Fidelity, Barriers and Facilitators to implementation of Referral Hub and Shuttle Service on the Utilization of Sexual and Reproductive Health Services in Rohingya Refugee Population: An Implementation Research

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EXECUTIVE SUMMARY

Background
A majority of the maternal related deaths worldwide occur due to preventable pregnancy-related complications. Therefore ‘delay’ to seek care is a significant contributing factor to death. Delays in seeking timely maternity care from health care professionals are crucial to address among the Rohingya population where many preventable pregnancy-related deaths occur within the camps when care is not sought. To mitigate the challenges related to the referral of emergency and routine Sexual and Reproductive Health and Rights (SRHR) cases, UNFPA, through its partners, is implementing “Referral hub” and “Shuttle service”, respectively. These components offer free transport services to women with SRHR needs to access the facilities. The current study explores the fidelity of referral hub for emergency obstetric services and shuttle service for routine care to improve utilization of SRHR services among the Rohingya population, and their barrier and facilitators.

Method
The research adopted a sequential explanatory mixed-method design. The quantitative phase consisted of collecting and analyzing secondary data on utilization of the services (January – July’20 for referral hub; August 2020 for shuttle service), and a survey among 194 mothers (100 for referral hub; 94 for shuttle service) and 83 community health workers (only shuttle service). The qualitative phase comprised of in-depth interviews with a total of 22 mothers who used the services (referral hub-12; shuttle service- 10), and key informant interviews with a total of 44 providers (program managers, supervisors, midwives, drivers, community health workers and volunteers) from both the services.

Results
Both the referral hub and shuttle service have fidelity in terms of implementation. However, in case of referral hub, the research identified several adaptations such as assessment of emergency at the community level and sharing of personal mobile numbers along with hotline numbers.

The secondary data analysis shows increasing trend in utilization of referral hub transport service. From January until August 2020, the total number of referrals through all hubs is 3,330. Out of this, 2,040 referrals were related to obstetric and 1,290 non-obstetric. Similarly, we saw a high number of mothers who used the shuttle service over a month of implementation. In total, with respect to SRHR services, 512 mothers sought shuttle service for Antenatal care, 19 for delivery, 13 for Post Natal Care, and 14 for Family planning.

The barriers identified for referral hub are discordant understanding of emergency, strict veiling practices, preference towards home delivery, poor network problem and roads. The facilitators for this service are partnership with community leaders and neighbouring hubs. In case of shuttle service, the barriers are lack of trust in providers, co-existence of other organizations offering similar services, veiling practices and preferences towards home deliveries. The facilitator is collaboration with other organizations, facilities and community.

Conclusion
Overall, the study observed that both the referral hub and the shuttle services are timely implementation strategies to increase utilization of SRHR services. Despite the barriers, the facilitating factors show a scope of improvement of these services.
INTRODUCTION

In humanitarian emergency, it is crucial to manage sexual and reproductive health (SRH) disparities for women and adolescent girls for better health outcomes and quality of life. This is particularly relevant when many pregnancy-related deaths occur within the camps (Parmar et al. 2019). In general, maternal mortality is one of the leading causes of deaths worldwide, and most deaths occur in the developing countries. A majority of these deaths occur due to preventable pregnancy-related complications. Therefore ‘delay’ to seek care is a significant contributing factor to deaths, as established in the literature. According to the ‘three delay model’ conceptualized by Thaddeus and Maine (1994), delay associated with maternal mortality occur at three different stages. The first delay is the delay in deciding to seek care; the second delay is in reaching the health facility; the third and final delay is the delay in receiving quality care at the facility. All these three delays significantly affect the Rohingya refugee population. The current study explores the facilitators and barriers for implementation of a comprehensive referral system introduced to improve the utilization of Sexual and Reproductive Health and Rights (SRHR) services among the Rohingya population.

Bangladesh hosts one of the largest displaced population in the world, the Rohingyas or as Bangladesh identifies them as Forcibly Displaced Myanmar Nationals (FDMNs). The recent displacement, coupled with a previous influx, has created the world’s most densely populated Rohingya settlement in Cox’s Bazar with an estimated 911,566 Rohingyas currently living in different camps (Khatun and Kamruzzaman 2018; Lewa 2009). Together with the government of Bangladesh, more than one hundred national non-governmental organizations (NGOs), international NGOs, United Nations (UN) organizations, and several donor agencies have been providing both preventive and clinical care, including health promotion, for the Rohingyas since the start of the influx. Sexual and Reproductive Health Services (SRHR) services are the primary focus of the interventions (Parmar et al. 2019).

The SRHR services which includes Antenatal Care (ANC), Post Natal Care (PNC), Emergency obstetric care (EmOnc), normal vaginal deliveries (NVDs), and family planning services are provided at facilities mainly the health posts, primary health centres (PHCs) and field hospitals located within or around the camps. The camps have community outreach activities along with fixed health facilities and women-friendly spaces to deliver the SRHR services. There are around 200 health facilities in the camps. Around 1400 community health workers (CHWs) are instrumental in bridging the gap between the community and the facility. They provide information about the availability of SRHR services in the community, provide community-based counselling and continue sensitization regarding the SRHR issues and services, and also facilitate referral for SRHR services to the facilities from the community. However, although there are around 200 health facilities in the camp, only 17% of them have 24/7 access. Moreover, due to lack of safety and gender-based violence, women’s ability to access 24/7 facilities at night are further limited (Schnabel and Huang 2019). Data shows that only 47 percent of babies in refugee camps were delivered in healthcare facilities in 2018 (Strategic Executive Group 2020). This according to the Joint Response Plan (JRP) is an indicator of low demand, low awareness and barriers in access (Strategic Executive Group 2020).

However, despite the provision of wide array of SRHR services several factors are observed which serves as barrier to uptake of these available services (Kumar 2019). Various published reports and studies mention several reasons for this, as Parmar et al. (2019) notes in their review. With decades-long history of violence and discrimination, the Rohingyas, conservative in general, feel reluctant to deliver at facilities, owing much to their bitter experiences in Myanmar and mixed gender spaces at facilities (Save the Children 2019). Studies have highlighted the inherent preference of community for the home based deliveries over institutional based deliveries which translate into lower utilization of the facility based deliveries and services irrespective of the geographical proximity to health facilities (Kumar 2019). This delay in seeking care results in prolonged labour which sometimes proves to be life threatening and fatal in nature during the childbirth, and is a major contributor to maternal deaths. Moreover, traditional birth attendants are often unskilled and often do not realise the danger signs and are unable to handle complications. They have been reported to be unaware of mother’s pre-existing conditions such as high blood pressure and diabetes that may further give rise to complications during delivery. Furthermore, these home births often happen in
poor unhygienic conditions thus leading to higher chances of severe infection for mothers and newborns (Save the Children 2019).

In addition to above-mentioned reasons, the second delay due to terrain, narrow and poor roads and infrastructure conditions in the crowded settlements within the camps further act as an additional barrier to seek healthcare at the facilities (Parmar et al. 2019). These conditions make large part of the camps inaccessible for the ambulance and emergency transport. Women in need of emergency obstetric care service either need to walk to a transport or be carried in makeshift stretchers, resulting in much physical and mental distress (Médecins Sans Frontières (MSF) International 2018). In order to avoid such journeys, women prefer to deliver at home, often living with complications for days, thus risking their lives as well their child to be born (Kelli Rogers 2018). Some of the common causes of deaths due to this are obstructed labor, haemorrhage, and sepsis (Parmar et al. 2019).

When women have to go through multiple steps to seek care, such as arriving at a clinic, getting an ambulance and then going to the facility can lead to considerable amount of delay. When the decision to seek care is delayed, then by the time the mother seeks help, it may be too late to save the mother and/or the child. Such delays could be worse in situations where a facility that provides emergency service is not open 24/7 (Kelli Rogers 2018). Therefore to be able to access emergency service, facilities offering 24/7 hour SRHR services need to be accessible, transport need to be available to take the emergency patient on time, and most importantly, the mother and her family-in-law (if they make decisions for her) need to be convinced and made aware of the need to seek the service timely.

Referral of emergency complications is one key concern in the camps in terms of limited awareness and access to emergency transportation services. To mitigate the challenges UNFPA with its implementing partners is implementing “Referral Hub Project” a 24/7 community-based referral project to meet the critical emergency obstetric and neonatal care referral needs (Schnabel and Huang 2019). In addition to the existing community-based referral hub project UNFPA expanded its referral services to link the community referrals with facilities. Due to the continuing needs in the community in general and as a response to the pandemic, UNFPA aimed to strengthen and expand the existing referral hub services by establishing four new hubs in other areas to serve even a wider population. This expansion included introduction of referral hub service and shuttle service as implementation strategies to increase the number of uptakes of SRHR services to improve the overall sexual and reproductive health.

However, given that several sociocultural, economical and infrastructural barriers already exist within the Rohingya refugee population, it is important to understand whether the mothers who need to access the Rohingya refugee population, it is important to understand whether the mothers who need to access the SRHR services are able to do so and whether introduction of referral hub and shuttle service increase utilisation of SRHR services. Therefore, the current implementation research explores the “implementation fidelity” and studies whether the intervention (i.e. comprehensive referral system) is feasible, acceptable, has adequate coverage, sustainable, affordable, and has an uptake. Fidelity is the ‘degree to which...a program or an intervention.... is delivered the way it is intended’ (Dusenbury 2003). In other words, it assesses paper versus actual implementation, and acts as a moderator to understand how far interventions have been implemented as intended.
PROJECT DESIGN
REFERRAL HUB
UNFPA supports 12 emergency hubs through its implementing partner by International Rescue Committee (IRC) in 8 camps to address the “second delay”, which is the postponement of care due to transportation issues. Out of these 12 hubs, eight began to be functional since January 2019 and the rest from July 2020. The referral hubs are small structure designed to serve as an access point to ensure rapid transportation of patients from community to the Primary Health Care Centre (PHCC)/Basic Emergency Obstetrics and neonatal Care (BEmONC) facilities. Transportation is provided but not limited to women of reproductive age with obstetrics complications and supports any kind of medical emergencies that require rapid referrals to save lives.

The hubs are placed in hard to reach geographic areas that serve both the host and Rohingya community. While selecting the location for these hubs, the focus was placed on the recent relocation sites which have little to no static health care facilities and high rate of home deliveries within the camps that puts women of reproductive age (WRA) at risk of severe complications and death during delivery. Referral hubs were established with the necessary approval from respective authority to ensure community buy-in to maintain the integrity of the project and to promote the utilization of life-saving referral services.

Staff members at the hub locations facilitate the transport of those in need of medical assistance to the nearest point of care using ambulance-like vehicles. The fleet of vehicles aid in 24-hour rapid transfer for obstetric or other sexual reproductive health emergencies from camp to referral centres with a higher level of clinical care. The transport vehicles also accommodate prompt transfers for comprehensive emergency obstetric and new-born care (CEmONC) services. Each camp has a Referral Hub Team Leader (RHTL) to supervise the hubs. There are dedicated community health volunteers (CHVs) in these hubs who disseminate messages on referral hub and assist emergency patients in boarding the vehicles and going to the facilities. Community health volunteers (CHVs) are male volunteers from both the host and the Rohingya community. The hubs have trained RHTLs and CHVs who coordinate the referrals. Although the hubs mostly transport emergency obstetric cases, they do advise mothers seeking regular services such as ANC, delivery, PNC, and family planning regarding which facilities they should go.

