Addressing Barriers to Maternal Health in New Kru Town Liberia using Participatory Action Research

Report

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Theresa Jones, International Rescue Committee
Rene Loewenson, Training and Research Support Centre
John Shakpeh, Redemption Hospital
Kelvin Koffa Kun, New Kru Town
Penelope Milsom, International Rescue Committee
with participating community members, community leaders, and health workers in New Kru Town

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Roles and acknowledgements:

Design – TARSC and IRC, specifically Penelope Milsom, Lara Ho & Rene Loewenson

Training – TARSC and IRC

Facilitation – Lucretia Kokoi, Roseline Broh, Susie Saytue, Finda Halay, Priscilla Gray, Rosetta Brown, S. Tugbeh Worjloh, Thomas Snyder, Anita Varney, Gloria Togba, Kelvin Kun

Actions – Redemption Hospital, New Kru Town, District/County Health Teams, Ministry of Health

Co-ordination – Nelson Sekeh, Nina Page, Sarah Wakai, Susan Wambui, Martha J. Dugbeh, Don Musepe, Maria Freeman, Theresa Jaryenneh, Susie Saytue, Finda Halay, Kelvin Kun, Gloria Togba, Lucretia Kokoi, Roseline Broh

Reporting and review – IRC, TARSC, Redemption Hospital, New Kru Town

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The full protocol and recording book can be obtained from IRC (theresa.jones@rescue.org) or TARSC (admin@tarsc.org)

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Executive Summary

In March 2014 the most deadly and widespread Ebola epidemic ever recorded entered Liberia. Without the capacity to contain or withstand the virus, numerous health facilities across the country restricted services or shut down entirely. This included selected services at Redemption Hospital, the capital city's largest public hospital located in New Kru Town, an area of high Ebola transmission within the country's capital, Monrovia. After Redemption Hospital re-opened, obstetric health service utilization had considerably declined as compared to pre-Ebola, while, antenatal service utilization remained largely unchanged.

In this research International Rescue Committee (IRC), Training and Research Support Centre (TARSC), New Kru Town Council and community sought to address barriers to timely and safe maternal health services using through participatory action research (PAR). It brought together in 2015 pregnant women, community leaders, TTMs, TBAs, and Redemption Hospital maternal healthcare workers to **i**dentify the needs, desired outcomes, services for maternal health and the factors affecting them; to analyze how the Ebola epidemic affected these needs and services, how different actors responded to the impacts and to identify, plan and implement actions that address these weaknesses and strengthen positive practice, supported by co-ordination, monitoring and learning from action involving these key stakeholders. Stage 1 PAR meetings were held for the different groups separately on current maternal health needs and services, the impact of the Ebola epidemic and the priority issues for service improvement. A Stage 2 PAR meeting brought all groups together to identify common priorities, a shared action plan and a co-ordinating mechanism to review actions against progress markers set. A likert scale survey was implemented before and four months after the intervention.

The findings highlighted that social determinants of maternal health were less well recognized by hospital personnel than community members. Many factors identified that weakened maternal health - including weak primary care services, poor communication between health workers and communities or TTMs/TBAs - existed before the Ebola epidemic, and were intensified by it. There was, however, a positive shift reported during the epidemic in male support during deliveries. Participants identified shared priorities for actions to: improve collaboration and training between the hospital and TTMs/TBAs; strengthen primary care facilities, and use community drama to strengthen communication with services. These actions were initiated by those involved between September and December 2015.

A review by stakeholders after four months against progress markers found high agreement that the communication and interaction between communities and health services improved, as did the quality of hospital services. However, the primary care services remained weak and under-utilized and hospital beds inadequate. The actions are thus continuing in 2016.

Findings from the PAR workshops, from the a baseline and follow-up survey and facility indicators suggested a high agreement on the improvements made in communication between stakeholder groups and in the relationship between the health system and the community and in community participation in maternal health. There was also an improvement found in the perceived quality of services at Redemption Hospital, particularly in terms of respectful communication between staff and pregnant women, and the reduction of demand for informal fees. Nevertheless, the issue of access to delivery beds remains critical, with Redemption currently only accommodating 50% of the deliveries it took before Ebola, and a still weak, under-utilized primary health structure in the rest of New Kru Town.

The findings indicate that the Ebola epidemic worsened existing weaknesses in maternal health services, but also provided an opportunity to address them. A review meeting in December 2015 called for the work to continue into 2016; to further support local clinics, further reinforce positive communication and relationships between different levels of the system, including between TTMs and TBAs and the health services, and to ensure ongoing community participation in health systems.

Specific recommendations were made by the PAR participants from New Kru Town, Redemption Hospital and the District and County Health Reproductive teams at local and national level:

At the Local Level:

a. To continue the New Kru Town Participatory Action Research project activities for at least another 12 months into 2016 in-line with actions highlighted by the PAR participants;
b. Increase the options to access safe delivery in New Kru Town and specifically to increase the number of beds for delivery at Redemption Hospital, or at a site that can cater for the needs of New Kru Town, Bushrod Island and referrals from wider Monrovia;
c. Increase accessibility and quality of Primary Health Care services in New Kru Town.

At the National Level

a. Address the shortfall in health workers at community and primary care level, by training more certified midwives through facilitating shorter courses and a bigger number of recruitment opportunities and reviewing the role of TTMs and TBAs to train and supervise them to support safe deliveries, work with and refer women to services;
b. Fully appreciate and address the non-physical social and psychological determinants that are barriers to health care not only for maternal health but for all health services. The PAR process reaffirmed the range of social factors that are seen as important for improved health and that are powerful barriers to women seeking safe deliveries;
c. Encourage respectful communication between service users and healthcare workers, including by integrating these competencies within health worker training;
d. Recognize and actively engage with community structures, including in urban settings; and
e. Engage men more actively in maternal health and other health system activities, to encourage their support of and involvement in health promoting practices.

While it is not possible to generalize the specific results to other areas, it is possible to transfer insights and learning. This project exemplifies that in order to respond to emergencies such as the Ebola epidemic effectively, maternal health systems need strong relationships between all of its different levels. PAR is one way to generate evidence, social change and more meaningful forms of community and health worker participation that can support more resilient and responsive health systems necessary to address the needs of the most vulnerable during times of crisis. The findings suggest that PAR methods can be used effectively in low-resource settings, but also in post-crisis contexts, where health systems need to be rebuilt in a way that makes them responsive to current needs and resilient to future crisis.

1. Background

In March 2014 the most deadly and widespread Ebola epidemic ever recorded entered Liberia. Without the capacity to contain or withstand the virus, numerous health facilities across the country restricted services or shut down entirely. This included selected services at Redemption Hospital, the capital city's largest public hospital located in New Kru Town, an area of high Ebola transmission within the country's capital, Monrovia.

Issues of denial of the virus existence and rumors of it being brought by health workers were prevalent, leading to clashes between New Kru Town community members and Redemption Hospital staff. In July 2014 Redemption hospital in-patient services closed, which included a mass withdrawal of facility-based life-saving basic and comprehensive emergency obstetric care (EmOC). The subsequent Ebola response strategy neglected to address this and essential services remained unavailable for a period of approximately six months between July and December 2014. When the hospital closed, anecdotal evidence suggests community-based midwives and traditional birth attendants (TBAs) mobilized to fill the resulting gap in care. Some pregnant women faced significant delays before care was provided and received insufficient or, at times, no care, sometimes with fatal consequences. The health workforce were themselves exposed to significant personal and professional challenges relating to the outbreak.

After Redemption Hospital re-opened, obstetric health service utilization had considerably declined as compared to pre-Ebola, while, antenatal service utilization remained largely unchanged. New Ebola infection and prevention control (IPC) measures, including limiting one person per bed and minimum distances between beds, resulted in reduced capacity to accommodate all women arriving to deliver at the hospital, and possibly deterred others from seeking care. In 2013, prior to Ebola, Redemption Hospital facilitated an average of 331 normal vaginal deliveries per month and while numbers have steadily increased since reopening, in July 2015 they were still at only at 42% of the pre-EVD average monthly delivery rate.

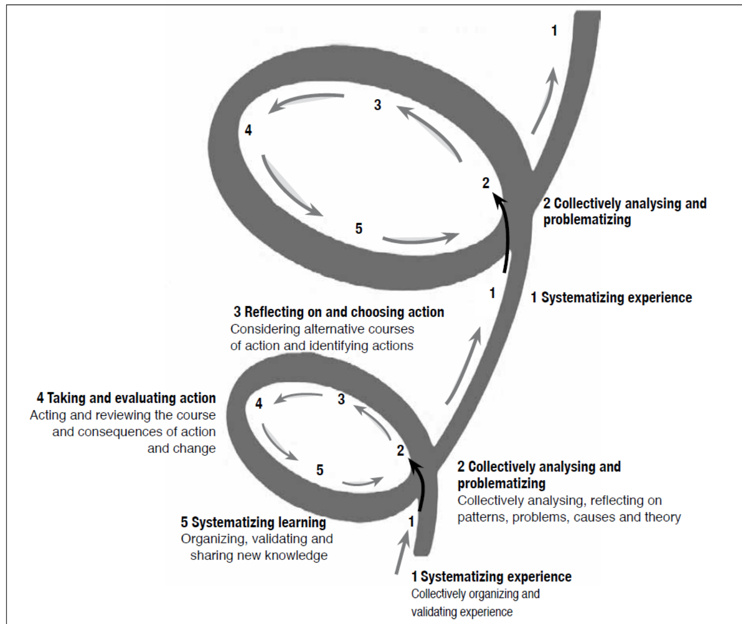
A number of factors related to the Ebola epidemic likely contributed to significant disruption and breakdown in trust in the already tenuous relationship between the public health system and the community. Community trust appeared to have increased in community-based traditional birth attendants (TBAs), who lack formal training, are discouraged to practice home deliveries by the Ministry of Health (MOH), and have difficulty referring to higher level facilities, as well as trained traditional midwives (TTMs) who although they have received basic training on maternal health, are still supposed to refer women to facilities for delivery. In addition, physical and financial factors continue to represent barriers to health service utilization across New Kru Town.

