to go to the community as we said we need to sensitize these people so they should know a, b, c and d and the know these are the danger signs of a pregnant woman and when they know what should they do. When you know a, b c d ,rush to the hospital immediately, call so that you should be assisted because sometimes we can see what is happening but may think of other causes so if they call we can direct them that ,that is not the case and go to so and so. So I think there is a need for teaching."
	R9: "Mostly pregnant women live with people around them, it could be grannies, mothers and so forth. So those people have got their myths even if your modern, sometimes they still hold on to their myths. Just to give them awareness that things happen naturally and not because someone has been bewitched and they need to take off that belief that if something's, maybe someone has gotten an abortion or miscarriage they feel someone has bewitched them, they need to take off that and give them awareness that things can happen. There are things around pregnancy so things can happen and just to be flexible so that the woman who is pregnant can have a health life."
	R11: "So, okay the community as I said to say we usually some places are very remote areas so if they work together to say if there's this woman who's having an emergency and then they work together to help that woman to get to the hospital In time, I think that's the part that they can do better than letting the family alone may just the husband to do the yeah, so I still think if that community, there's that collaboration in the community to say let's pick this one in time to go to the hospital and they should be able to help but that will also depend on whether they have the information on emergency as well."
	R10: "Yeah, I think the community, for example, let's take the woman is in the village, maybe you tell her, you have advised her and tell her that they should rush to the hospital, they are some callers that they will tell you that I do not have money to go to the hospital, so I think maybe the community could do some agreements that maybe to assist those kind of people who do not have transport to go to the hospital, they should be transport so that they should rush to the hospital for assistance. Or if maybe there are health practitioners who could help them right away in the village."
 **Health system** • Training skilled health workers at facilities • Proactively counsel women on danger signs to look out for • Health workers should serve clients with a good attitude	R2: "Health center, health system it is the same, I am sticking on teaching, these people should have immediate respondents, when we reach the health center , they should be qualified medical personnel who know how to handle such cases not that every case they refer to a bigger hospital, they complicate things that are easy to handle. So there is a need of expertise but I also think it is good; we have HSAs, Health Surveillance Assistants, they should also be taught on what to do on such cases, people in the villages may not be able to handle these cases sometimes, ambulances should be sent to take people fast, they should be like paramedics, they may not have done clinical stuff but they can be taught that when this happens this what we do."
	R4: "Health system we should advice the woman when they come to ante-natal re-visit the danger signs and I think each and every meeting with woman we should remind her or telling her about the emergencies and may be how to do, may be when she's convulsing or she's bleeding or she's draining liquor."

	R8: "Transportation is poor and maybe I should also say like this; this time we are helping women ante-natally and they should be given full information so that when they see something different from what you told them, they should report to the hospital because sometimes they receive partial information and we have such things in our community. Health information is very necessary for the community as well as women who are coming for antenatal."
	R9: "The health system, especially the health center attitude towards pregnant women or any other client who receive care because attitude matters. If I am having an issue and I am coming to them, seeing an attitude which is very hostile, I would not be able to express myself, maybe you will just examine me, not even holistically so, we miss a lot of issues with the women so mostly it is attitude... and also sticking to the protocol of examining women and not taking short cuts."
 **CCPF** • More sensitization so community is aware of resource • Dedicated line for emergencies • Improve network and hotline work stations • Provide HLWs with more training on maternal health • Establish a strong referral partnership with facilities • Provide or tap into a transport system to get women to care • Re-instate protocol and needed resources to call women back if a call drops during an emergency	R6: "The only challenge here, because we are not link with health centers, if we were linking with health centers say if you receive emergency call, that client is calling from let's say area 25, and they say go to area 25 clinic, and you call that clinic they say get prepared, we're sending you new patient, the patient might come or will come, they get prepared for that patient, if the patient come, they find all people are prepared but you don't have any linkage to call and advise that...because we need to know the health centers, if we send a case, lets say a client to that health center the patient send will find that health center there, no stuffs there, low resources they don't have resources and they delay the help for the client, as a result we might lose that client, yaah, because we need to know they say like here we know bwaila they do this procedure, instead if you know that this procedure they say you can get at the hospital you look from the phone, now don't go to youngest hospital find the way to go to this hospital because we are able to help you."
	R8: "Maybe if we could have a specific line where an individual should be taking only emergency calls that can also help. Because you find that somebody with an emergency is calling and you are on a phone with somebody who is asking that what are the symptoms of malaria and that one with an emergency is on queue and you are not taking her call just because you ae speaking to somebody. You can have a specific line of obs emergency that can also help." ... yeah this is one of the things; we have been suggesting if we could have a focal person at a health facility where we can give them information about a certain patient in a certain area. Our focal person can go to that area to ferry those patients but up to now it has not been taken on board. It could be one of the things that we can use as we are referring people. We suggested we should be having our people in several districts so that they should be getting information from CCP, problems in their areas, they should pick those people to their nearest health facility but because of other challenges, they failed to achieve it."

	R9: "These days we are always experiencing system failer so that one...I think it is network issues, I think it is something to do with the network, yeah that is the most problem we have right now...it's not the phone, it's the whole system, I do not know how it works...we get the calls but most calls drop and it says the system is failing...So you try to assist someone, you are in the process of recording and not even attending to and it drops and you cannot even reach out to the persons number and you have nothing to do...and another thing is more training to the hot line worker." Interviewer: "Do you have any topics?" R9: "Mostly on maternal health as a whole because sometimes they ask questions and you need to answer as a whole. You go to the clinic and they say this is how we are doing it now and on ART like I said the regime if it changes to a pregnant woman we do know how to handle that case. They actually say I am on this medication, how can you help me but then you do not know how to assist."
	R12: "Maybe if we can team up the other health centers just as we did with COVID-19, COVID-19 we had numbers that we gave them that if you are experiencing this symptom, call that number when they are experiencing these symptoms and can be assisted. Maybe also since these are emergencies maybe Lilongwe, Blantyre, they can have a number and say call this number and then may be able to know that they have been referred here."
	R1: "To connect the community, health centre and CCPF, they need to be connected. I am, suggesting that we should be connected to the health centers so that maybe we should, hmmmh, or we should have our own ambulances hahaha for us to go there, directly to that patient and pick him to the hospital. Not us but there should be focal persons nearest to the health centre so that we should call them to go to such such a place and pick such a person who is having this emergency."
	R3: "Sometimes we lack good referral system to be assured that the woman reached at the hospital and have been assisted, we follow up after maybe after the woman has already been assisted. At least if we can have personnel in the hospital every district in the hospital in every district hospitals, those can be for personnel's who can tackle are the referrals from mobile phone clinic at least we can trace them to say we have refereed this client to your hospital did the client reach you?... Or even callers themselves they do ask sometimes, if I go to that hospital should I call you so that I can be assisted or is there somebody there who can, whom I can meet and be assisted? Yeah so I think if we can have forcal personnel's in the district hospitals the health centers close to district hospitals I think those ones can take the responsibility of referrals and even if we can have maybe some ambulances because in obstetric emergencies it may happen that somebody is lacking transport somewhere so you just listen and say go to the hospital but she is do not have any access to transport. to the hospital, so if there can be an ambulance to say if there is an obstetric emergency you assign people to say got to this route meet so meet and assist them it can be better."
	R11: "If I would have one think, I would say if it were if there's that linkage between CCPF and the hospitals that are out there the health centers or what, let's say a woman is calling from let's say here 36 I know that woman definitely if they're to go to the hospital, they will go to bwaila if there is that communication between us and bwaila should be able to go, if they can manage should be able to go to pick the patient, if they can go and get the patient then we should be able to reduce the gap and if there's that communication between us and the hospitals that are out there then we should be able to say, okay which hospital should we go to if they tell you may be then we can look up to this woman somewhere in your area this is what is happening may be we can also reduce some, yeah."

