



## Medical Action Myanmar activity report

January – December 2018



*A child with clubfeet can live a normal life after several months therapy with casting and repositioning.  
Without treatment this child would never be able to walk. And life as a disabled person is extremely hard in remote communities*

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## 1. Introduction

Myanmar has a population of 52 million with 26% of people living below the poverty line and 5% living in extreme poverty.

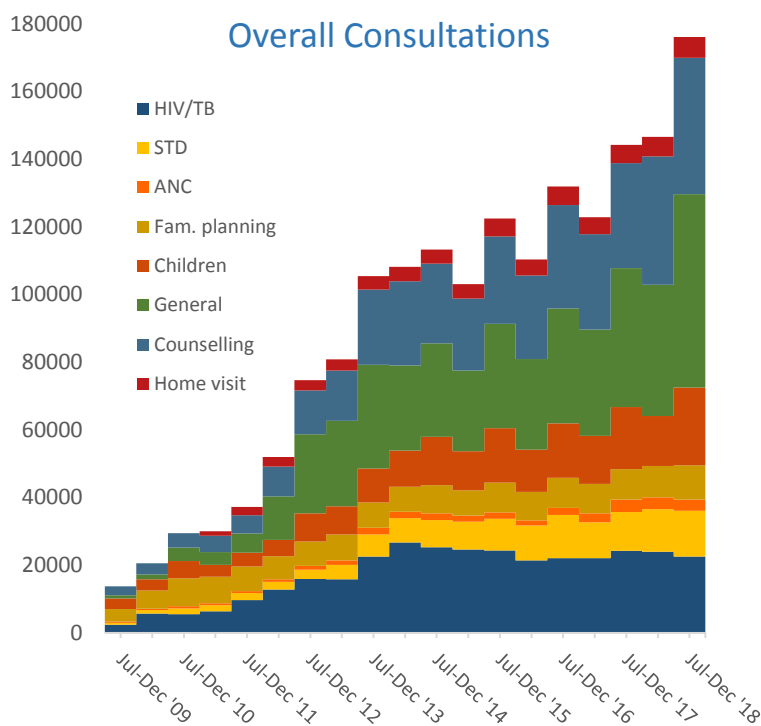


Medical Action Myanmar started operations in 2009 with 1 clinic in the poorest slum in Yangon. Since then we expanded to 10 clinics and 2,147 Community Health Workers (CHW) who provide health care in the most remote and hard-to-reach communities. In 2018 we performed over 1,000,000 patient consultations.

## 2. General medical clinics

MAM clinics provide health services, free of charge, to the poorest populations who cannot afford health care. The services range from acute medical consultations to more complex TB and HIV-related services. Most clinics open 7 days a week. The clinics are supported by international volunteer specialists.

Besides 310,769 clinic consultations, over 12,000 home visits were made for patients with chronic diseases like malnutrition, TB and HIV. On average, MAM's clinics conduct 884 consultations a day, 20% more than 2017.



### a. Paediatrics

37,902 consultations for children were conducted. Children with complicated conditions were referred to hospitals and MAM provided treatment and transport costs.



Paediatric Consultation

### b. Malnutrition

Early diagnosis and treatment of acute malnutrition can dramatically decrease related mortality, and MAM systematically screens children and pregnant women. If malnourished, they are provided with therapeutic feeding and treatment. Of 39,172 children screened, 304 were found to be acutely malnourished. 6,337 pregnant and lactating women were tested and 626 were treated.



Feeding malnourished child

#### c. Child Support

MAM provides support to extra vulnerable children including children who are HIV positive and children living in extreme poverty. 86 children joined the program in 2018, bringing the total to 314 children receiving support. Each child receives support worth of USD360 per year including nutrition, school items, clothing and a hygiene kit.

#### d. Child Protection



Children play in MAM's Clinic before receiving support

We see some children in the clinics who are clearly abused and they need protection. With expertise from outside, we set up a MAM child protection team. They try to prevent further abuse and in extremely violent cases, we even go to court. As most parents are not aware of child abuse we also provide health education to raise awareness to over 26,000 people.

#### e. Reproductive tract infections

Most women with reproductive tract infections (RTI) and sexually transmitted infections (STI) have no symptoms and active screening is essential to detect diseases like syphilis, chlamydia and gonorrhoea. These infections facilitate HIV transmission and can be very harmful for unborn babies.

