**Responsive community health delivery systems during COVID-19 pandemic: Experiences of Medical Action Myanmar**

## 1. Introduction

Myanmar is committed to reaching the malaria elimination goal by 2030.[1] The country has made impressive progress in malaria control over the past eight years: between 2012 and 2019, malaria morbidity reduced by 89% (total confirmed malaria cases from 481,204 to 53,179) and malaria mortality by 97% (from 403 deaths to 14), according to National Malaria Control Program (NMCP) shown in *Fig 1*. In 2020, well-established 21,000 integrated Community Malaria volunteers (ICMVs[2]) under NMCP and the Civil Society Organizations (CSOs) are at the frontline helping in flattening the malaria curve and thrust the country to move forward with pre-elimination activities. However, the new emergence of coronavirus (COVID-19) threatens the hard gains on an unprecedented scale and challenge the efficiency of the health system in terms of human resources, financial capabilities, and service deliveries. As of 4th October, Myanmar reported 16,503 confirmed cases of COVID-19 with 371 deaths.

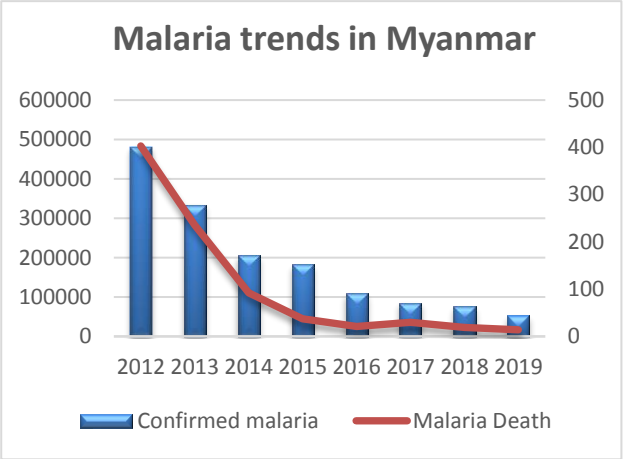


*Fig 1; Malaria trends in Myanmar (2012 – 2019)*

With the unswerving efforts, malaria CSOs in collaboration with NMCP, endeavour to alleviate the health burdens imposed by malaria and novel coronavirus. When COVID-19 situation escalated, the government issued restrictions for travel and mass gathering of people to curb the spread of COVID-19. As a result, routine malaria activities, which are mostly carried out in campaign setting, -such as supervision and monitoring visits to volunteers, community activities (LLIN distribution, health education, and volunteer training) involving the mass gathering of people, supply chain management, regular on-time data reporting were disrupted. Nonetheless, it is imperative to continue providing essential malaria services during the COVID-19 pandemic to be on track for malaria elimination. Uninterrupted malaria services delivery and uptake during the pandemic require the timely adaptation of implementing malaria prevention and case management and surveillance activity if the sustainable development goals are to be achieved.

Successful community engagement becomes more important during public health crises than ever before. Medical Action Myanmar (MAM), a local NGO in Myanmar, is providing health services for malaria, TB, nutrition, basic health care, and emergency referral to the vulnerable populations in high malaria Townships. One of the high-risk Townships is Paletwa Township with ongoing armed conflict found the most malaria cases in 2019. MAM managed to maintain service delivery and uptake amidst restrictions by utilizing the extensive network of frontline volunteers who are close to the community. Identifying fundamental principles and extracting lessons learned for how civil society organizations

[1] https://www.who.int/southeastasia/news/detail/08-12-2017-amid-concern-over-drug-resistance-mekong-countries-call-for-accelerated-action-to-eliminate-malaria-before-2030

[2] ICMV refers to the existing malaria volunteers are trained on an additional five diseases, including tuberculosis, HIV, dengue hemorrhagic fever, filariasis, and leprosy

can maintain the trust of the community they serve and at the same time protect their front-line service provider, will be an important lesson learned for other malaria actors in the region. To facilitate the learning and knowledge transfer, the Regional Malaria CSO Platform, GMS sets out the following learning questions:

1. What is the overall impact of COVID-19 on programme activities? Are you seeing any changes in malaria or other health indicators in areas where you are working?
2. Around programme implementation, what is not working well, and why? What data (qualitative/quantitative) do you have to support this?
3. What are the approaches/modifications being used by your programme that could easily be applied to other NGOs/CSOs?
4. Are you looking to make greater use of digital technology (to communicate quickly and update situation with the team)?
5. Are there any further key barriers to continuing programme delivery not outlined above?