	R7: "When the call drops, we expect them to call us back but, in the past, we had a line that we used to call people back, that was a follow up line, we had an access to outreach former, so we could call them back and continue with the conversation depending with the emergency situation, we used to so, currently we're not, the idea we're supposed to call them, follow up to them, ask them they should finish their story because it's an emergency." Interviewer: "So, what do you recommend then?" R7: "...We should continue with the calling them, if the call got cut."
 **HLWs** • Bring the proper attitude and be passionate to help	R11: "Ourselves we need to, how should I put this, just have the passion because sometimes it's just the passion to help someone that makes you give out, that makes you help someone well s need to have the passion and not only sometime we need to be equipped with the, may be if there are any guide lines, if there's is any new issues around these emergencies that have risen up and we need to be equipped with those so that we can be able to help our clients well, yeah."
	R9: "The hotline worker should just be on it...the hotline worker has to have the spirit of assisting and not getting tired. You receive calls that are irritating but you have to be professional. Assist people, leave your moods at home and be here for work."

Additional training

In regards to further training, HLWs specifically shared that they need to be refreshed on current information since they may have outdated information now that they have graduated several years ago. They would like refresher trainings on maternal health danger signs and protocols in case information may have changed. One HLW acknowledged that they do receive refresher trainings but on topics like nutrition, and that they had not received a refresher training on obstetrics since they arrived at the hotline two years prior (Respondent 7). The interviewer asked, "So it's something that you just learned at school?" to which R7 replied, "Sure, I don't know what is on the ground right now." Respondent 12 was even more specific, saying that they would find it helpful to be oriented on how to manage pre-eclampsia and that if a nurse or colleague was to call CCPF for refreshers or guidance on which medication to give women experiencing pre-eclampsia and how to monitor it that she would not know how to respond. Respondent 1 lamented that sometimes a few of them attend specialized trainings but they are not all able to be trained, leaving them to depend on their colleague to be available to answer questions when the HLW cannot field themselves (i.e. regarding ARVs and contraindication in pregnancy.)

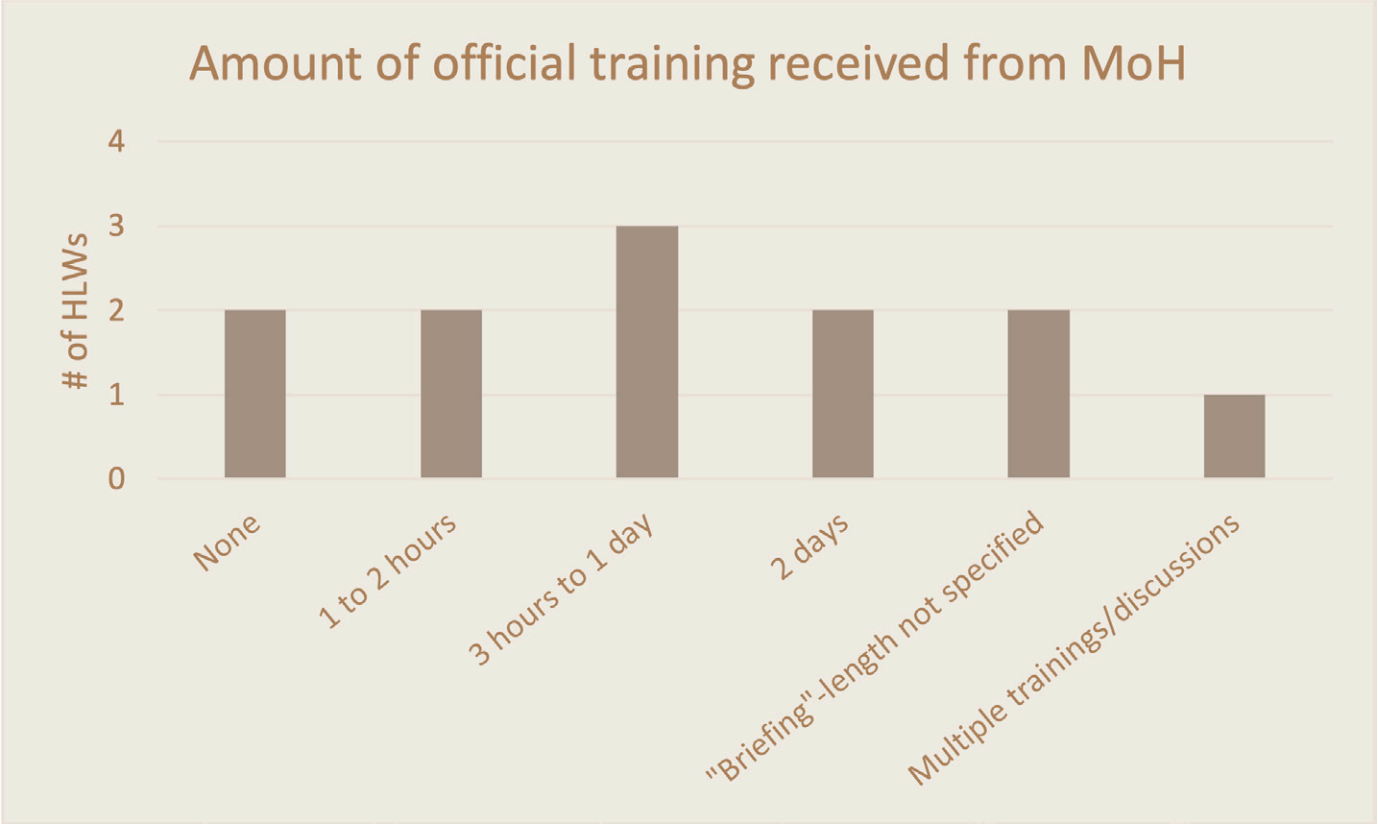
COVID-19 and Maternal Health

The latter half of the interview guide focused on exploring how maternal health questions and call patterns may have shifted after the onset of COVID-19, what advice HLWs give, any additional training the HLWs would like on COVID-19, etc.

TRAINING ON COVID-19

The HLWs reported mixed experiences with the COVID-19 training they received, with some finding it perfectly adequate at the time but warranting refreshers, and others feeling it was not sufficient to being with. This may be related to the fact that HLWs seemed to receive varying amounts of training. Figure 1 shows that HLWs reported receiving a minimum of no training from the MOH (n=2) and at the other extreme 1 HLW who recounted attending multiple trainings/formal discussions on COVID-19.

FIGURE 1. HLWS' SELF-REPORT OF HOW MUCH OFFICIAL TRAINING THEY HAVE RECEIVED ON COVID-19



Although Respondents 2 and 5 did not receive any formal training, they supplemented their knowledge through online research, as well as refer to the information leaflets MOH circulated and receive informal or refresher updates from the CCPF supervisor.

Overall, the primary methods for how HLWs receive their information on COVID-19 included:

1. Orientation from MOH. Those who participated in an orientation or training with the MOH found it very useful. Respondent 9 said prior to the training it was "just panic…if someone calls what will I tell the person? After [the training] it was ok." Respondent 12 found it quite helpful, saying,

> **"…They also gave us some papers where by if we have forgotten and we can go back to check and we have a reference material…it was useful because it helped us with some many questions because at that time, before the training, normally, we have corona virus, how is it transmitted, so will normally google and be searching and what is this corona virus, what is this. So on google we have so many information and to put it on one so in that training at least we are able; at least when the client calls we know that we are going to give them all the information there." Finally, Respondent 8 said, "very useful because being a new disease COVID-19, there are other things which are not familiar and you are not able to know. But after being brief, being trained, we are able to disseminate the right type of information."**

2. Leaflets from MOH. The MOH provided leaflets after the training, and many HLWs noted referring to the information in the leaflets and that before long, the information "got in your blood" or was easy to retain when you are answering similar questions all day.

