Maintaining the provision and use of services for maternal, newborn, child and adolescent health and older people during the COVID-19 pandemic

Yemen: implementation of community-based services

Background

In 2006, the World Health Organization (WHO) classified Yemen as one of 57 countries suffering from a critical shortage in its health workforce. Health service providers are particularly scarce in rural areas; this situation shows the need to recruit community health workers to support the health system in increasing access to basic health services (1). Yemen has been facing the COVID-19 pandemic with a health system hollowed out by years of conflict which has reduced the health workforce. With just 10 health workers per 10,000 population, Yemen is well below the international standard of 41 per 10,000. In addition, with nearly one half of the country’s health facilities either damaged or completely destroyed, basic health needs cannot be ensured (2). Community-based approaches have been identified as an important intervention in the Yemen context to meet unmet health needs, particularly in rural areas (3,4). To support the already weakened health system, and recognizing the magnitude of the unmet health care needs in Yemen, the United States Agency for International Development (USAID) initiated a three-year (2019-2022) development project, the Systems, Health and Resiliency Project (SHARP), led by John Snow, Inc. (JSI) in partnership with the National Yemen Midwifery Association, Search for Common Ground and the Yemen Family Care Association. SHARP aimed to improve maternal and child health outcomes, increase community engagement in the health sector and improve the resiliency of Yemen’s health system in general (5).
Yemen reported its first confirmed case of COVID-19 on 10 April 2020 with the peak in the number of cases seen by June 2020. By the last quarter of 2020 the number of cases declined (6). There was another surge in COVID-19 cases later in 2020, although of a lower magnitude. The focus of SHARP activities at the time of its conception in 2019 was on reproductive, maternal, newborn and child health and nutrition (RMNCH+N) services to address malnutrition and diarrhoea among children. However, with the unexpected outbreak of COVID-19, SHARP was adapted to address the needs of the overburdened health system with project activities beginning in September 2020. A national Technical Working Group was established in Yemen in October 2020 which met regularly during the pandemic to discuss strategies to maintain essential services for reproductive, maternal, newborn, child and adolescent health and the health of older persons. The national Technical Working Group considered it important to share the SHARP experience which could be useful in strengthening health systems and future emergency preparedness. This report documents the SHARP project with a specific focus on the implementation of community-based approaches to maintaining essential services for RMNCH+N during COVID-19.

**Description of the intervention**

SHARP aims to reduce maternal, newborn and infant mortality in Yemen by improving maternal and child health outcomes, increasing community engagement in the health sector and improving the resiliency of the health system. The project works towards strengthening health care providers’ capacity to deliver quality health care and restoring health services at the community level by actively engaging community midwives (CMWs) and community reproductive health volunteers (CRHVs). The CRHV is a new category of female volunteers introduced during the COVID-19 pandemic whose focus is to raise awareness on pregnancy and pregnancy-related conditions. They help detect high-risk pregnancies and puerperium; refer cases to CMWs as needed; and support community campaigns to prevent diseases such as diarrhoea, cholera and COVID-19.

The project has recruited only female CMWs and CRHVs, who focus on providing reproductive health services to women and awareness-raising activities among men. SHARP targets newborns and children under 5 years of age through the provision of RMNCH+N services. The project also works to strengthen the capabilities of health workers in health facilities, with a focus on female cadres to provide reproductive health services to women.

**Implementation of community-based services**

The implementation of activities began in September 2020, and the project is currently functioning in three districts in each of three targeted governorates: Aden (Al Buraiqa, Ash Sheikh Outhman, Dar Sad), Lahj (Al Maqatera, Al Musaymir, Tuban) and Ta’izz (Al Mawasit, Ash Shamayatayn). These districts were chosen for their relatively stable operating environment, poor health indicators, functional or partially functional health facilities, and motivated local authorities.

**Fig. 1. Map of the three governorates targeted by SHARP, 2020**

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Map source: © United Nations, Wikipedia (Administrative divisions of Yemen)

The various approaches applied through SHARP and measures taken during the COVID-19 pandemic to support the provision and use of essential RMNCH+N services are described below.

**1. My Community, My Home approach**

To address newborn mortality, SHARP adapted the My Village, My Home approach, implemented by JSI in many countries to increase immunization coverage. Since the approach is applied at the community level in Yemen, the name was changed to My Community,
My Home (MCMH). The implementation of MCMH was dependent on the availability of CMWs, easy access to the geographical area, and the availability of services for childbirth, newborn care and complications.

