

The importance of building community trust for sustained health interventions during disruptive events such as COVID-19: A Cambodia case study

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Short Report

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Abstract

Cambodia has made impressive progress in reducing malaria trends and, in 2018, reported no malaria related deaths for the first time. However, the novel coronavirus SARS-CoV-2 (COVID-19) pandemic presents a potential challenge to the country's goal for malaria elimination by 2025. The path towards malaria elimination is dependent on sustained interventions to prevent rapid resurgence, which can quickly set back any gains achieved.

Malaria Consortium supported Mobile Malaria Workers (MMWs) engage with target communities to promote acceptance, trust, and resilience. During the COVID-19 pandemic Malaria Consortium's policy has been to follow national guidelines while continuing to support community-based malaria services via the MMWs / mobile malaria posts (MPs) with as minimal disruption as possible. A COVID-19 risk assessment was carried out by Malaria Consortium, with a mitigation plan quickly developed and implemented, to ensure MMWs were able to continue providing services without putting themselves or their patients at risk.

In general, Health Centres and village malaria workers at District level saw an overall decline in malaria testing in March and April; however, Malaria Consortium-supported MMWs did not report any such decline in the utilization of their services. They attribute this to the trust they have among the communities especially regarding Covid-19 mitigation measures that were implemented, and their consequent ability to continue working safely thanks to Malaria Consortium's rapid response and continued support.

By effectively demonstrating care and solidarity with and among the MMWs and communities being served, the rapid and effective Covid-19 mitigation measures and community messaging have ensured a high level of trust, and therefore willingness to continue providing and utilising malaria services as usual, despite the fear of COVID-19. By building trust among rural communities, resilience was strengthened, and effective malaria elimination activities were able to continue uninterrupted, even during an extraneous disruptive force such as the Covid-19 pandemic.

Highlights

Key Findings

1. Malaria Consortium-supported mobile malaria workers (MMWs/mobile malaria posts) reported no disruptions in maintaining essential malaria services despite fears of COVID-19
2. The communities trust the MMWs because they are recruited from within their own communities and are often known to them personally, they speak the same language and are engaged in the same forest activities. Likewise, the MMWs trust Malaria Consortium because of the clear duty of care displayed to them and the provision of consistent, relevant, and rapid support

3. Malaria Consortium's trust, relevance, and connection (TRC) approach made the communities and health service program more resilient to external factors beyond their control, and ensured people feel comfortable delivering and using MMW services even during times of uncertainty, such as the COVID-19 pandemic

Key Implications

1. If malaria elimination goals are to be successfully reached, it is vital to continue delivering essential EDAT services even during a time of potential crisis.
2. TRC and flexible programming ensure communities and health services are resilient and less depending on external factors, making it possible for essential service delivery to continue with minimal disruption.
3. Scaling up the TRC approach to the wider MMW program will assist Cambodia, and potentially other settings, in achieving malaria elimination, regardless of the presence of COVID-19 or other potential extraneous disruptive events.

Introduction

Cambodia has set an ambitious goal of *Plasmodium falciparum* malaria elimination by 2020 and complete elimination of all *Plasmodium* malaria by 2025. The country's malaria elimination database shows impressive progress in reducing malaria trends from Jan 2018 – May 2020 and, in 2018, no malaria related deaths were reported for the first time (WHO, 2019). However, the novel coronavirus SARS-CoV-2 (COVID-19) pandemic presents a potential challenge to this goal. As observed in other countries around the world, COVID-19 can quickly overwhelm health system capacity and divert attention from other pre-existing health priorities.

Situated relatively close to China, Cambodia was quickly on high alert as international news first reported the outbreak of COVID-19 in Wuhan and the subsequent lockdown of the city. Cambodia's first COVID-19 case was diagnosed on 27 January 2020 (WHO 2020), and the country responded swiftly by reducing international travel and setting up screening points at border crossings to provide health education and fever screening for returning Cambodian migrant workers. Travel within the country has been allowed to continue except for the holiday period of Khmer New Year (April), which is normally associated with high levels of social gathering and interaction. The Ministry of Health (MoH), World Health Organization (WHO), and other partners ramped up preparations for the health sector to accommodate a potential increase in COVID-19 cases and developed an Emergency Master Plan for COVID-19 response. The MoH updates the number and location of COVID-19 cases on a daily basis at <https://covid19-map.cdcmoh.gov.kh/> and posts daily surveillance reports at <http://cdcmoh.gov.kh/resource-documents/covid-19-documents>. As of 5 October 2020 there have been a total of 280 confirmed cases and zero deaths reported in the country (<https://covid19-map.cdcmoh.gov.kh/>).