3. Supervisor bringing updates. A couple respondents shared that their supervisor brought informal updates and briefings to the group, such as a training on handwashing.

4. Research on one's own. Several HLWs shared researching online to find out more about COVID-19, and Respondent 1 suggested it would be helpful if there was internet at the CCPF office so they could research some things. Respondent 2, who joined CCPF after their colleagues had been trained in COVID-19, also used the internet to learn COVID-19 facts.

Training needs for counseling callers on COVID-19

Although they had received varying degrees of initial training, HLWs felt generally well prepared to counsel callers on prevention and identifying symptoms. Some, however, noted that they can explain the basics to callers, but that if they were to be pressed for information about how or why the virus operates in certain ways (e.g. why does it stay on a hard surface) then they would be lost.

Even those who did feel confident on most topics raised concern about speaking to potential treatments and vaccines. Table 10 highlights some of their gaps in knowledge and areas where they would like more training, in which key themes emerged. Several HLWs said they know how to talk about prevention well, and have never been stumped by a caller's question, but that there are plenty things they do not know about COVID-19 and if a caller asked they would have to say they do not know. Several HLWs pointed out it is important for them to have the most up to date information because callers see things on social media and then call with a question, and if the HLWs do not have the latest information they will not be able to answer the callers' questions. Some HLWs did not have a specific topic they needed more information on, but just a general concern that their one training was at the beginning of the pandemic and so there could be many things they do not know.

TABLE 10: KNOWLEDGE GAPS AND TRAINING NEEDS REGARDING COVID-19

Gaps and training needs	Illustrative quote
 Lack details on how's and why's of Coronavirus	R2: "I am about 85% [confident handling COVID-19 calls]. why am I saying 85%, am here and COVID found me here already after leaving school and I have tried to learn and answer a phone but in my case, I have never gone for COVID training so I do not know what people are learning, I just self-learn through the internet but there are other things that are changing. For example, in the past, they were saying that it is found in the blood and one can get COVID but can I justify how that happens, no so in this case for you to tell a person, you can be afraid that what if they ask me what happens in the blood, how would I answer, so it is about 85%. Let's come to testing; I do not know what is happening during testing, I only know they take samples and samples are taken from mucous from nostrils but I cannot say that testing happens like this and this, I do not know. What if a client asked me about testing, what would I answer so 85%." Interviewer: "How prepared are you to talk to women about COVID-19?" R2: "I would also say 85% because if a pregnant woman asks me what would I say. Would a woman during delivery transmit COVID to an infant?" Interviewer: "So what kind of help are you looking for in order to reach the 100%?" R2: "The 100%, I think what I can say is that we need to also be taught, we need to be taught properly because when we give information at the call center we are suppose to be well trained. If a woman asks me that can I transmit COVID-19 to an infant, what would I say? I need to have justifications when answering that is why we need to be well trained. This is not a place that you can just talk, that is already on paper which we give out in the streets because I can read but understanding, so there is a need of a section, where an experts needs to explain, to explain on how long the virus survives on a hard surface but I cannot give the answer."
	Interviewer: "If anything, you would have love to be added to that training to be better." R6: "Only, because the training was the brief one, they just give us knowledge on how COVID is spread, transmitted, prevention and history that was a brief one but management of that patient, they don't say but according to you, you just information because you're not first line, yaah." Interviewer: "Why do you think you need similar information with first line respondent?" R6: "Okay, because if you have a similar training, because we come from the community, where we come from, we're also nurses there other people they come to us for help, advice not only we do this in our office hotline, in our community we also provide information to people who need information, yaah so we need to provide information, we finally most of the patient in our isolation center, we just take critical one, is the one we admit there, their testing positive they're self-isolation at home, we need to bring information to the career of that patient."

 Need information about the vaccine	R9: "In terms of COVID, maybe treatment, of course we know there is no treatment, they are researches on vaccines so maybe on that because when people are calling us they know things and even better than us and someone will call you , I have seen this and this on the news, what can you tell? They want assurance to confirm something because they can read everywhere but they want to get assurance. So maybe if there is something happening, research about COVID, we should be trained on those so that we should be able to give accurate information."
	Interviewer: "Are there any changes that you know now that you need to be updated?" R7: "Yeah, I've just heard of a COVID vaccine, a thing that I've never been updated on, yeah we just hear on social medias some pictures news or USA COVID so, so, so, vaccine has been stocked, some of the information that I was supposed to have, because people calls, 'I've heard of COVID vaccine somewhere and I'll be like blank so, sure..."
 General sense of lacking updated information	R11: "I would say this CORONA thing has just come in, it's just a new thing, we're just learning most the things and we were only enlightened on this COVID-19 once, just for some 2 days, yeah that was the only time we had a discussion, it was done by health education we were just be there, so but it was just like an orientation to say this is our orientation to you on CORONA virus, so since then we haven't had like any deep training on what CORONA is, yeah, on what people ask us when they call and ask us, usually are the same things about prevention, transmission, may be just the statistics now, yeah so." Interviewer: "What topics did the orientation cover?" R11: "It covered about these things that I have mentioned and the statistics were able to update on our group they are always put there so am fine but if there was an opportunity to do more, I think it could be necessary because you explain better what you understand better" Interviewer: "So, what kind of gaps or areas if you know if the caller asking about these things can be confusing?" R11: "I think on experience from what they've been asking me, I think am okay, there haven't been something that has been really bothering me to say I have no idea what this is so I think." R11: "Yeah, I heard there is a vaccine but I don't know anything about the vaccine as it is to say how is it given what is it in it, or what are the effects because we know that usually if there's a vaccine, we know that there might be some effects that may come with it, usually I don't know." Interviewer: "So, if a caller called?" R11: "Then I would say, I don't know, let's wait." Interviewer: "So, what needs to happen?" R11: "I think there's this we've always said before to say if there's something that has come up, if there's something new then you need to be talking time, because people they don't know that I don't know that so they want, they ask about anything whether they've just heard it on radio they call and ask but I haven't listened to the radio myself I don't, so if there is anything new that has come up in relation to health or anything at least they should make sure that information gets to us quick so that we should be able to answer."
	R12: "Yes as of now I might be able to tell them even though some researches are being conducted and we have to be given some information mostly on pregnancy and breast feeding. Since we know that the risk is low but we still have to know and if they are any changes like of this vaccine. Maybe I might receive a call like this vaccine will it affect the fetus or will it only affect me or will I be the only one to benefit from this vaccine. Such things if there are any changes, somehow we need to be notified."

	R3: "[When we had the training] was just early days of COVID-19...yeah, and a lot has changed and has happened...so many things have happened that we have not yet received anything about it, see after that orientation...that's the challenge."
	R1: "There is change about COVID-19 each and every day so there is need for training, that is what we are talking about, because everything that people hear about COVID-19, they ask us and we have no information."
	Interviewer: "If you are to change anything how the briefings could be done, what could it be?" R8: "I would just request to have more time on these things; being a new disease we were supposed to have time to be taught about it, because some other information we got it from reading."

CALLERS AND COVID-19

Demand patterns

Universally, HLWs reported that a very high proportion of the calls they field are related to COVID-19. Table 11 underscores just how popular CCPF has become for COVID-19 questions, crowding out other types of calls, including antenatal and obstetric emergency calls (see Table 3 also). It was often in response to an earlier interview question about how common obstetric emergency calls are that many HLWs took the opportunity to share how much demand and types of calls have shifted since the onset of COVID-19. HLWs noted that it is as if callers only think they can get COVID-19 information from the hotline, as so many are asking about it.