This research sought to address barriers to timely and safe maternal health services using participatory action research.[1] This methodology aims to address power dynamics and build relationships and communication between stakeholder groups in the New Kru Town community and the health system. It facilitates participants to be researchers themselves, to generate and use their own knowledge of the local context to improve access to and quality of maternal health services. PAR as an approach was identified as relevant to this work as it:

[1] Loewenson R, Laurell AC, Hogstedt C, D'Ambruoso L, Shroff Z (2014) Participatory action research in health systems: a methods reader, TARSC, AHPSR, WHO, IDRC Canada, EQUINET, Harare www.equinetafrica.org/bibl/docs/PAR%20Methods%20Reader2014%20for%20web.pdf

- Draws on and organizes the experience of those directly affected by a problem as the primary actors in generating and using the knowledge for action,
- Builds shared collective analysis on relationships and causes of problems.
- Involves developing, implementing, and reflecting on actions to produce and learn from change (See Figure 1).

Figure 1: The cyclical and spiral process of participatory action research



Source: Loewenson et al 2014, used with permission

The process helps to generate knowledge on barriers, but also builds confidence, communication and trust across those involved in strengthening maternal health services, including women in the community, to identify and act on their shared analysis. This potential of PAR was found in the work of the learning network on PAR in east and southern Africa in EQUINET, whose experience and tools informed the work in Monrovia.

Aims

The overall goals for the work were to:

1. Improve and sustain communication between New Kru Town community and the health system
2. Build facilitation skills for PAR in health and community actors in New Kru Town
3. Identify shared ideas for action, and have sustained participation in improving services for maternal health in the post-Ebola context

Specific objectives for the work were to facilitate all relevant stakeholders in New Kru Town for maternal health, including pregnant women, community leaders, TTMs, TBAs, and Redemption Hospital maternal healthcare workers to**:**

1. Identify the needs, desired outcomes, services for maternal health and the factors affecting them;

2. Identify and analyze how the Ebola epidemic affected the needs and services for maternal health, how different actors responded to these impacts and the priority issues to address to improve services;
3. Identify and implement actions that address these weaknesses/gaps or that strengthen positive practice
4. Establish a sustainable approach to collaborative co-ordination of, monitoring of progress and learning from action on an agreed action plan.

2. Methods

Prior to the PAR process initial separate meetings were held between IRC and representatives and leaders of the community, the women and the management of the health workers and Ministry of Health to discuss the research and its process/ broad steps, the roles and ethical framework, who will be involved in each of the three groups and to obtain informed consent from those involved. The participants for the PAR process were drawn from key stakeholder groups affected by maternal health services or important actors of change in the system, informed by initial situational analyses. Community Introductory meetings were held with these groups to introduce the PAR process and to decide how to select participants. The groups included:

1) Pregnant women in New Kru town – including strata from all child-bearing age groups.
2) Women community leaders – representing the 25 New Kru Town communities
3) Traditional Trained Midwives (TTMs) and untrained Traditional Birthing Assistants (TBAs)
4) Male councilmen[2]
5) Redemption Hospital health care workers from both the obstetric and antenatal care (ANC) services

Research Design:

A protocol for the PAR work was developed using methods that had been tested in similar PAR processes in Africa in EQUINET[3]. The protocol was reviewed by IRC, community leaders, and health sector managers, and by ethical review committees in IRC and Liberia. A total of 7 representatives from across the different stakeholder groups were trained by TARSC as co-facilitators of the process along with 4 members of the IRC psychosocial team. These individuals volunteered for this role during the introductory meetings, and were approved by their respective groups. The facilitators received mentoring by IRC and TARSC and peer review support from co-facilitators during the process.

The aims were addressed in several stages.

- In the first stage separate two day meetings were held with (i) pregnant women, (ii) community leaders, community-based midwives, traditional birth attendants, community based organization representatives and councilmen and (iii) Redemption Hospital maternal health care workers from the obstetric and antenatal services, (See *Table 1a*) using PAR approaches to

[2] Elected local administrators and traditional leaders.
[3] Loewenson R., B. Kaim, F. Chikomo [TARSC], S. Mbuyita and A. Makemba [IHRDC] (2006) Organizing People's Power for Health: Participatory Methods for a People Centred Health System. PRA toolkit, Ideas Studio, South Africa

address specific objectives 1 and 2. Separate meetings were held in the first stage to take into account the power imbalances and possibility of different experience and perceptions between the groups.

- The outcome of the stage 1 meeting was taken back and discussed with the wider group the participants were drawn from and the feedback from this discussion brought to and reviewed in a stage 2 meeting.
- The stage 2 one day meeting brought all groups together to address specific objectives 3 and 4. A subgroup of those attending the stage 1 meeting was selected by each group to limit the total to 39 participants to allow for meaningful levels of participation. Progress markers were used for the identified actions to monitor progress. A monitoring committee of 12 people was established with two to three representatives from each group, and four IRC facilitators.
- The identified actions were implemented over the subsequent three months with review by the identified coordinating group against progress markers and by a wider review meeting held in December 2015 to support the learning from action. The plan also included longer term actions.

A baseline measure was taken of process and output change indicators within the group of PAR participants. The process and output change indicators of the survey included:

- Communication between stakeholders in the community regarding actions for maternal health
- Perceived quality of relationship between the health system and wider community
- Community participation in the health system
- Access to safe maternal delivery services
- Perceived quality of maternal health services

A survey (see Appendix 1) consisting of 19 Likert scale questions and one open ended question was administered before the start of the PAR process and again in December 2015 to 78 of the participants directly involved in the PAR process for short term impact assessment. The same participants as listed in *Table 1* completed the survey, with a dropout of 8 pregnant women and one health worker who were unavailable at the time of data collection. The same survey was given at baseline and is planned to be re-administered after one year to a sample of 150 New Kru Town women aged 15-49 years old (data to be collected July 2016). The sampling used a two stage cluster design with 30 clusters and 5 women within each cluster (see Appendix 2 for more details on sampling method).

The individual findings of the PAR meetings, review meetings and the survey are presented in this report, and triangulation across these findings is discussed.

Table 1 : Participants in Stage 1 meeting

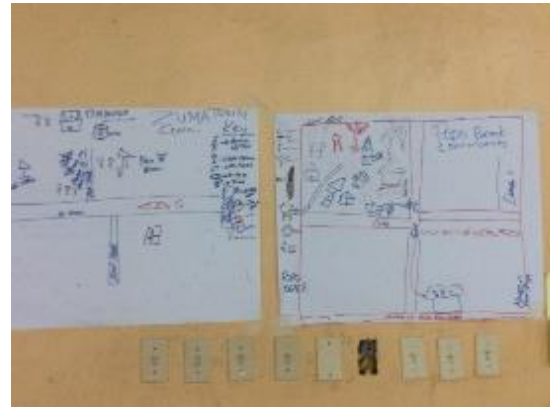
PAR Stage 1 Separate Meetings	Group Composition	
	Female	Male
Health Workers 12 and 13 August 2015	5 ANC 9 OBGYN	1 OBGYN 2 Hospital managers
Community Members 18 and 19 August 2015	10 Leaders 15 TTMs and TBAs	10 Leaders
Pregnant Women 26 and 27 August 2015	35	

Table 2: Participants in Stage 2 meeting

PAR Stage 2 Joint Meeting 2 and 3 September 2015	Group Composition	
	Female	Male
Health Workers	3 ANC 5 OBGYN	1 OBGYN 2 Managers
Community Members	4 Leaders 6 TTMs and TBAs	4 Leaders
Pregnant Women	14	

Specific PAR tools used were as below, with review and discussion of the outcomes, the general patterns and outliers:

- Building a shared understanding of what maternal health means - Picture codes and Pile sorting
- Features of our current maternal health situation - Social mapping
- Current services for maternal health - Venn diagrams
- Problems in maternal health services and impacts of Ebola - Timeline and ranking and scoring
- Priority strengths/ weaknesses - Pairwise ranking
- Current responses to barriers/ factors - Market Place
- Priority areas for action In maternal health services - Revisit the Venn Diagrams
- Shared priorities for follow up actions - Ranking and scoring
- Actions for top 2-3 priority areas of action - Cards and action plan table
- Setting goals and progress markers for the plan - Progress markers
- Showing the benefit of co-operation on the plan - Stepping Stones
- Mechanism for coordination - Buzz groups



Images 1 and 2: Participatory methods used, including Marketplace of Ideas (1) and Social Mapping (2)

Data collection and analysis

All discussions and activities during PAR meetings were recorded by an IRC facilitator in a structured recording book. The materials used were collected and observations of the interactions and process in the meetings were recorded. The discussion content was analyzed using thematic analysis by IRC. The report was drafted by IRC and TARSC and reviewed and contributed to by the PAR facilitators. The findings of the work and key themes derived from the evidence are presented below.