## 2. Literature review

It is evident that COVID-19 has the potential to cause disruptions to health services in many ways. The recent survey results of Global Fund-supported programs across 106 countries show widespread disruption of malaria service delivery due to COVID-19. By large, 73% of malaria programs reported disruption of service delivery, in which countries in Latin America and the Caribbean and high-burden countries in Africa reported the highest levels of disruptions.[3] In the GMS region, the regional malaria CSO platform through country consultations relayed that supervision activities, stakeholders' coordination meetings, malaria activities at the international borders, and provision of malaria services by the volunteers were disrupted.[4] Also, there have been many modelling studies to learn the potential impact of the COVID-19 pandemic on malaria in high burden low- and middle-income countries. According to the Imperial College London, in high burden settings, malaria-related deaths over five years could increase up to 36%, compared to if there were no disruptions due to the COVID-19 pandemic. According to a WHO modelling study, the case could increase from 215 million in 2018 to 261 million by the end of 2020 and malaria death could also be doubled if the case management is severely disrupted.

To reduce the impact of COVID-19 on malaria programs, Myanmar, with the support from WHO, has developed guidelines on "Tailoring malaria interventions in the context of COVID-19". NMCP and malaria CSO partners adjusted malaria activities in line with new guidelines. With support from the Global Fund and other donors, malaria CSO partners distributed Personal Protective Equipment (PPE) together with COVID-19 preventive materials (IEC and Job Aids) to the health workers and Integrated community malaria volunteers (ICMVs) for the protection. NMCP also decided to increase the monetary incentives from 50,000 to 60,000 Kyats (46 US)/Quarter for ICMVs for their contributions in the malaria activities. The mega social media campaign, IEC materials, TV/Radio – Malaria and COVID-19 has been set up to educate the community about COVID-19 and sustain malaria activities indirectly

[3] https://www.theglobalfund.org/en/covid-19/news/2020-06-17-global-fund-survey-majority-of-hiv-tb-and-malaria-programs-face-disruptions-as-a-result-of-covid-19
[4] https://www.malariafreemekong.org/contents/rai2e-implementation-challenges-at-the-community-level-in-the-context-of-covid-19-epidemic-in-the-gms

since May 2020. The availability of PPE and health knowledge greatly help the frontline workers to continue the malaria services in the community.

To improve health knowledge, service quality, and health-related outcomes, supporting the communities and their active participation of the community is essential. The Global Fund emphasized malaria programs to consider the best community engagement approaches to be adopted while delivering malaria services. A recent systematic review on the community delivered model suggests that - community health workers/ volunteers, substantially helped reduce the malaria burden and conducting malaria intervention activities.[5] The paper also concludes that using community volunteers is effective in improving the coverage of malaria interventions and reducing malaria-associated mortality.[6] The community health workers/volunteers who are already providing malaria preventive and treatment roles can be leveraged to provide additional health services such as pneumonia and diarrhoea.[7] Here, in this case, having community-based and led health delivery programs made a difference by bringing in communities closer to service and allows them to monitor and participate in response to the public health crisis. For instance, community malaria workers who are responsible for services of malaria, pneumonia and diarrhoea in Ghana managed to provide more than 92% of carers of sick children.[8] Due to the growing threat of infectious diseases, innovative response and investment are necessary to stay on track of malaria elimination.

## 3. Implementation

MAM's village health worker program is implemented in remote and hard-to-reach areas in Myanmar. Trained volunteers provide an integrated package of health services to the communities including malaria testing and treatment, tuberculosis case finding and patient follow-up, referral of people with health emergencies to the hospital, and other basic health services. Volunteers are supported by MAM mobile teams, led by a medical doctor, who conducts monthly or bi-monthly supervision and monitoring visits to the volunteers. Mobile teams give on-the-job training, collect patient data, resupply drugs and conduct home-based monitoring visits to patients. In addition, mobile clinics and health education sessions are provided.