TABLE 11: HOW COVID-19 QUESTIONS DOMINATE THE CALLS ANSWERED BY HLWS

	Illustrative quote
 Majority of calls are questions about COVID-19	Interviewer: "Would you say they are similar or you have seen some change To the kind of questions that are coming?" R3: "Yeah, there is that change, Long time ago we used to have several questions Obstetric, youth friendly the people asking about Obstetric and youth friendly services, nutrition and other general issues but with COVID-19 we have seen that everything has really changed we can answer 100 COVID-19 in a day."
	R4: "Right now, people are just calling about CORONA virus, they have forgotten that we have some other conditions, yeah." Interviewer: "So, you don't have pregnant women calling then?" R4: "Yeah, right now, may as of now but January, mmh, July, August, September, you can just come on the day shift and answering COVID, COVID, COVID."
	Interviewer: "How common or rare would you say it is for women to call CCP if there's an obs emergency, is it common is it rare?" R7: "Yeah, it is common, yeah...except in these periods of COVID, I can't know why, is it people are concentrating on COVID or caller's of obstetric emergency are those that are hanging up due to the congestion I don't know." Interviewer: "But your view in the past you used to?" R7: "Yeah, I could answer like, 'am feeling stomach pains, am losing blood."

	R8: “COVID-19 has overturned all the problems which people call CCP.COVID-19 now days, we are receiving a lot of calls about COVID-19 comparing to other problems which people face out there but they call." ... Interviewer: "So you think it is possible women with other issues are trying to call but then because the lines are always congested?" R8: "I believe like that since COVID came we have having less women calling with ante natal issues.”
	R11: “There has been that great change because we’ve received more calls on CORONA than pregnancy, previously we used to receive more calls sexual and reproductive issues but this time around we’re receiving more calls on CORONA virus, so there’s that big gap I think, yeah." Interviewer: "And what do you think is the reason?" R11: "I think the reason is that CORONA has just come in, it’s a new thing so people are eager to get more information on CORONA may be than other things that were there before I think that’s the reason and there are those fears, the fear of CORONA was too much at some point, so I think that has affected the how people call us.”
	Interviewer: “How common or rare is for women to call CCP with an obs emergency? Do you think you have more or less cases of obs emergencies?" R12: "We had more in recent months but due to this COVID-19 they were less, normally people these few months call on COVID-19 and in the community there is this misconception that CCP is for corona. They call it the mobile clinic for corona. Maybe because there was less sensitization or awareness of this that’s all, normally we had more cases on COVID-19 than obs emergencies." ... there is an decrease [in obstetric emergency calls], few called
	Interviewer: "Why do you think that is the case?" R12: "This period CCPF people are taking it as only for COVID-19.People only call to ask about symptom, to know that the woman is pregnant we normally know when we are filling the system when documenting, we ask are you pregnant the is when we also know that the woman who is calling even though she is asking about the signs and symptoms of COVID-19 and she is also pregnant. That is when we rule out that she is pregnant but the woman only called to ask about COVID-19. Few will call with this COVID-19 that will it affect my baby inside just as it can be done with HIV?”

Knowledge on COVID-19

HLWs were asked whether they have observed shifts in how much/what callers know about COVID-19 from the start of the pandemic until now (December 2020). Many of the HLWs reported that they have noticed callers' knowledge increasing since the start of the pandemic. Six HLWs explained that they know this because before answering the callers' questions, they ask the caller to share what they know on the subject—as time has gone on, they have noticed callers having more information about how COVID-19 is prevented and transmitted.

TABLE 12: CALLERS' COVID-19 KNOWLEDGE INCREASING

	Illustrative quote
Callers' knowledge on COVID-19 is increasing	R2: "Actually if a person calls me in this period of COVID, I just not give the information that I have because I know that information of COVID. What I do is asking that person questions so that I probe on what that person knows about and you then realize that the person knows already about the information you were going to give her. So this is just showing that people know, when we say COVID people know how it is transmitted."
	Interviewer: "Would you say that people have becoming more familiar with how Corona Virus is transmitted? Its symptoms perception etc." R3: "Yeah." Interviewer: "You think so? Are you sure? How do you know?" R3: "Most of the times people do call asking of the same so before you give information, so you say let's assess what she or he know about symptoms, so you hear they are expressing all the symptoms all the prevention measures. so, you say ok those are the things we have for and you add some of the things that maybe she or he has not mentioned."
	R6: "Yaah because we ask the caller to e= explain us the signs, prevention how COVID is prevented , before, according to myself before I answer that question I ask that client, can you explain what you know about COVID what about the prevention, you find they're explaining all the prevention measures, then you say its true but you forgot this apart from, you find people have information but they want to compare what they have and all is said there is that true, may be they heard on the radio or they heard on someone but they don't trust they call they want to compare but the information is there."
	R9: "Yes because when they call, it's been there since march, at first we used to tell them everything from way go to the last but now when they call, of course there been messaging at churches , villages and on the radio. We know people know something so we can't just be saying COVID is this and this; so what do you want to know, what have you heard and so they start to say what they have heard and then you take off from there , most people say it all."
	R11: "Yeah, they're becoming more familiar, okay, so previously when they call when we ask them what do you know about CORONA, usually they wouldn't know much, but now they call us, then you ask them about CORONA you're just trying to find out what do they already know or now if you ask them, they are able to tell this is how is transmitted, this is how we can prevent it, so I think now I think it's better than it was 2 or 3 months ago."

Facility-based experiences with COVID-19

When prompted to share any care experiences or concerns that callers may pass along, HLWs did not have much to share other than complaints they have received. Two HLWs shared they have heard complaints from callers about health workers not wearing masks, and 1 HLW found it hard to believe, but heard from a caller that their nearest health facility was shut down due to COVID-19.

TABLE 13: CALLERS' EXPERIENCES WITH FACILITY CARE DURING COVID-19

	Illustrative quote
 Health workers not wearing masks	Interviewer: "Do you had a caller commenting on that? What they see in their health center?" R3: "Yeah of course I have but what callers call for is not that, precaution measures are being followed at the facility but that there are no precaution measures at the facility. Interviewer: so they do complain." R3: "Yeah, they do complain." Interviewer: "On mobile clinic?" R3: "Yes, to say those health personnel they encourage us to put on mask why are they themselves not putting on mask?" Interviewer: "So, the talk about a place not being safe there?" R3: "Yeah, yes, they do." Interviewer: "Ok so what your advice on that case?" H: "Of course, uh we admit to say everyone must put on protective measures whether it's a health worker and even somebody who came to get assistance so for them we say that is not right. yeah, we say that is not right everyone has to put on a mask, so because if you can say for, them not be putting on a mask but you should be putting on a mask then it frustrates them to say why are they asking them to put on a mask while you are not putting on a mask." Interviewer: "So, are you able to help over the phone?" R3: "We always give assurance. we always give assurance to say yeah observation is good they were not supposed to do that everyone was supposed to put on a mask." Interviewer: "But why are they calling you? They are calling you in order for you to help them, isn't?" R3: "Yeah, every issue concerning all the hospitals around, concerning the DHOs. uh health center they call expression the problems that are there some which we cannot assist but we just give assurance to say this is the way to go, you have to follow this this this so that they should be they should see that we have really assisted them." Interviewer: "[laughs] but they are complaining about a health worker, right?" R3: "Yeah, sometimes if they are complaining somebody at the facility, we refer them to the DHO. Yeah, we say you can go to these people that are within your area that if you can express all these problem to them these ate the people who can assist you because we cannot come there and do whatever you want to be done."