3. <u>Results of the PAR Workshops</u>

Stage 1 Findings: Maternal health needs and services and the impact of Ebola

Using picture codes, the three groups identified key features of maternal health. Across all three groups, common features of maternal health were

- Physical health and being free from pain;

- Social determinants: access to good food; clean environments; personal hygiene and family support. Pregnant women specifically mentioned husband support.
- Health Service determinants: Seeking and accessing treatment when it is needed, including medication

The positive and negative features of maternal health in New Kru Town identified from social mapping are shown in *Table 3* below. Across all groups environments, roads/transport and delivery services were identified as positive features, and nightclubs and other sites of risk of teenage pregnancy as negative. However there was an evident difference between community level participants and hospital workers, in that the former more commonly identified community level services (TTMs and TBAs; churches, schools). The pregnant women, most directly affected by conditions, highlighted food markets as important positive features, and flooding as negative, both not raised by other groups.

Table 3: Positive and negative features for maternal health in New Kru Town

Group	Positive features	Negative features
Pregnant Women	Roads for access to care Wells; Toilets Market to buy food Community-based TTMs, TBAs Church for education Schools for education	Nightclubs Ghettos where rape can happen Flooding
Community members (TTMs, TBAs, Leaders)	Main road access Hand-pumps for hygiene Community-based TTMs, TBAs Drug Stores Redemption Hospital Liberian Electricity Company	Nightclubs and entertainment places that increase the risk of teenage pregnancy
Hospital Staff	Main road access for hospital Hand pumps for hygiene Transportation Drug stores	Over-population and congestion Nightclubs and entertainment places that increase the risk of pregnancy

Important maternal health services and their accessibility

From the Venn diagrams (Image 3) the most important maternal health services for good health outcomes in pregnancy, delivery, and post-natal care identified by all three groups were Redemption Hospital, its midwives, and its pharmacy. They were also identified as the least accessible by all. Notably only pregnant women identified food markets as being an important service, indicating their perception of nutrition as a key factor in material health. Despite there being nine primary health facilities in New Kru Town, none of the groups mentioned these in their Venn diagrams, raising only TTMs, TBAs or Redemption Hospital as services for deliveries (see *Table 4*).

Table 4: Importance, accessibility of and barriers to maternal health services in New Kru Town

Group	Most important maternal health services	Important but hard to access services	Barriers identified to the most important services
Pregnant Women	Hospital Hospital midwives Pharmacy Market	Redemption Hospital Hospital midwives Pharmacy	Only one person/bed so rejected by services if no beds Hospital staff attitudes 'Money business' – hospital staff charging informal fees
Community Members (TTMs, TBAs, Leaders)	Hospital Hospital midwives Nurses Doctors Pharmacy	Redemption Hospital Hospital midwives Nurses Doctors Pharmacy	Fear of giving birth in hospital Not registering at ANC Being unwilling to use hospital services Trusting TTMs more than hospital staff Distance; Transportation problems
Hospital staff	Hospital Ambulance Hospital midwives Pharmacy	Redemption Hospital Hospital midwives Immunisation services Pharmacy Ambulances	People like their traditional practices Women's fear of going to hospital Poor relationship between women and hospital staff

Image 3: Venn diagram of maternal health services from Hospital Staff Stage 1 meeting

All three groups identified a woman's mother and their community's TTM and TBA as less important, but much more accessible to her. All three groups also recognized that a women's husband/boyfriend is less important and less accessible during pregnancy and delivery, but that after the baby is born he becomes closer and is more important, mainly for financial support. In discussion, the community group recognized that during the outbreak some husbands/boyfriends were forced to be more *"hands on"* during delivery, taking the woman to the midwife, or to the hospital when even female relatives and friends became too afraid. Many TTMs reported this to be the first time they had seen so many men accompany a women to their houses during deliveries.

The barriers identified to those services identified as important included lack of transportation, mistrust in health facilities, women's fear of giving birth in hospital, cost barriers, lack of bed availability in the hospital, preference for traditional practices, and hospital staff's attitudes.

Impacts of Ebola on maternal health services

A discussion on a timeline for the Ebola epidemic in Liberia (see Figure 2) led groups to identify impacts of the epidemic on maternal health, with ranking and scoring used to identify the priority impacts and pairwise ranking the factors affecting these impacts (See *Table 5* page 12).

Figure 2: EVD timeline in Liberia used in the PAR

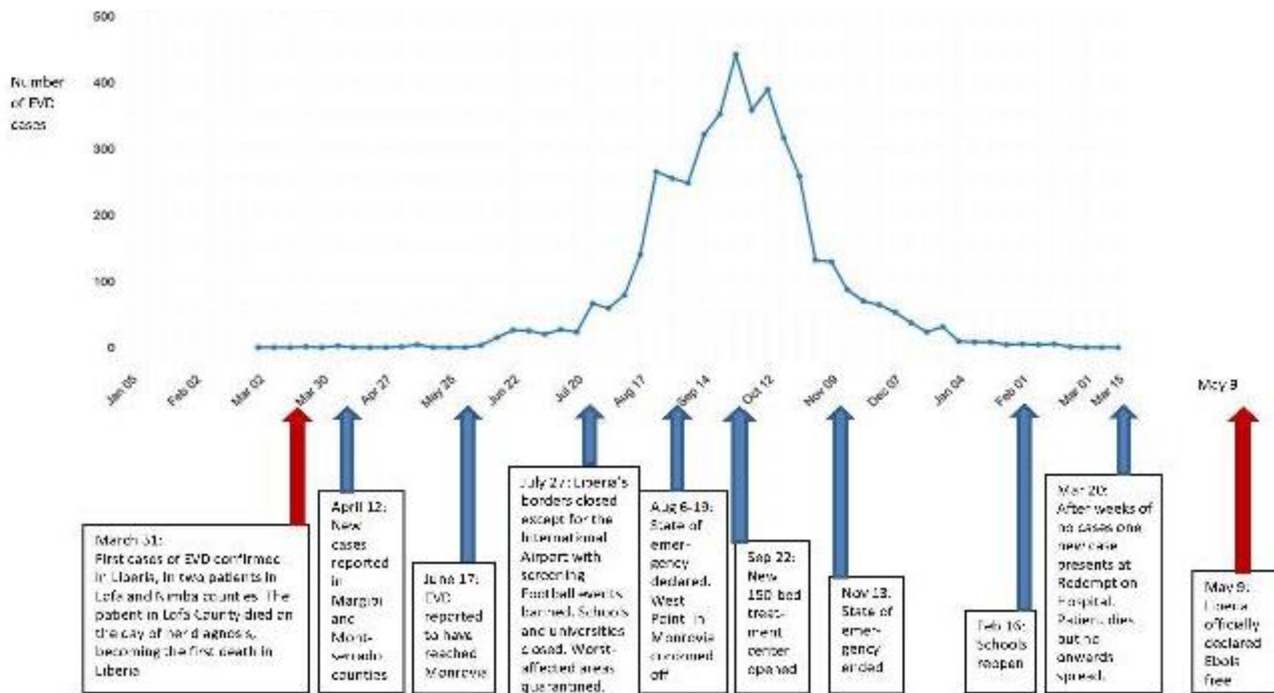


Image 4: Ranking and scoring in the healthcare worker group

During the Stage 1 workshops, all groups acknowledged that during the Ebola outbreak, TTMs and TBAs carried out most deliveries, and that they still do. The pregnant women identified this as being due to new “One person per bed” infection prevention and control protocols in the hospital, reducing the capacity of the delivery room to six women at a time. Prior to Ebola, up to three women might share a bed or women might have to deliver on the floor, explaining the decreased capacity.

Table 5: Main impacts of Ebola on maternal health services, and the factors leading to them

Group	Main impacts of Ebola on maternal health	Perceived main factors for these impacts
Pregnant Women	"Bed business" – Now only one person per bed at hospital limiting bed availability	• "Big men" at the hospital not aware of the problem • Mismanagement of the space that is there
	The approach of healthcare staff to patients has worsened	• Staff charging patients informal fees for services • Healthcare workers lacking passion for their work
TTMs, TBAs and Community Leaders	Lack of safe places for women to deliver	• TTM and TBA houses too small for the demand • No good organization between pregnant women, family, TTMs, TBAs and hospital
	TTMs and TBAs do not feel recognized for their work	• TTMs and TBAs have not had enough training • TTMs and TBAs are not established
Healthcare Workers	Communication and education between the hospital and community has deteriorated	• Hospital management do not meet community leadership • Community leaders do not have a role in the hospital
	Hospital services under high pressure without support from surrounding clinics	• Lack of equipment and trained staff in clinics • No communication between hospital and surrounding clinics

PAR participants did not identity smaller private clinics or government primary health facilities as being services they use (e.g. it was either Redemption or TTM or TBA) so this suggests a significant number were currently delivering outside of a health facility. In the stage 2 meetings, participants from all groups stated that they are either not functioning, or because eight of the nine are private and require payment, and because they lack equipment for deliveries.

In addition to this, during and after the EVD period some key approaches to maternal health care were affected. Due to fear and subsequent "no touch" policies, staff spoke about examinations and labor monitoring being highly restricted. They reported this made it difficult to provide adequate care because they weren't able to fully examine and monitor as they felt was needed. Specifically, essential monitoring tools such as partographs and fetoscopes were barely used and still only in a limited way because they would require touching the laboring woman. This lack of touch also increased tensions and worsened feelings of mistrust between the health workers and community members.

All groups raised as an impact the breakdown in communication between health workers, community level personnel and communities, indicating that the epidemic and its service impacts worsened existing communication gaps and perceptions of negative staff attitudes, as described in *Table 4*. This and the list of factors raised in *Table 5* suggest that many of the factors that were associated with the impacts of Ebola on maternal health were present before and possibly worsened by the epidemic.

Responses to the impacts of Ebola on maternal health services

The groups reported during the market place activity how people and services were currently responding to these impacts.