One of the areas covered by MAM is Paletwa Township, which is part of Chin State and located in the western part of Myanmar. This township has the

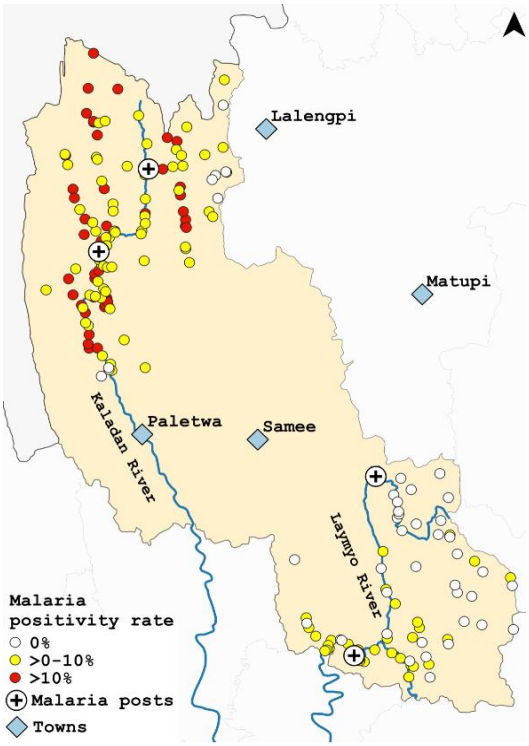


*Fig 2; MAM supported ICMV in Paletwa,*

[5] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6683427/
[6] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6683427/
[7] https://www.malariafreemekong.org/contents/regional-advocacy-statement-for-leveraging-the-roles-of-the-community-malaria-volunteers-in-greater-mekong-sub-region-countries
[8] https://pubmed.ncbi.nlm.nih.gov/29233111/

highest malaria burden in Myanmar with over 17,000 cases (25% of national case-load) and 11 malaria deaths in 2019.
Paletwa can only be reached by boat and is one of the most isolated, hard-to-reach, and least developed townships in Myanmar. There are ongoing conflicts, internet is shut down, a curfew is in place and public transport, as well as access to villages, is often disrupted. Government health services are limited and the escalating conflicts have worsened shortages of manpower and supplies.

MAM started its operations in 2016 and built a network of 200 volunteers, covering around 50,000 people, half of the township population. As rivers are the main travel routes, MAM set up four malaria posts staffed by a midwife, to provide malaria and other health care services for travellers and nearby villages. The malaria posts also serve as gathering points for ICMV, temporary storage of stock and facilitate patient referrals. Services provided by the volunteers, malaria posts, and MAM mobile teams are the only option available for most people to get health care from trained persons.

In order to reduce the disease burden in Paletwa effectively, MAM conducted targeted malaria screening activities in 81 villages from the end of March until June 2020. Fifty-seven villages were covered by MAM mobile teams, while for 25 inaccessible villages, ICMVs were trained at cluster points and conducted door-to-door screening.

From the start of COVID-19, MAM has remained operational and taken measures to ensure ICMV can keep providing services, and villagers remain using them after rapid assessment of the risk and proactive planning (Annex A).

***Sufficient supplies for ICMV;*** MAM sent more medical and non-medical supplies, including PPE items (face masks, hand sanitizer), to project warehouses and MAM mobile teams carried these to ICMV creating stock buffers of up to 10 months. For inaccessible villages by MAM field team, ICMVs were invited to pick up the supplies at one of the malaria posts or to meet the mobile team at a cluster point. Project staff negotiated with local authorities and soldiers for approval to pass military gates with supplies.
***Adopt activities to prevent mass gatherings;*** Local authorities already put a ban on mass gatherings due to ongoing conflict, which was re-enforced by COVID-19 restrictions, whereby a maximum of five people can assemble. Group health education activities were substituted by door-to-door visits and spreading messages through the loudspeaker. Mobile clinics were conducted door-to-door or by inviting small groups of patients who were lined up following physical distancing rules and given face mask if having fever or suspected of TB. Classroom refresher training of batches of 30 ICMV was postponed and, in consultation with local authorities, will be replaced by training of smaller groups (10 ICMV) or training at the village level (2-3 ICMV). Field teams emphasized on-the-job training in the village in the absence of refresher training.
***Reduce fear and promote ICMV services;*** As ICMV and villagers were scared and a lot of misinformation and rumours were spread, even resulting in self-imposed lockdown of villages, MAM emphasized on COVID-19 messaging. As MAM have been working in the villages for several years, the staff was not perceived as strangers. MAM mobile teams met with ICMV and village leaders to explain COVID-19 and the importance of continuing health service delivery. MAM trained ICMV on how to protect against COVID-19 and provide COVID-19 messaging, placed posters in villages and shared information through loudspeakers.