2. Strengthening the care of small and sick newborns

Within the MCMH approach, efforts were undertaken to implement kangaroo mother care (KMC) for preterm and low-birth-weight babies to reduce newborn mortality. To integrate KMC as its core intervention, SHARP organized a three-day training course on the technique for 25 CMWs, the district-level supervisor and the district health office director from Al Maqatera District. The main objective of this training was to orient and equip the CMWs with technical skills to increase their ability to support KMC in the community for infants born at home. SHARP, in coordination with the Ministry of Public Health and Population, prepared a register of babies who were meant to receive KMC in the district which was printed and distributed to the trained CMWs. A card was also designed to allow CMWs to follow each newborn’s progress. The project developed additional information, education and communication materials for CMWs on the importance of and steps for continuous KMC, danger signs for newborns, CMWs’ role in supporting KMC, and the importance of immunization.

3. Preparing and updating RMNCH+N guidelines, job aids and assessment tools

To facilitate implementation of community-based health care services, SHARP, in coordination with the Ministry of Public Health and Population and the United Nations Population Fund, conducted a three-day workshop to review national community-based maternal and neonatal care guidelines.

For effective implementation of community-based services strengthening, the referral system to link the community to health facilities for emergency management and to access facility-based maternal, newborn and child health services was deemed important. The project team developed the first draft of a quick guide on how and where to refer maternal and neonatal patients with complications and remind health workers of pre-referral management.

In November 2020, SHARP, in coordination with the Ministry of Public Health and Population, updated and adapted a referral guideline for safe motherhood (which in 2022 was being piloted in Al Buraiqa and Ash Shamayatayn Districts).

SHARP developed an assessment tool to periodically evaluate the efficiency of the referral system in place and to fill gaps for further improvement. The assessment is composed of the Health Facility Referral System Tool and the Patient Referral Satisfaction Tool.

4. Building the capacity of frontline health workers

The training and orientation of CMWs and CRHVs have been an integral part of the implementation of community-based services, particularly during the COVID-19 pandemic.

As part of a community mapping exercise to develop a basic household profile and gather information on child health, vaccination and referrals, more than 210 CMWs were trained on the use of KoBo – a mobile data collection software. A total of 161 trained referral focal points (146 women and 15 men) were oriented on the SHARP updated Referral Guideline for Safe Motherhood in 11 training sessions and were trained on how to complete referral and referral follow-up forms.

A four-day refresher training of trainers course was conducted for six national trainers on the SHARP updated community-based maternal, newborn and child health guideline. These trainers then trained the project CMWs on the guideline. The SHARP technical team, in coordination with the Ministry of Public Health and Population, prepared the CRHV training curriculum. The Ministry nominated 27 master CRHV trainers (three from each of the targeted districts) to participate in a three-day training of trainers.

5. Improving the quality of community health services

To ensure the provision of high-quality services, the SHARP team conducted supportive supervision visits using the updated Reproductive Health Supportive Supervision Tool. The SHARP team conducted 13 supervision visits, of which two were attended by representatives from the Ministry of Public Health.
and Population and District Health Offices in Al Buraiqa and Ash Shamayyatayn. SHARP procured and distributed midwifery kits to 201 CMWs in all SHARP-supported districts. The kits contained birth supplies, scales to weigh babies, and newborn resuscitator sets to help CMWs provide quality services.

6. Strengthen the health information system
SHARP customized the Performance of Routine Information System Management (PRISM) assessment framework, translating six of its modules to Arabic. It also launched the PRISM assessment at the national and governorate levels to obtain a clear picture of the current health information system, identify gaps, and explore opportunities to strengthen health information, in order to help develop a strategic and operational plan for improving the routine system. In addition, the project developed a District Health Information Software 2 (DHIS2) implementation plan to strengthen the health management information system in SHARP-targeted districts and shared it with senior Ministry officials.

Select key findings are presented below.

1. Needs, problems and barriers related to RMNCH+N
   - Financial constraints are the major barrier to access to health services, including indirect costs such as transportation and loss of work hours for family members accompanying women or children to health providers.
   - Physical access to facilities was mentioned by one quarter of the respondents as another major constraint; this appears to be more prevalent in the rural governorates.
   - Security did not appear as a major obstacle to accessing health care.
   - The COVID-19 pandemic had an impact on women’s health-seeking behaviour; women fear accessing health structures and becoming infected with COVID-19, or being misdiagnosed and subjected to quarantine.
   - Women are aware of danger signs in pregnancy and obstetric complications, and antenatal care attendance is around 80%.
   - One half of the women respondents gave birth to their last child at home with the presence of a midwife. A traditional healer was also present in 20% of the cases.
   - Postnatal care attendance is low across the three governorates and mostly provided at home, possibly by the same CMW who manages childbirth.
   - Vaccination coverage is high according to vaccination cards. Nearly all women (89%) were aware of the importance of vaccinating their children for better health outcomes.