Background

Community health workers (CHWs) are broadly defined as members of a community, often chosen by the community and working within their own community, who are supported by the health system but have no professional training and are usually volunteers but may receive a stipend. Using CHWs to deliver health services in their source communities has been shown to be effective in improving coverage of interventions, leading to improvements in mortality. However, in some settings, high coverage of CHWs has not led to expected levels of improvement (Grant et al 2017). Because CHWs are recruited from within their own communities, they are likely to have both a personal and a service relationship with the people they visit (Grant et al 2017). Being a member of a community does not guarantee that CHWs will be trusted. To be successful, not only do specific efforts have to be made to ensure trust among the communities and CHWs, but between the CHWs, health facility staff and supervisors (Grant et al, 2017). Early and effective community engagement, non-threatening home visits that enhance friendship and strong supportive supervision can improve the trust and acceptance of the CHWs within the communities, as well as the confidence of the CHWs themselves, increasing the willingness of community members to utilise CHW services (Singh et al 2015).

Successful CHW programmes require partnership between communities and health systems (and MoH partners), however, this does not happen automatically. Explicit mutual responsibilities and accountabilities are required, as well as a demonstrated willingness to work in tandem toward a common objective and flexibility (Naimoli et al, 2015). To date, there have been limited examples showing how this collaborative, dynamic approach creates trust, which can help maximise the efficient use of available resources and build resilience.

Program Description

In 2009, the Cambodian national malaria control programme (CNM) introduced a new cadre of CHWs known as mobile malaria workers (MMWs) to specifically improve the availability and accessibility of malaria services among remote populations (Canavati et al 2016). Malaria Consortium is supporting the provision of early diagnostic and treatment (EDAT) services for malaria among remote populations through MMWs and mobile malaria posts (MPs) in three provinces in North East Cambodia (Preah Vihear, Stung Treng and Ratanakiri Provinces). The approach was developed in alignment with the National Strategic Plan for Elimination of Malaria, in close collaboration with CNM and built on lessons learnt from earlier RAI projects (Malaria Consortium 2017). The MMWs need to have a strong understanding of the local geography, since road access and river crossings change frequently; work in collaboration with local authorities; and, most importantly, build and maintain trust among the forest goers so that they utilise the services being provided. To successfully access communities in and around the forest, some of who may be involved in illegal activities, as well as having cultural and linguistic differences from the majority Khmer population, it is essential that services are provided by a trusted and culturally acceptable person. To achieve this, Malaria Consortium uses a peer-to-peer approach, with the majority of MMWs

representing at least two of the following groups: forest goers, communities that regularly cross borders, loggers, ethnic minority groups, migrant farmers or construction workers.

The MMWs are trained and incorporated into the national VMW program and meet monthly with health centre (HC) staff. This ensures they are included in the general delivery of health services and can share challenges with health centre staff. However, unlike more traditional village malaria workers (VMWs), MMWs are proactive with their work; actively seeking out hard-to-reach populations and adjusting how they deliver their services, depending on changing circumstances (see Figure 1 for an example of the reach of MMW service delivery). To maximize the reach of activities and increase the population able to receive services, locations for mobile MP placement and targeted outreach activities are based on the triangulation of local MMW knowledge, distribution of cases, and accessibility of hard-to-reach and remote areas (Figure 2 shows the triangulation approach used to determine where to deliver services).

To ensure the same level of trust operates between the MMWs and Malaria Consortium, Community Mobilisation Officers (CMOs) each support an average of six or seven MMWs or mobile MPs. This enables each CMO to provide high quality support supervision; closely monitoring and following up with all MMWs/mobile MPs. If the CMO cannot join outreach activities for any reason, a home visit to the MMW or the mobile MP is always planned, at least once a month. Because services are provided in very remote areas, Malaria Consortium staff often spend the night, especially during the raining season when roads can become impassable. Spending this additional time among the communities adds to the level of trust shared between the communities, MMWs and Malaria Consortium staff. Malaria Consortium staff also attend monthly MMW/VMW meetings at the HCs to arrange payments, check the register books, make sure there are enough supplies and discuss any issues or problems.