The Pregnant Women Group reported that TTMs and TBAs have been providing the majority of delivery services, and that Non-governmental organizations, including IRC have been working at Redemption to try to improve the quality of the service, including giving psychosocial support to staff.

The Community Leader, TTM and TBA group reported that TTMs and TBAs are currently making some referrals to the hospital, that they are also still doing deliveries, and that they give education to women on their health during pregnancy. Through a local community-based organization, some pregnant women were carrying on drama performances in the communities to educate other pregnant women about their health

The Health Worker Group reported that there used to be joint meetings between Redemption and TTMs and TBAs before Ebola, but that there were not currently being held.

Building on the analysis of factors and responses underway, the participant groups identified responses that could improve the system and address gaps, and placed these in their respective Venn diagrams. Across all three groups, the common responses were identified to be the basis for follow up actions:

1. Improve the way staff approach and communicate with pregnant women /clients.
2. Strengthen education and communication between hospital services and the community.
3. Improve collaboration between hospital workers and the TTMs and TBAs in the community.

Some responses were uniquely identified by certain groups:

- Pregnant women raised responses to create more bed space at Redemption Hospital.
- The community group raised responses to improve family planning services and to provide more training for TTMs and andTBAs.
- Healthcare workers raised responses to build capacity of local clinics to relieve pressure on Redemption Hospital.

Stage 2 Findings: Addressing impacts of Ebola & improving maternal health services

The feedback following the stage 1 meetings with other members of the group represented confirmed the findings of the stage 1 meetings and added additional information:

- For pregnant women, they reported that since Ebola few visitors have been allowed inside the hospital, meaning that women are unaccompanied when they come to deliver. A key area of action raised by the community was to educate and raise awareness so that pregnant women know the services and their rights.
- For community leaders, TTMs and TBAs, the new infection prevention control measures mean family members and TTMs have not been allowed inside the hospital when bringing women for delivery. They also reported a view that TTMs and TBAs should have a means of identification (e.g. an ID card) to improve the system.
- For health workers, a other staff members proposed as a follow up action that TTMs and TBAs be allowed into the delivery room to give emotional support, as long as they abide by infection control protocols.

The three groups each presented their own findings and materials to the other groups and took turns to discuss similarities and differences.

Shared priority areas of action

Following this shared analysis, the meeting identified the shared priority areas of action through ranking and scoring across all areas of response raised by the three groups combined. The following areas were collaboratively prioritized by the larger group:

1. Raising awareness of services, reducing stigma and improving communication between health workers and communities in New Kru Town. The focused action for this was identified to be establishing a drama group to be run by pregnant women and Redemption ANC staff.

2. Improving the working relations and collaboration of hospital staff, TTMs and TBAs: Focused actions for this included TTMs and and TBAs being allowed to accompany women into the Redemption Hospital delivery room and clarifying referral processes to improve mutual respect between the two groups.

3. Increased training of TTMs and and TBAs in New Kru Town, with focused actions to clarify and share information on their role, skills and protocols to recognize complications and for timely referrals to services.

4. Redemption Hospital to work with local private and governmental clinics in New Kru Town that are registered with the Ministry of Health, to facilitate referrals and strengthen their capacity for safe deliveries.

The group also identified **actions for government level and international agencies**:

1. To increase the number of delivery beds available within clinics, health facilities and hospitals that can be accessed by the women of New Kru Town.
2. If there are no alternative spaces at clinics, facilities or hospitals, to train TTMs and TBAs in skills for safe delivery. It was proposed that there could be accreditation after training with identification badges to formalize the role they play in the health system.
3. For long-term change, to support stronger primary health care level services in New Kru Town to reduce the workload on Redemption Hospital

Image 5: A PAR participant presenting an area of the action plan

The action plans and progress markers for these actions are shown in *Table 6* below, highlighting the

immediate actions to be taken between September and December 2015, and the longer term subsequent actions, noting that many of the areas identified demand short and medium term action. The progress markers were those outcomes that participants would expect to see within three months and within the longer term. As a first stage of work these were more markers of changes in the systems as a result of the actions, than in the maternal health outcomes. The meeting established a committee with people from each group to monitor and review the actions and progress markers and to share learning across the groups.

Table 6: Action plan and progress markers developed in the meeting

Key area	Actions	Timing	Progress marker
Improve working together of TTMs, TBAs and Redemption Hospital personnel	Identify TTMs and TBAs	Within three months	Active Traditional Birth Attendants /Trained Traditional Midwives in NKT listed
	Identify CMs in hospital		CMs in Redemption listed
	Planning agenda for meeting Find a place for the meeting		Meeting between leadership of both groups. Unity on joint meeting agenda plan, venue found
	Meeting to discuss collaboration		Meeting between TTMs, TBAs and staff held Collaboration points agreed on delivery room", referral procedures, respect; TTMs, TBAs accompany Hospital deliveries
Key area	**Actions**	**Timing**	**Progress marker**
Training of TBAs and TTMs in New Kru Town	Identify the sponsors Speak with County Health Team	Within three months	Ministry accept the request Sponsor identified
	Identify the trainers		Trainers made available
	Identify the TTMs, TBAs		Active TTMs, TBAs listed
	Identify training materials; time and place of training		Trainers well equipped and ready; time and place of training identified
	Carry out the Training		Training held; TTMs, TBAs educated on their role, recognizing complications, timely referrals and collaboration with hospital
	Advocate for the TBA and TTM recognition/ identity	Longer term	Identification available for TTMs and TBAs
Key area	**Actions**	**Timing**	**Progress marker**
Dramas on maternal health and family planning to inform community on services and reduce stigma	Decide who is in the drama group; plan the drama	Within three months	Pregnant women in the drama group listed; Venue for practice identified
	Practice drama; get materials		Materials collected and drama prepared
	Drama performance in Redemption OPD		Drama performed at Redemption Outpatient area, spectators educated
	Inform local leaders		Local leader agreement on performance
	Procession through New Kru Town, drama performances across 25 communities		New Kru Town community members attending informed

Key area	Actions	Timing	Progress marker
Strengthen Clinics in New Kru Town for maternal health	List of clinics from District Health Officer	Within three months	Clinics in New Kru Town mapped
	Introduction to the clinics		Redemption and clinics management met
	Assess clinics		Gaps in clinic maternal health identified
	Hold meetings with all clinics		Meeting held on capacity building, referral
	Training of clinics		Capacity on maternal health increased
	Set up Referral system		Clinic –hospital referral system in place
	Provide basic equipment		Clinics have basic maternity equipment
	Establish M and E / reporting system	Longer term	M and E / Reporting systems established

4. Findings of the Baseline Survey

The findings of the baseline Likert scale survey and the follow up survey after four months – as outlined in the methods- are presented in this this sub-section. The findings shown in *Table 7* overleaf indicate that

- In the baseline survey pregnant women and community members generally had a more favorable rating of maternal health services than health workers;
- Pregnant women and community members generally rated service delivery as better than communication between health workers and community; while pregnant women reported that they felt least informed about where to go to improve services or to take complaints about services.
- Health workers, in contrast, thought that people in New Kru Town played a less active role than was perceived by the community itself; and gave far higher ratings of the difficulties in their work and respect for community views than was perceived by communities.

The results suggest differences in perceptions that were also observed in the PAR work, discussed in the next section. For example, analysis of the data in the baseline survey process revealed differences in how good quality care is perceived (See *Table 7*). Healthcare workers defined it as *"drugs and equipment accessibility",* however community members stated that *"encouragement"* and *"talking good*" were most important.

Table 7: Qualitative definitions of "good quality care" from the separate survey groups

Quality Care when delivering baby	Wider Community	PAR- Pregnant women	PAR- Community	PAR- Health Worker	Total
Good behavior and 'talking well' towards patients	40%	52%	27%	0%	**51%**
Timely and effective treatment	39%	43%	27%	0%	**49%**
Encouragement	8%	17%	47%	0%	**16%**
Good attention and monitoring	11%	17%	0%	0%	**14%**
Conducive Environment	1%	0%	20%	36%	**7%**
Drugs and equipment accessibility	0%	0%	0%	36%	**4%**
Skillful midwife	0%	0%	0%	14%	**1%**

Table 8: Findings of the baseline and follow up Likert scale survey

QN	Statement	Baseline Survey Average response: Pregnant women	Baseline Survey Average response: Comm-unity	Baseline Survey Average response: Health Worker	Follow-Up Survey Average response: Pregnant women	Follow-Up Survey Average response: Comm-unity	Follow-Up Survey Average response: Health Worker
Q1	PW in NKT find problems to deliver safely	3.81	3.51	2.63	2.82	2.51	2.83
Q2	Women in NKT know how to remain healthy during pregnancy and delivery	3.78	3.43	4.06	4.06	4.02	4.08
Q3	Community members have information about maternal health services	3.15	3.26	3.75	4.00	3.90	3.92
Q4	Women discuss about their health status with RH staff	3.96	3.60	3.56	4.00	4.02	4.00
Q5	RH staff listen and respect to PW	2.67	2.77	3.56	3.82	3.94	3.92
Q6	Women usually choose TTM for delivery	3.56	3.86	3.50	2.35	2.73	3.08
Q7	RH staff ask women to pay for treatment	3.67	3.34	2.19	2.53	2.43	1.83
Q8	Two way communication between RH staff and TTMs	2.81	2.63	2.38	4.18	4.08	3.58
Q9	RH staff face difficulties in their work	3.12	2.82	4.44	3.47	2.80	3.92
Q10	RH staff talk harshly with women visiting for ANC care	3.26	2.86	2.44	2.24	2.35	2.42
Q11	RH staff talk harshly with women visiting for delivery	3.74	3.47	2.56	2.76	2.27	2.42
Q12	TTM refer PW having difficulties during delivery	3.62	4.23	3.56	4.06	3.96	3.92
Q13	RH has good quality care whilst delivering a baby	5.00	3.21	3.87	3.88	4.00	4.00
Q14	RH staff providing deliveries are often stressed up	3.58	3.63	3.67	3.47	3.51	4.33
Q15	RH and NKT work closely to improve MH services	2.73	3.12	2.20	4.00	4.10	3.83
Q16	NKT people play an active role in improving MH services	3.19	3.38	2.19	4.00	4.00	3.50
Q17	Improvement in delivery services after Ebola	3.92	3.62	3.94	3.94	4.12	4.25
Q18	NKT women knows where to take RH staff complaints	2.58	3.11	3.00	2.88	3.35	3.50
Q19	Belief of getting Ebola if visited to RH	1.88	2.83	2.38	2.18	1.78	2.25