## 4. Outcomes and lessons learned

### 4.1 Outcomes

A comparison of health service delivery data by MAM from Jan-Jun 2019 (pre-COVID) and Jan-Jun 2020 (in the midst of COVID), shows that routine malaria screening ***in the community*** by ICMV was not much affected by COVID-19 (see *Fig 3*). ICMVs conducted 21,446 RDTs in Jan-Jun 2019 and 17,510 RDTs in Jan-Jun 2020, with an annual blood examination rate of 90% and 74%, respectively. The slightly lower achievement for Jan-Jun 2020 can be explained by over 100 late reports for May and June that have not been collected yet until September due to travel restrictions and conflict. However, the average number of RDTs done by ICMV per month with routine screening was similar over both periods, 18.8 RDTs per month in Jan-Jun 2019 vs 18.7 RDTs per month in Jan-Jun 2020. Besides, 18,516 patients were tested during targeted screening activities covering on average 79% of the village population during the first half of 2020. Over 77% of the 224 positive cases found were asymptomatic.

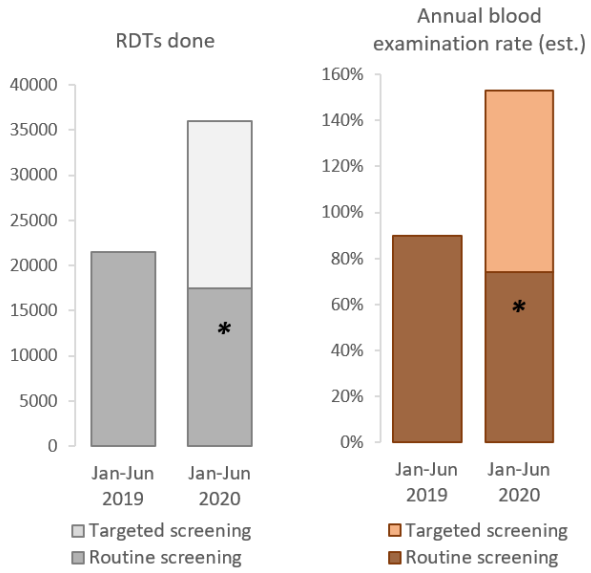


*Fig 3; Comparison of malaria services provided*
** exl. late data*

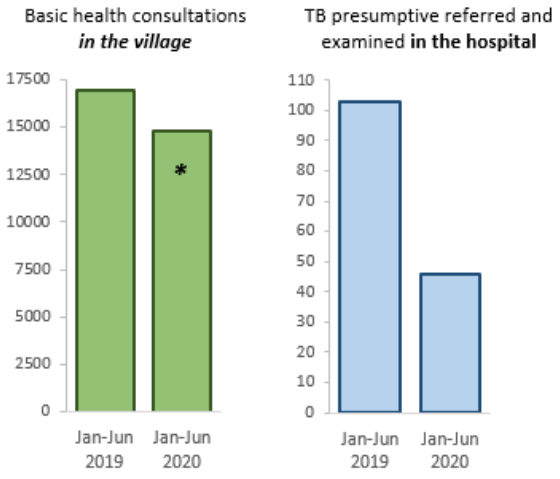


*Fig 4; Comparison of other health services provided by ICMV*
** excl. late data*

ICMV provided 16,914 basic health consultations in Jan-Jun 2019 and 14,383 consultations in Jan-Jun 2020 (see Fig 4). Over 100 late reports for May and June 2020 have not been collected yet due to travel restrictions. A slight increase was found for the average number of basic health consultations per ICMV, with 16.2 patient consultations per month in Jan-Jun 2019 and 17.4 in Jan-Jun 2020. Thus, despite COVID-19, uptake of basic health services remained high.

On the other hand, COVID-19 affected referral activities, with presumptive TB referral declining as travel outside villages was seriously impacted by conflict and COVID-19 restrictions (see *Fig 4*). Main challenges included lack of public transport, blocked routes by armed groups, travel restrictions due to COVID-19, and fear of safety and COVID-19 by villagers.