Female sex workers have a very high risk to get and spread STIs and HIV. Many work in brothels where they



Young parents learning about child care

have limited opportunities to leave the brothel during the time of their contract (!). In order to provide services to them, MAM set up a mobile team to visit these sex workers *in the brothels* to provide contraception, STI treatment and HIV testing. Over 26,000 consultations for RTI and STI were made.

#### f. Family planning

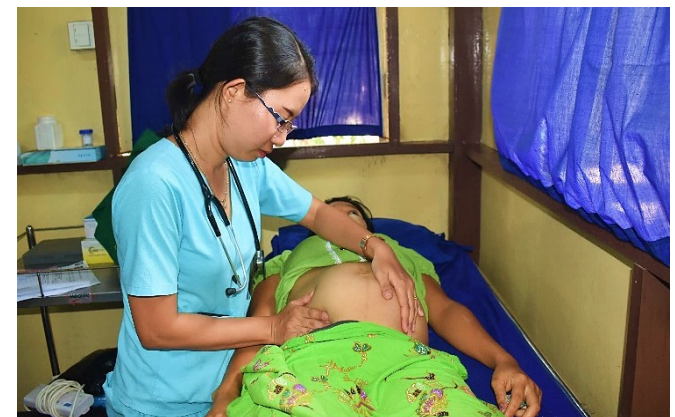
Many women have more children than they can care for. This leads to poverty and poor health of mothers and children. Women sometimes seek illegal abortions, which can result in infection and death. 19,341 family planning consultations were conducted. 1,369 women got a contraceptive implant.



Health Educator teaching about Family Planning

#### g. Antenatal care and HIV

Treatment of HIV+ pregnant women saves their lives and prevents HIV transmission to their baby.



In 2018, 117 mothers were treated. 61 delivered in 2018. 57 children were tested 18 months after delivery and none of them was infected with HIV (!).

#### *h. HIV prevention and treatment*

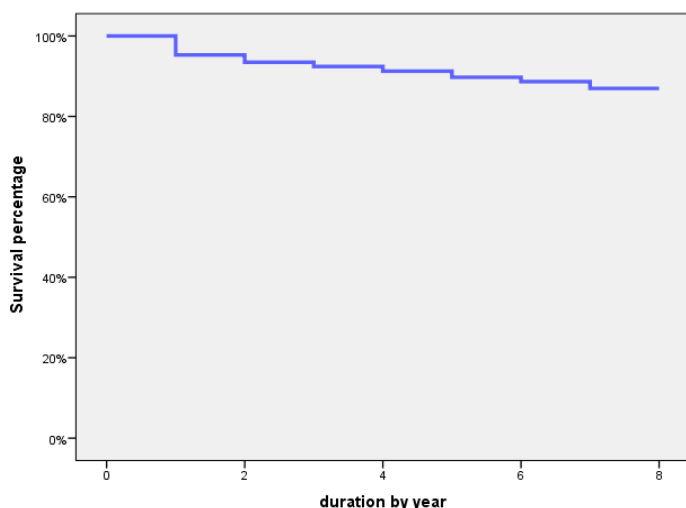
MAM clinics provide HIV testing, counselling, treatment and nutrition support. In 2018, 21,438 people were tested and 1,369 (6%) were HIV (+). 1,027 new patients were put on HIV treatment (ART) and by the end of 2018, 4,969 patients were receiving ART.

With more than 15 years of experience in managing HIV patients, Dr Ni Ni Tun is a reliable person for other organisations to refer their complicated patients to.



Dr Ni Ni Tun

Survival graph for patients treated with ART  
>85% of patients still surviving after 8 years on treatment



#### *i. Tuberculosis*

In 2018, 4,740 patients were tested for TB and 874 tested positive. 255 patients who were co-infected with HIV and treated in MAM clinics. HIV (-) TB patients are transferred to government clinics.