Key: The responses given ranged from Strongly Agree = 5; Agree= 4; Neutral= 3; Disagree= 2; Strongly Disagree=1. The average rating for each group is shown in the table for each round of the survey

Acronyms: PW = pregnant women; NKT = New Kru Town; RH = Redemption Hospital; MH = Maternal Health

Table 9 below shows the results of the community survey, ordered by highest frequency of agreement. It has similar findings to that of the pregnant women in the baseline, with positive perceptions of hospital service quality and community knowledge, and much less favorable perceptions of communication between health workers and community and community roles in giving feedback on services.

Table 9: Findings of the baseline survey of community members (N=150)

Women of Child-Bearing Age in New Kru Town (n=150)	
Statement	**Average response**
RH has good quality care while delivering a baby	3.90
Women in NKT knows how to remain healthy during pregnancy and delivery	3.69
RH staff talking harshly with women visiting for delivery	3.63
MH services information among community members	3.59
Women discuss about their health status with RH staff	3.53
TTM referring PW having difficulties during delivery	3.51
Improvement in delivery services after Ebola	3.48
PW in NKT finding problems to deliver	3.44
RH staff asking women to pay for treatment	3.41
Women choosing TTM for delivery	3.28
RH staff providing deliveries are often stressed	3.28
RH staff talking harshly with women visiting for ANC care	3.25
RH staff face difficulties in their work	3.23
RH staff listen and respect to PW	3.05
NKT people plays active role in improving MH services	2.90
Two way communication between RH staff and TTM	2.85
RH and NKT working closely to improve MH services	2.69
NKT women knows where to take RH staff complaints	2.61
Belief of getting Ebola if visited to RH	2.17

Key: The responses given ranged from Strongly Agree = 5; Agree= 4; Neutral= 3; Disagree= 2; Strongly Disagree=1. The average rating for each group is shown in the table for each round of the survey
Acronyms: PW = pregnant women; NKT = New Kru Town; RH = Redemption Hospital; MH = Maternal Health

Despite the short time frame between them, the follow up survey implemented four months later, after the first set of actions, revealed changes in views expressed in the baseline by the different groups, as shown in *Table 8*. All groups reported improvements in a number of areas, and are discussed further in Section 7.

5. Discussion of the Initial Findings

The findings and thematic analysis of the discussions in the initial PAR meetings and the findings of the initial results from the baseline Likert scale survey highlighted a number of issues, summarized in this sub-section.

Links and disconnects between communities, primary care and hospital services

The results showed many dimensions of disconnect between communities and health services that existed before the Ebola epidemic, were intensified by it, and worsened its impact on maternal health services. Community level personnel (TBAs and TTMs) are poorly recognized and there was no mention of other community health personnel from the health system, such as community health workers, community based distributors of family planning or other extension workers. Primary care services, that are a vital link between communities and hospitals, were largely unmentioned.

This is important, as reportedly stories *"quickly spread"* in New Kru Town, and dominant narratives such as *"no beds at Redemption"* can spread rapidly and act as a deterrent for women to seek care in the hospital, if there are no links or channels of communication. Furthermore, a lack of formal or informal referral networks between these levels of the system would further impede access to beds (e.g. when Redemption is at capacity, hospital staff directing women to clinics that can do deliveries).

Paying attention to the social determinants of maternal health

Importantly, one overarching theme to emerge from the initial data collected was that barriers to women delivering within facilities in this part of urban Monrovia are **more than physical**. The PAR workshops highlighted, especially for pregnant women themselves, they key role of the living conditions, transport, food and social support on maternal health. These factors were less well recognized by hospital personnel. Their importance for pregnant women calls for primary health care (PHC) approaches, to take a more holistic approach to maternal health, including the dietary and social support for it. Another non-physical barrier was the often mentioned poor communication between health workers, community level personnel and women, and weak or absent mechanisms for continuous dialogue and feedback between these groups.

Despite the majority of participants in the process being female, the role of men in maternal health was discussed. Men were often raised as uninvolved during pregnancy or delivery, with more important roles after birth, largely for financial support. Yet financial support from the husband is important to ensure that women have adequate food during pregnancy, or to overcome cost barriers to accessing safe deliveries. The findings highlighted the possibility of more engaged roles for men, with some becoming more *"hands on" in* during deliveries at the height of the Ebola epidemic. Certainly crises have been known to shift gender roles, e.g. during the civil war in Liberia women playing the role of men, finding food for their families, while their husbands hid under beds, a process which was believed to have ignited women's empowerment in Liberia.

Emotional distress and stigma

The impact of Ebola on the emotional state of the healthcare workers was also prominent. During the timeline activity in which key events during the epidemic are discussed the majority of the health worker participants broke down into tears. They described this period as the *"running away time"* as they explained how their colleagues died one by one. This was not seen in the other meetings and is

hypothesized to be because the staff have shared stories of treating Ebola cases and of mutual colleagues that they lost. A key damage caused by Ebola seemed to be one of disconnection and division as each group spoke about catastrophic fear between people. As raised by one health worker *"…. nurses are afraid of patients, patients are afraid of nurses".* During discussions on the impacts of Ebola, the pregnant women and community member groups expressed that pregnant women were the most feared social group due to the amount of bodily fluid associated with delivery. Stories of stigma in the community, refusal at clinics and hospitals, and even multiple accounts of pregnant women abandoned in wheelbarrows were recounted.

Overcoming power imbalances and barriers between groups

The PAR activities revealed a great deal about where power lies in Maternal Health systems. With the hospital perceived to be most important but least accessible to women, TTMs andTBAs play a key role in facilitating or enabling access to them. Indeed, these stakeholders were vocal and spoke their opinions with confidence through the process, in comparison with the pregnant women. However there was some observable shift in power during the PAR process, which is one of its intentions.

Pregnant women began the process as the quietest voices, and descriptions of pregnant women from community members included: *"she doesn't have a say"* and *"a drowning person can take a cutlass to survive".* However they put forward their own views in the PAR process, when given an organized space within which to express them, and during the action planning section proposed a special drama group for pregnant women, as one ongoing platform from which to express their experiences and views. This seemed to impact the whole group, as a senior manager at the hospital expressed: *"We need to keep pregnant women at the front of this, to remember why we are doing this."*

The meetings were reported to be the first time different stakeholders had been gathered together from the District and County Health team level, to the hospital management, to the Governorship of New Kru Town. Redemption Hospital had been described as a *"fortress"* within New Kru Town with new post-Ebola Infection Prevention and Control measures limiting visitors to all wards. Nevertheless, one key action point that was proposed by a senior hospital manager was to allow TTMs or TBAs to accompany pregnant women inside the Redemption delivery room. *"You can enter any part of the ward. Myself I will give you green light"* (Deputy Supervisor, OBGYN)

6. <u>Taking Action</u>

During the period September 4th 2015 – December 11th 2015 the participants implemented the actions planned in the joint meeting.

Drama Performances

The group of pregnant women met for rehearsals in the Redemption Hospital outpatients department (OPD), facilitated by two Redemption antenatal care midwives. This culminated in a performance at the OPD, and three subsequent community performances that spanned the 25 communities of New Kru Town. During these performances, pregnant women, key community influential figures, men and women were encouraged to attend by the PAR committee members. The drama group prepared a performance titled *"Nurse be Nice, Patients be Patient"* which portrayed a "bad example" of

communication between nurses and pregnant women, then presented a “good example”, allowing for questions, comments and discussion after each mini performance. The dramas included the figure of the TTM or TBA bringing the women, and detailed the equipment a delivering women needs to bring to the hospital, as this was identified as the most common source of tension. The PAR committee chose to take the opportunity of these platforms to talk about the findings from the PAR process, and the actions that are being undertaken to improve access to safe deliveries.

Images 6 and 7: PAR drama group perform in Carpet Street community, New Kru Town and at Redemption OPD

Collaboration with TTMs and TBAs

As the process flowed, the committee merged the second and third actions: training of TTMs and better collaboration with TTMs, into a single action. This led to a 1-day workshop facilitated by the Ministry of Health District Health Team and County Reproductive Health Team and Redemption Hospital for all 51 TTMs and TBAs from New Kru Town on referral, infection prevention and control, and mutual respect between nurses and TTMs and TBAs when bringing a patient to the hospital. The Ministry of Health staff were firm on the role of TTMs and TBAs being to educate and escort women to facilities, and not to do home deliveries, which the TBAs and TTMs supported. However TTMs and TBAs expressed that they *“need to put bread on the table for their families”.* This heated discussion ended with a proposal for a general meeting in December 2015 with the Ministry of Health, County and District reproductive health teams, community leaders, Redemption Hospital and partners to discuss an incentive that a TBA/TTM will get for referring patients to the Hospital. They also advocated for adding beds to the delivery ward temporarily so that fewer women are turned away. Issues of ID cards were also taken up by the Ministry of Health as a result of this workshop. Participants expressed this was *“the first time”* such a joining together has happened.