Program Adjustments For Covid-19

National guidance documents and operational plans for malaria interventions were quickly adapted by CNM and WHO for the context of COVID-19 (Kingdom of Cambodia MoH 2020, Kingdom of Cambodia MOH & WHO 2020). Malaria Consortium's policy during COVID-19 has been to follow national guidelines while continuing to support community-based malaria services via the MMWs / mobile MPs with as minimal disruption as possible. A risk assessment was therefore rapidly carried out by Malaria Consortium, with a mitigation plan quickly developed (see Table 1 for Malaria Consortium's COVID-19 risk assessment and mitigation plan for MMWs) and implemented, to ensure MMWs were able to continue providing services without putting themselves or their patients at risk.

Outcome

The reported number of confirmed COVID-19 cases has remained low in Cambodia and there has been only minor disruptions to health services; however, the number of malaria tests conducted nationally did decrease by 20 percent in April and May compared to March (WHO 2020). To date, there have been confirmed COVID-19 cases in Preah Vihear but not in the other two provinces supported by Malaria

Consortium, but – as with the rest of the country – there has been an overall decline in malaria testing at the HCs and VMWs among all three provinces. Such a decline was not seen in previous years and it is possible this could be attributed to fear of COVID-19 (see Figure 3 for sub-regional testing and confirmed *Pf* and mixed cases). However, Malaria Consortium-supported MMWs have not reported any such decline in the utilization of their services.[1]

Malaria Consortium-supported MMWs/mobile MPs reported no disruptions to their services in the months of April and May. One MMW from Chom Ksant District, Preah Vihear Province commented “For sure, the activities of the MMWs in this area could still continue because the MMWs are all ‘recognized’ and trusted by the local people.... CMOs and MMWs have heard information from people in the communities that some villagers were worried about getting infected by COVID-19. But they still come for malaria testing at the mobile MPs or with the MMWs when they suspect they might have malaria, as they trust our services and clearly understood that COVID-19 can be prevented by wearing masks and washing their hands with soap or gel.” Another MMW in Cham village, Siem Pang District, Stung Treng Province reported the same experience: “At the beginning of the outbreak of COVID-19, CMOs and MMWs heard some information from local people saying they were worried about the disease and afraid to go outside or to go to the town. They asked their children to stay at home. But when they suspect that they might get malaria, they will still go and meet with MMWs in the village, that they have known.”

[1] Notes from monthly Malaria Consortium Community Mobilization Officer meeting, June 2020

Lessons Learnt

Malaria Consortium ensured the MMW/MMP program is built on **trust, relevance** to, and **connection** with, **(TRC)** within the communities being served. The communities trust the MMWs because they are one of them and are often known to them personally, they speak the same language and are engaged in the same forest activities. Likewise, the MMWs trust Malaria Consortium as the CMOs provide them with consistent, relevant, and rapid support. While developed to strengthen the delivery of malaria EDAT services, Malaria Consortium’s TRC approach has made the communities and health service program more resilient to external factors beyond their control, and ensured people feel comfortable delivering and using MMW and mobile MP services even during times of uncertainty, such as the COVID-19 pandemic.

If malaria elimination goals are to be successfully reached, it is vital to continue delivering essential EDAT services even during a time of potential crisis. TRC and flexible programming ensure communities and health services are resilient and less depending on external factors, making it possible for essential service delivery to continue with minimal disruption. Scaling up this approach to the MMW program will allow Cambodia, and potentially other settings, to ensure they succeed in achieving malaria elimination, regardless of the presence of COVID-19 or other potential extraneous disruptive events.