In summary, the results demonstrate that uptake of ICMV services in villages, overall, was not significantly affected by COVID-19, but seeking health care outside the village was negatively impacted due to travel issues. Villagers trust the ICMV and COVID-19 messaging by MAM mobile teams and ICMV has contributed to this result by reducing fear of villagers to seek health care in the COVID-19 context. The findings underscore the importance and resilience of the community-based model for service delivery of essential diseases.

### 4.2 Lessons learned from the field experience and qualitative findings

Results of the semi-structured interviews with one ICMV and one MAM Project Medical Officer from Paletwa Township, and one MAM senior program management staff show the key enablers and readjusted interventions, which help successfully implement health services despite several challenges encompassed COVID restrictions and armed conflicts. Four major themes stand out from the interviews, namely *(1) collaboration among key stakeholders during difficult times, (2) possessing responsive and resilient frontline members, (3) gaining trust with community through integrated health services, and (4) readjusted interventions.*

1. **Collaboration among key stakeholders during difficult times**

***Strong government collaboration;*** MAM staff build good relationships with local health and administrative authorities and meets regularly to provide updates and coordinate activities. This relationship enabled MAM to advocate for the continuation of monitoring and supervision visits by MAM mobile teams, despite lockdowns and travel restrictions. Fear of outsiders was taken away by explaining that MAM staff stayed in the same area and didn't take home leave or travel to other States/Regions. Local authorities (government and ethnic groups) acknowledged the need for health service delivery, especially with all resources dedicated to dealing with COVID-19, and issued travel documents. Therefore, MAM mobile teams could continue visiting the villages to supply stock and support the ICMV.

2. **Possessing responsive and resilient frontline members**

***Protecting volunteers and MAM staff;*** From the start of COVID, MAM Head Quarter communicated regularly with the projects and provided daily updates using social media platforms to re-assure staff and prevent panic. MAM used evidence to communicate the risk and protection measures related to COVID, countering misinformation that was spreading on Facebook. Based on the guidance from the Ministry of Health and Sports, MAM developed an operational guideline for staff and volunteers. Staff were trained by headquarters and passed on the instructions to the ICMV regarding the importance of proper control measures. MAM mobile teams reassured the ICMV that service delivery could continue and highlighted the importance, especially in the time that government health staff focussing on COVID with little time left to deliver other routine health services.

> *There are two key reasons that we can provide health services, including malaria successfully in Paletwa Township. The first one, we are grateful to get support from Township administrative and health staff, providing the approval letter for travel and commodity transportation. Second, we have collaborative and capable volunteers in the villages who help the community due to the relationship and trust we built over the years.* ***"MAM Project Medical Officer, Paletwa Township"***

### 3. Gaining trust with community through integrated health services

***Integration of health services;*** ICMVs supported by MAM are trained in the delivery of a package of integrated health services. This increases the popularity of the ICMV in the community since patients with complaints of fever can get other treatment if not malaria positive. It also improves cost-effectiveness of the program and contributes to the national goal of providing universal health care coverage.

> *I always get support from MAM. They teach me how to manage malaria, TB, and other illnesses. I am happy that the people in my village rely on me for health services.* ***"ICMV, Paletwa Township"***

### 4. Readjusted interventions

***Pro-active planning***; MAM developed an internal contingency plan just before the first case of COVID-19 was found in Myanmar with context-specific scenarios as different project areas could be affected differently. Mitigation measures and communication strategies were discussed and agreed upon with the project offices with the aim to maintain operations as much as possible. In addition, MAM procured additional supplies and increased buffers at warehouses and ICMV sites to prevent stock out.

***Utilize lessons learned from working in remote, conflict-affected areas***; Having operated in conflict-affected areas for years, MAM's systems are set up to be flexible and highly responsive to abrupt changes in project needs. In addition, working in remote conflict-affected areas has resulted in creative and resilient staff, who are able to find quick solutions for problems encountered in the field.

> *We immediately took action to protect the staff and ICMVs. We provided PPE and training to our staff and ICMVs. We did a rapid risk assessment and mitigation plans considering drug supply, capacity building, preventive measures, and guidelines to deliver health services in the field safely. It is crucial to readjust interventions proactively without any delay.* ***"MAM Senior Program Management staff, Yangon Head Quarter"***

Along with identifying important drivers to continue the health services amidst several challenges, the mechanics can be seen in the following observation framework (Annex B).