Image 8: Workshop with TTMs and TBAs facilitated by Redemption Nursing Director and MoH

Clinic strengthening

As per the action plan, Redemption Hospital administration supported by IRC OBGYN staff mapped and assessed the clinics around Redemption and met with the Officers In Charge. Along with the Ministry of Health they prepared and delivered a 3-day capacity building workshop on Emergency Obstetric and Neonatal Care to 64 Certified Midwives, from both Redemption Hospital and the clinics. Topics included: focused antenatal care, pregnancy induced hypertension (eclampsia and pre eclampsia), obstructed labor and use of partograph, active management of third stage of labor, postnatal infection, prevention and management of anti and post-partum hemorrhage, post-partum infection, neonatal resuscitation, medical ethics, effective communication and collaboration with TBAs and TTMs. Topics were selected that could encourage quality deliveries in the post-Ebola context – e.g. proper infection prevention control measures during hands-on procedures such as examinations for partograph monitoring. Some recommendations came from the training participants including that the Ministry of Health should increase supervision of clinics and emphasis on safe delivery, and to carry this training forward to other health facilities.

Referral pathways were formalized in a meeting between the Redemption Nursing Director and the facilities for when clinics receive complex cases. Delivery equipment needs were discussed and Redemption Hospital agreed to donate some surplus materials that had been donated by various NGOs (as the Nursing Director said: *“we have extra, you don’t have enough”)* and the clinics agreed to reduce their costs of deliveries in return. Monitoring of referrals was begun, with a subsequent reported increase in the use of the hospital ambulance service to carry women between hospital and facility following the training. A monthly meeting between the hospital and clinics was established, with the Zonal Surveillance Officer, responsible for supervising health facilities to be in attendance. The PAR committee decided to sensitize New Kru Town community members during the community drama rehearsals on the clinics that had personnel who had been trained.

Image 9 : Adapted EmONC training for CMs from New Kru Town clinics

Review by the coordinating committee

During September 4th – December 11th the PAR committee met four times to review the action plans, progress made, and how to proceed. Attendance at this meeting ranged between 8 and 14 members. The two pregnant women gave birth during the period, so were not present at the 3rd and 4th meetings, but each group from the original PAR meetings were otherwise represented at each meeting. Participants discussed challenges and successes of action points of the previous month, as well as upcoming plans that needed mobilization from the different groups including meetings, trainings, drama rehearsals, and community performances.

7. Reviewing and Learning from Action

Changes identified in the participatory review meeting on the work

The coordinating committee members and key stakeholders held a review meeting on 15th December with the following objectives, to:

- Recap the key findings of the PAR
- Present the actions done and progress made
- Discuss the difficulties and identify actions to address gaps
- Discuss the learning from the work, actions taken and changes made
- Identify next steps and follow up to be taken

The participants in attendance are detailed in *Table 10* and the process involved recapping the PAR and actions taken; and small group and paired discussions on ; on i) what has/has not worked, ii) barriers/challenges, iii) what should be done next, iv) the learning and changes; and the next steps for 2016.

Table 10: Participants in the December 2015 review meeting

PAR Review Meeting	Group Composition	
	Female	Male
Health Workers	2 ANC 4 OBGYN	1 OBGYN 1 Manager
Community Members	10 Leaders 12 TBAs, 2 TTMs	10 Leaders
Pregnant Women	15	
District Health Team	1	

Images 10 and 11: Review Meeting participants

The discussion revealed that the majority of short-term actions were successfully taken (see *Table 11*). The exceptions were the joint meeting between all community members, TTMs and TBAs, which was not done due to a lack of time. As a result only a few TTMs and TBAs were able to accompany women into the delivery room. Advocating for identification for TTMs and TBAs was reported to be in progress, as was equipping clinics with basic materials and establishing a monitoring system.

Table 11: The status of the PAR Progress Markers status at the Review Meeting

Key area	**Actions**	**Timing**	**Progress marker**	
Improve working together of TTMs, TBAs and Redemption Hospital personnel	Identify TTMs and TBAs	Within three months	Active Traditional Birth Attendants /Trained Traditional Midwives in NKT listed	X
	Identify CMs in hospital		CMs in Redemption listed	X
	Planning agenda for meeting Find a place for the meeting		Meeting between leadership of both groups. Unity on joint meeting agenda plan, venue found	…
	Meeting to discuss collaboration		Meeting between TTMs, TBAs and staff held Collaboration points agreed on delivery room", referral procedures, respect; TTMs, TBAs accompany Hospital deliveries	…

Key area	Actions	Timing	Progress marker	
Training of TBAs and TTMs in New Kru Town	Identify the sponsors Speak with County Health Team	Within three months	Ministry accept the request Sponsor identified	X
	Identify the trainers		Trainers made available	X
	Identify the TTMs and TBAs		Active TTMs and TBAs listed	X
	Identify training materials; time and place of training		Trainers well equipped and ready; time and place of training identified	X
	Carry out the Training		Training held; TTMs and TBAs educated on their role, recognizing complications, timely referrals and collaboration with hospital	X
	Advocate for the TBA and TTM recognition/ identity	Longer term	Identification available for TTMs and TBAs	…
Key area	**Actions**	**Timing**	**Progress marker**	
Dramas on maternal health and family planning to inform community on services and reduce stigma	Decide who is in the drama group; plan the drama	Within three months	Pregnant women in the drama group listed; Venue for practice identified	X
	Practice drama; get materials		Materials collected and drama prepared	X
	Drama performance in Redemption OPD		Drama performed at Redemption Outpatient area, spectators educated	X
	Inform local leaders		Local leader agreement on performance	X
	Procession through New Kru Town, drama performances across 25 communities		New Kru Town community members attending informed	X
Key area	Actions	Timing	With what result?	
Strengthen Clinics in New Kru Town for maternal health	List of clinics from District Health Officer	Within three months	Clinics in New Kru Town mapped	X
	Introduction to the clinics		Redemption and clinics management met	X
	Assess clinics		Gaps in clinic maternal health identified	X
	Hold meetings with all clinics		Meeting held on capacity building, referral	X
	Training of clinics		Capacity on maternal health increased	X
	Set up Referral system		Clinic –hospital referral system in place	X
	Provide basic equipment		Clinics have basic maternity equipment	…
	Establish MandE / reporting system	Longer term	M and E / Reporting systems established	…

Key: Shaded X = Action was taken … = Action is ongoing

The participants reported the changes they perceived to be most important from the process to date as:

- Improved communication: *"The hospital and other community members are working together now"*
- Recognition of and working relations with TTMs and TBAs: *"The TTMs and TBAs have been recognized at Redemption"; "The Big Belly and Nurses are also feeling together now"; "TTMs and TBAs are now referring pregnant women to the hospital, but there is still a problem of not enough beds"; "There is a good working relationship between TTM and TBA themselves as they have now started weekly meetings"*

- Strengthening of primary care services and improved access at all services: *"Local clinics are being empowered"; "Nurses are not receiving money from patients now"*

At the same time, some problems were perceived to continue, such as the bed availability and transport: *"When there are not enough beds, there is no ambulance to take us somewhere else".*

The participants reported that the process had strengthened their joint work across groups at New Kru Town - *"We have learned to work together"*- and that this had given them more power in acting on issues - *"We have learned to do things on our own".* There was a strengthened understanding of different aspects of maternal health, from early care to delivery - *"Pregnant woman should attend ANC 4 times during pregnancy"* and *"The Ministry of Health say we should not deliver our babies at home";,* with a shift in perception on the actions the women could take themselves: *"Pregnant Women themselves can go to hospital".* The process thus appeared to have strengthened information flow to and power to act within the community, individually for the pregnant women involved, and collectively for the different groups involved.

Changes reported in the follow up Likert survey

The survey was administered a second time to the PAR participants following the review meeting, using the same indicators as in the baseline. Despite the short time frame between them, the follow up survey implemented four months later, after the first set of actions, revealed changes in views expressed in the baseline by the different groups, as shown in Section 4, *Table 8*. All groups reported improvements in a number of areas:

- Pregnant women's ratings indicated improved perception of various areas of services, including of their own knowledge and roles in maternal health; information about maternal health services; respectful communication with health workers on maternal health; referrals by TTMs of problem cases to the hospital; safety of delivery services and joint work between community and health workers to improve services. There did appear to be a reported shift towards use of health services as opposed to TTMs (shown in Q8 *Table 8*). Pregnant women appeared to also have a stronger acknowledgement of health workers stresses. The rating of quality of care at the hospital fell, possibly as women became more informed of what they *should* obtain.
- The TTMs and community leader and health worker responses followed a similar pattern, albeit with less concern for health worker stresses amongst the TTMs and community leaders.

There was thus high agreement across respondent groups of perceived improvement since baseline in communication between stakeholder groups, in the relationship between the health system and the community, in community participation in the health system, and in the quality of services at Redemption Hospital. The latter was most specifically in terms of staff listening to and respecting pregnant women, and less instances of requesting informal fees (despite health workers disagreeing this was happening even at the pre-test phase). As shown in *Table 8*, women still reported facing problems finding a place to deliver, with 25% reporting that this was due to "no beds" and/or "rejection". This was however a decrease from the baseline survey and a shift from the use of TTMs or TBAs alone.

The next survey is planned to be implemented in June 2016, when the consistency and further trend in these findings can be ascertained.