#### *j. Counselling and outreach service*

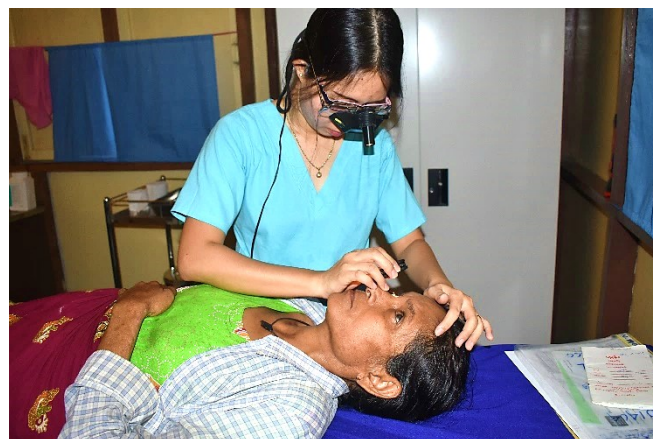
Counselling is important to support compliance with long-term treatments for diseases like HIV and TB. In 2018, 78,182 counselling sessions were conducted. In addition, 12,029 home visits were done by outreach staff, to support socially weak patients. Poor compliance leads to resistance, which is a threat for all.

#### *k. Eye screening and blindness prevention*

People with severe HIV infection have a risk to become blind due to cytomegalovirus (CMV). But injecting ganciclovir directly into the eyeball can prevent

blindness. Dr Ni Ni Tun is specialised in this procedure. 1,574 patients were screened for eye pathology in 2018 and 21 patients were diagnosed with CMV retinitis and 480 patients were diagnosed with TB lesions or other eye pathologies.

For severe cases that need surgery MAM works in partnership with "Myanmar Eye Services" that provides eye surgery free of charge.



Eye screening

#### *l. Hepatitis C Treatment*

In October 2017, MAM started treatment for Hepatitis C to prevent progression to terminal cirrhosis. Hepatitis C treatment costs USD 360, which is prohibitively expensive for low-income patients. In 2018, 17,333 patients were tested and 680 tested positive. MAM supported treatment for 200 patients so far.

#### *m. Day-care unit*

Severely ill patients are admitted to day-care wards in MAM clinics. In 2018 we had 3,726 patients in day care. Patients who need surgery or obstetrics, are referred to local hospitals. All costs are provided by MAM.



#### *n. Laboratory testing*

153,694 laboratory tests were conducted which is an increase of 55% compared to 2017. In 2019 we are going to join an international study to see which other tests can help improve our diagnosis



*The bum of an acute malnourished child before and after treatment for malnutrition*

#### *o. Food supply and travel support*

Patients with serious chronic diseases are often unemployed and poor. Some sell their medicines to buy food, leading to treatment failure. We provide food for patients until they recover from the acute phase of their disease (a few months) and return to their job. In 2018, 3,298 patients with chronic diseases, orphans and single-woman households received food support (rice, beans, oil, fish and salt).



#### *p. "Mother" House*

MAM built a house for extremely vulnerable children (HIV orphans and abused children).



*Children playing in the Mother House Garden*

This house has 2 'mothers' who care for them with love, and make sure they get their medicines and education. Besides loving care, the mothers organize social activities, recreational trips to amusement parks and theatre shows, guitar and swimming classes.

#### *q. Special Activities*

For 10 days, a team of British dentists worked free of charge in one MAM's clinics and treated over 1,200 patients. Most patients *never* saw a dentist before!



*Volunteer British dentists in Yangon clinic*

MAM started to assist a government hospital in Yangon, to support their HIV and TB patients. MAM's doctors treated HIV+ patients and MAM's counsellors support the medical adherence program.

Staff from MAM's PutaO clinic, in northern Myanmar, visit a prison once every 3 months for routine consultations. They provide a range of services like basic health care, and TB and HIV treatment.

And we always support corrective surgery for children with cleft lips or other deformities.



*Corrective surgery makes an enormous difference for a child with a severe cleft lip*

### 3. Community Health Workers for health care in remote communities

#### a. Rationale

Remote communities do not have trained health professionals. Communities are far apart with a very poor infrastructure. Transportation to hospitals is prohibitively expensive. Sick people usually visit local “quacks”, who treat patients without training. MAM trained local villagers to be *Community Health Workers* (CHW). By the end of 2018 we trained 2,147 CHWs (map page 1). The CHWs are trained to manage malaria, TB, pneumonia, diarrhoea, malnutrition, family planning and other common diseases. Severe and complicated patients are referred to hospitals and MAM pays all costs. In 2018, 730,700 patient consultations were conducted by the CHWs<sup>1</sup>.