**BRIEF OVERVIEW**

**IMPLEMENTATION PATHWAY OF REFERRAL HUB SERVICE (FROM DOCUMENT REVIEW)**

As revealed in the Standard Operating Procedure of referral hub (RH) and informed during the formative meeting of the project, the process usually consists of six (06) broad steps (Figure 01).

1. **Identify patients or future clients in the community:** As a part of community mobilization, the CHVs identify the clients during their door-to-door visits and inform hotline number of their respective hubs to mothers. They should inform the mothers about the ambulance service and its pick and drop facilities. They should motivate the pregnant mothers to use referral hub for going to the facilities in case of emergency.

2. **Contact with the hub:** Next, the communication between the mother and the hub should be established. This could be achieved in two ways. First, the CHVs notify the Referral Hub about the arrival of the possible client and request for the possible pick up arrangements. Second, mothers or their families could directly call on the hotline or send someone to the hub to ask for the ambulance service. The CHVs should be in continuous touch with the client until she reaches the hub.

3. **Bring the patient to the RH:** In this third step, the ambulance assigned for the respective hub should be close to the patient’s residence as it can. If the patient’s home is cannot be reached, the CHV should bring the patient to the vehicle. If the patient cannot walk, the CHV should use a wheelchair or stretcher to carry the patient to the ambulance. If necessary, one should take the help of family members and neighbours. In severe emergency cases, patients are directly taken to the health facilities from their residence and CHV should fill up the referral slip on the way.

4. **Activities at the RH:** At the RH, paramedics and RH Team Leaders (RHTL) should assess the patient’s situation based on the self-reported complications and refers to appropriate facilities. Both the paramedics and RHTLs received training for conducting the assessment. CHVs assists the patient to fill out the Referral Form at the RH, which they should hand over to the referred facility.
5. Transfer to the primary health facility: Following the assessment done at the RH, patients are transferred to the Primary Health Facilities located inside the camp areas where they receive some immediate treatment along with some small-scale emergency service like initial stabilization in form of Basic Emergency Obstetric care (BEmONC). CHVs accompany the patients with the referral slip. The ambulances come back to the RH after they have delivered the client to the health facility.

6. Transfer patients to health facilities at tertiary level: Only some of the emergency patients who require further assistance should be sent to tertiary health facilities directly from the RH. A CHV should fill up the referral form and keep it with them until they reach the health facility. The ambulance driver should come back with the patient provided there is a scope. However, if there is another emergency call or delay at the health facility, the ambulance should return to the RH immediately after dropping the patient off at the health facility.

Figure 1. Implementation pathway of referral hub services from document review
The shuttle service is an effort to reduce the potential barriers to access the routine SRHR services such as ANC, PNC and family planning in the facilities due to challenges in transportation in general. It was mainly introduced in July 2020 to address the challenges regarding restricted movement and availability of public transport during the COVID-19 pandemic.

Each shuttle service has a defined catchment area for service coverage. Each catchment area is tagged with the specific UNFPA supported health facilities. The shuttle service does not provide any service outside the catchment area. At present, a total of six vehicles are used for community-based transportation services to transport women of reproductive age to SRHR healthcare facilities in 16 camps and three host community sites. The vehicles are to be solely used for transport to the specific facility. The shuttle service focuses on ANC, PNC, NVD or any SRHR related services.

Around 450 Community health workers (CHWs) from 16 camps advise the community on how to avail the shuttle services, and the need to do so. The CHWs in consultation with the beneficiaries, plan the date, time and location for pick-ups and drop-offs. The pick-up location of the shuttle is an easily accessible open space in the community where the ambulance waits for the women. The CHW then calls the driver and books the vehicle. The clients are picked up and dropped off from the nearest pick-up point from their home. There are two schedules for pick up. The operating hours of the vehicle are as per the opening hours of the facility. However, the vehicle can be used for any emergency transportation after the scheduled pick up and drop off. All the information mentioned above is shared with the community people by the community health workers/volunteers for the best result of the shuttle service.

### IMPLEMENTATION PATHWAY OF SHUTTLE SERVICE (AS PER DOCUMENT REVIEW)

1. **Identification of potential clients:** During community mobilisation activities, the community health workers (CHW) map pregnant mothers and gives them information about SRHR services and the shuttle service. They also inform the family members about the services. They also engage the community leaders and midwives in disseminating messages about the services. When CHWs visit the pregnant mothers, she also informs them about the time of the vehicle the next day and that they should be ready to meet at the pick-up point.

2. **Boarding the shuttle vehicle:** The CHWs visit the households of those women who need ANC/FP/PNC support and tells them to meet at the pick up points. After gathering around 6-7 mothers, she then calls the driver. After the driver of the vehicle arrives, the mothers along with the CHW board the vehicle to go to the facility.

3. **Arriving at the facility:** Once the mothers come, they receive their respective services. During this time, the shuttle vehicle waits at the facility unless being called again to pick up another group of clients.

4. **Dropping the clients back to the community:** After receiving the service, the mothers are dropped back to the community. If the vehicle is not present at the facility, the CHW phones the driver to pick them up to take them home.
Figure 2. Implementation pathway of shuttle service
RESEARCH QUESTIONS AND METHODOLOGY

Overall Research Question
What is the implementation fidelity and the bottlenecks of the referral transportation system to avail the SRHR services by mothers in Rohingya refugee camps?

Specific Research Questions
• What is the fidelity of the referral transportation system to improve the utilization of the SRHR services in the facilities?
• What are the implementation barriers and facilitators to the implementation of the referral transportation system to avail SRHR services at the facilities?

Research Design
The research adopted a sequential explanatory mixed-method design. This means that a qualitative phase followed a quantitative component took place that explored in-depth the findings from the former phase through in-depth interviews (Creswell 2013). The quantitative part relied on both secondary data collection and a survey. The qualitative component consisted of a series of in-depth interviews and key informant interviews.

The quantitative part is comprised of two components: secondary SRHR service utilization data collected in the health facility and two community-based survey with the service recipients of both referral hub and shuttle service. The qualitative part is a series of in-depth interviews and key informant interviews.

Data Collection

Quantitative
A. Secondary data collection

Referral hub
Existing routine eight months (From January till August 2020) data of mothers who visited health facilities through referral hubs to access SRHR services was collected.

Shuttle service
The shuttle service data was primarily collected for the duration of one month, that is, the month of August.

B. Data Analysis of secondary data
The record of the number of mothers who used the services was investigated. The trend in the utilisation of referral hub and shuttle service was identified. This action comprised of measuring the frequencies and percentages of mothers who used the services for ANC, delivery, FP, PNC services.

Study sites
We conducted the study in the Rohingya Refugee camps that accommodate close to a million Forcibly Displaced Myanmar National (FDMN) in Cox Bazar Bangladesh. The current research was limited to the 12 camps that hosts a functional referral hub in each to refer emergency cases, and five facilities that introduced shuttle service vehicles.

Source:
https://solutionscenter.nethope.org/program-areas/connectivity-infrastructure/bangladesh-connectivity-assessment
C. Primary data collection

**Referral Hub**

**Sampling**

- Inclusion criteria
  - Those who have received the service at the health facilities
  - Those who accessed the transport from the referral hub in July 2020 (recent user)
- Exclusion criteria
  - Those who were sick

**Sample size and Sampling Technique**

A list of mothers who utilized the referral hubs was obtained from the implementing partners implementing the program. In total 342 mothers who accessed the referral hubs for SRHR services in the month of July 2020. A proportionate sampling was used to capture the information related to different categories of services women required to use the referral hub. We selected 102 mothers to represent varieties of services they received. Out of 102 mothers, the data collectors could reach 100 mothers as two mothers in a new referral hub (Camp 2E) were unavailable (Table 1).

Table 1. Number of mothers who participated in the survey

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Type of Referral Hubs</th>
<th>Referral Hub Establishment*</th>
<th>Data Collected</th>
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<tr>
<td>A.</td>
<td>Old hubs</td>
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<td>10</td>
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<tr>
<td>B.</td>
<td></td>
<td>Camp 26</td>
<td>12</td>
</tr>
<tr>
<td>C.</td>
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<td>Camp 27-1</td>
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<td>D.</td>
<td></td>
<td>Camp 27-2</td>
<td>10</td>
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<tr>
<td>E.</td>
<td></td>
<td>Camp 6</td>
<td>10</td>
</tr>
<tr>
<td>F.</td>
<td></td>
<td>Camp 7</td>
<td>10</td>
</tr>
<tr>
<td>G.</td>
<td></td>
<td>Camp 8W-1</td>
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<td>H.</td>
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<tr>
<td>I.</td>
<td>New hubs</td>
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<tr>
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</tr>
<tr>
<td>K.</td>
<td></td>
<td>Camp 8E</td>
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</tr>
</tbody>
</table>

*Camp 2E (new): Two respondents unavailable

**Shuttle Service**

**Sampling**

- Inclusion criteria
  - Those who have received the service at the health facilities
  - Those who accessed the shuttle in August 2020 (recent user)
- Exclusion criteria
  - Those who were sick

**Sample size and Sampling Technique - Mothers**

A list of shuttle service users who utilized the shuttle service was obtained from the implementing partners implementing the program. Since the focus of the research was on ANC, pregnancy, PNC and FP we identified in total 342 users for these services in the month of July 2020, all of whom were mothers or future mothers. We selected all FP, PNC and delivery cases, and 50 ANC cases from the five camps. In total, the survey was conducted among 94 mothers/pregnant women.

**Sample size and Sampling Technique - Community health workers (CHWs)**

A survey was conducted with 82 CHWs engaged in facilitating the shuttle service use. The structured questionnaire was developed focusing on their knowledge and experience related to the shuttle service.

**Survey Tools for Referral Hub, Shuttle Service, & CHW**

A structured questionnaire was developed focusing on knowledge, experience, and challenges related to the use of referral hub and shuttle services. Ten data collectors were trained who conducted all three surveys at the household in the community.

**D. Data Analysis of primary data**

To be able to understand the facilitators and challenges related to implementation, it was essential to know how the referral hub and shuttle service transport services are meant to be implemented. For this reason, we analysed the documents provided to us and the information we received during the virtual meetings with UNFPA and the partner organizations who are implementing the services. We created flowcharts to indicate every step of the processes and showed modifications in the steps as revealed through our interviews. Going by the steps, we compared and contrasted with the information we got from the interviews and noted down modifications if any.

A descriptive analysis was conducted to assess the knowledge about the referral hub and shuttle service use and to identify the challenges, if any, in accessing them. Both univariate and bivariate analyses for primary quantitative data and presented data in tables. To assess knowledge levels regarding referral hub transport among all mothers, frequencies of their responses were calculated. To look at the experiences of using the referral hub transport, a comparison was done between those that reported complications and those that didn’t. In the case of shuttle service, mothers who used the transport and their responses corresponding to questions on
Knowledge and utilisation of the shuttle service were identified. To analyse the experiences and perception of CHWs tagged with shuttle service, the survey responses were divided into two groups: those who had the vehicle coming to their area and those who did not.

### Qualitative

The qualitative component consists of a series of interviews; IDIs with mothers and KIIIs with providers. A total of 10 data enumerators conducted face-to-face survey and in-depth interviews (IDIs) with the study participants over a period of one month. All the key informant interviews (KIIIs) with the providers were conducted by the team of experienced researchers in qualitative research methodology.