Facility Indicators

Various facility data was also tracked from Redemption Hospital over this period of the project to provide further opportunity to triangulate findings.

The average number of women attending the Redemption ante-natal clinic per month increased from 769 in July 2015 to 1679 in December 2015, with the number of women completing their recommended four visits also increasing over this period. This is in-line with the finding of improved relationships and also improved communication, as Redemption Nurses hold daily health talks at the ante-natal clinic to educate pregnant women on keeping healthy.

The number of normal vaginal deliveries at Redemption Hospital has increased since reopening but between July and December 2015, has stayed around 50% below the pre-Ebola average monthly normal vaginal delivery rate (average monthly delivery rate of 331 births per month for 2013 vs 162 for July-December 2015). The fact that ANC visits has increased implies that this reduction is not due to a reduced number of pregnancies, and alongside the review meeting and survey data suggests a significant number of women are still delivering outside of a facility. However, the primary health facilities and clinics that were engaged in the project reported an increase in the number of deliveries over the PAR period. Although their exact delivery figures are not available, the Redemption Nursing Director reports an increase in monthly referrals from these specific centers between October – December 2015 (19, 21, 24 respectively).

8. Conclusions on the Changes, Learning and Follow up

Triangulating the findings from the follow up survey, facility indicators, progress markers, and review meeting data, this section summarizes the areas of impact and learning from the process, and the ongoing issues to address. It concludes with recommendations for future work.

Changes from the intervention

In terms of the process and output indicators, all sources of evidence indicate that communication of information between different stakeholders in the maternal health system has improved. Participants reported having more information available in their community on maternal health services and on how to keep healthy during pregnancy, especially through the drama performances which were coordinated with the ANC nurses. The PAR process and coordination committee has also improved communication between stakeholders in the system.

There has been an improvement in the relationship between the different stakeholders in the system, in terms of more respectful interactions between health workers, service users and with TTMs, less blaming of other stakeholders, more joint problem solving and fewer requests for informal payment at Redemption Hospital. The PAR process facilitated recognition of the value of different stakeholder contributions to maternal health system, especially during Ebola.

The PAR process has also stimulated greater awareness of the different roles in the health system, and the value of community involvement. The community themselves gained confidence to act: This appeared to be most empowering for the pregnant women.

While there was a perceived shift towards use of the hospital for deliveries, the monthly average delivery rate is still 50% below the pre-Ebola delivery rate. Women still report problems delivering at a facility, in part due to limited bed space and the weakness in primary care services. While they are thus likely to be using TTMs and TBAs, these challenges are now perceived as shared. Further, the same facility data also shows an increase in women coming to ante-natal services, important for the early detection of problems and support of normal pregnancies. In addition, the quality of care at Redemption is reported to have improved, largely due to the improvements noted earlier in communication and approach between health workers and communities. The challenge remains to ensure quality improvements from other sources of safe delivery in New Kru Town.

Learning from the process

The review meeting and survey findings suggest that the project has i) improved relationship between all actors in the system and uniting *against shared problems* rather than fighting one another, ii) improved communication style between health workers and service users and iii) improved perception of community participation in their maternal health system, especially in giving a voice to pregnant women. The participants reported their perceptions of improvements in working together and uniting against problems, and that different actors at the community level can improve their health system without needing to wait for government or NGOs to respond.

Reflections from participants and facilitators and the findings reported in previous sections point to a number of areas of learning for work on maternal health, particularly in a post emergency context:

1. ***Take a step back, and build a shared vision:*** In this case this meant identifying: *the needs, desired outcomes, services for maternal health and the factors affecting them.* By starting with participant experience and views on health, the PAR process was able to build a shared vision of the positive goals aimed at, across its physical, social and medical dimensions, and the strengths and weaknesses of the maternal health system pre-Ebola. It was able to point out inequities in the current system against this vision such as the shortfalls in family support, transport and information to pregnant women; Redemption hospital being considered the most important but least accessible service; the absence of primary care services; and TTMs and TBAs being more accessible, but lacking skills and equipment. It highlighted the importance of communication and attitudes between pregnant women, health workers and TTMs, TBAs in addressing these issues, while at the same time the process itself built that communication.

2. ***Recognize different experience and build a shared identification of problems and their solutions:*** The PAR process enabled the different groups involved to analyze how the Ebola epidemic affected the needs and services for maternal health, how it exacerbated existing weaknesses, and how different actors responded to these impacts. It exposed the different experience of the same epidemic and system by different groups: the increased pressure on overburdened health workers and under-recognized community resources due to the closure and subsequent heightened infection prevention measures at the hospital, perceived by communities as a rejection of their needs. This combined with the significant emotional impact of Ebola for both groups, and the perception by TTMs and TBAs of being unrecognized for their work and risks taken during the crisis. By building a shared perception of these different experiences and the problems they raised, the process built understanding and also enabled identification of actions supported across the groups.

3. ***Identify and implement actions that address these weaknesses or that strengthen positive practice.*** Through stage 1 and stage 2 meetings with PAR methodology, participants were able to identify shared priorities for change outlined in this report, in which they claimed a power to act themselves and monitor their own progress. Taking action collectively and collaboratively has improved the relationships between different actors, and empowered each group. However, some issues need more time and support to make change, such as the deeper changes in service availability and quality, and some need engagement at higher levels. The process has not had sufficient time to see how such areas are addressed.

4. ***Learn from action:*** *Having a sustainable mechanism and approach for collaborative co-ordination, monitoring, review and learning from action* has been important for strategic review. It has also built mutual trust and responsibility for change across all actors and enabled learning from the work. These mechanisms and processes for learning also need more time, commitment and support, in this case for to lead to sustained improvements in maternal outcomes, and to lever support and inputs from government and international agencies to complement the collective action of the community.

Areas for Follow up

By December 2015, participants in the process identified that the key remaining gaps identified from the review meeting were around access to delivery beds and the quality of care at primary health facilities. The other areas of action appear to be further reinforcing of positive communication and relationship building between different levels of the system, continuing to recognize the role of TTMs and TBAs, and to ensure ongoing community participation in health systems.

From the discussion on changes and learning at the December meeting, the group collaboratively decided on the actions that should continue in 2016, to address the goals not yet achieved.

1. Continue drama group as per the original Progress Markers (see *Table 11*) and prepare new performances that include old and new pregnant women who attend ante natal services at Redemption Hospital
2. Work on consolidating the referral pathways and clinic quality as per the original Progress Markers (see *Table 11*), with specific actions being donating equipment, advocating for reducing the price of deliveries and regular monitoring of these facilities for quality assurance
3. Redemption Midwives to attend the TTM and TBA meeting once a month
4. Advocate for another ambulance for Redemption, with the District Health Reproductive Officer to take responsibility for this
5. Compensation for TTMs and TBAs when they make referrals to be agreed through further community meetings

Participants agreed to continue regular monthly PAR Committee Meetings to monitor progress on these action points, and to provide ongoing discussion ground between the different stakeholder groups. They also agreed that the District Reproductive Supervisor should be included in the committee.

Recommendations for future work

The team and facilitators implementing the work recommend future work at local and national level.

At the Local Level:

a. ***Continue the New Kru Town Participatory Action Research project activities*** for at least another 12 months into 2016 in-line with actions highlighted in the review meeting. This should include review meetings with all stakeholder groups of PAR participants every 4 months to review progress, reflect on changes and learnings and change or build on actions. This will allow gaps identified from the process so far to be acted upon, and any new issues in the maternal health system to be responded to. It will require commitment from the actors involved and financial and technical support from the International Rescue Committee or other organizations with appropriate capacity and experience. The same methodology can be used with effect in other communities in urban settings to encourage stronger, more resilient maternal health system in the post-Ebola context.

b. ***Increase the options to access safe delivery in New Kru Town and specifically the number of beds for delivery*** at Redemption Hospital, or at a site that can cater for the needs of New Kru Town, Bushrod Island and referrals from wider Monrovia.

c. ***Increase accessibility and quality of Primary Health Care structures in New Kru Town,*** *especially* considering the cost of services, the availability of trained staff and the national policy for all births to occur in health facilities. Secondary facilities such as Redemption Hospital do not have the capacity to take all delivering mothers whilst adhering to national IPC protocols. This will require further understanding of the barriers for people seeking care at primary facilities, and as this project was limited to one site, also how far this trend is true across the County.

At the National Level

a. ***Address the shortfall in health workers at community and primary care level.*** The Monrovia County Reproductive Health Working group explained that the small number of CMs in the country makes them *"gold dust".* This calls for more training of certified midwives through shorter courses and more recruitment opportunities. Sierra Leone have recently announced plans for a shortened 3 year training course for midwives with support from UNFPA, and it is recommended that Liberia pursue a similar action. The role of TTMs and TBAs can be reviewed within the system. Participants in this project acknowledged that they need more training and supervision to work safely, but are also local resources that can support safe deliveries and referral to services if better trained, including formally to become skilled attendants working at or with facilities and as distributors of family planning.

b. ***Fully appreciate the non-physical / non-medical barriers to health care*.** The impact of Ebola uncovered the importance of a range of social and psychological determinants not only for maternal health but for many areas of health. For example, the initial response expected people to actively present themselves for care at Ebola Treatment Units and the later response expected patients and health workers to freely discuss symptoms during screening procedures,

however both proved extremely difficult due to psychosocial factors such as fear and mistrust. The PAR process highlighted that these factors are powerful barriers to women using services for maternal health and seeking safe deliveries, and stimulated action across actors in and outside the health sector to address them.

c. ***Encourage respectful communication between patients and healthcare workers.*** Women in New Kru Town chose community-based TTMs and TBAs over a facility delivery in part because good quality care for them is being spoken to respectfully and being treated in a dignified way,. This should be more strongly integrated into the way of working at health services, including in the training of healthcare workers. The emotional impact of Ebola within health workers on this process also highlights the need for psychosocial support for front-line health workers, including as a contributor to their positive interactions with others.

d. ***Recognize and actively engage with community Structures in Urban Monrovia:*** Community members, leaders and community level workers, including TTMs and TBAs, are key resources for health promotion, service uptake and are figures of trust in the community. Participation in health system plan can increase the level of ownership and help reduce some of the non-physical barriers to care. The health system would gain from engaging and informing them. For example TTMs and TBAs could be more actively and respectfully engaged as key links to facilities, especially regarding addressing misperceptions at the community level. Government and partners in the health system could also usefully ***acknowledge and build on the level of community engagement and ownership during the Ebola response.***

e. ***Engage men actively in maternal and other areas of health,*** to encourage their support, especially at a time when financial support is more crucial, such as for service use, transport, health food and other needs during pregnancy and delivery. There is an opportunity to devise strategies that build on the report of increased involvement of men in supporting women during delivery observed during the Ebola outbreak.