#### b. Malaria

In 2018, CHWs tested 275,956 people for malaria and



10,830 tested positive and were treated. CHW malaria activities have proven to be extremely effective. With simple tests and effective treatment, malaria decreased dramatically.



Testing children for malaria in the remote communities

In Mon state, in South East Myanmar, where MAM started malaria activities in 2011, **falciparum malaria completely disappeared (!)** in all 168 villages where MAM is supporting CHWs (see picture next page).

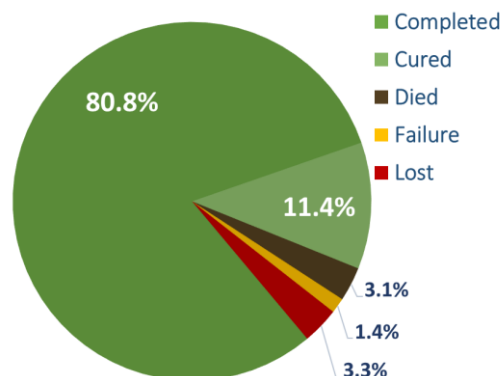
<sup>1</sup> note; Some patients came for malaria testing and for other services and were counted as 2 consultations. It is impossible to differentiate in our current data base. This will be corrected next year.

#### c. Tuberculosis

CHWs are also trained to identify patients who have signs and symptoms of tuberculosis (TB). TB suspected patients are referred to hospital to get an X-ray and a lab test for TB and receive anti-TB treatment if necessary.

9,615 patients were referred for TB screening and 952 patients were diagnosed with TB. Over 90% completed their 6 months treatment (“cured” or “completed treatment”), which is a very good result.

Outcome of TB patients  
Jan 2016 – Jun 2018



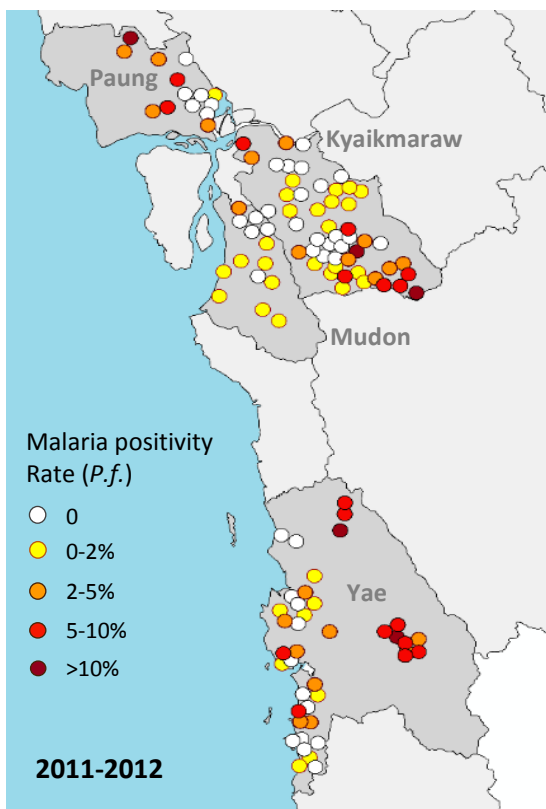
If the TB suspected patient is too sick to travel, hours walking is almost impossible when you are sick!, MAM staff collects the sputum in the remote community and send it to the hospital. If positive the medicines are then sent to the patient.