#### A. IDIs with Mothers

**Sampling**

**Referral hub**

Once the survey completed, from the primary data analysis, we identified that out of 100 mothers who used the referral hub service in July, some reported using it in emergency and some even when they did not have any complication, according to their understanding. Therefore, we randomly selected 12 mothers for IDIs with and without complications who sought service during pregnancy, delivery and PNC. This means that from each of these three areas of services, there were two mothers who reported complications and two who did not. The IDIs explored why, how and when they used the services, their experiences, and their perception regarding the services in depth. The data collectors conducted these IDIs.

**Shuttle service**

Similarly, in the case of shuttle service, we selected ten mothers from the survey based on the service they used the shuttle vehicle for. We took into considerations ANC, PNCs, deliveries and FP. CHW supervisors from PHD conducted the IDIs with the mothers. Similarly, like referral hub, the IDIs explored why, how and when they used the services, their experiences, and their perception regarding the services.

**Tool**

The guidelines were developed with relevant probing questions for both respondent groups.

#### B. KIIIs with providers

To understand how referral hub works and the associated barriers and facilitators in providing the services, we interviewed staff at different levels of the hierarchy who have different responsibilities concerning the hubs. Upon our request, IRC provided us with a list of 12 Community Health Volunteers (CHVs), four Referral Hub Team Leaders (RTHLs), four drivers, and one Referral Hub Manager. Out of 12 CHVs, the BRAC-JPGSPH researchers conducted KIIIs with six CHVs (of Bangladeshi nationality) and the data collectors interviewed four CHVs (of Rohingya nationality). We did not question more CHVs further as we reached data saturation. Also, we held KIIIs with RTHLs, drivers and the Referral Hub Manager. The CHVs; RTHLs and drivers were from both old and new hubs.

Using semi-structured guideline, the interviews with CHVs, Referral Hub Manager, referral hub team leaders, and vehicle drivers explored their experience and challenges regarding referral hub. Similarly, to explore the service provision of shuttle service, we interviewed 25 providers in-depth. They consisted of medical officers, technical officer, midwives and their supervisors, program managers, drivers and both CHWs and CHVs.

#### C. Data analysis

All audio files verbatim of the interviews were transcribed into Bangla. Two qualitative researchers repeatedly read the transcripts to familiarise with the data. A content analysis was done based on both deductive and inductive coding. After familiarization, a set of a priori codes were created to perform deductive coding. The deductive approach for coding involves a top-down approach to coding qualitative data. Using this approach, researchers formulate pre-set coding schemes. Researchers setup the codes and define them according to the source (e.g. literature review, document review etc.). Once the coding scheme is established, the researcher applies the codes to the text.

After completion of deductive coding, inductive coding was done on the new emerging information. Inductive coding refers to a data analysis process
whereby the researcher reads and interprets raw textual data to develop concepts, themes or a process model through interpretations based on data.

After completion of deductive and inductive coding, all codes were categorised and themes and patterns were identified. The themes were evolved around the facilitators and barriers in accessing the referral hub and shuttle services. The identified barriers and facilitators were categorized into two broad areas that emerged: ‘Decision to seek care’ and ‘reaching the facility’.

Data Triangulation

The quantitative information gathered from the survey was triangulated with the qualitative information collected from both beneficiaries and the providers. The qualitative data supported the quantitative findings showing the convergence of the results and validated the information.

Ethical considerations

The ethical permission to conduct the study was provided by the Institutional Review Board of BRAC James P. Grant School of Public Health.
RESULTS
COMPONENT 1

REFERRAL HUB
KEY FINDINGS

The trend in the utilization of referral hub
(January - August 2020)
- From January till August 2020, the total number of referrals through all hubs is 3330. Out of this, 2040 referrals were related to self-reported obstetric and 1290 non-obstetric.
- We found an increase in the flow of obstetric cases from July to August, with a further boost by the introduction of 4 new hubs.

Fidelity
- Since January 2020, the hubs have had some refinement and adaptations in terms of their operational flow which are:
  » Only emergency cases can avail the transport service
  » CHVs write hotline numbers on walls of client’s house
  » Clients no longer are taken to referral hub. Their assessment of emergency done in the community and then taken to the facility directly.

The decision to seek care

Facilitators
- Symbiotic relationship with other organizations enables exchanges of information about women who do not or are not allowed to share information with male community health workers.
- Engagement with community health leaders helps to convince mothers and their families to give birth at facilitators.

Barriers
- Discordant understanding of emergency affects the decision to seek care at the right time
- Strict gender norms and veiling practices hamper direct communication with male health workers and contribute to delaying visits to facilities.
- There is a strong preference for home deliveries in the Rohingya community

Reaching the facility

Facilitators
- A strong cooperative relationship between the staffs of the referral hubs enables efficient communication and quicker service, and ambulance supply.
- Along with hotline number, sharing of personal numbers of CHVs helps to reach patients in situations of mobile network problems.

Barriers
- Mobile network problem, a shortage of ambulance, poor conditions of roads and lack of security of hub staff and ambulance contributes to delay in reaching the facility.
FINDINGS FROM SECONDARY DATA

Number of self-reported obstetric emergency referrals between January-August’20
Between 1st of January and 31st August 2020, a total of 3330 self reported were made by all the camps operational at any given time within this period. Out of these self-reported referrals, 2040 referrals were related to obstetric, and 1290 non-obstetric. Figure 3. shows the ratio of obstetric to non-obstetric referrals over eight months (61% vs 39%).

TOTAL NUMBER OF SELF REPORTED OBSTETRIC AND NON-OBSTETRIC REFERRALS FOR ALL CAMPS COMBINED: JAN 2020 - AUG 2020

As Figure 3. presents, although the main focus of the referral hub service is to provide emergency obstetric support, the data shows that the transport was used for other non-obstetric emergencies as well.

Month-wise trend in referrals of obstetric cases
Figure 4. shows the month-wise trend in the utilization of referral hub services by obstetric patients from January till August’ 20. The data revealed an overall increasing trend of self reported obstetric referrals starting from January till August with a temporary plateau in the middle. Significantly aggregated overall in the eight already existing camps, a sum of self reported 203 obstetric referrals were made in January. Following a non-increasing trend, the monthly number of obstetric referrals reached 184 in April, and then steadily increased to 250 in June. Upon introduction of the four new referral hubs in July, there is a further increase in the number of obstetric referrals (342), and there is an increasing trend.
Camp-wise number of obstetric referrals (July – August’ 20)
The contribution of the four new camps as obstetric referrals (ANC, delivery, PNC) after the first month of operation is presented in Figure 5., with a camp-wise disintegration of numbers for July and August. Almost all the hubs saw an increase in the flow of obstetric cases from July to August. Especially in August, there is a significant rise in the number of mothers seeking care from the new hubs.

Figure 4. The monthwise trend of obstetric referrals from January - Aug 2020

Figure 5. Camp-wise number of obstetric referrals in July and August 2020
Findings from primary data

Fidelity of the implementation: Adaptations and innovations
The fidelity refers to an intervention being delivered as intended by the program developers and in line with the program model. In practice, since January 2020, the referral hubs have had some refinement and adaptations in terms of their operational flow (see Figure 6). The adaptations facilitated changes in most of the steps mentioned above.

Identifying the clients: As the service provided by the RH and the health facilities had some similarities, as well as some dissimilarities, the providers followed several adaptive methods to identify and mobilize the clients from the community. Since January 2020, the implementers decided that only the emergency and SRHR related cases will be able to avail the RH services. Since community sensitization is a part of the daily activities of the CHVs; delivering this message also became mandatory for them during their house visits.

Some other changes were made in the listing of possible or identified cases from the Rohingya community. In order to sensitize the targeted mother community, the implementers recruited some female CHVs temporarily. This activity helped in orienting the target clients about the possible services they can effectively receive from the RH facility. To ensure a regular follow up and to ease the client’s tension, the CHVs write the hotline numbers of the RHs with permanent marker on the wall of the houses of targeted clients in each block.

We counselled them to call hotline number when emergency services are needed for mothers or anyone. We told them that the focus is more on emergency obstetric services now. They are also getting used to this now. They will only call when some emergency arrives.” (CHV_08_IRC_RH_I4_N3)

They are being sensitized about different aspects like the pandemic and the importance of hospital delivery compared to home delivery. They are being told about the bad aspects of home delivery. We have written the hotline number on the wall of every houses that we visited. Hence, as long as the house stays, our number will be there. (RHTL_11_IRC_RH_I2_N5)

The listing of possible clients had a makeover as now mainly the emergency or SRHR service receivers are being targeted. Because of that, the implementers changed the previous plan of listing every pregnant woman to a particular pregnancy period during the CHV’s house visits.

Previously we decided to list all the pregnant mothers and collect their addresses. However, now it was changed to listing the mothers who were pregnant for 7 to 8 months or above. (CHV_07_IRC_RH_I2_N5)
Taking clients HF: The implementers made some systematic rearrangements within the process of getting the clients to the RH and HF. Previously clients were taken to the RH from the community and then to other HF. However, because of the rearrangement, RH’s ambulatory services are provided from the community to the facility. If the client requires the facility to facility referral service, then they provide the transport for them. As there was no trained medical professional to assess the condition of the emergency cases at the RH, they are directly sent to the HF after the primary assessment at the community. As mentioned by one RH manager,

When we had paramedics working 24/7 on a roaster basis in the RH, they used to visit the houses of the client from whom we received a call. Because they had a minimal medical background. They would assess the client’s situation, whether they need to be sent to the HF, or if they required sterilized procedure, the paramedics would do it. Sometimes we had to take a client from the PHC to the secondary hospital. If sterilization was needed in between the travel, it was done by the paramedics too. Now, we do not have them anymore, and we are not taking anyone from PHC to secondary HF too. We only provide the ambulatory service. (Supervisor)
At present, the RH Team Leaders (RHTL) are also working on a roster basis to ensure continuous monitoring of the RH along with assisting with the emergency assessment of the clients to some extent.

Transferring the clients to a different facility: There are two central adaptations that the RH service providers adopted while transporting their clients in various facilities. One of the significant problems that the RH ambulatory care face is when two emergency clients request the service at the same time. The RHs coordinate with the nearby RHs from the same organization or other organizations working in the area and used their free ambulatory services when such situation occurred.

The RHs provide the ride-back home services to the Rohingya community. However, with the rearrangement taking place, it is more focused on emergency cases. They also offer the service to those who do not have any other means of travel or has an unfavourable condition. Following the words from a driver,

Since last December, we have been told that we do not need to take every patient back to their community. I do not know if it is official or unofficial. We were told not to provide our ride back service in some cases. Like during night time, when it is hard for them (clients) to get transport, we were told to provide help in that kind of issues. (Driver, age)

General information of mothers who participated in the survey

As mentioned earlier in the method section of this report, 100 mothers out of 342 mothers were surveyed who used the referral hub service in July. These mothers were currently pregnant or have had delivered their baby six weeks prior and came in contact with the hub services. The mothers interviewed had a median age of 23 years (Range: 16-35 years). Majority of them belonged to 21-25 years age group (42%). The mothers had a mean number of 2.43 children (currently alive). Most of the mothers reported having at least two children currently alive (29%). Out of the 100 mothers, 25 were pregnant at the time of the survey, and the rest had given birth in the past six weeks or more. Majority of them were living with their husband (96%) and children (81%) at the time of the survey.