	Interviewer: “Have you ever spoken to anyone who has commented to the kind of precautions taken in the health facility? Like telling you, ooh no I saw them putting masks and do this." R12: "In health facilities or..." Interviewer: "Just a caller telling you their experience in seeking care at a facility during this time of COVID and what their experience was like." R12: "I only received one but it was a complaint...she was complaining that during this month when the cases are dropping, she went to the health facility, I don’t know which department but when she went there, the nurse did not put on a mask and she was like this happened and I saw some other health care workers did not put on masks. Interviewer; so the caller did not feel safe. So what was your advice?" R12: "I had to tell her that no COVID-19 is still there , it may be some cases maybe the health care worker may have thought that she has put on mask. Ha ha ha." Interviewer: "Ha ha ha so you are trying to find an excuse for the health worker." R12: "But sometimes it happens, you may think you have put on something when you have not, so I had to tell him and I had to tell him that no COVID is still there." Interviewer: "Did the caller accept your explanation?" R12: "Yes we had a long talk."
 Facility closed due to COVID-19	Interviewer: “Have pregnant women shared anything about being hesitant to attend antennal clinic or to deliver in a health clinic?" R5: "Uh I really really, yeah there was one but it was hard to believe." R5: "Ok, yeah, they said that during COVID-19 I have just forgotten the district but there not being provided with any health services they said there was COVID-19 they have shut down the hospital." Interviewer: "So, this was a caller telling you that?" R5: "Yeah, But I have really forgotten the uh facility and the district, I received one." Interviewer: "So, what did you do?" R5: "Uh I tried to probe more by they they could not give actual information... they were saying that the clinician and the health care worker were tested positive for COVID-19. By then I did not have actual proof so I only told them if there another nearest health facility they should go there because I did not have real information concerning that health facility." Interviewer: "Ok so in this case they went to seek a service from the facility and they claim the facility was closed due to COVID-19?" R5: "Yeah because of COVID-19.”

Questions, fears, and myths regarding maternal health and COVID-19

HLWs were asked how common it is for women to call with maternal health questions regarding COVID-19. HLWs indicated this does occur, and they shared examples of common questions, fears, and myths, they tendtohearfrompregnantwomen. Note that one of the questions specifically asked whether HLW sever fielded a call from a woman who was hesitant to seek care in person and thus more HLWs may have shared on this theme because it was a pointed question. Table 14 features common questions and fears regarding the intersection of maternal health and COVID-19 as well as HLW responses to them, and Table 15 highlights the myths and misconceptions that HLWs have heard from callers.

- Overall the key maternal health questions and concerns that HLWs field are in regards to:
  - Hesitancy or confusion around attending antenatal care in person or delivery in facility
  - Concerns about passing COVID-19 to a fetus, or to a baby during delivery or breastfeeding
  - Whether pregnant women should social distance from their husbands

In terms of the responses that HLWs gave to callers, the responses were generally accurate and appropriate. In one instance, the HLW mentioned that if the mother is "treated" she will not pass COVID-19 to her baby, but it is worth noting that COVID-19 can be managed but not officially treated or cured. Another HLW respondent implied they might recommend formula to a mother who was concerned about passing COVID-19 to her baby, but the current recommendations are to continue breastfeeding. Enhanced training on COVID-19 and maternal health, as expounded on below, should address these misconceptions that HLWs may have.

TABLE 14: MATERNAL HEALTH QUESTIONS AND FEARS RELATED TO COVID-19 AND HLW RESPONSES

Questions and fears	Illustrative quote
 Hesitancy or confusion about seeking antenatal or delivery care in-person	R2: "March, April May, when COVID cases, May, June when cases were on the higher side most women were saying that if I go there they will get COVID. They will say that we have not started to go to scale because in the hospital people are busy and they are also saying that we should not be many. But we give them proper counselling that they should not be doing that. Why? Because going early at scale helps and one of it is identification of obs emergencies because we are able to know that these have low blood and if we do not act early, it might cause problems in future and might have low blood during delivering or might bleed and might die. So we tell them to go early to the hospital."
	R1: "They are saying that they are afraid to go at the hospital because the corona is at the hospital. They think that corona is at the hospital." Interviewer: "So how do you counsel such clients?" R1: "We do explain to them that corona is not at the hospital, it is everywhere and you just need to prevent, wash hands, social distance, yeah..." Interviewer: "Have you seen the pregnancy questions changing over time during the pandemic? Have the questions been changing or it is the same questions?" R1: "They are the same questions and some are the ones I have been saying that some are failing to go to the hospital because they think corona is there. Those are the questions that are asked now that there is corona."
	Interviewer: "Have you ever received a call from a client and the client was hesitant to go or worried to go to antenatal clinic or to deliver in a health facility?" R6: "I did not have the call yet I heard in a community we're staying, I can't go to hospital to deliver in a hospital, I said why; she said you health workers your at risk of passing us COVID virus, stigma discrimination, they say you find there's a patient with COVID, how is COVID spread everyone is afraid , they think you are there, a patient is there then you can get infected."
	Interviewer: "Anything else on the myths? Do they have any concerns on COVID that you have heard about?" R9: "Only pertaining to pregnancy, the only thing I have heard about is how is my baby going to be born with this COVID situation when I am at the clinic. So we always assure them that the nurses there are trained and they will handle you with care."

	R12: "And also sensitization of women in the communities, mainly they know that there is CCPF but they do not know how to use it and they need to sensitize them because some may benefit. As I said that others may be scared that, ok I will give an example of this COVID-19. Let's say a woman called to ask about ante-natal care services and when I ask have you started antenatal care and she said no and then I ask her why. She says am afraid to go to the hospital to contract COVID-19. So I had to tell her that there is need to go to the hospital because only asking us, yes we will be able to give her the ante natal information, the baby preparedness information but at the hospital she will be required to receive other things like the TTV vaccine, to be tested if positive or not and she said ooh I didn't know I thought that if I go to the hospital I will find someone with coronavirus...." Interviewer: "You talked about receiving a call were the woman was hesitant about going to health facility for fear of contracting the corona virus. So what kind of counseling do you give?" R12: "First of all I want to read the myth that, when she is going to the hospital that the other clients she is going to sit with have those symptoms of COVID-19. So we have to tell them how they assist with managing by entering at the gate they check if they have the symptoms. So they will be like ooh I thought everyone at the hospital including the nurses since they are in contact with they may have that virus. So I had to counsel her that no even at the hospital they will check first if you have. So I ask her have you either gone in town , you will see people checking with a thermometer, and she was yes that gun and so I said yes they do check and if they are suspicious that these symptoms are COVID-19 related, you are separated to be probing more. But it is safe go to ante natal care to receive your treatment."
	R8: "And another question was about, if a woman with COVID-19 can be allowed to go to the hospital to deliver maybe because of social distancing and other things. This is one of the questions I remember." Interviewer: "Have you met that question only once?" R8: "Yeah it is only once." Interviewer: "What was your advice?" R8: "I said, you can go to the hospital with assistant with medical personnel. If you are pregnant and you have symptoms of COVID-19, you call us and if you confirm that you are COVID-19, go at the hospital but with care of hospital personnel."
 **Can I pass COVID-19 to my baby?** • Transmission in utero • Transmission during delivery • Transmission through breastfeeding	R2: "Most of them are asking questions, that I have been seeing is; should a woman with an infant stop breast feeding? Why are they asking like that, they are usually saying that they can get it through the milk because we are talking of watery fluids so milk is watery? So they are asking that should we stop breast feeding if we are found with it. These are the kind of questions." Interviewer: "So how do you counsel such?" R2: "They should not stop breast feeding."
	R9: "If the baby is born can it get COVID? It's not only women but everyone who ask; can a baby get COVID. So it's a yes everyone can get COVID and mostly it's about a baby."
	R10: "The antenatal mothers will ask you that does the COVID-19 transfer, take the woman is COVID-19 positive, does that not transfer from the woman to the baby? And again when the baby is born, when you are breast feeding or maybe, since we advise them on COVID-19, so we tell them to avoid things some body fluids, so they will ask you that should I not be touching my baby and they will tell you that through breast feeding will the baby not get the virus?" Interviewer: "So what advice do you give to such women?" R10: "Ok, so mostly when they ask things about blood fluids and things concerning touching, I tell them, I explain to them that mostly when the person is found with COVID -19 there are being taken to an isolation center which means that the baby will be taken care by health care workers. And on the issues like maybe during pregnancy if the baby does gets transmitted with the infection, I explain to them that it is not possible unless during delivery but during delivery the health workers will make sure that the baby is protected from the virus."