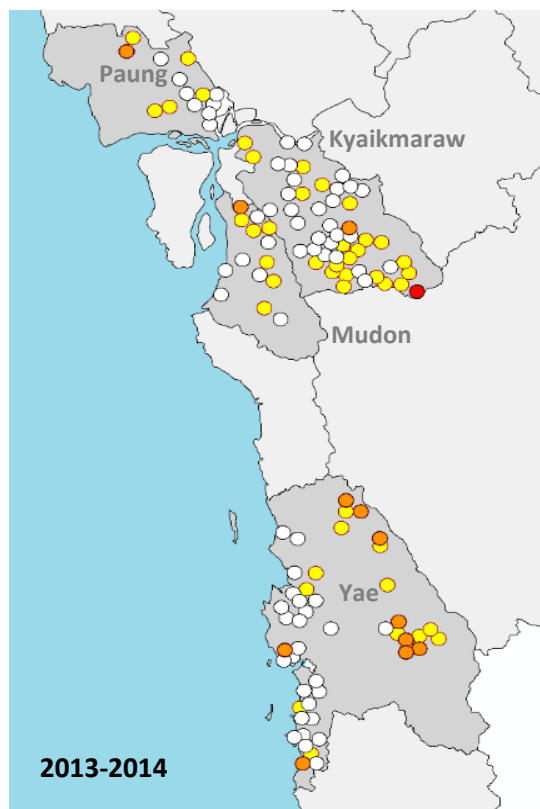
Collection of sputum suspected for Tuberculosis in remote communities. Strict precautions are needed to prevent staff to get infected.

## Test results for falciparum malaria in Mon state from 2011 to 2018, by MAM supported CHWs

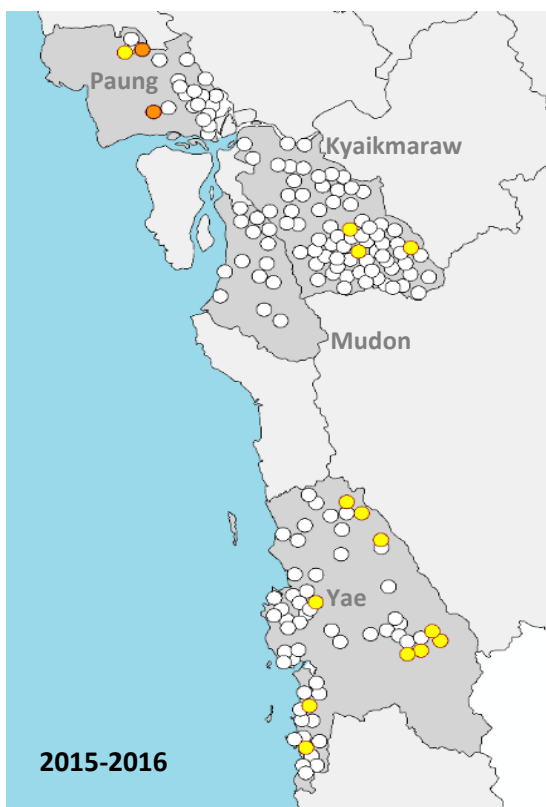
Based on 211,046 Rapid Diagnostic Tests for Malaria



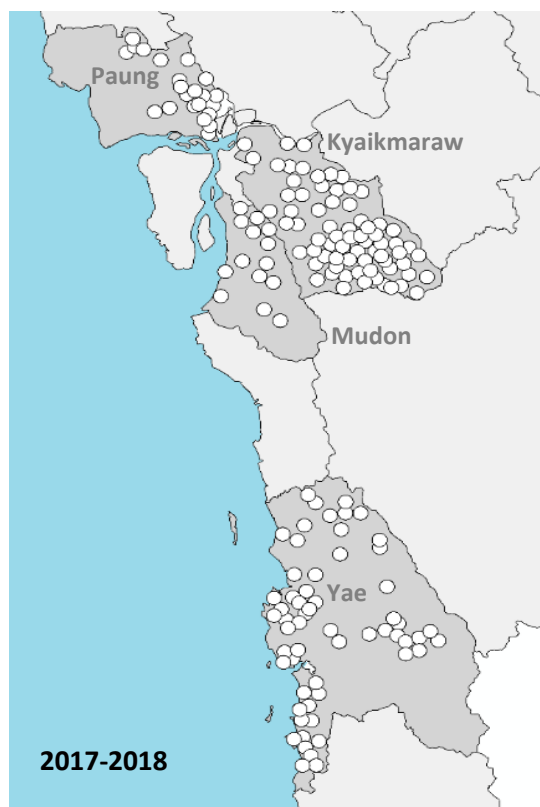
120 villages.  
32,509 RDTs, 816 (2.51%) *P.f.* Malaria.  
43 (36%) villages without falciparum malaria



126 villages.  
56,322 RDTs, 274 (0.49%) *P.f.* Malaria.  
69 (55%) villages without falciparum malaria