The decision to seek care

Facilitators

The success of the referral hub intervention is heavily dependent on the knowledge of the mothers about the functionality of the referral hub.

Table 2. Knowledge about the function of a referral hub

<table>
<thead>
<tr>
<th>What RH does</th>
<th>Didn't have complication, n (%)</th>
<th>Had complication, n (%)</th>
<th>Overall n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides emergency care</td>
<td>N = 62</td>
<td>N = 36</td>
<td>N = 98</td>
</tr>
<tr>
<td>Arranges emergency transport to take to the facility</td>
<td>39 (62.90)</td>
<td>30 (83.33)</td>
<td>69 (70.41)</td>
</tr>
<tr>
<td>Refers to other facility</td>
<td>58 (91.94)</td>
<td>32 (88.89)</td>
<td>90 (90.82)</td>
</tr>
<tr>
<td>Provides counselling</td>
<td>20 (32.26)</td>
<td>14 (38.89)</td>
<td>34 (34.69)</td>
</tr>
<tr>
<td>Provide help in that kind of issues</td>
<td>29 (46.77)</td>
<td>14 (38.89)</td>
<td>43 (43.88)</td>
</tr>
</tbody>
</table>

* N is the number of mothers who were asked this question and gave at least one response

When the mothers were asked about their sources of knowledge about hub, the answers were:

Table 3. Sources of Knowledge about referral hub

<table>
<thead>
<tr>
<th>Source of Knowledge about RH</th>
<th>Didn’t have complication, n (%)</th>
<th>Had complication, n (%)</th>
<th>Overall n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHV during daily visit</td>
<td>N = 62</td>
<td>N = 36</td>
<td>N = 98</td>
</tr>
<tr>
<td>From neighbours</td>
<td>59 (95.16)</td>
<td>33 (91.67)</td>
<td>92 (93.88)</td>
</tr>
<tr>
<td>From friends and relatives</td>
<td>12 (19.35)</td>
<td>9 (25.00)</td>
<td>21 (21.43)</td>
</tr>
<tr>
<td>Majhi</td>
<td>2 (3.23)</td>
<td>2 (5.56)</td>
<td>4 (4.08)</td>
</tr>
</tbody>
</table>

* N is the number of mothers who were asked this question and gave at least one response

According to Table 3, most of the mothers cited CHV as at least one of their sources of information about hub (59). This was followed by hearing from neighbours and then friends and relatives. Two of the 98 mothers also reported to get the information from majhi, a term used to refer to community leaders. The camps are divided into several blocks, and each block is controlled by a majhi who is oriented about the referral hub services. Therefore, the community is well informed of the hub services.
and bringing the community leaders on board helps to disseminate the messages.

The above quantitative finding is supported by the qualitative interviews with providers who shared how involving the majhis helps them in their work.

In the camp, Majhi is the guardian of a block and the whole camp is under his regulation. We regularly maintain communication with him. Majhi knows information of the mothers in the camp. We gave them our hotline number too. – (Supervisor, 28, IDI 3)

Due to our communication with Majhi, we get information about pregnant mothers in this block. Emergency patients usually inform Majhi about their choice of facility. We circulate our hotline number to Majhi as they can notify us immediately. The patient can receive the service quickly. – (Supervisor, 27, IDI 2)

The relationship with the majhis also enables the providers to collect information about patients. Generally, the mothers or their families inform the majhis about their emergency condition at first, who then communicates with the hub to provide transport services for the patient. A good relationship with the majhis also enables them to enter the camps and pick up emergency patients at night when no outsider is allowed.

I got an emergency call at 2 AM., but how can I get into the camp at that time? I cannot go there without Majhi’s confirmation. So, I call him and ask to stay there after he confirms the emergency. – (CHV, 28, IDI 6)

While providing referral services to an emergency patient, CHVs sometimes have to carry the patients on a stretcher to board in the ambulance. In that case, four people need to move the stretcher. So, CHVs take help from the majhis.

Our volunteers work on roaster basis; thus, two CHVs are available in a shift. In some cases, four people may be required to carry a patient on a stretcher. Sometimes, CHVs seek help from the majhi to carry the stretcher. – (Supervisor, 28, IDI 3)

All family members agree for institutional delivery except the husband. We communicate with majhi, imam and local elite person. We approach them. Majhi convinces the patient and the guardian of the patient. Then, we refer the patient. – (Supervisor, 28, IDI 3)

In addition, the involvement of community leaders in mobilization helps to convince the families to go for facility delivery. They also counsel the traditional birth attendants to convince the patients who refuse to go to the hospital for delivery.

We have noted the numbers of TBAs who conduct home delivery in this camp. If any patient refuses to go, we inform the TBAs to convince the patients not to go for home deliveries. They are helpful. If necessary, they go with the patient to the hospital and stay there.” – (Supervisor, 27, IDI 4)

Symbiotic relationship with other organizations

The CHVs maintain liaison with and work hand-in-hand with volunteers of other organizations who also provide maternal health services in the camp. Those volunteers too go door to door and collect information on pregnant mothers. The CHVs and their supervisors who took part in our study mentioned that they work collaboratively with other organizations and help each other out by providing and exchanging information about women who receive SRHR services.

In each block, volunteers of every organization work. We ask them whether they know any delivery patient [and] emergency patient. We promote our services communicating with [other] CHVs, site management [team], health focal or partner organizations. – (Supervisor, 29, IDI 13)

Such a liaison helps the referral hub staff to get emergency patients as volunteers of other organizations inform the referral hub when they find any emergency patient in the community.

A good partnership with other organizations is particularly useful for the referral hub staff because pregnant women in the camps are regularly listed by other organizations who also issue a “pregnancy card” to every expectant mother they come across the first time. Having access to this card is a privilege for the CHVs of referral hub because they use those pregnancy cards to take the information of the mothers.

Such a collaborative relationship also exists between the referral hubs and the hospitals. Both hospital and referral hub support each other when they need any assistance. The is an advantage for the referral hub to cope up in challenging situations. Most of the service providers (TLs and CHVs) depicted that they manage ambulance from the neighbouring referral hub or hospital when they face challenges due to the overload of emergency patients at a time.
In our camps, we collaborate with community health volunteers of other organizations who work on maternal health, ANC, PNC. If they find any emergency patients, they call on our hotline number for referral services. – (Supervisor, 28, IDI 3)

Few patients who take service from other organization have pregnancy card. We use that card to take the information of expected delivery date and last menstruation period. This way, we map the patients. - (Supervisor, 28, IDI 3)

If we find these ambulances unavailable, we contact with hospitals. We have a good relation with them. they also support us providing their ambulance in emergency cases.” – (Supervisor, 35, IDI 11)

Gatekeepers turned matchmakers: The engagement of community leaders

Community mobilization activities including the engagement of community leaders help to disseminate information on referral hub. All survey respondents were first asked if they knew about the hub, what is its purpose, and the sources of their knowledge. Among 100 women, 98 reported to know about referral hub. Those who reported to know about hub (n= 98) were asked about what it does. Multiple responses were recorded from each respondent. Table 2. shows that the most common response among the 98 mothers is that the hubs provide emergency transport service to facilities. Next, provision of emergency care was also cited as a function of referral hub, followed by referral to other facility. Only 29 mothers mentioned provision of counselling as a service by referral hubs.

Barriers

Discordant understanding of emergency

The understanding regarding when to seek hub transport was not homogenous between the beneficiaries and the providers. Although according to the current protocol of the hub, transport should be mainly provided for emergency cases, we found that out of 25 pregnant mothers, 15 reported seeking the RH transport service even when they had no complications. Table 4, presents the number of mothers who reported to utilize the referral hub service. Out of 100 mothers who participated in the survey, two reported not hearing about “referral hub”. It is possible that the two most likely were not familiar with the term used by the interviewer. So even though they declined knowing about RHs, they used the hub service nonetheless. As revealed through the in-depth interviews, to be discussed later, terms such as “IRC hubs” and IRC gaari “ were most commonly used.

Table 4. Status of the utilization of referral hub transport service

<table>
<thead>
<tr>
<th>Availed RH transport</th>
<th>Didn’t have a complication, n (%)</th>
<th>Had complication, n (%)</th>
<th>Overall n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 62</td>
<td>N = 36</td>
<td>N = 98</td>
</tr>
<tr>
<td>No</td>
<td>7 (11.29)</td>
<td>7 (7.14)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>55 (88.71)</td>
<td>36 (100.00)</td>
<td>91 (92.86)</td>
</tr>
</tbody>
</table>

From the remaining 98 mothers who reported to know about referral hub, 91 mentioned that they used the transport service. The remaining 7 said hubs referred them to facilities and they did not use the transport. Out of 91 who used the transport service, 36 did so because they had complications (See Table 4).

Among 75 mothers who had already delivered, 18 developed complications during delivery, 6 after delivery, and 2 both during and after delivery. Out of the rest who reported not having any complications, 15 were pregnant and 49 had already delivered. The complications reported during pregnancy are diabetes, high blood pressure, bleeding, fever and stomach ache (See Table 5). Prolonged labour, obstructed labour, and bleeding was reported as complications developed during delivery. Reported complications developed after delivery are retained placenta, bleeding, weakness, headache and swelling (See table 5).

Table 5. Number of complications self-reported by mothers during pregnancy, during and after delivery

<table>
<thead>
<tr>
<th>Complications</th>
<th>No. of responses (N= 36*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>During pregnancy</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>4</td>
</tr>
<tr>
<td>Bleeding</td>
<td>2</td>
</tr>
<tr>
<td>Fever</td>
<td>1</td>
</tr>
<tr>
<td>Stomach ache</td>
<td>17</td>
</tr>
<tr>
<td>During delivery</td>
<td>2</td>
</tr>
<tr>
<td>Prolonged labor</td>
<td>7</td>
</tr>
<tr>
<td>Obstructed labor</td>
<td>1</td>
</tr>
<tr>
<td>Bleeding</td>
<td>5</td>
</tr>
<tr>
<td>After delivery</td>
<td>2</td>
</tr>
<tr>
<td>Retained placenta</td>
<td>1</td>
</tr>
<tr>
<td>Weakness</td>
<td>2</td>
</tr>
<tr>
<td>Headache</td>
<td>1</td>
</tr>
<tr>
<td>Swelling</td>
<td>1</td>
</tr>
</tbody>
</table>

3 number of mothers who were asked this question and gave at least one response corresponding to the phase they had complications in.
The narratives revealed a differential understanding of emergency between the mothers and the providers that affected the use of the transport service. Most mothers called the ambulance only when they perceived ‘complication’ that was beyond their ability to treat. One mother said,

*We told them, “the mother just delivered her child at home. Now she is not feeling well. There is a lot of bleeding. She needs to be taken to the hospital. We do not have any travel fare. Where will we poor people go? If you can provide the service from the number you gave us, please come”.* - (Mother, 27, delivered, complication after delivery)

The fact that the mothers prefer to wait until a critical situation arises was also confirmed by some providers. One said,

*Our volunteers found a few mothers having a headache. They told them to go to the hospital, but mothers think that it is a simple matter, they do not need to go to the hospital. We cannot force them. This kind of problem we have to deal with. Unless we get a pregnant mother in a very critical condition, we find it difficult to convince them.* - (Supervisor, 27, IDI 2)

The understanding that mothers should call before a complication arises was also apparent in the narratives of other providers. A driver said,

*They do not contact us immediately the minute they feel labour pain. We take in every patient we get. When we ask them when did you start to feel the pain, they would tell us they felt it like two to three hours ago. We tell them, “Why did you call us so late? You could call us when the pain started”. I don’t understand why they wait to call us.* - (Driver, 30, IDI 14)

Although the providers revealed in the interviews that they expect mothers to seek service when they feel labour pain, irrespective of complication, the messages they give to pregnant women during household visits tell otherwise (see sidebar for quotations from both mothers and CHVs).