The PAR approach used in this project has potential in this and other areas of health for program implementers in the Ministry of Health and their international and national partners. Over a relatively short period in this project it has uncovered significant issues, community members and health workers have become more powerful in acting on health issues, it has broken barriers, created meaningful links between local groups and strengthened the quality and level of communication between facilities and the communities they serve.

Image 12: Health worker facilitating review session learning activity with TTMs, TBAs, male local leaders and pregnant women

While it is not possible to generalize the specific results to other areas, it is possible to transfer insights and learning. This project exemplifies that in order to respond to emergencies such as the Ebola epidemic effectively, maternal health systems need strong relationships between all of its different levels. PAR is one way to generate evidence, social change and more meaningful forms of community and health worker participation that can support more resilient and responsive health systems necessary to address the needs of the most vulnerable during times of crisis. The findings suggest that PAR methods can be used effectively in low-resource settings, but also in post-crisis contexts, where health systems need to be rebuilt in a way that makes them responsive to current needs and resilient to future crises.

Appendix 1

Survey Tool: Maternal health services, New Kru Town, August 2015

Name of community ____	Survey ID # ____________
Age _______ Date _________________	
Group represented ____	Cluster #_______________
Survey Interviewer's name ____________________________________	Household #___________

"In the following discussion we would like you to speak on behalf of all women in your community, not only yourself"

1. Pregnant women in New Kru Town face problems to find a place to deliver their baby safely

If agreement, what are three main problems?

1. ……………………………………… 2. ……………………………………. 3. ……………………………………………

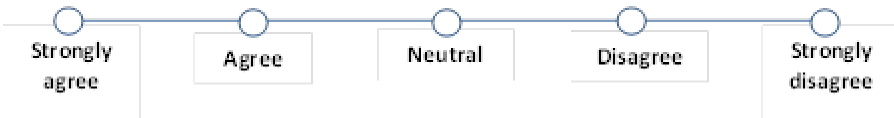
2. Women in New Kru Town have information about what to do to remain healthy during pregnancy and delivery

………

3. Community members have information about the services available for maternal health in New Kru Town

……

4. Women in New Kru Town talk with health workers in Redemption Hospital about their health during pregnancy and delivery



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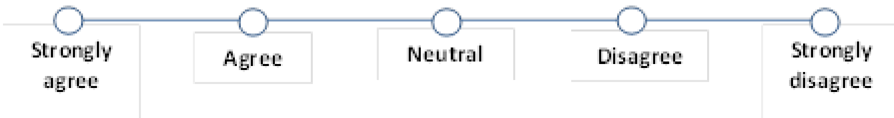
5. Health care workers at Redemption Hospital listen to and respect pregnant women and the New Kru Town community



……

6. Women in New Kru Town usually choose to deliver their babies with a traditional midwife in the community than in the hospital

If agreement, why is this?

……

7. Health workers at Redemption Hospital ask women to pay for Maternal Health treatment

If agreement, give an example of when this has happened

…….

8. Traditional midwives in the community and health workers at Redemption Hospital communicate with one another

…….

9. Health workers at Redemption Hospital face difficulties in their work

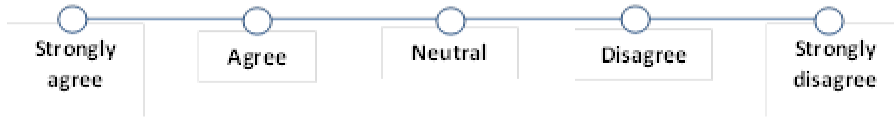
If agreement, what are three difficulties?

1. ……………………………………… 2. ……………………………………… 3. ………………………………………

10. Health workers at antenatal care services at Redemption Hospital talk to women who use the services harshly

…….

11. Health workers carrying out deliveries at Redemption Hospital talk to women who use the services harshly



……

12. Traditional midwives in the community can refer pregnant woman who have problems during deliveries to Redemption hospital

If possible, give an example of when this has/has not happened

……

13. What counts as good quality care when delivering a baby?

…………………………………………………………………………

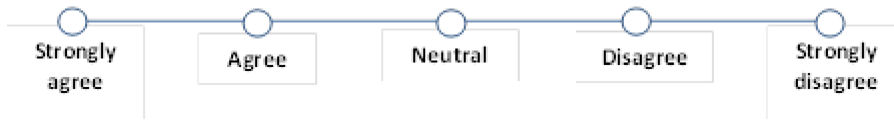
…………………………………………………………………………

…………………………………………………………………………

From what you just said, is there good quality care at Redemption Hospital for people when they deliver a baby?

……

14. Health workers providing deliveries at Redemption hospital can often be stressed up at work



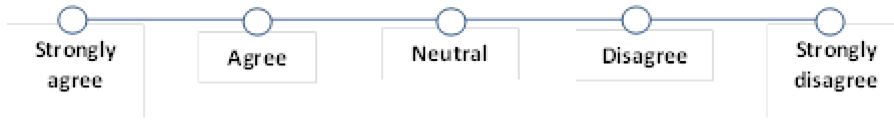
………

15. In New Kru Town health workers and communities are working together to improve maternal health

If agreement, give an example of how they work together

………

16. New Kru Town community members actively play a role in improving health care of women during pregnancy and delivery



If agreement, give an example of how they do this

………

17. Delivery services in New Kru Town are improving after the height of the Ebola outbreak

If agreement, give an example of how they are improving

…….

18. In New Kru Town women know where to take their complaints about service delivery at Redemption Hospital

…….

19. At present, pregnant women and new mothers believe if they go to Redemption Hospital they can catch Ebola

If agreement, what are the concerns?

……

Appendix 2: WHO-EPI sampling methodology

The community-level survey took a two stage cluster design with 30 clusters and 5 samples within each cluster. According to the IRC Psychosocial team, there are 86 blocks across the 25 communities of New Kru town, so each block represented a cluster in the survey. In the first stage of sampling, 30 blocks were selected proportional to the population size method to represent the study population. In the second stage, within each cluster, 5 households were selected giving a total of 150 households. A household was operationally defined as individuals sleeping regularly under the same roof and sharing meals. All study households had to include at least one women of reproductive age (15 to 49 years) in order to qualify for the survey process. If there was more than one eligible woman in the household, the names of all eligible women were listed on separate scraps of paper and then one piece was randomly selected. Households without women 15 to 49 years were skipped. If a women was absent at the time of data collection, arrangements was made to revisit the household. A systematic random sampling based on WHO-EPI methodology was followed while selecting the household.

1. If the households were set in an orderly fashion and are not spread over a large geographic area (either in a linear pattern or grid) then the total number of houses were counted. The World Food Program (WFP) had listed clusters with household numbers during food distributions and these lists were used.
2. To select the sampling interval, the total households were divided by the number of households needed in the cluster
3. A random number between 1 and the sampling interval calculated was used to select the first household to be surveyed.
4. The sampling interval was added to the first randomly selected household to pick the next household and the process was repeated until the enumerator visited the number of households in the cluster.

Selected blocks	**Total blocks**	**Total household**	**Total population**	**Number of households (Need for survey)**	**Sampling interval**
Point FourA	Point FourA	164	2010	5	33
Lagoon D	Lagoon D	105	1437	10	11
Kissi Camp A	Kissi Camp A	106	833	5	21
Point Four D	Point Four D	372	2940	15	25
Bong Mines Bridge C	Bong Mines Bridge C	69	212	5	14
Colonel West A	Colonel West A	167	1785	5	33
Nyuanpanton B	Nyuanpanton B	100	2125	5	20

Popo Beach D	Popo Beach D	372	2940	10	37
Gbalasua D	Gbalasua D	103	1801	5	21
Nyuanpanton A	Nyuanpanton A	104	1147	5	21
Trowin C	Trowin C	106	1830	5	21
Karpeh Street B	Karpeh Street B	108	1625	5	22
Kissi Camp D	Kissi Camp D	104	1140	10	10
Coast Guard Base B	Coast Guard Base B	82	513	5	16
Nyuanpanton D	Nyuanpanton D	100	1112	5	20
Popo Beach D	Central New Kru Town C	88	2940	15	6
Lagoon D	Kissi Camp C	96	1437	5	19
Central New Kru Town C	Central New Kru Town E	58	1927	5	12
Kissi Camp C	Zuma Town C	121	1052	10	12
Central New Kru Town E	Point Four C	71	1291	5	14
Zuma Town C	Fundaye A	147	1640	5	29
Central New Kru Town C	Nyuanpanton E	125	1927	5	25