	R8: "One question I usually get is if you have COVID-19 is it possible that the baby will also have COVID-19 on delivery? So I use to say no, if you are treated, the baby will not have COVID-19 if you go to deliver, so this is one of the things." Interviewer: "Ok, so how do you counsel these women?" R8: "Uuuh one of the questions is about; is it possible that when you have COVID, you can deliver a live baby? That was one of the questions, so I said that yes you can deliver."
	R5: "There was this one call that they asked about can a baby get COVID-19 when someone is breastfeeding or still in the uterus...that was the question...Can a baby get COVID-19 whilst in the uterus and can a baby get COVID-19 when breastfeeding and how best can you take care of your baby a new born that when you have just delivered during this COVID-19 pandemic" Interviewer: "So, you in terms of uh breast feeding and COVID-19, what your uhhhhhh, how do you counsel this woman?" R5: "First thing you tell them about hygiene, hygiene like the washing of hands thing, breast caring because around the best they need to be clean before they feed the baby." Interviewer: "Ok." R5: "And also, some the worry to say anything that is fluids from the body and you tell them." Interviewer: "Uh" R5: "So, they things tell you the was something that was shared from here that there has not been any prove that a baby can get COVID-19 from breast milk so you also share with the women, but mostly you tell them about the hygiene the cleaning and that they have a baby and not to be making unnecessary movements, going to meeting of which they can miss this all to preventative measures they can also apply to because they have a baby."
	R6: "Yaah, most of the questions, if am COVID positive can I transmit the virus to the baby, what can I do?" Interviewer: "So, what would be your response to the changes you have seen?" R6: "The changes, most of the callers were pregnant women, they need to know how they can prevent the transmission from mother to a baby, let's say like giving birth, breastfeeding yaah, we experience more cause on that." Interviewer: "What is your current, what do you normally say based on what the knowledge you have?" R6: "Okay you ask the question, how old is the baby, the woman is early to buy this, let's say its day old, the woman is able to buy the lactogen if you advise."
	R3: "I think they was that information to say if a woman can breastfeed a baby can't, she transmit the virus to the baby." Interviewer: "How frequent were such calls?" R3: "With the corona it has been a frequent question."
	R12: "About COVID-19, yeah it was during pregnancy or breast feeding, maybe what will happen to my baby if I have COVID-19, will I be able to breast feed my baby or will I be separated." Interviewer: "So what responses do you normally give to such kind of questions? On breast feeding." R12: "On breasting we tell them that the risk are low so she will normally breastfeed but she should follow the protocols of COVID-19, wearing masks, hand washing, yeah such as that." Interviewer: "I cannot recall the other one that you mentioned." R12: "Like the woman is pregnant, just as it is done in HIV , the baby might get the infection when she is in her mother's womb so will it be the same as COVID-19? So we tell them the risks are few."

 Should I social distance from my husband?	R3: "Ok uh yeah ok, the other one is they do ask about whether its right to sleep very close to a man as a family or they should sleep separate." Interviewer: "Is this just a norm sleeping or you are talking about having sex?" R3: "Yeah both." Interviewer: "ok, so it both closeness and... so in terms them sleeping with their husbands what's your advice? What advice do you give them?" R3: "Uh according to some information that we gathered about whether a woman should sleep together with a man. in this period of corona, it was saying that its ok the family can sleep together they should not be separated its ok only if there is someone having symptoms and signs of corona virus then we can say that that one should be separated."
	R2: "For me, the ones that I have faced are the same issues about breastfeeding and the misconceptions maybe are should we stop being with our husband since you are talking about social distance." Interviewer: "So how do you handle that?" R2: "Mind you COVID is not ..... (not clear) we are talking about respiratory so they should not prevent them to be with their husbands because if we do this we are creating a loop hole that men should be going outside the marital homes and if the woman is pregnant she can also be contracted with sexually transmitted diseases, we need to give them the right type of information. If one of them has signs of COVID then they should not be together unless if tested negative but if tested positive, they should wait."

Only 2 HLWs had examples of myths or misconceptions to share, including mistaking the symptoms of COVID-19, and the misconception that pregnant women who get COVID-19 could automatically die. There is no indication of how common these misconceptions are, but the HLWs did talk about with the term "they" rather than one single occurrence.

TABLE 15: MYTHS AND MISCONCEPTIONS REGARDING MATERNAL HEALTH AND COVID-19

Myths and misconceptions	Illustrative quote
 Symptoms include rash and bleeding from eyes and nose	R6: "They COVID, COVID-19 the signs, they say have body rash and the like, yaah but these are local name, I can't translate them to describe the signs we're talking, patient of COVID, they bleed from the eyes and nose, I say no its not COVID." Interviewer: "That's an EBOLA thing." R6: "Yaah, the people they just take the signs of EBOLA, they say COVID have the same signs, I say no, COVID just have cough."
 If pregnant and get COVID-19 could automatically die	R7: "Maybe it's the fear that surround COVID and pregnancy thinking that when you are pregnant and contract COVID you automatically die, just a panic but after being counselled they become better."

SOLUTIONS TO PROVIDING ACCESS TO ACCURATE COVID INFORMATION

HLWs were again asked what levels of the health system could do to improve access to accurate information and quality service, this time in regards to getting accurate information about COVID-19 to pregnant women. Table 15 features the ideas generated by HLWs.

TABLE 15: HOW TO IMPROVE GETTING ACCURATE INFORMATION ON COVID-19 TO PREGNANT WOMEN

Level	Illustrative quote
 **Community** • Sensitization on COVID-19 • Sensitization on CCPF as resource • Community to minimize pregnant women's exposure	R9: "About community, we need more messages about awareness that a pregnant woman need to be taken care of, let's say in rural areas the woman is there to look after the family, goes around to the market so that woman needs to be spared to go around in public places so they should be in less contact with the community."
	R1: "[Awareness] through posters, the chiefs should also have meetings their people. Or the HSAs."
	R7: "Sensitize on CCPF." Interviewer: "Okay, through what we used, one can be us through the phone, sensitize them of the number, yeah, our services that we have, messages and calls, yeah, so on messages."
 **Health system** • Incorporate COVID-19 information into antenatal health education talks • Equip Community Health Workers and other health workers with updated COVID-19 information	Interviewer: "Ahh how relative players can improve getting accurate information from pregnant woman about COVID-19 and pregnancy?" R5: "Okay like aah in the communities they say like mostly in health facilities come for ante – natal services or anything first they are given health education talk, so I feel like if those workers in health centers they could tell them at the end if they did get anything what they have been told either COVID-19 or maternity they should contact 54747. And so here when they contact us, we usually tell them. We tell them what they have called for and we also tell them select sometimes we messages where can be sent. I feel when they have been told in communities to call 54747 and we tell them to listen to the messages that they get the necessary messages they want."
	R3: "Yeah, even the health center they can have [sensitization], I think they already do that they give health education...they do health information before giving them any help which they have come for." Interviewer: "Is this information available for each and every pregnant woman that comes to the facility? You think?" R3: "Uh I cannot answer on their behalf I don't know now but the hospitals that I have been in I see that it's a routine every pregnant woman passes through health education before receiving every treatment she or he has come for." Interviewer: "So, let's look at pregnant women which particular section of the health sector would handle them in this case. Which section of the health center are we looking at? Interviewer: They have targeted massages for pregnant woman?" R3: "Yeah." Interviewer: "So what you suggest is that they should incorporate COVID-19 massages in their talks?" R3: "Yeah."