The quotations reveal that the providers expect mothers to seek transport only when there is any ‘danger sign’ or any complication and that labour pain is typically not an emergency. Therefore, it is not clear whether those mothers who reported not having any complication actually had any and to what degree.

The discordant understanding could also be related to the low medical expertise of community health volunteers as claimed by their supervisors. One said,

*Volunteers do not have medical Knowledge. They cannot correctly identify the patient’s categories (of emergency). Sometimes it becomes tough for them to ensure who needs emergency service and who doesn’t.* – (Supervisor, 29, IDI 13)

Suppose there is a pregnant mother. When we go for house visits, we check on her. We tell her “if you face any problem during delivery, before or after, call us”. – (CHV, 30, IDI 17)

We tell the pregnant mothers about the danger signs during pregnancy and that they should immediately go to the hospital when such signs are visible. – (CHV, 27, IDI 8)

*They told me to call them if I feel unwell at any point during my pregnancy and that they will bring the ambulance.* – (Mother, 25, post-natal complications)

**Preference for home delivery**

Preference for home delivery leads the mothers and their families not to seek transport at the moment of delivery. According to the providers, home delivery is a traditional practice among the Rohingya community. The social and religious norm to practice veiling and pressure from community people also influence women to give birth at home. Often, resistance towards facility delivery comes from family members too. According to one provider, these are crucial reasons for not achieving a 100% facility delivery among Rohingya women.

*Neighbors tell the patient’s family “we gave birth to 4/5 children at home. We did not face any problem. So why should you go to the hospital?” Traditional home delivery is a common trend among them. Also, religious beliefs matter in this context... Sometimes husbands do not allow the (pregnant) mother to go to the hospital. For these reasons, we cannot ensure hundred percent delivery at facilities.* – (Supervisor, 29, IDI 13)

Due to strict gender norms, the providers observe a tendency among the community to call Traditional Birth Attendants (TBAs) at home to conduct the delivery. It is only when the TBAs are not successful, and complications arise, the pregnant mother calls for the hub transport, as experienced by the providers. In the meantime, the patient’s condition often gets deteriorated.
A mother got labour pain at 7 pm but called for referral service at midnight. During this period, tba tried to conduct the delivery at home. When tba failed, they telephoned the referral hub....Rohingyas are a conservative community. They strictly practice veiling. They do not want to visit the doctors until it is a grave matter. – (supervisor, 27, idi 2)

Such delays are also problematic in terms of admission at facilities. Health facilities sometimes refuse to take mothers in severe condition at the eleventh hour as they feel they are not fully equipped to treat those conditions. The delay further causes harm to both the pregnant women and their unborn child. A driver shared,

There are also cases where mothers go for home delivery, and the traditional birth attendant worsens the complication by trying to treat herself. In such cases, it becomes tough for us because no health facility wants to receive such patients. They say “why did you bring this patient now? The birth attendant made it worse. Now it becomes more difficult for us to treat”. Now, who knows if the mothers tell us the truth. They say the situation got worse two to three hours ago. But in reality, after you take them to the hospital, you would see that they have been trying to solve the matter at home themselves for a long time which becomes detrimental for both the child and the mother. – (Driver, 29, IDI 9)

Providers have also cited the previous bad experience of mistreatment and torture by health providers in the home country as a reason why the Rohingya community prefer home deliveries. Therefore, when RH staff go to their place to bring them to the hospital, they deny going. Even in many cases, CHVs return to the hubs empty-handed.

We counselled many high-risk patients, but they did not go to the hospital. They think they will be in trouble. [This fear is] even more than Corona itself. They believe that the doctors would not care for them as they (patients) are Rohingyas. Even they fear of getting killed at the hospital. – (Supervisor, 27, IDI 4)

**Strict veiling practices: Discomfort to interact with opposite sex**

Strict veiling practices and gender norms in the Rohingya population also leads to discomfort and reluctance to communicate and take help from CHVs who are men. According to the CHVs and their supervisors, pregnant women feel shy to share details about their pregnancy with CHVs. For this reason, CHVs face difficulty to collect correct information on last menstrual period (LMP), expected delivery date (EDD), among others. Often mothers do not share their complications with them. The efforts to talk to the mother often gets complicated when family members themselves do not allow women to speak to the CHVs

The female members of the Rohingya community are very conservative. They don’t come in front of people. Every one of my volunteers is male. In that case, it is tough to take a patient’s medical history. So, they can’t ask the patient directly. They have to take permission from the patient’s husband. Few patients deny talking, CHVs take the information of LMP and EDD after seeing the prescription. – (Supervisor, 27, IDI 4)

Family members also sometimes deny allowing the patient to talk with a male person. – (Supervisor, 35, IDI 11)

If a delivery patient can’t walk, we carry her in the stretcher towards the ambulance. Sometimes on the way, delivery takes place. At that time, we cannot touch the woman as we are all men. Even we do not have a nurse who can accompany us. – (Driver, 30, IDI 14)

Such a strict gender practice also proves to be a problem when women give birth on the way to the facility. Male CHVs cannot assist the process as no female nurse or health workers is available in this situation.

However, even though the women are not allowed to or refuse to talk to male volunteers, they do directly speak to community leaders, majhis, who are also men.

They (pregnant woman) feel shy with us, but they talk with majhis, so we communicate beforehand with majhis and tell them what messages they need to deliver” – (CHV, 20, IDI 12)

Nevertheless, the fact that no female worker accompanies the mothers to the facility seems to be a crucial reason why mothers may prefer home delivery and refuse to go to the hospital.
REACHING THE FACILITY

Facilitators

Getting the job done: Intra-organizational Mechanism

The survey among the mothers revealed that intra-organizational mechanisms are useful to provide services and lead to satisfaction. As a multiple response question, those who used the transport service were asked if they would recommend the service to others (See Table 6). All of them said ‘yes’ and their reasons are presented in the table below. The most common response was that the transport was available when needed (82%). This is followed by the availability of the transport 24/7 (76%). Good behaviour of staff was also cited as a reason for recommending the service (54%). Nineteen mothers also pointed out free service being a reason. Only one mother did not make any comment behind her recommendation towards the service.

Table 6. Reasons for recommending referral hub service by mothers

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Didn’t have complication n (%)</th>
<th>Had complication n (%)</th>
<th>Overall n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 55</td>
<td>N = 36</td>
<td>N = 98</td>
<td></td>
</tr>
<tr>
<td>Transport is available 24/7</td>
<td>43 (78.18)</td>
<td>26 (72.22)</td>
<td>69 (75.82)</td>
</tr>
<tr>
<td>Transport came timely when needed</td>
<td>46 (83.64)</td>
<td>29 (80.56)</td>
<td>75 (82.42)</td>
</tr>
<tr>
<td>Good behaviour of staff</td>
<td>31 (56.36)</td>
<td>23 (63.89)</td>
<td>54 (59.34)</td>
</tr>
<tr>
<td>Availability of staff</td>
<td>14 (25.45)</td>
<td>13 (36.11)</td>
<td>27 (29.67)</td>
</tr>
<tr>
<td>Free/ no cost</td>
<td>8 (14.55)</td>
<td>11 (30.56)</td>
<td>19 (20.88)</td>
</tr>
<tr>
<td>No comment made</td>
<td>-</td>
<td>1 (2.78)</td>
<td>1 (1.10)</td>
</tr>
</tbody>
</table>

* N is the number of mothers who were asked this question and gave at least one response

When patients do not want to come, we tell them that you will not be treated like how you have been in Myanmar. The system is different here. The service is excellent. They will take care of you. You can go for the first time and see what happens. – (CHV, 20, IDI 7)

Volunteers do counselling. When CHVs find any patients who never become motivated, they inform us. Then, I visit those patients and talk with the family members.7 – (Supervisor, 27, IDI 4)

The narratives of the interviews with the providers also revealed a strong working relationship among the staff of the referral hubs that facilitates the utilization of the referral hub transport services. The community health volunteers continuously keep in touch with their supervisors and notify them immediately of any challenges. Such a relationship is particularly useful when mothers and/or their families refuse or do not feel motivated to give birth at hospitals. Earlier, we mentioned reasons such as the preference of home delivery and past negative experience at health facilities in Myanmar that demotivate mothers to visit facilities. For reasons like this, CHVs counsel mothers and their families about the benefits of delivering at facilities until they are convinced. Sometimes CHVs bring along their supervisors to convince the families.

The access to constant communication with supervisors is particularly useful when CHVs need to clarify whether a mother who has sought the ambulance service indeed has an emergency. This step is especially important since, as mentioned in the earlier section, the CHVs lack proper clinical Knowledge about the type of emergencies. To cope with this challenge, they call their team leaders.

If volunteers are confused about the patients’ category, whether the patient is an emergency or not emergency, they directly call team leader. They explain the situation of the patient. Team leaders can assess the patients for having medical Knowledge and suggest CHVs accordingly. – (Supervisor, 29, IDI 13)

The providers also maintain a good relationship with the neighbouring hubs, which facilitates to cope with the shortage of ambulances. When two emergency patients need transport at a time, CHVs manage ambulances from other hubs and provide support immediately.

When we need to provide referral services for more than one patient at a time, we communicate with the referral hub of 25 or 27 to send their ambulance. – (Supervisor, 35, IDI 11)

If we found two emergency patients, we refer the patient who is in a more severe condition. Then we urgently manage ambulance for another patient. – (CHV, 20, IDI 7)

Along with the hotline number, the CHVs also share their (personal) mobile number, which helps them to get to emergency patients when there is a network problem. Often community people directly call on the personal numbers to get immediate service.

Community people whom we know have our own mobile numbers. Due to the network problem, patients sometimes become unable to communicate on the hotline number. Then, they call our number, we provide the service. – (CHV, 43, IDI 10)
Barriers

Communication delays

The study revealed various points of delay in taking a patient to the facility. One prevalent barrier identified by the providers is poor mobile phone network connection in the camps. It hampers regular communication between the hub staff and the health facilities and beneficiaries. Due to this problem, beneficiaries cannot communicate through hotline numbers of referral hub for seeking emergency transport.

Sometimes family cannot contact us over the phone due to network problem. – (Supervisor, 35, IDI 11)

There is a severe network problem; sometimes, we cannot even connect with the driver. – (CHV, 20, IDI 7)

Due to the network problem, referral hub service providers cannot communicate over the phone with the hospital authority before bringing the patient to the hospital. Sometimes, getting the patient without communication creates further delays for them.