Key steps for ensuring TRC

- Recruit MMWs directly from the communities they will serve
- Ensure quality support is provided by the CMOs e.g. limit network size of MMWs/mobile MPs supported by each CMO
- Ensure flexibility with locations of mobile MPs and outreach services – through triangulation of relevant information
- Respond rapidly to changing circumstances
- Provide clear information and guidelines on changing situation e.g. COVID-19 transmission and prevention
- Ensure safety of staff (both CMOs and MMWs) and those utilising services e.g. rapid provision of PPE materials
- Continue to provide visible support to MMWs despite changing circumstances

Conclusions

Malaria Consortium was able to demonstrate care and solidarity for the MMWs and the communities being served through the COVID-19 rapid risk assessment and mitigation plan, combined with a the early provision of correct information on the transmission and prevention of COVID-19 and enhanced personal protective equipment (PPE), as well as continued routine support supervision. The high level of trust already established by the program ensured a willingness among the MMWs and communities to continue providing and utilising services as usual.

Preliminary data and anecdotal reports suggest that Malaria Consortium’s TRC strategy has been successful in building resilience and ensuring that COVID-19 has not impacted the delivery of EDAT services for malaria across the three supported provinces. This clearly demonstrates the important role of building and sustaining genuine trust among programme beneficiaries and service providers for the continuation of vital malaria elimination services, regardless of the ongoing external factors, whether that be COVID-19 or other potentially catastrophic future events such as other pandemics or natural disasters etc.

List Of Abbreviations

ART-R Artemisinin- resistant

CHWs Community health workers

CMOs Community mobilisation officers

CNM National Center for Parasitology Entomology and Malaria Control

EDAT Early diagnostic and treatment

GMS Greater Mekong Subregion

HC Health centre

MMWs Mobile malaria workers

MoH Ministry of Health

MPs Malaria posts

PPE Personal protective equipment

RAI Resistant Artemisinin Initiative

TRC Trust, relevance, connection

VMWs Village malaria workers

WHO World Health Organization

Declarations

Ethics approval and consent to participate: Not applicable

Consent for publication: Not applicable

Availability of data and materials: The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing Interests: The authors declare that they have no competing interests

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Authors' Contributions

MF wrote the paper based on information provided by co-authors. JT identified the value of writing a paper on practices that sustain malaria control interventions during an exceptional disruptive event, and provided overall guidance on content and emphases. HT coordinated manuscript inputs and process management. All authors contributed to manuscript development and proof-reading.

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Table

Table 1: Malaria Consortium COVID-19 risk assessment and mitigation plan for MMW activities

Malaria risks for Malaria Consortium MMW/Mobile Posts	Mitigation Measures	Implementation Status	Outcome
Risk of decreasing number of tests done by MMWs	Additional PPE material available & importance use of PPE strengthened by Malaria Consortium staff	Extra masks & forehead thermometers distributed March/April 2020	No decrease in number of tests observed; in Stung Treng some decrease for April 2020, but this is yearly recurrent phenomenon due to Khmer New Year - starting up activities in fields near villages resulting in less forest activities by population
Miscommunication/ limited understanding of COVID-19 transmission and prevention	Posters distributed related to COVID-19: transmission and prevention (provided by PHDs)	All MMWs received information (March) from Malaria Consortium staff on COVID-19 Strong messages given to continue screening, implementing/following safety instructions	Low number of COVID-19 cases/no proven local transmission makes it easier for MMWs to continue the task. Malaria Consortium staff continues to support and visit the MMW/MMP in a safe way.
Fear feeling at MMWs/MMP/Malaria Consortium staff level	Additional PPE ^[1] materials provided, and communication done	Completed March/April with ongoing sharing information, updating by management team (e.g. repeat safety measures, weekly update mails task force etc.)	No fear observed among MMWs/MMP and Malaria Consortium staff; no local transmission, no cases in the area gives feeling of safety As MMWs/MMP are locally recruited, no limit in movement when some villages/areas were closed down for a few days. No limits in traveling for outreach activities.
Coverage LLIN/LLIHN	Ongoing top up of LLIN/LLIHN Malaria Consortium Stock out observed from March 2020	LLIN/LLIHN requested to continue activity LLIN: out of stock on national level (refill 2021) LLIHN: received June 2020 order	Distribution of LLIHN ongoing by MMW/MMP No more LLIN: increased risk for plantation workers, for new settlements in forested areas, for new remote annex villages
Number of positive malaria cases	System in place: any Pf+ inform Health Centre for foci investigation & Malaria Consortium team perform re-ACD	Monitoring Malaria Consortium internal data base; compare/update national Malaria Information System (MIS) - monthly exchange data with	Decrease in the three areas of all types of malaria cases (end of dry season, starting rainy season) from January until May 2020

(=screening co-travellers)

CNM/WHO intensification plan for Stung Treng and Ratanakiri.