## 5. Recommendations and key next steps

It is possible that malaria programs in the region can maintain the services for the communities through program flexibility despite several restrictions. Three key recommendations emerged from the lesson learned and key adjusted strategies from MAM:

***Resilient and Sustainable Systems for Health*****:** *Fully utilize the network of volunteers who are within the community to continue providing essential malaria services. To optimize further utilization of*

*services, community volunteers should jointly provide the malaria services and encourage them to take part in other health services such as TB, immunization, fever management, referral and COVID-19.*

***Build capacity to CSO** – Provide the necessary technical and operational capacity to the CSOs, who are in the frontline working alongside community volunteers. Motivate the CSO staff to utilize the online social media and phone call for surveillance activity when physical data collection is out of option. Having said that, CSOs can quickly adapt to the local context and amplify the knowledge and skill set needed for the community volunteers to address the services of the community health needs.*

***Continue investment** – GF and other donors need to continue support to strengthen the community system as evident vividly shown that COVID-19 could derail the gains that have been achieved in the region.*

## 6. Conclusion

Maintaining uninterrupted malaria services in Paletwa Township during the conflict and COVID-19 related restrictions was not an easy task. Yet, Medical Action Myanmar managed to obtain an impressive success. The case study of MAM vividly shows that leveraging the strong network of functioning volunteers who can respond quickly not only to malaria but also to COVID-19 and other health illnesses gain the trust within the community and able to continue the health services. The intersectoral collaboration among key stakeholders such as the Township Authority, Township Medical Officer, NMCP, the village chief, and village health volunteers and proactive planning for the interventions and safety of staff and volunteers also the key drivers for MAM to keep on going serving the vulnerable and at-risk populations during a pandemic. These enablers echoed the key takeaways on building trust, integration of health services, and leveraging CSO in the transition to sustainability that were shared by the CSOs during the APMENxChange webinar.[9] Importantly, program implementers need to be flexible to adjust interventions responding to challenges and maintain the most critical prevention of malaria services to reduce the overall impact of the COVID-19 pandemic.

[9] https://www.malariafreemekong.org/contents/3-key-takeaways-from-apmenxchange-webinar-new-challenges-existing-networks-civil-society-experiences-in-the-gms-during-covid-19

**Annex A**: Operational risk assessment specific to Paletwa Township conducted by MAM

| Identified risks | Level of risk (High/ medium/ low) | Mitigation measures | Outcome after measures |
|---|---|---|---|
| Covid-19 pandemic;<br>- travel<br>- gatherings<br>- supplies<br>- protection of health workers | High | - **Travel**; advocate local authorities to maintain access to villages. When not allowed, meet at cluster point to educate ICMVs and key persons about COVID-19, collect data and give supplies (including PPE). Contact ICMVs regularly using mobile phones for supervision whenever possible. For MAM staff, request non-local staff to postpone home leave as to avoid quarantine.<br>- **Gatherings**; for ICMV training, MAM discuss with TMO and either train smaller groups or train at the community level. At the village level, MAM field teams conduct field activities through door to door adhering social distancing rules.<br>- **Supplies**; MAM sent more supplies to project warehouses in case of future pipeline breakdown. At the ICMV level, buffer period of medical and non-medical supplies is increased where necessary. MAM monitor and reach out to UNOPS PR team for necessary action.<br>- **Protection of health workers**; MAM developed field implementation guidelines for volunteers and field teams and procured PPE items. | MAM was able to sustain field activities despite many COVID-19 related restrictions and prevention measures. |
| Conflicts | High | - **Move the office;** MAM also set up a new office at Matupi, from which access to highest burden villages at the northern and western part of Paletwa was improved effectively.<br>- **Build strong relationships with locals;** MAM teams checked the security condition on a day to day basic and visit the villages whenever possible.<br>- **Produced visible items for protection:** MAM staff travel with ID cards and visibility is increased by wearing and carrying items with clear MAM logo. Moreover, MAM supplied ICMVs in the conflict area with supplies for 4-6 months, maximum for 8-12 months where feasible. | No stockout happened at frontline field sites and malaria control activities were continued in 2020. |
| Difficult to recruit medical doctors due to security issues | | MAM has four malaria posts in Paletwa, where local nurses are assigned and they are responsible to supervise ICMV. Local staff were also provided intensive training to be able to provide effective supervision visits for Malaria, TB and essential BHC services. | |