Shortage of ambulances

Other delays happen due to the shortage in the number of ambulances. The referral hub has a limited number of ambulances. Usually, one hub is supported by one ambulance, but sometimes one ambulance covers more than one RH. The low number of ambulances is problematic when more than one patient needs the service simultaneously. Service providers cannot provide emergency referral services to more than one patient at a time.

We see the patient's condition first and then take her to the hospital immediately. We communicate with the hospital before going there. Sometimes we cannot contact the hospital due to the network problem. In that case, when we bring the patient without communication, we find that doctors are not available. Then, we have to go to another hospital again. It is a challenge for us. – (supervisor, 27, id 4)

Suppose one patient call for emergency service from Block B, and we reach there to carry the patient. At that moment, another patient calls for emergency service from Block C. We face difficulties to manage this situation. – (Supervisor, 35, IDI 11)

One mother who had labour pain along with fever said that her visit to the facility got delayed due to the shortage of ambulance and that she had to wait for a long time. She added,

They came and checked everything. Then they said “give us some time. Another patient took the ambulance. You need to give some time for this”. That time the call for noon prayer still wasn’t given. By the time the ambulance came back, it was already 2 PM. - (Mother, 20, delivered, no complications)

We use one ambulance to cover two referral hubs. We prioritize emergency patients to bring them to the hospital. We cannot support back referral from the hospital to home. Unless we find any request from the health sector or doctors, we try to convince the patient to go home themselves. – (Supervisor, 29, IDI 13)

Although according to the protocol, the mothers are supposed to get a lift back home, it is not always possible for the providers to do so as the ambulance would need to be available for other’s emergency.

Poor roads: a distressful journey

Location of camps and the roads within them is a particular challenge that hampers how quickly and safely the emergency case can be transferred to the hospital. The camps are situated in hilly areas. There is no paved road inside the camps. The ambulance drivers also need to be cautious while driving on the slopes. They drive slowly while passing through the streets, keeping patient safety in their mind. What’s worse, the roads become muddy during the rainy season that makes it even more difficult for the service providers to carry the patient and further cause delay.

It has been raining continuously for the last five days. The roads have become muddy. It is not easy to walk. When we go to rescue a mother, it is a dangerous situation to bring her on a stretcher because someone’s foot can slip [while walking]. This is a big challenge... [...] ...Sometimes, the wheels of ambulance get stuck into the mud. It happens every day. – (Supervisor, 35, IDI 11)

Two mothers mentioned that the roads from their house to ambulance are not in good shape and therefore added to their ongoing physical distress. One of them shared,

If only the ambulance could come to my house, then my suffering would have been less. - (Mother, 27, pregnant, felt complication during pregnancy)
Lack of security

During the time of boarding the patient inside the ambulance, if people surrounding the ambulance are carrying bags and all, we make sure we search those bags. I did not face any incident, but we have heard from others that sometimes these people pretend to be fake patients to traffic things illegally. – (Driver, 38, IDI 1)

They said (Transport company authority) we do not want you to be in trouble and also, we don’t want to be in any trouble either. So, you should better check. – (Driver, 29, IDI 9)

Lack of security of hub staff and the ambulance is a crucial challenge that also hampers how quickly the providers can take a patient in an emergency to the facility. Often when patients need to board the ambulance, the drivers have to do security checks. Some drivers have shared rumours about illegal goods transported during the boarding of patients, therefore, if there are people carrying bags during boarding of the patient, the driver and CHVs search those bags, a measure enforced by their authority as well.

Often for the security of the ambulances, the drivers cannot go and help the volunteers to carry patients,

When we go far to bring a patient, we are scared of children. Anytime they (children) can throw bricks at the ambulance when it is stationed.

Safety of the community health workers continues to be a cause of concern at night time due to ongoing existing conflicts in the camps. There are incidents of gun shooting and killing inside the camps. At night when there is an emergency referral case, the hub staff become more conscious about their security. Therefore, the staff needs to team up with more people to ensure safety.

It is scary at night to go inside the camp. There are multiple problems ...often there is shooting, sometimes people are killed, and a dead body is left on the roads.... In this situation, both the volunteers of RH go to the camp at night along with me... So, a total of three people. But at day-time one volunteer and I (driver). There is no extra staff. – (Driver, 30, IDI 14)
COMPONENT 2
SHUTTLE SERVICE
KEY FINDINGS

The utilisation of shuttle service (Secondary data analysis)
- Secondary data analysis showed that in the first month of shuttle service (August), the total number of women who utilised the service is 574. Out of them, 512 did for ANC, 19 for delivery, 13 for PNC, 14 for FP, and 16 for other reasons (STI, VIA, GP, referral to other facilities for delivery and pregnancy test).

Fidelity
- Fidelity in terms of the types of services intended, community mobilisation, and taking the mothers to the facilities and bringing them back exist.
- However, transport service not provided in two locations as per intention due to shortage of vehicle and inaccessibility of roads.
- All CHWs had correct knowledge regarding the function of shuttle service transport.

The decision to seek care
Facilitators
- Friendly motivated community workers gain trust from the community and repeatedly tries to convince clients to seek care from facilities.
- Partnership with community leaders enables to gain trust in the community and dissemination of messages.

Barriers
- Lack of trust in service providers in the Rohingya community hampers communication.
- Successful home deliveries in the past and strict gender norms and veiling practices lead to strong preference for home deliveries.
- Co-existence of several organizations offering the same service leads to clients choosing those facilities that provide free products. They refuse to go to the ones that don’t.

Reaching the facility
Facilitators
- Collaboration with other organizations enables referral of clients and provision of ambulance support. Support from community and facilities enables transport of clients who need emergency support.

Barriers
- Overcrowded camps, narrow roads and shortage of ambulances cause delays.
- Lack of emergency support after working hours due to unavailability of ambulance and drivers work according to opening hours of facilities.
FINDINGS FROM SECONDARY DATA

Number of mothers who used shuttle vehicle for SRHR service in August 2020

A total of 574 women used the shuttle vehicle for all kinds of services in August 2020. Out of these, most used for ANC (89%). This is followed by a small number who sought for delivery (3%). Near about similar number of mothers sought for family planning (FP) and Post-natal care (PNC). The other services categorised as “others” in the pie-chart include sexually transmitted infection (STI), visual inspection by ascetic acid, for general reason, and pregnancy test).

![Pie Chart]

Figure 7. Utilisation of shuttle service in August 2020
FINDINGS FROM PRIMARY DATA

Fidelity of the implementation of shuttle service

As per document review, our data showed that over the one month of implementation of shuttle service, there was fidelity in terms of the types of services intended, community mobilisation, and taking the mothers to the facilities and bringing them back. However, the only difference we came across in paper versus actual implementation is that the transport service was not provided in two locations, Noyapara and Camp 400 zone, although the CHWs disseminated information on shuttle service at those camps. The reason for the former is the shortage of vehicle, and for the latter, the roads are inaccessible. The shuttle vehicle is tagged with facilities in five locations instead of seven.

We also found the CHWs to have proper knowledge regarding the provision of shuttle service. The fact that the shuttle vehicles pick patients up from a fixed location within the community was mentioned by 89% of the CHWs, drop patients off at the facility within the camps (73%), pick patients up from the facility and return them to a fixed location within the community (59%) and taking patients to the facilities outside the camp when necessary (38%) (see Table 7).

Table 7. CHWs’ Knowledge about how the shuttle service works

Nature of utilization of shuttle service

Among the 93 respondents 54 (58%) availed the service during their ANC check-ups whereas 18 (19%) used it during PNC, 23 (25%) used it to reach the facility at the time of delivery, and 12 (13%) of the respondents used it while receiving family planning service from the facility. Almost all of them (88 out of 93) used the service to return to their house from the facility (see Table 8).

Table 8. Details of the utilization of shuttle service

The decision to seek care

Facilitators

Friendly motivated well-informed community workers

As indicated in the earlier section, CHWs are well aware of how the shuttle service works. They not only disseminate correct information but also motivate the mothers to avail the services through their friendly behavior. The fact that the CHWs disseminate correct information also came up in the interviews with the mothers (see Annex for socio-demographic information of these mothers) who could report the information related to the services correctly. The level of knowledge of the CHWs corresponded to the level of awareness about the modality of the shuttle service among the mothers. All of the 93 mothers interviewed reported knowing about the shuttle service in their camps. When asked about their knowledge of the modality of the shuttle service, all of them mentioned that
shuttle service picks up patients from a fixed spot inside the community and drops them off near the facility. However, only 86 said that the service also picks up patients from the facility and drops them home (see Table 9). All respondents knew about the service from the CHWs during their home visits, and 12 of them also mentioned neighbors. All mothers availed the shuttle service at least once.

Table 9. Knowledge about the utilisation of shuttle transport service by mothers

<table>
<thead>
<tr>
<th>Items</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whether the respondent knows about the shuttle service in their camp?</td>
<td>(N=93)</td>
<td>(%)</td>
</tr>
<tr>
<td>Yes</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>What respondent thinks the shuttle service does?</td>
<td>(N=93)</td>
<td>(%)</td>
</tr>
<tr>
<td>Picks patients up from a fixed spot in community and drops to a health facility</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>Picks patients up from a health facility and drops to a fixed spot in the community</td>
<td>86</td>
<td>92</td>
</tr>
<tr>
<td>Both</td>
<td>86</td>
<td>92</td>
</tr>
<tr>
<td>How the respondent knew about shuttle service?</td>
<td>(N=93)</td>
<td>(%)</td>
</tr>
<tr>
<td>From CHWs during their home visits</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>From neighbours</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>

Multiple response question

The CHWs reported that even though mothers are well informed about the shuttle service, they (the mothers) are reluctant to use it initially. The CHWs try to convince them to use the service. They often try to break the ice by immersing themselves in the household chores of the clients, often showing affection to the children. Doing so helps them to get close to family members.

Especially when family members reject the idea of taking services from facilities, CHWs continuously motivate them and inform them of the free pick-and-drop services. Not only door-to-door visits but also through courtyard meetings with family members, they, along with their supervisors, convince them of the importance of health services.

I always talk to them lovingly, with affection. I tell the family members about our services. We try to convince them. Suppose, I visit a household and find a woman doing household chores like separating rice; I would sit beside her and talk to her while sitting together with her. - (CHW, 26, IDI 55)

People know about the health facility and the services. But they may not agree to come. Or may hesitate to go at the time of the pandemic. In this case, we visit those targeted households and inform about the availability of the vehicle, (and) the hospital services. After receiving the hospital service, they will be dropped back home safely under the full responsibility of CHW. - (Program Supervisor, 31, IDI 35)

CHWs do courtyard meetings to counsel pregnant women’s husbands, their mothers-in-law. Family members sometimes do not understand the services. CHWs let them know. - (CHW, 26, IDI 55)
The midwives counsel the patients about shuttle service when patients come for a checkup.

We advise the patients, “we have a transport facility, you will come through transport. Call us on our number; we will send the ambulance.” – (Midwife Supervisor, 24, IDI 45)

To address the complaints and expectations that clients have about free products which they get at other facilities, the providers try to motivate them to bring them to their facilities by highlighting their expertise in handling the critical situation. The counselling of clients continues even at the facilities.