168 villages.  
85,376 RDTs, 64 (0.07%) *P.f.* Malaria.  
152 (90%) villages without falciparum malaria



168 villages.  
36,839 RDTs, 0 *P.f.* Malaria.  
168 (100%) villages without falciparum malaria

#### d. Malnutrition

Early diagnosis and treatment dramatically decreases mortality from malnutrition. In 2018, 18,936 children and 907 pregnant women were screened and 634 (3%) children and 20 (6%) pregnant women were diagnosed and treated for acute malnutrition with *plumpy-nut*, a high-energy peanut-based paste for malnutrition.



Check up for malnutrition case

#### e. Basic Health Care

In 2018, CHWs conducted a total of 454,744 consultations, mostly for respiratory infections (pneumonia is the biggest killer!), gastrointestinal infections, and skin infections. 34,164 women received family planning consultations.



Wound treatment

#### f. Referrals of severely sick persons

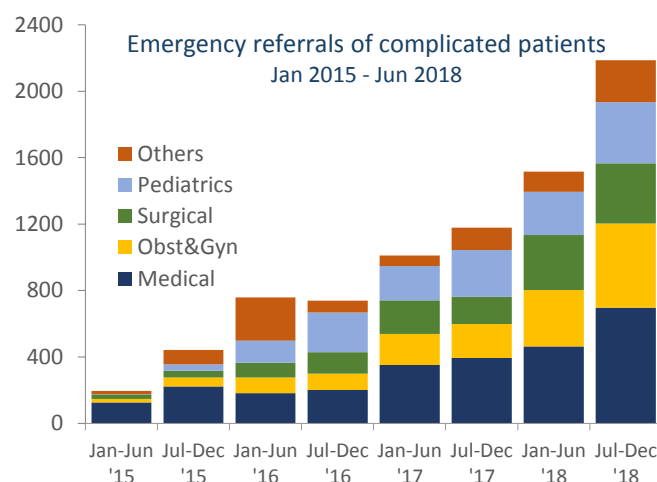
Severely sick patients need treatment in a hospital. But most villages are far from the hospital, the infrastructure is very poor and villagers cannot afford transportation costs. MAM trained the CHWs on severe conditions that need referral. In 2018, 3,701 patients were referred. MAM provided the expenses for transportation, treatment and food.

##### Referral: Patient Story

In March 2018, Mar Aye started having strong labour pains. She contacted the MAM supported CHWs for help. The CHW conducted a physical exam and felt "more than one baby". This increases the risk of complications and the CHW sent

Ma Aye to the hospital.

Mar Aye was worried about the costs, but the CHW informed her that MAM would provide all costs for transport, food, and operation. In the hospital she received a caesarian and 3 healthy babies were delivered. After 6 days of recovery, Mar Aye and the 3 babies were able to return home healthy.