[1] PPE supplies provided included soap, hand sanitizer, masks, gloves, and thermometer guns

Figures

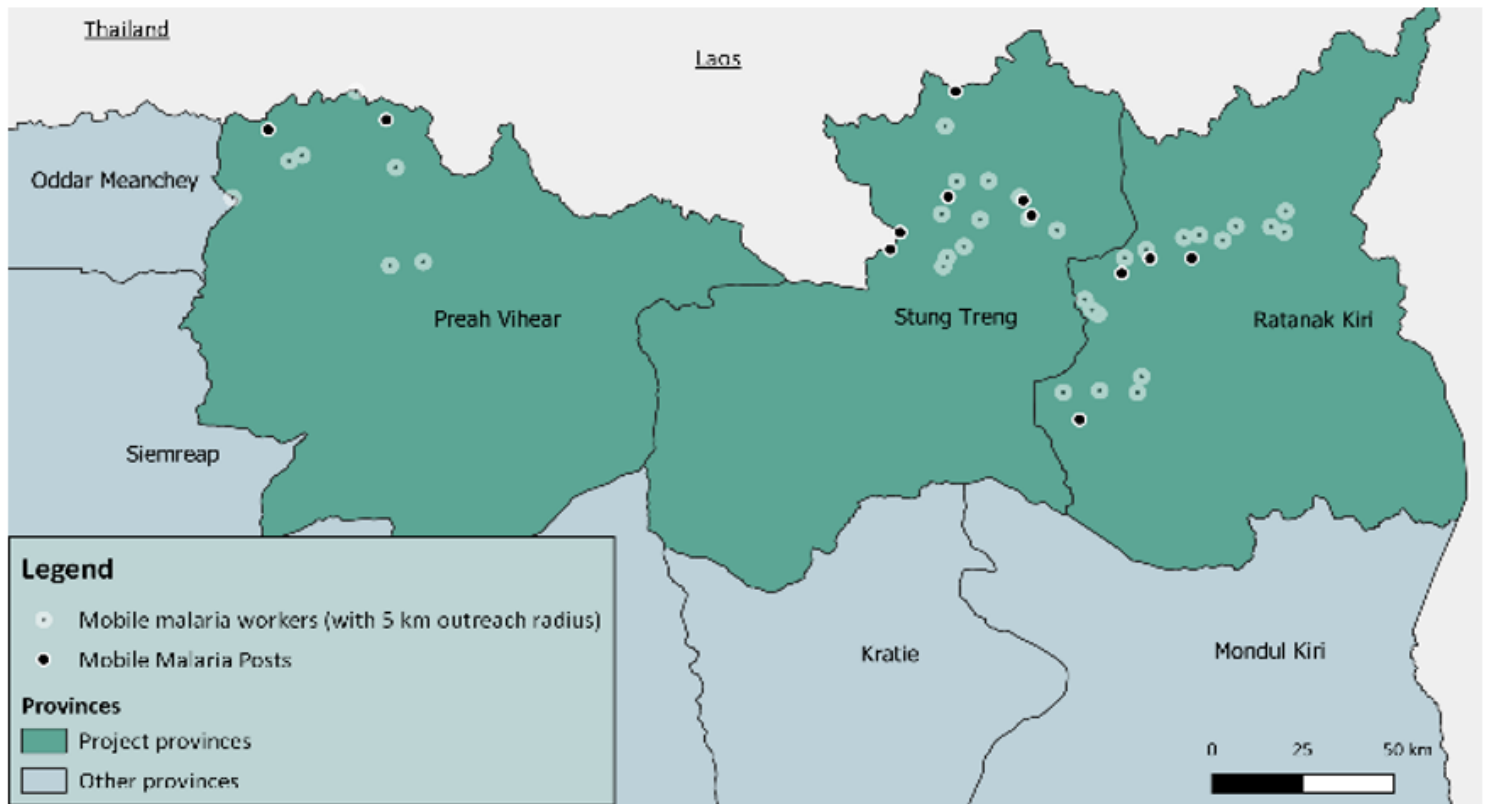


Figure 1

Example of reach of Malaria Consortium supported MMW service delivery. Note: The designations employed and the presentation of the material on this map do not imply the expression of any opinion whatsoever on the part of Research Square concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. This map has been provided by the authors.