[We tell them] “yes many facilities conduct deliveries. But at our facilities, if the mother needs blood urgently, you will get it. Or if the mother experiences seizures, you will get this and that support.” In this way, we have to convince them. - (CHW supervisor, IDI 54)

We have seats in the waiting area. When the patient flow is a lot, we make them sit in the corridors by arranging benches and chairs. Then we do counselling with them. Every day we take sessions with the pregnant mothers who come for family planning service. - (Midwife, 34, IDI 33)

Collaboration with community leaders

Collaborating with community leaders such as majhis and imams helps the service providers to disseminate information about shuttle services.

Majhi is the leader of the block. We inform them about the available services in the facility. We tell them, pregnant mothers in your block can avail these services. - (Midwife Supervisor, 24, IDI 33)
Table 10. Reasons for using the shuttle service as reported by mothers

<table>
<thead>
<tr>
<th>Reasons for using the shuttle service</th>
<th>(N=93)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because it’s free and convenient</td>
<td>83</td>
<td>94</td>
</tr>
<tr>
<td>Respondent was recommended</td>
<td>75</td>
<td>81</td>
</tr>
<tr>
<td>Unwillingness to walk</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>It allows user to go to facility and come back home directly</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Reason for not using shuttle service while returning home after visiting facility*</td>
<td>(N=1)</td>
<td>(%)</td>
</tr>
<tr>
<td>Did not want to wait for shuttle vehicle</td>
<td>1</td>
<td>100</td>
</tr>
</tbody>
</table>

Gaining trust of the community: free service and representative of the community

The survey revealed that the shuttle service is well accepted in the community. When mothers were asked about their reasons for preferring the shuttle service (see Table 10.), 83 out of 93 (94%) mentioned that they used it because it is free of cost and is convenient; 75 (81%) said they were recommended; and 24 (26%) stated that the shuttle service enabled them a direct option to go to the facility and come back home.

Recruiting CHWs from the Rohingya community helps to convince the patient to take services. This is because the community people already know the volunteers and thus can rely on easily. Moreover, because the CHWs are women, it helps them to gain access to clients who are also female.

Eighty-four Rohingya volunteers work in the camp. We take the volunteers from the block near the facility they would need to refer to. They are well-known in that area. Everyone knows that volunteer. So, people would listen to them. Moreover, all our volunteers are female, which enables more effective communication with the patients.” - (Program Supervisor, 31, IDI 35)

Barriers

Lack of trust in service providers

The shuttle service is relatively new for the Rohingya community. Hence the community level workers expressed that establishing reliable communication with the Rohingya population for smoother service delivery is still a challenge. One particular challenge is the language. According to the midwives, sensitisation for every new service starts from speaking it in the language clients understand. The linguistic barrier further becomes a challenging task when not only the clients but also their family members need to be convinced about the services, who believe in traditional home delivery practices.

The first challenge is speaking the (Rohingya’s) language. At first, we have to counter that. Afterwards, comes the in-laws and husband and other senior citizens who have delivered 12 or 17 babies in the traditional method. They did not care if seven died and ten remained and would put it in God’s ledger. So, when we have to refer somebody to a higher-level health facility, this stepwise counselling becomes a pressure. Sometimes we counsel the in-laws first, then the senior citizens, then the husband of the patient and only after that, we can transfer the patient to another health facility. (Midwife, 24, IDI 37)

Preferre for home deliveries

Many health providers such as community health workers, their supervisors and midwives talked about the preference of the Rohingya population for home deliveries. According to these providers, it is not easy to convince those families who cites past successful home deliveries in their families and communities as a good reason to continue the tradition, and not go to facilities for deliveries. One midwife said,

You know, the mothers-in-law and the grandmothers during their time used to deliver babies at home. They would have delivery of 12 -17 children at home. Maybe out of those, seven would die, and ten would survive. They would reason that as Allah did not want, so those seven died. That is why we feel a lot of pressure and have to put in a lot of effort to convince them. If the mother-in-law agrees, you would see that the grandmother denies. Or the husband doesn’t agree. After counselling all of them, finally, they let the mother go. The fieldworkers do courtyard sessions with mothers-in-law and grandmothers and urge them. They try to make the family members aware of the danger signs. Then they agree to permit the mother to go. But again, next time, you would see they have gone back to square one. (Midwife, 24, IDI 37)

They (mothers) tell me “my mother-in-law doesn’t permit me to go.” or “my husband does not allow me.” now i do not have to convince her because she understands. Since she is pregnant, she understands herself. When i explain to her, she understands. But they do not understand. The mother-in-law and the husband. They (mothers) tell me “sister, please try to convince my mother-in-law, try to convince my husband.” - (chw, 26, idi 55)
block convinces some families to give birth at facilities. She shared,

When one baby dies in their block (during home delivery), everyone goes to the facility (to give birth). But if babies survive, they all [tend to] give birth at home. - (CHW, 26, IDI 55)

Strict gender norms and power plays

One reason for a strong preference towards home delivery seems to be the strict gender norms and veiling practices in the community. Community health workers and volunteers and their supervisors cited resistance from mothers-in-law and husbands as a common reason for a smaller number of deliveries at the facilities. They continuously experience refusal from mothers-in-law and husbands who do not allow the daughters-in-law to give birth at facilities.

The strict norms and expectations surrounding women also affect the modality of service by the providers. One supervisor of community health workers shared her experience of recruiting community health workers for shuttle service. The community leaders, majhis, refused to engage women of their respective blocks in this role.

When I told them [I need to recruit women], the majhis said, “we are not going to allow our Rohingya women to do this work. They are not going to go from house to house and do this.” - (CHW supervisor, IDI 54)

As a result, the respondent had to recruit women from other camps. However, that resulted in a different conflict later on. She added,

Now we are having this problem. They (majhis) came and told us “People from other camps cannot work here. The people from our camps who worked over there were sacked. So their people need to be sacked from here as well.” So, I told them “look, when I came to Camp 6 to work, we built a small tent here and worked. They worked in rain and storm. With a meagre salary of 2400 taka, they even acted as cleaners even though they were CHWs.” The Rohingya people here did not understand even what hospital is. Our CHWs worked very hard. How can I let them go? They said, “No need to show such sympathies. If our people are sacked, then they need to be sacked too.” So, for their sake, I said, “let 2 of them work and the others we will let go”. They agreed. - (CHW supervisor, IDI 54)

Co-existence of organizations offering similar services

The study revealed the co-existence of different organizations offering similar services to be a crucial barrier to service delivery. The providers who are directly working at the ground level expressed the challenge they face daily to convince clients to come to their facilities, who otherwise like to visit other facilities that offer free products and incentives, along with transport service. One provider mentioned,

In the past, the pregnant mothers used to get free biscuits, sweets and fruits from us. They also used to receive solar light bulbs. But now we no have the fund to do so. Now that other organisation has that fund. When mothers deliver [at their facilities], the mothers get nice mats and everything. Their CHWs now think very highly of themselves. They say “we offer this and that and a lot more. Now mothers always want to come to us. If they deliver at your facilities, they do not get anything. They are sent home with only medicines”. So, if they counsel those mothers once, our CHWs have to counsel thrice [to convince the mothers]. - (CHW supervisor, IDI 54)

UNFPA works with many organizations. Patients are sent to the facilities funded by UNFPA. [The organization] PHD has no health facility in this area, but they have 300 volunteers, who work in the community. These volunteers refer patients to hospitals. We are getting this sort of support from them. - (Program Supervisor, 31, IDI 35)

Reaching the facility

Facilitators

Collaboration with other organizations: More clients on time

According to the providers, collaboration with other organizations ensures more clients in their facilities. A large number of volunteers from other organizations work in the community to provide support to the Rohingya population. Due to the collaboration between organizations, duplication of services for the patients tend not to happen.

RTMI has no facility here. But they send the patients to hospitals of PHD and Hope. From camp 1W, 2W or surrounding areas in Kutubpalong, RTMI and PHD send patients. So, three organizations do not send patients to one hospital. Duplication is not possible because each organization has a specific catchment area [that do not overlap]. - (Program Supervisor, 31, IDI 35)
Suppose, there are patients from camp 2W and 1W. Here three organizations, Hope, RTMI and PHD, refer patients to hospitals. In this case, both RTMI and PHD may ask for a transport service at the same time. So, we managed a fixed time for each organization to avail the transport through negotiations. Suppose, if one organization needs the transport support at 10 AM, then the other will get at 11 AM. - (Program Supervisor, 31,IDI 35)

When several organizations require transport service at a time, they fix a specific time for each organization based on their necessity of transport. Because of the collaborative relationships, there is smooth coordination and communication between organizations. Teamwork between a health facility and a field supervision team is essential to negotiate time to provide transport.

Support from the community and facilities during emergencies

When the vehicles are far from where pregnant mothers live, the community health workers receive help from people in the Rohingya community to carry the mothers. There are chairs specially made for carrying pregnant women by Rohingyas. These chairs are kept near households that have pregnant women.

The Rohingya community has a unique system. They carry the pregnant mother in a chair, which is like a portable palanquin. They bring the patient on this chair like palanquin at day and during the night. We provide the costs if they have to spend money to carry the patients. - (Program Supervisor, 31, IDI 35)

Once facilities close, when any pregnant mother needs emergency transport, then an ambulance from the facility is sent to her house to bring her. The ANC card contains the phone numbers of both the facilities and the CHWs.

We provide an ANC card to patients. Our office phone number and CHV’s number are written on the card. When they face any problem, we send our ambulance to the patient’s house to bring the patient to the hospital. - (Midwife, 24, IDI 37)

Usually, ANC, PNC and family planning service seekers come to the hospital through shuttle vehicles during the facility working hours. But if an emergency patient (delivery patient) needs transport support after the working hours, there are alternative procedures to ensure the patient’s arrival at the facility. In this case, due to unavailability of shuttle services at night, low-cost ambulance service is provided by RTMI to the patients. If the emergency patient comes to the facility herself, she is reimbursed the cost by the authority of the hospital.

When we get to know about any emergency patient, we bring her using our low-cost ambulance. In some cases, when patients come to the hospital spending their own money, we reimburse them the cost. (Midwife Supervisor, 24, IDI 33)

Barriers

Anticipated delays: Overcrowded camps and narrow roads

Even though shuttle service is assisting Rohingya patients to reach the health facility, barriers in transportation still exist due to the uneven and rough terrain inside the Rohingyas camps. Moreover, the drivers cannot drive at full speed children play on the roads inside the camps, thus resulting in transportation delay of the patients even though the distance is minuscule.

It takes a bit of time to collect and hand over the patients to the health facilities and then go back for another round. The roads inside the camps are not that well-built, and you will find children playing alongside the road all the time. So, even if you try, you cannot run your vehicle at full speed. Hence, it takes time to take the patients to the health facility even when the distance is not much." - (Program Supervisor, 31, IDI 35)

Lack of emergency support after working hours

As shuttle service is not available for 24/7, several barriers exist in availing it during emergencies after working hours. As the drivers, who are employees of a transport agency, are not hired to work after the facilities close, which is 4 PM, emergency cases arriving at after this time means they have to work overtime. It becomes a barrier as there are no substitute drivers assigned in case the regular drivers cannot work overtime.