2. Communication processes and sources of influence on health behaviour
   - CRHVs are often mentioned as a source of valuable information as well as a resource to be used for malnutrition screening, and diagnosis and treatment of minor ailments in children. They are considered the best option for receiving health information. Poorly-educated and unemployed people rely on discussions with CRHVs or listen to messages on TV, as both are accessible for illiterate or only basically literate people.

Nine meetings were conducted in SHARP target districts to prioritize health issues that hinder people seeking services from nearby facilities. The meetings were attended by 280 participants (171 men and 109 women) drawn from community leaders, local authorities and health workers to ensure a broad spectrum of voices in the process. SHARP implemented strategies to resolve these issues through a combination of contributions from communities and businesses, with complementary funding by SHARP in the form of small grants.

Additional activities required to enable implementation
Several activities were undertaken to enable implementation of the community-based services. A needs assessment (7) using mixed methods was conducted in February-March 2022 which included identifying barriers and facilitating factors in accessing and providing RMNCH+N services to the community. A knowledge, attitudes and practices baseline survey of 1197 households; 18 focus group discussions with mothers of children less than 5 years of age about family planning, antenatal care, postnatal care and vaccination; and 36 key informant interviews with frontline health workers, community leaders and health authorities were carried out. The initial assessment was done before the start of the COVID-19 pandemic, and additional adaptations to the delivery of community-based services were made to address it.

Photo credit: JSI, SHARP
In addition, 33 community dialogue sessions were completed (11 each in Aden, Lahj and Ta’izz); a total of 514 people attended the sessions. The main purpose of the dialogue and validation meetings was to build community trust and understanding by training local health authorities to enhance their capacity and motivation to act as stewards of the health needs of their communities, and to enhance their role in oversight, leadership and management.

Adaptations for effective implementation during the COVID-19 pandemic

The implementation of community-based services was facilitated by close liaison between the Ministry of Public Health and Population and SHARP. However, COVID-19 impacted on the project by causing suspension of some activities as well as delayed timelines. Staff at the Ministry have been overwhelmed with critical tasks, including COVID-19 response activities, while also being understaffed which has led to recurring delays and postponement of SHARP activities. The Project has taken some measures to maintain implementation during the COVID-19 pandemic, including:

1. decreasing the number of participants in each training session, while increasing the overall number of training sessions;
2. using larger training venues to ensure physical distancing;
3. wearing of face masks and frequent hand sanitization;
4. sharing COVID-19 awareness messages during all SHARP activities;
5. adding COVID-19 awareness activities to community-based services, including messages and print materials on the importance of vaccination and other preventive measures for COVID-19;
6. including a session in all trainings, meetings and workshops on the importance of COVID-19 preventive measures.

Monitoring of implementation of the delivery and use of essential RMNCH+N community-based services

SHARP developed an iterative geographic mapping to identify clients’ needs and health worker skill gaps, and define community-level RMNCH+N services and information, including assessing the potential for task-shifting from health facilities to community volunteers or trained CMWs.

SHARP collected community profile data by using the KoBo system. On average, each CMW collected data from about 120 households; their performance shows significant variations. From June 2021 until March 2022, when this activity was completed, a total of 82,931 home visits had been performed (35,716 in Aden, 17,560 in Lahj, and 29,655 in Taiz).

The project used the following achievement indicators:

1. Percent of CMWs who know at least three warning/danger signs of obstetric complications.
2. Number of cases of child diarrhoea treated by community health workers.
3. Number of cases of diarrhoea among children under 5 identified and referred for treatment by community health workers.
4. Number of cases of acute respiratory infection among children under 5 identified and referred for treatment by community health workers.
5. Number of children under 5 identified as underweight, stunted or wasted and referred for treatment by community health workers.
6. Number of patients successfully referred to the next level of health care.
7. Percent of CRHVs/CMWs demonstrating increased capacity to provide service at the community level as evidenced by competency at completion of training.

Table 1 summarizes achievements from September 2020 through February 2022.