	R7: "On the ground there are some health workers, health surveillance assistance, community nurses who're supposed to interact with people directly so those people are supposed to meet people time and again giving information about pregnancy, COVID-19 and those are supposed to be updated with information otherwise they will give information which is not of quality I don't know if am answering or I have missed the question."
 **CCPF** • Adjust hotline software to include more searchable content on COVID-19 • Provide internet at CCPF for COVID-19 research • Refresher trainings for HLWs • Motivation for HLWs	R2: "To search for the proper information like us we need to search for the proper information to give people the accurate information." Interviewer: "Apart from the hotline what should the whole system do? Not just at the individual level." R2: "I should appreciate they considered us and put a leaflet in our system for references, let's say COVID and you are stuck somewhere, there is a reference but it is important that we should not be tongue tied and be restricted to this information as I said it's like a handout and you cannot find a lot of information in hand-outs at least we could go to other pages where we could search information, currently you cannot search."
	R5: "I think that if there are training, we should get them in order to get that update information like of now I was hearing that the focus in antenatal care where women are supposed to go to antenatal, I think each and every month when they are pregnant but for me, I only learnt from school they are supposed to go three times to four times first school. now people have gone to trainings they have to go each and every month to the hospital of the pregnancy so I feel there can be a gap as of now we all know they have to go each and every trimester first, second and third or four times but now I think guidelines have changed so if we can have refreshers or and like to gain that information."
	R7: "Okay, we need updated information, full packed training, so that we have full packed information about our community, pregnant women, we need motivation we're human beings, we need motivation, come on." Interviewer: "May you describe motivation for me, how would you be motivated, what motivates you." R7: "There are several ways one can get motivated." Interviewer: "Let's begin with one." R7: "Even the training itself it's a motivation, updated information, you have confidence that I have been given appropriate information and I will give accurate information, we talk of in the past weeks we had some incentives like to the best performer, we could be given like anything either T-shirts, they put you on the wall those little things motivates someone, we talk of school, we are given opportunities to go to school, things that can motivate a worker or an employee."
	R8: "We need an internet, internet will help us , of course we have referencing materials but referencing material to be good it has to be updated frequently. So if you want new developments, you have to goggle on net but actually we do not have internet, we cannot access internet. So if we can have internet were we can use it for references, it can also help."
 **HLWs** • Ask each other for support • Have confidence and good attitude	R5: "On their part they should be confident try ask as much as possible where they feel they're not comfortable ones any one they can ask the supervisor or colleagues they are some who can know things among us. Ask is best way." R11: "We as I said earlier, we just need to have the passion to help some one and you need to equip yourself and have the confidence be able to answer any question that people are asking in a specific area, yeah because if you don't know what you're saying it will be hard for the people to get exactly what is needed, just have the confidence and the right information and the right attitude as well."

Improvements implemented at CCPF during COVID-19

HLWs were also asked whether any changes had been implemented at the hotline over the course of the pandemic. Overwhelmingly, HLWs relayed that the hiring of additional HLWs to staff the lines was a huge help to the operations and the quality of service provided. With these additional hires, CCPF is able to field more calls (thus providing better service) and HLWs are not stretched so thin and getting exhausted fielding all the calls as they were in the early days of the pandemic.

Some respondents mentioned new equipment and trainings which made their jobs easier and boosted morale.

Another respondent also added that masks and sanitizers were provided, and social distancing observed. The respondent did seem to imply, however, that maybe this was not possible after the staff doubled in size.

TABLE 16: CHANGES THAT IMPROVED ABILITY FOR HLWS TO DO THEIR WORK AND/OR IMPROVED QUALITY OF SERVICE

	Illustrative quote
 Hired additional HLWs to address surging demand	R11: "Okay yeah, there have been a number of staff here as was increased some people joined us, so I really think that has helped because so there were just so many calls coming there were very few people to answer, I think that change was really great because now we are able to catch so many calls, yeah and at the same time if you over work, you start to get tired then if there a number of you working it means you work and then you break and then someone is working that is also health for us I think the quality is also dependent on your mood because you're talking to someone, so if you're so tired, it's so hard to assist someone, so I think that change the significant change is that there are a number of people here the number of staff increased, yeah."
	R4: "The change is that we're many now as compared to the time I was starting, yeah, we're many, yeah, I heard that GIZ employ people so that we can help people and handle as many people we can, we can reach as many people we can per day because by then when you're on shift may be we're five of us, people are just calling all over the world, so we are exhausted with work, but right now we're many, may be we're 20, so the work now is easier than it was."
	R5: "I think now we are they are more people cause when I was coming in super a lot of stuff were added. I think callers are able to gain more calls in a day. Which means a lot of people are helped? Yah because I heard previous, they were few and some where been left out." Interviewer: "Now you have feeling you are providing better service." R5: "Yah." Interviewer: "There is we can say reduce waiting time." R5: "Yah reduce waiting time." Interviewer: "You think it is no longer an issue?" R5: "It can be an issue and it can be still be an issue cause maybe you can be talking to someone more than five minutes and someone is speaking to someone five minutes or more they can't be that but also network sometimes it really a problem."

	Interviewer: "You see motivation is not a simple work; have there been any changes made during the COVID response period that improved your ability to do your job?" R7: "Yes, a very big change." Interviewer: "What can you describe?" R7: "In terms of human resource, they almost doubled us, some guys who came to join us due to COVID pressure so that was a very good move." Interviewer: "Anything that has helped the quality of service?" R7: "On quality, they brought some new pc's and forms I think donated by UN women, that improved quality on our collecting data, so we could have when we're collecting data the laptops and computers, new phones that we could here properly the clients which older phones we could not hear properly, even that little training that I say boosted our morale, saying I have information on COVID though it was just a brief one."
	R2: "I could say I have seen changes because when I come in march we were19 all time workers but because of the COVID-19 they were a lot of people on the queue so they were other people who assisted and other people signed contracts, so it helped us because when people call and they are on-line for a long time, they get bored and say these people do not answer. So a lot of people come that helped in the job and it simplified work and we know that we have enough time to talk to a person because we know that other are also attending to the calls. So there was a change but also UN women come and assisted us with G2 computers and phones and they also trained us on gender based violence, pregnant women face all sorts of violence."
 **Masks and sanitizer provided**	R3: "Some of the changes that have been made is availability of some resources like masks, sanitizers... we have been given those things in order to protect ourselves and also protect others." ... R3: "Of course, if I can remember well there was this other time the supervisor enforced that we should be sitting at a distance altleast one or two meters from each other." Interviewer: "In the call center?" R3: "Yes, in the call center." Interviewer: "Ok." R3: "But now with the force with the demand of calls that are coming so the company had to add more workers so that we can..."
 **Sharing information on COVID-19 with colleagues** (Convene every 2 weeks to discuss updated information)	R8: "If you are 2 or more you share information, sometimes we have time to share ideas. Anything else that we know about COVID-19, we meet every Friday." Interviewer: "So you meet every Friday?" R8: "Not every day but every fortnight, we used to have presentations so through those presentations."

Final interview comments from hotline workers

When the interviewer asked whether any HLWs had anything to ask or add before ending the interview, HLWs had interesting and inspiring comments to share.