Another challenge is to provide service at night. Our vehicles are providing service from 9 to 4. Some delivery patients or critical patients want to avail the service at night as they feel shy to come to the health facility during the daytime. Their families sometimes do not allow them to do so also. We are unable to provide any assistance in such circumstances as our vehicles on rent, and we cannot use them after working hours." - (Program Supervisor, 31, IDI 35)
Moreover, the supervisors also feel “uncomfortable” to contact drivers late at night. One said,

*When you go to those facilities, you will see that they are jammed with people till 2 PM. Once past that time, the number of patients in the outpatient department significantly drops. We already told our driver to familiarize themselves with those locations, and requested to be on call after 2. Suppose there are patients, when our CHWs call, try to be available. But even then, at night, we feel uneasy about calling drivers, about waking them up from their sleep.* - (Program Supervisor, 54, IDI 34)

Furthermore, the vehicles are not equipped with emergency kits to carry emergency patients to the health facility. All the vehicles assigned for the shuttle service are not ambulances. Following the words of the drivers working with patient delivery using the shuttle service, this modality hampers adequate service provision during emergency transport of the patients using shuttle service.

*We do not take the emergency delivery patients, brother. Those emergency patients need to be taken by the ambulances that our facilities have. We take two patients sitting in one seat. We cannot possibly take those emergency ones alongside the sitting patients.* (Driver, 32, IDI 49)

**Shortage of vehicles: huge client load at a time**

Although the providers at field level expressed the community’s reluctance towards facility delivery, the midwives and their supervisors mainly shared about their overburden of work due to massive flow of women who came for ANC over the past month of the service which just started. They, along with the drivers, particularly acknowledged that the introduction of the shuttle service led to an inflow of a vast number of clients.

However, considering the vehicles are limited (one microbus per camp) and have limited seating capacity, this gathering most often becomes a waiting group clustered at pick-up points in proximity. As a result, delay in transferring patients to the facility occurs. Furthermore, the patient load becomes so much that the vehicle drivers do not get to eat lunch as they have to be on the road continuously to shuttle patients back and forth from the community to the facility. According to the midwives their supervisors, the increase in patient load hampers efficient service delivery. Moreover, they cannot maintain social distancing measures in place for COVID-19. Such a situation becomes more hectic when there is a shortage of human resource. *Sometimes all of our CHWs ask for the vehicle service from different points of the camp, at the same time. When all those patients reach the health facility at a time, the workload increases significantly. It becomes harder to maintain social distancing for us too.*” (Midwife Supervisor, 24, IDI 33)
DISCUSSION AND CONCLUSION

For the first time, this unique study investigated the fidelity and the barriers and facilitators of the referral hub and the shuttle services introduced. Although both the components have different purposes (referral hub for emergency and shuttle for routine services), there were common grounds for barriers and facilitators, providing a rather holistic lens that would guide the discussion in this section. The literature on referral hub or shuttle service in a humanitarian crisis setting is almost non-existent.

One promising finding in the current study is that both these transportation services enabled women in the Rohingya community to seek emergency and routine services from SRHR facilities. As per the secondary data analysis, we saw a significant increasing trend in the number of mothers who utilized the services. Regarding referral hub, the analysis of secondary data from January 20 till August 20 showed an upward trend in the number of obstetric cases with only a slight drop in April due to COVID. There were more cases after the introduction of 4 new hubs. The increasing trend gives us an overall picture of the need for such a facility. In the shuttle service, the effect of which we observed for only a month, the number of women who sought SRHR services using the shuttle vehicle were high. Given that the camps are placed precariously on hilly areas with narrow roads and terrains that become even more dangerous when it rains, the services are a blessing for a pregnant mother with an emergency or cannot walk. The mothers had access to ambulatory services as well as reached the health facilities on time.

The result also shows a gradual acceptance of the service in the community. The services’ uptake conveys that the services have demand and that there was indeed a need for such services. Addressing the barriers would improve the services and increase uptake. Although the time to assess utilization and fidelity was only one month for shuttle service, the high number of users in less than a month is promising. However, in future implementation research, a more extended period of utilization could be considered to assess the trend in shuttle service utilization.

Concerning fidelity, both the services are implemented as planned with only little adaptations in case of referral hub to better suit the context. For example, the referral hub’s critical transformation is assessing emergency at the community level by the community health volunteers. Previously this assessment was conducted at the hub. This particular step seems crucial as time can be wasted for bringing the client to the hub, and service might be refused due to the false alarm. In case of a shortage of ambulances, such a pre-assessment reveals whether transport is needed and where she should be referred.

Similarly, because of the poor network and the necessity of clients to access referral hub service, sharing personal mobile numbers of CHV and hotline numbers is a necessary modification. For shuttle service, however, no such adaptation was found. It could also be due to the fact that the shuttle service program is young. Future studies should explore the fidelity and adaptations in-depth after a more extended period of implementation.

A couple of facilitators to implementing both the services were identified. Notably, the partnership and collaboration with community leaders and volunteers of other organizations support facilitating access to the transport services. The Bangladesh authority selected Majhis, who are considered not representative of the Rohingya community (Protection Sector Working Group Cox’s Bazar 2018; The New Humanitarian 2019). They were identified as key players in motivating mothers and their in-laws to use the services and referring complicated cases to the providers. A majhi’s approval also signifies acceptance in the community as everyone looks up to him. For both the services, approaching and involving majhis in the implementation process helps providers provide the service. The shuttle service component also revealed how majhis have a say in whether CHWs who are women may work in the camps or not. Perhaps to ensure that CHWs can continue to work, a partnership with these community leaders must be initiated and continued.

Volunteers of other organizations working in the same area contributed to communicating with the beneficiaries enabled utilizing the referral hub and the shuttle service. It especially was beneficial to male CHVs who could not directly talk to pregnant women due to strict gender norms and veiling practices. Therefore, for successful implementation of services, partnership with community leaders and other organizations is sorely needed.

Besides community leaders, the community members also supported significantly. Makeshift-stretchers made by the community members to carry pregnant mothers is a vivid example. They also assisted in carrying the mothers to the vehicles if necessary. During the night, while health workers’ movement is
restricted, they coordinated and organized with the other members to carry the emergency patient and bring them to the vehicles. By involving the community leaders and the community as a whole, both the referral hub and shuttle service address the fourth delay mentioned in the literature as well which occurs when there is no collective action in the community to enable the pregnant mother to reach the facility (MacDonald et al. 2018).

Despite the facilitators, however, a couple of barriers exist that hampers both the services' smooth implementation. One crucial challenge is the preference for home deliveries, and such a choice seemed to be connected to strict gender norms and veiling practices of women in the community (Toma et al., 2018). Rohingya women are not allowed to interact with men and are expected to be out of view. As we also saw in the case of the referral hub, the husbands and the mothers-in-law do not allow their pregnant wives or daughters-in-law to talk to male volunteers, which hampered the collection of pregnancy-related information. Such strict gender norms and veiling practices delays timely emergency transfers to facilities and put the mother and the newborn at risk of complications and deaths.

Moreover, the review by Parmar et al. (2019) highlights the reluctance of Rohingya women to give birth at facilities that have mixed-gender spaces. The fact that they are allowed to and feel comfortable interacting only with women could be why they do not easily contact the referral hub even when they have complications and need emergency support. A driver of a referral hub vehicle shared his experience of not having a female volunteer during the facility's journey, which was uncomfortable for the mother (who gave birth on the way) and the male volunteer and the driver who couldn't touch the mother to help her. So, perhaps having a female volunteer instead of a male volunteer to collect pregnancy-related information and accompany the mother to the facility to give birth could encourage more deliveries at facilities. However, this was not a problem for the shuttle service, where mothers could talk openly with female volunteers and accompany them for routine services. The significant number of mothers who sought ANC service through shuttle vehicle over only less than a month of its introduction complements this picture. However, to what extent female volunteers would be a better choice is difficult to say as the shuttle service findings revealed that community leaders were against recruiting women as volunteers. In the case of the referral hub, along with male community health volunteers, there should perhaps be female volunteers to accompany the mothers to the facilities. It might motivate more mothers to give birth to facilities.

The tendency to practice home deliveries could also be connected to the fact that being able to keep women at home and not send them out to work due to financial constraints is a sense of pride among the Rohingya population (Ripoll 2017). Such gender norms within the Rohingya refugee committee also hamper the recruitment of CHWs, as seen in the shuttle service initiative.

Another significant barrier in deciding to seek care is the discordant understanding of emergency between pregnant mothers (or their families) and the providers. Almost all the mothers asked for emergency ambulance service when their home deliveries went wrong. According to the messages the mothers received, this behavior was to seek help when they face any complication. But the interviews with the providers revealed a different picture. They expect mothers to call when they have delivery pain as they want the mothers to give birth at facilities. The providers seem to interpret delivery pain as an emergency. Unless both the clients and the providers have a similar understanding of when mothers should seek service, there will always be a gap in service provision.

The co-existence of other organizations that provide similar services is a challenge for shuttle service providers. They informed that it isn't easy to convince those families that want free products from facilities which they no longer offer. The clients prefer to go to those facilities that continue such a practice. They expressed frustration in the amount of effort they have to give to convince the clients. Such an “invisible competition” implies that it is an additional burden to the daily work responsibilities of the providers who have to maintain liaison between the community and the facility.

Common barriers identified in reaching the facilities by both the services are telephone network problems and poor road conditions, concurrent with previous findings (Sarker et al. 2020; Parmar et al. 2019). The nature of settlements and their location already compromises the client's transfer to a facility and would continue to reduce delays in seeking care. Although there is a pregnant mother's scope to be carried, dangerous soil erosion and subsequently landslides are risky.

Overall, the study observed that both the referral hub and the shuttle services are timely implementation strategies to increase utilization of SRHR services. Both are a boon to the Rohingya community that otherwise lack proper and easy access to transport facilities, especially during an emergency. Despite the barriers, the facilitating factors show a scope of improvement of these services.
LIMITATIONS

There are several limitations to the current study. One of the primary reasons is the BRAC JPGSPH research team could not travel to Cox’s Bazar due to the COVID 19 pandemic. The training and supervision were done on line. The time constraint was also vital for providing quick feedback to the implementers for adaptation of program implementation. The survey was limited to a smaller sample size. The data collectors could not collect the written consent as the Rohingya Population is suspicious and distrustful of strangers who ask for such a request.
RECOMMENDATIONS

**Referral hub**
- Deployment of female health workers into the community to disseminate messages to share the pregnancy-related information.

- Deployment of female health workers to accompany the mothers to the facilities to avoid uncomfortable feelings or reluctance of being in the mixed-gender space (vehicle), which might discourage referral hub utilization.

- Engagement of midwives for community mobilization and motivating family members to ensure admission of the mothers at facilities for delivery or any pregnancy related complication.

- Provision of referral incentives to traditional birth attendants for referring the pregnant women to the health facilities for delivery or seeking care for complications.

- Encouragement of families or mothers who have already used the service to sensitize other families to use referral hub.

- Implementation of a structured strategy for involving community leaders to motivate the decision makers of the family (husbands and mother-in-law).

- Revisit the messages disseminated to the beneficiaries. Alongside danger signs, a clear message about whom to contact for the referral hub service, when, how should be included.

**Shuttle service**
- Increase the number of vehicles so that more mothers can access and utilize the SRHR facilities.

- Engagement of beneficiaries and their families who have already used the service to sensitize other families to encourage the utilization of the vehicle and seek services at the SRHR facilities.

- Rigorous involvement of community leaders to motivate the decision-makers of the families (husbands and mother-in-law).

- Provision of referral incentives to traditional birth attendants for referring the SRHR clients to the health facilities.
REFERENCES