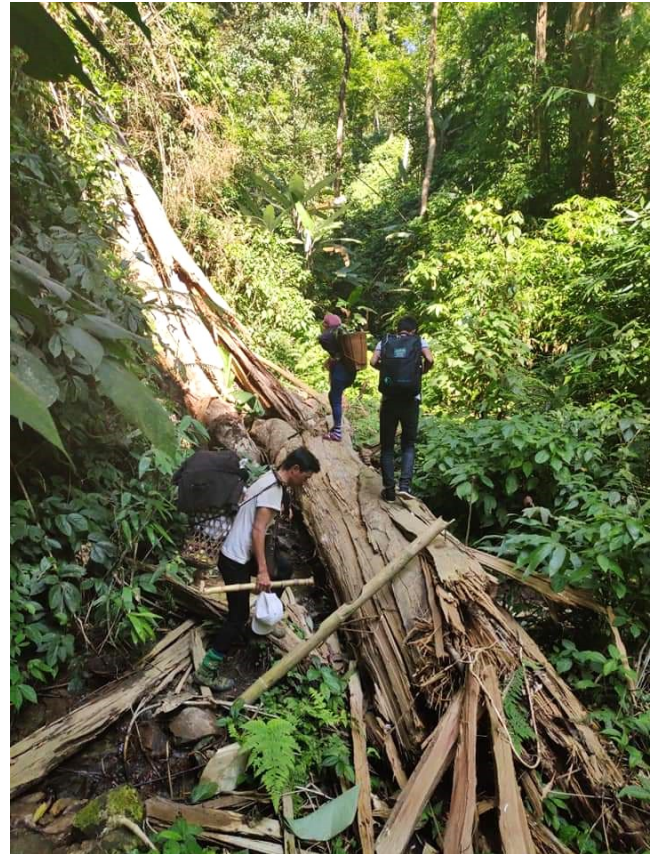
#### g. Health education

All health activities are supported by health education sessions. The mobile field staff discuss with the villagers how they can prevent some diseases and what to do when ill. These discussions are done in the evening when the villagers are back from the field.



#### *h. CHW medical training & monitoring*

All MAM CHWs received class room training and were subsequently visited (bi-) monthly for practical *on-the-job-training*. 50 medical mobile teams travel to all remote villages. This is very labour intensive but we are convinced that *on-the-job-training* in the community with a doctor and the CHW seeing patients together is essential to improve the skills of the CHW. In 2018, 9,254 training & monitoring visits were made<sup>2</sup>.



*Visiting > 2000 remote villages bi-monthly*

*VERY labour intensive indeed....*

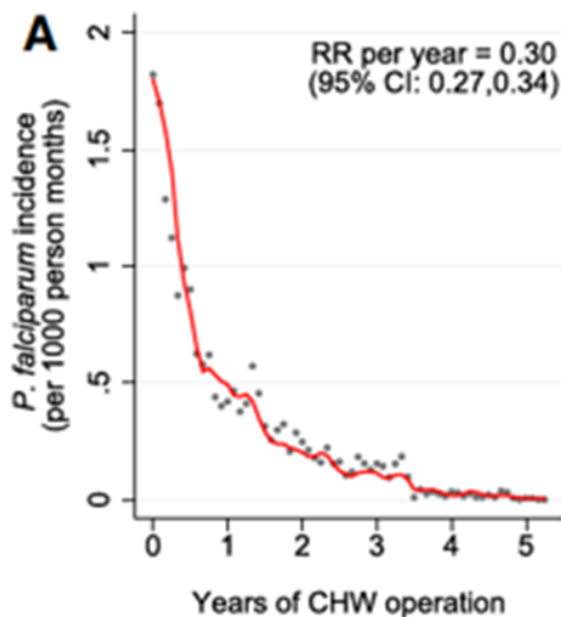


## 4. Research

MAM conducts research with Oxford University to improve the diagnosis and treatment of diseases.

### a. *An analysis of Community Health Workers*

MAM's CHW program has proven very effective in decreasing malaria. A retrospective analysis of 571,286 test results between 2011 and 2016 in 1,335 communities showed an average yearly reduction of falciparum malaria 70%. Vivax malaria, which is more difficult to control, was reduced by 64% per year.



Graph; Rapid decline of malaria after introduction of CHWs

As malaria is now uncommon, people don't want to go for malaria testing. Therefore, we investigated the impact of adding a basic health care package to the malaria testing service. Not only did this increase the number of malaria blood examinations, essential for malaria elimination. It also had a major effect on general health. This work was published<sup>3</sup> and presented at the World Malaria conference.

### b. *Fever studies*

Fever is the most common reason for attending health care. The problem is that we often don't know what is causing fever. Clinical diagnosis are often difficult, and a wrong diagnoses results in a wrong treatment. Two very important fever diseases, *Typhus* and *Melioidosis*, were very common during 'the British times' but are largely forgotten these days, partly due to the lack of laboratory tests.

We are trying to find out how common these diseases are today. And if common, we want to put these diseases back to the attention of medical professionals.

1. *Typhus*; we tested 301 fever patients with a newly developed rapid test. 68 (23%) patients tested positive. This finding is very important evidence that Typhus is a common cause of fever and we are considering to use this test on a large scale.

2. *Melioidosis*; Melioidosis is an often fatal disease caused by a bacteria that lives in the mud. It is therefore most common in farmers' families. It was discovered in 1911 by a British doctor in Yangon (!). But since the 2nd World War, the disease has been rarely diagnosed. It is hard to believe that this bacteria has disappeared. We cultured mud at a large number of locations all over Myanmar and identified these Melioidosis bacteria at 26 locations, mainly in the central region of Myanmar. The next step will be to investigate if this bacteria is a common - but unknown (!) - cause of death in hospitals at these locations.