Figure 2

Triangulation approach for determining where to deliver MMW/MP services

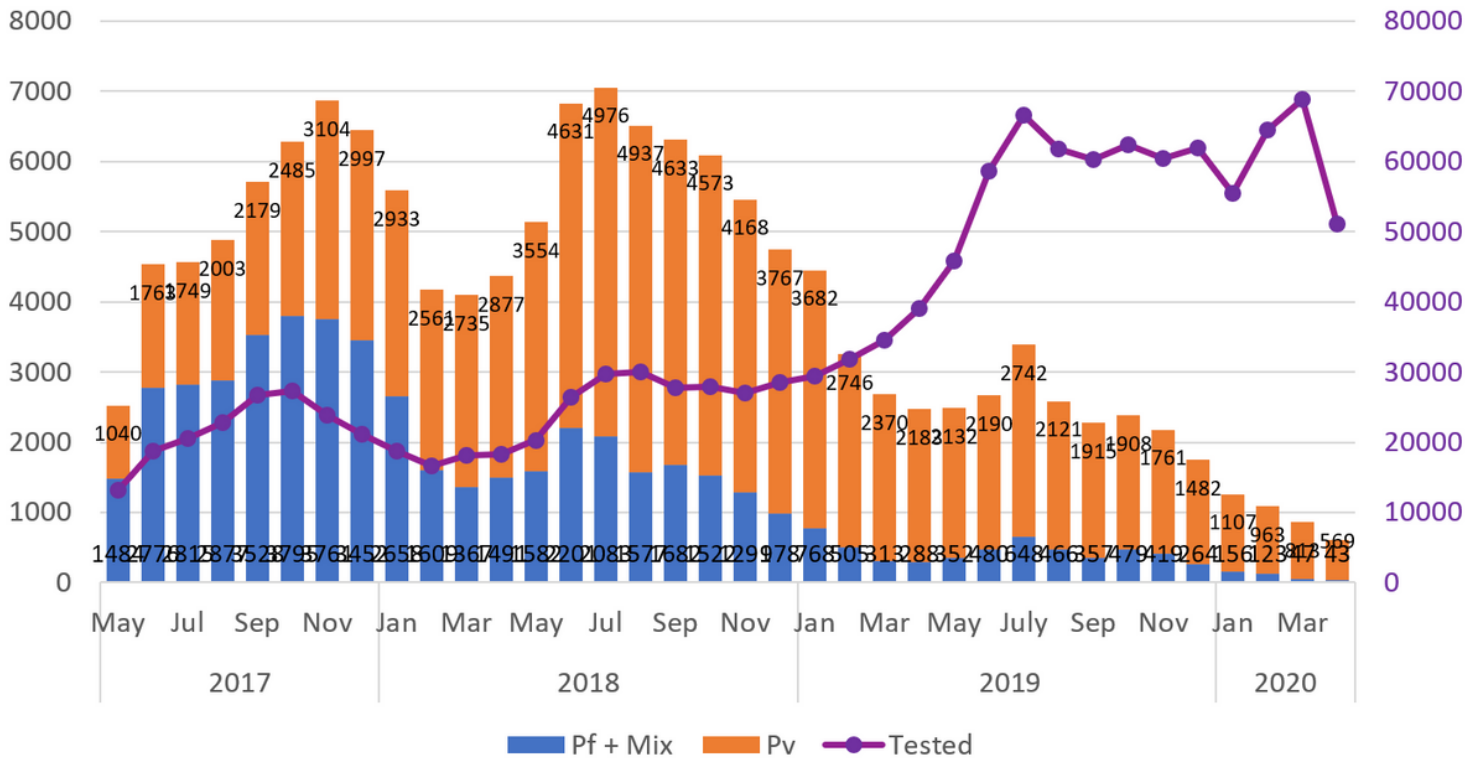


Figure 3

Testing and confirmed Pf and mixed cases 2017- 2020 (Source: WHO sub-regional database)