	Illustrative quote
 TNM mobile network users should also have free access to CCPF	R2: "So if the government could do that part that will be helpful on the side of trainings that should be done so that we are updated, we shouldn't just say we are at the call center but thee information is not even updated. So in that case, things will not work. Also TNM should have call center so that people can call everywhere, for free. And for you as well, you should use the information we get and not just employ us and then it ends there."
 Sensitization is needed so people understand the purpose of CCPF	R5: "Yah I think if there was mass communication about mobile clinic and it's aah I think work it's has become tenders' kids below ten years or fifteen years they call just play. So, I think people should really know mobile clinic. Why it is really there? Some people will just abuse it, because it is free line. If they get information why it's there and why is it necessary for the community. because you find out some people will just call to use some obscure languages and it is real and also challenge." Interviewer: "You have an idea how to deal with that?" R5: "Recently some who were using obscure languages now and then were blocked. Yah despite been block people will really know there is mobile clinic. It only does this this I think it can help. It's not only COVID-19 but general health."
 Inspired to think about how to follow- up with clients experiencing medical emergencies & Need for HLWs to be trained with accurate COVID-19 information	R4: "Okay, what I want to say is that, I think, you can pause the, through the interview I have noted that we just come here and work then off we go, we come and work and off we go we don't differentiate that this is an emergency we have to follow up and I have to do this and I have to know how my patient is feeling, on that we do neglect a lot, we have to improve us as hotline workers that's what I've noted and also we need to improve our referral system and also I think to have updated information, we're seen as fore front workers, whatever people hear, either on the radio they call us, so I think on updated information, any news happening or anything to do with health we should be the first ones to be trained or to have information because we receive." ... R4: "I think COVID it seems when the number calls were becoming low, other people not from Machinga but mchinji, I heard that there's a new disease but we don't know that there's a new disease like they also asked that they have found a new vaccine, yet us we don't know, so we're supposed to give the right information because people tell each other in the communities, if you tell them the wrong thing, they also spread the wrong information, yeah, like I remember a certain man from Machinga was calling on the phone concerning circumcision, he was saying that those people conducting circumcision were moving around the community but a certain man was telling me that circumcision can make someone to be unproductive, so if we give them the wrong information the whole village will be affected, so I think us we're lacking information but had it been there was free wi-fi here we would have been searching current news that for example at health what has recently happened, those things can really help us because here data, we don't have good access to it, so that I can download, let's say someone has asked me about a certain condition, sometimes you meet some other conditions that you have the knowledge from school, yeah, the way things are happening now we don't have the knowledge, so I think we have a gap."

 Sparked awareness in HLW that they should be receiving more trainings	R9: "Thanks for the whole interview so, this has also opened my mind that we say; we need to consider more on trainings , mostly on that , give us update, we should give us updates on anything that is happening around COVID and maternal health, that one it will improve our care on the clients."
 Need for an improved referral system	R11: "Okay, I think you're doing well, yeah we are able to reach out to as many people as we can, yeah but I still feel like we can do better, we can improve this is as suggested to say sometimes our referrall system is good because some one calls me and then I said go to the hospital then I don't know when they are going, whether they will go or not so I think if there's that connection between us and the hospitals out there like we're doing with COVID-19 to say we've a number, this is the coordinator who is here who's in Machinga, so you can call direct, so the client calls this one, I think that is good and if that can also be extended I don't know whether it's dowable but we can improve but if there's that communication between us on specific not on every other case on specific cases may be on life taken like these obstetric emergency we need to have people out there may be who can be linking, if we can link up with the person who's having an emergency, so I think we can do better."

Summary of Key Findings

OBSTETRIC EMERGENCIES

- HLWs have a strong understanding of maternal health danger signs and how to identify an obstetric emergency
- HLWs generally feel confident handling such calls, but would like refresher training to ensure they stay current on best practices since it has been some time since they graduated
- Majority of HLWs felt CCPF should be leveraged in emergencies, with the rationale that HLWs can play an important role in helping women identify that they are experiencing a potential maternal health emergency and that they should seek care immediately. HLWs relayed their key actions are to underscore the seriousness of the situation to the woman and any guardian present, and urge her to seek care immediately
- It is unclear how often obstetric emergency calls are placed to the hotline, as it is possible some calls fall off under heavy call traffic, and HLWs had a hard time estimating how many obstetric emergency calls they tend to receive
- HLWs think it is important to follow up with women experiencing emergencies (if call drops during, or afterwards to see how things transpired) but are mostly unclear on whether the protocol and resources still exist to do so
- Many HLWs believe there needs to be a strong referral relationship between CCPF and facilities, and a transport system to help women who they refer to immediate care but who lack the means to travel
- HLWs had ideas for how to improve the quality of care provided to callers with obstetric emergencies (see below)

COVID-19 AND MATERNAL HEALTH

- HLWs underwent a range of training on COVID-19, with some HLWs receiving none and others receiving 2 days of training
- HLWs feel generally confident handling calls about COVID-19 transmission and prevention thanks to MOH training and leaflets
- HLWs feel unprepared to answer any questions about why transmission works a certain way, treatment, and vaccines
- HLWs who found the initial training helpful would like a refresher to better understand what is currently known about the virus
- Demand for information on COVID-19 remains incredibly high—the majority of all incoming calls are regarding COVID-19
- HLWs have noticed callers' knowledge on COVID-19 improving over time. HLWs relayed only a couple misconceptions callers have had about pregnancy and COVID-19
- Some callers have complained about health facility staff not wearing their masks
- Most common questions/concerns from callers about pregnancy and COVID-19 are:
    - Hesitancy or confusion around attending antenatal care in person or delivery in facility
    - Concerns about passing COVID-19 to a fetus, or to a baby during delivery or breastfeeding o Whetherpregnantwomenshouldsocialdis-tancefromtheirhusbands
- HLWs very much appreciated the significant add in staffing to help manage the intense growth in call demand
- HLW implied that with added staff there is less room to distance in the office

Appendix

VILLAGEREACH®

Respondent No

Research on the 1. Management of obstetric emergencies, including postpartum hemorrhage 2. Impact of COVID-19 on maternal health questions, myths, behaviors through Chipatala cha pa Foni (CCPF) health hotline call data

Hotline Workers Interview Guide

Interviewer Introduction

Good morning/afternoon. My name is _____ and I am working with VillageReach, which as you may know is the organization that operated Chipatala cha pa Foni (CCPF) before it became ran by the MOH and supports as requested.

We are participating in a study to understand more about emergency obstetric care in Malawi, and we're also looking at how COVID-19 has impacted the issues and questions coming up for pregnant women. CCPF was recognized as a means that women gain maternal health information, and so we are doing several methods to contribute to the study. We are:

1. Listening to previous calls from women who had a possible obstetric emergency or who wanted to know about COVID

2. Calling past clients to ask about their experience getting maternal health advice from CCPF

3. And finally, conducting interviews with hotline workers to get your perspective on the challenges and successes surrounding Malawian women accessing obstetric information and care and how

COVID-19 has impacted access

We expect to spend about 1 hour discussing together. Know that you can feel free to be open and comfortable to discuss any challenges or concerns, as well as successes that you see. We will not share your name with any ministry departments or other stakeholders. While some findings and quotes may be used for reporting, we will not name who said what.

Also, we will be audio recording the interview and then transcribing it so that the study team can see what was discussed and we can make sure we captured all of your points. We will not record your name on the tape, and we will erase the recording once we have transcribed the audio. The audio recording is done solely for data verification and transcription after the interview but the audio files will not be disseminated or shared. Do you have any questions about this?

Any information or comments that will be shared with the ministry of health, study sponsors or published will be de-identified so that your responses cannot be linked to you.

[i] National Statistical Office (NSO) [Malawi] and ICF. (2017). 2015-16 Malawi Demographic and Health Survey Key Findings. Zomba, Malawi, and Rockville, Maryland, USA. NSO and ICF. https://dhsprogram.com/pubs/pdf/SR237/SR237.pdf

Conclusion

The findings in the present report complement findings across other methods, and key findings and recommendations will be synthesized in an upcoming brief.

This work is part of the Advancing Postpartum Hemorrhage Care (APPHC) partnership supported by USAID and led by the Breakthrough RESEARCH Project and the Health Evaluation and Applied Research Development (HEARD) Project. The APPHC partnership generates and tests solutions to address key implementation barriers for PPH prevention and treatment and contributes to the effective implementation of interventions, strategies, and innovations for PPH in Madagascar and Malawi.
https://iscollab.org/advancing-postpartum-hemorrhage-care/

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USAID's Health Evaluation and Applied Research Development (HEARD) project leverages a global partnership of more than 30 institutions to generate, synthesize, and use evidence to improve the implementation of policies and programs related to USAID priority areas, and crucial for improving health and development in low and middle-income countries.

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