Taking mud samples for culture the bacteria that causes Melioidosis

### c. *Malaria: A Study to Detect Drug Resistance*

Drug resistant malaria is a global threat that causes treatment to become ineffective. Together with research groups in 7 other countries, we studied new treatment combinations that are effective to resistant malaria parasites.

### d. *Causes of Pneumonia Study*

To effectively treat pneumonia, we need to know its causes. We studied 300 patients with acute pneumonia, to identify the bacterial and viral causes. Surprisingly, the results showed a high % of lung-TB, which is generally only considered in patients with chronic complaints of pneumonia. This is very important for the management of patients with signs and symptoms of acute pneumonia in the future.

<sup>2</sup> Malaria elimination in remote communities requires integration of malaria control activities into general health care: an observational study in Myanmar. Alistair McLean, Hla PW, Aung MT, Zay SK, ..... Arjen Dondorp, Nick White and, Frank Smithuis. BMC Med. 2018; 16:183.

## 5. Rickets Report

MAM's Community Health Workers (CHW) identified 8 children with bandy legs in 2 villages in Nanyun Township, northwest Myanmar. They all displayed similar symptoms of leg and arm deformities, joint pains and difficulty or unable to walk. These symptoms suggested *rickets*, which is usually – but caused by Vitamin D deficiency.



6 year old girl with knock knees



Different hand size of a 5 year old boy



Leg fracture of 13 year old boy



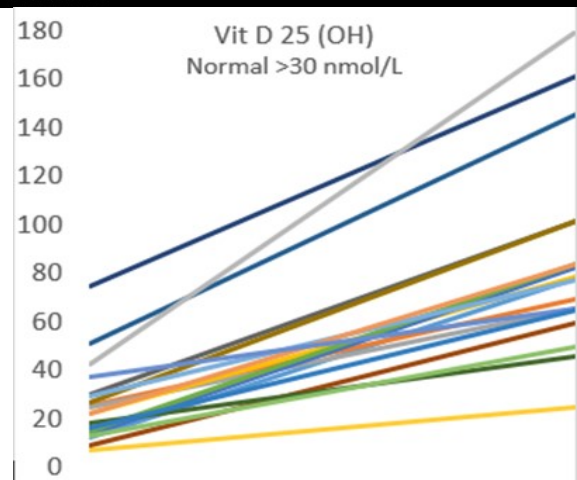
13 year old boy, with fractures since 6 months of age



17 year old girl with severe walking difficulties

To confirm the diagnosis we took some blood samples and made X-rays to confirm the diagnosis. After the diagnosis was confirmed, we started treatment with Vitamin D and calcium to strengthen the bones.

After the treatment, new blood tests and X-rays were made and the results showed a significant increase in vitamin D levels. The X-rays, examined by Frank Smithuis *Junior*, who is a bone radiologist, showed promising bone growth.



Vitamin D levels returned to normal and the X-rays looked better but it will take years to improve the deformities, if ever.....

The discovery of rickets in Naga is an example to the importance of MAM's network of CHWs. They expose isolated communities' health care issues that could often be left unnoticed and untreated.

Rickets is a completely preventable disease and the unnecessary suffering it is causing should be prevented.

We will further investigate the exact cause of this disease, which was not earlier reported in Myanmar.



Three siblings outside their house in Naga

## 6. Pictures



*the 'new' MAM boat*



*MAM's mobile medical team fighting against strong currents*



*Community Health Worker and MAM mobile clinic doctor after treatment check up*

## Fundraising and Donations

Our activities are only possible thanks to the donations we get. Small or large, they all make a difference!

For people who live in Australia, Canada, Germany, Switzerland, The Netherlands, UK and USA donations can be tax deductible. For information please contact Mr Sieb; sieb@mam.org.mm

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Account number (USD)	43.84.12.974	Account number (EURO)	54.12.25.693
IBAN number	NL56ABNA0438412974	IBAN number	NL24ABNA0541225693
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*Private donations enable us to react immediately to needs we see, without months-long bureaucratic procedures*



*MAM mobile medical team walking to the next remote village*