**Annex B**: Observation Framework

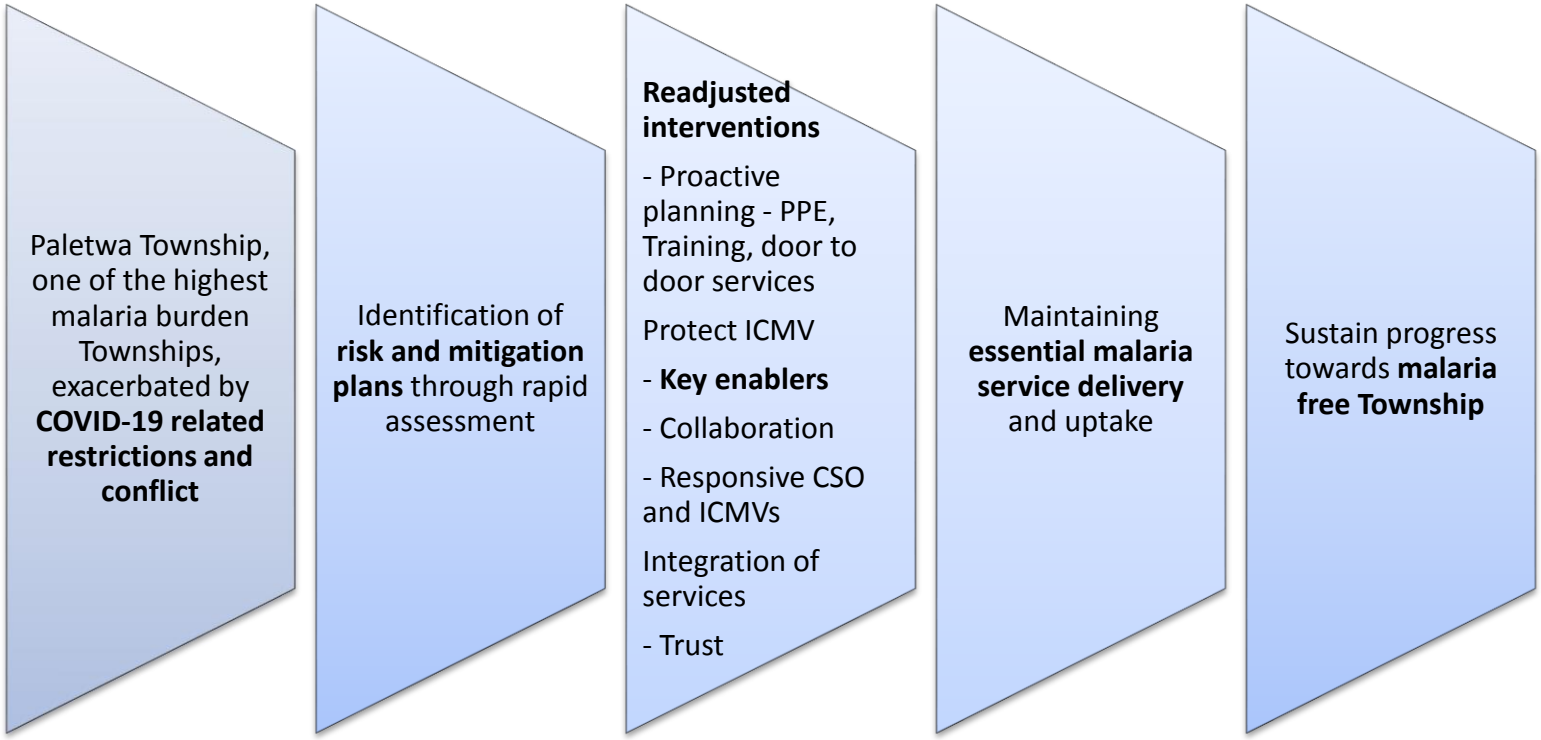

*Fig 5, 6*: MAM medical mobile team supplying medical commodities to prevent stock out at field sites during travel restrictions due to Covid-19 and conflict

*Fig 7*: MAM medical mobile team struggling difficult transportation routes to the villages

*Fig 8*: Small group volunteer training with physical distancing and protective surgical masks

*Fig 9*: ICMV providing consultation with infection control measures


*Fig 10*: Door-to-door malaria testing and treatment by following infection control measures