<table>
<thead>
<tr>
<th>Indicator no.</th>
<th>Indicator</th>
<th>Target</th>
<th>Achieved</th>
<th>Sex (male/female)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Workshops for determining gaps in community health workers’ skills</td>
<td>3</td>
<td>4</td>
<td>-</td>
<td>133.0</td>
</tr>
<tr>
<td>2.</td>
<td>Persons trained in child health and nutrition</td>
<td>1000</td>
<td>564</td>
<td>M: 55</td>
<td>F: 509</td>
</tr>
<tr>
<td>3.</td>
<td>Cases of diarrhoea among children under 5 years of age identified and referred for treatment by community health workers</td>
<td>3835</td>
<td>4055</td>
<td>M: 1917</td>
<td>F: 2138</td>
</tr>
<tr>
<td>4.</td>
<td>Cases of acute respiratory infection among children under 5 years of age identified and referred for treatment by community health workers</td>
<td>3780</td>
<td>3652</td>
<td>M: 1636</td>
<td>F: 2016</td>
</tr>
<tr>
<td>5.</td>
<td>% of pregnant women having at least 4 antenatal care visits</td>
<td>40</td>
<td>33</td>
<td>-</td>
<td>82.0</td>
</tr>
<tr>
<td>6.</td>
<td>Children who received third dose of diphtheria/pertussis/tetanus (DPT3) or pentavalent vaccine (Penta3)</td>
<td>6958</td>
<td>5057</td>
<td>M: 2623</td>
<td>F: 2434</td>
</tr>
<tr>
<td>7.</td>
<td>Community health workers supported to provide family planning counselling and referral</td>
<td>630</td>
<td>441</td>
<td>-</td>
<td>70.0</td>
</tr>
</tbody>
</table>
The monitoring, evaluation and learning team organized an orientation session for partners on how to use the manual for this purpose. Topics included the monitoring plan (Performance Indicator Reference Sheets, Performance Monitoring Plan, Indicator Tracking Table); project indicators and their baseline values and targets; data collection and management process (sources, collection and reporting tools, databases, security and protection); SHARP’s data management flow chart, quality assurance and error management, and reporting timelines.

Lessons learned

The Ministry of Public Health and Population of Yemen considers promoting community health important, particularly during the pandemic, due to difficulties in accessing health facilities, as well as due to the security situation. In this regard, the SHARP project ensured community-based services could be maintained in the three targeted governorates. Through this project many important lessons learned were identified.

Successful implementation of community-based services can be achieved through well-designed needs assessment, tailored interventions, linkages with relevant governmental bodies, ongoing supportive supervision and monitoring and evaluation for learning. Community health workers, including CMWs and CHRVs, are essential during service disruptions including diseases outbreaks, natural disasters and conflict situations. Their roles need to be consistently strengthened so that they are prepared to continue providing services during these disruptions.

CMWs and CRHVs need to work as a team within their communities, and this team should be linked with local health authorities. Holding regular meetings to discuss the challenges and needs of the community health team were important.

The role of the CMWs was strengthened not only by providing job aids, but also treatments and consumables for the provision of RMNCH+N services such as contraceptive pills, child health treatments, etc.

The project also learned that many CMWs lack up-to-date information about child health, so training them in Integrated Community Case Management was very important. Supportive supervision visits were vital to ensure that CMWs and CHRVs provided quality services in the community.

Finally, it is necessary to strengthen the health management information system and the availability of registers for all CMWs to note the type and number of services provided to the community. This is very important for documentation of accurate data and for easy access in the future, particularly for the Ministry of Public Health and Population.

Way forward

The project will extend for one more year to complete the activities and scale up the most successful ones such as the activities of the CMWs to five more districts, and continue the training of health workers on the updated guidelines and KMC.

Acknowledgements

SHARP is being implemented by JSI in partnership with the National Yemen Midwifery Association, Search for Common Ground and the Yemen Family Care Association, and was funded by the United States Agency for International Development. The information in this summary is based on reports from the JSI team.

Information was collected and synthesized by the Ministry of Public Health and Population, Yemen, and the SHARP team, particularly Suaad Shaker Al-Hetari, the Technical Director of the project.

This report was prepared by Huda Basaleem, Tarek Bin Hawil and Entesar Ben Thabet, with inputs from Dina Neelofur Khan and Anayda Portela. We are grateful for the inputs of staff at the World Health Organization Regional Office for the Eastern Mediterranean and the WHO Department of Maternal, Newborn, Child and Adolescent Health and Ageing at WHO Headquarters who reviewed and provided input into the final document. The Ministry of Public Health and Population approved the final version.

Financial support received from WHO/MCA through a grant from the Bill and Melinda Gates Foundation (INV-017424).

The views in this brief do not necessarily represent the decisions, policy or views of the World Health Organization.
References


Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMW</td>
<td>community midwife</td>
</tr>
<tr>
<td>CRHV</td>
<td>community reproductive health volunteer</td>
</tr>
<tr>
<td>JSI</td>
<td>John Snow, Inc.</td>
</tr>
<tr>
<td>KMC</td>
<td>kangaroo mother care</td>
</tr>
<tr>
<td>MCMH</td>
<td>My Community, My Home</td>
</tr>
<tr>
<td>PRISM</td>
<td>Performance of Routine Information System Management</td>
</tr>
<tr>
<td>RMNCH+N</td>
<td>reproductive, maternal, newborn and childhood health and nutrition</td>
</tr>
<tr>
<td>SHARP</td>
<td>Systems, Health and Resiliency Project</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>