

Adapting a severe malaria intervention in Zambia in the context of COVID-19

In early March 2020, coronavirus (COVID-19) was declared a pandemic by the World Health Organization. Many countries had started to take steps to isolate suspected cases, ban mass gatherings and public events, close schools and universities and impose social distancing. At the time, MAMaZ Against Malaria at Scale (MAM@Scale) was implementing a community level intervention to address severe malaria targeted to young children in five districts of Zambia, working in partnership with district health teams. Responding to an urgent request by the Ministry of Health (MOH) for development partners to help build community preparedness and resilience, the project swiftly pivoted its activities to integrate a COVID-19 focus.

Community engagement has been crucial to the effective management of past disease outbreaks such as Ebola. Grounded in an evidence-based community engagement approach facilitated by trained Community Health Volunteers (CHVs), MAM@Scale was ideally placed to respond to the crisis. Planning for an integrated child health and COVID-19 response began

in March and implementation started in early April 2020. The challenge was two-fold: protecting communities' access to essential health services in the context of a pandemic; and ensuring access to timely and reliable information on COVID-19 in order to prevent the spread of the disease and ensure an appropriate response if cases were identified.

SUMMARY

- In Zambia, MAM@Scale rapidly adapted a community intervention to address severe malaria to incorporate a COVID-19 response.
- The COVID-19 response was grounded in an evidence-based community engagement approach facilitated by trained CHVs.
- Over 400,000 people in five districts were provided with information on COVID-19 and encouraged to continue using essential health services.
- Existing community safety nets (food banks, emergency transport systems) were adapted to help strengthen community resilience to the pandemic.
- The project's monitoring and evaluation system showed that health services continued to be used throughout the pandemic and that COVID-19 prevention and response knowledge levels were high.
- The project's strategy involved ensuring a two-way flow of information between different levels (community, district, national and global) in a rapidly changing environment.



Distribution of food bank top-ups in Serenje District

Background and context

MAM@Scale began operations in December 2018 with funding from Grand Challenges Canada (GCC) and the Government of Canada, the Geneva-based Foundation, Medicines for Malaria Venture and UK development organisation, Transaid. Originally an 18-month intervention, additional funding from FIA Foundation, Grand Challenges Canada and a private donor extended the project timeframe by six months enabling MAM@Scale to participate in Zambia's national COVID-19 response.

Over 7,500 malaria deaths occurred in Zambia in 2018¹ and children under six are most susceptible due to their lack of immunity. MAM@Scale empowered rural Zambian families to reduce their mortality risk from severe malaria by introducing quality assured 100 mg artesunate rectal capsules (known locally as rectal artesunate or 'RAS'), a cutting-edge pre-referral treatment given at community level to children aged six months to six years old. An earlier pilot project, MAMaZ Against

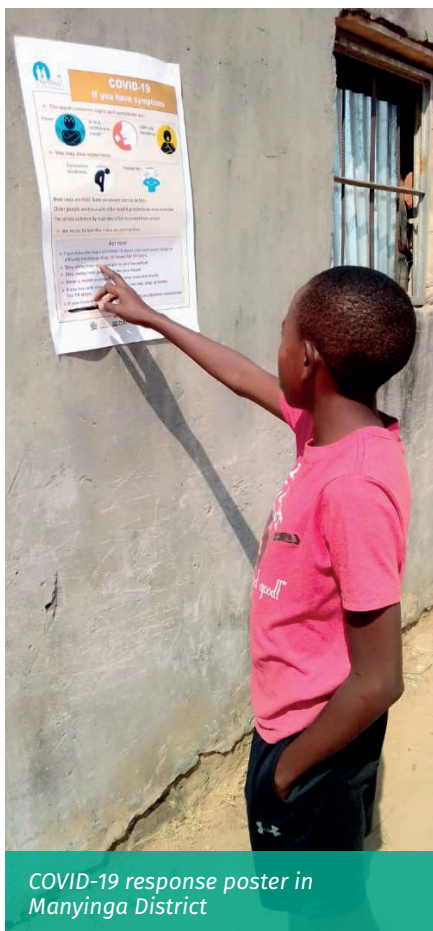
Malaria (2017-2018) showed that RAS can help to drastically reduce child deaths from malaria: in intervention sites the case fatality rate from severe malaria fell from 8% to 0.25%.²

“By April 2020, there were widespread concerns that COVID-19 could set back global progress in reducing the malaria burden by two decades.”

CHVs in five rural districts (Chitambo, Serenje, Chama, Manyinga and Vubwi) were trained to mobilise their communities, administer RAS and refer severe malaria cases to the health facility for further treatment. The CHVs were also trained to identify and refer other child health emergencies such as severe diarrhoea and pneumonia. Community-managed safety nets (e.g. food banks, emergency savings schemes and emergency transport systems) were established to tackle barriers and delays to use of health services.³ Capacity building of front-line health providers helped to improve severe malaria case management. Community monitoring

systems generated data to measure impact. At national level, MAM@Scale worked with the National Malaria Elimination Centre (NMEC) to prepare the ground for wider national scale-up of RAS.

By April 2020, there were widespread concerns that COVID-19 could set back global progress in reducing the malaria burden by two decades. In a worst case scenario, with preventive activities and services badly affected, Zambia was predicted to face a 150-200% increase in malaria deaths.⁴ There were also concerns that demand for other essential health services would fall. Zambia's health system had limited capacity to absorb the pandemic. It was therefore vital to focus on prevention. However, in the early stages of the pandemic, national public health education efforts were struggling to penetrate rural areas and communities lacked reliable information on how to stay safe. Physical distancing rules were difficult to follow in contexts where families needed to secure food on a daily basis. A further concern was that gender-based violence (GBV), already at high levels, would increase during the pandemic.



COVID-19 response poster in Manyinga District

Strategy

In March 2020 the building blocks for an effective COVID-19 response were already in place. MAM@Scale enjoyed a strong working relationship with the MOH and district health teams; could tap into a large network of trained CHVs with capacity to deliver vital information on COVID-19 to communities; and was able to support the adaptation of existing community 'safety nets' (e.g. food banks and emergency savings schemes) to build local resilience to weather the impact of self-isolation, illness, recovery, unemployment or loss of a household member. A fleet of bicycle ambulances and network of riders were available, allowing health emergencies to be transported to the health facility following COVID-19 safety protocols. A decade's worth of experience of implementing effective community engagement interventions and generating transformative health related behaviour change meant that the project was well-positioned to launch an effective COVID-19 response.

In the context of a pandemic, it was important to work in a flexible, but joined-up way. Information needed to

flow to and from different localities (community, district, national and global) to ensure rapid uptake of evolving best practice. In the context of an 'infodemic', however, it was vital to have a means to manage and filter information. MAM@Scale global public health experts tracked the evolving global guidance and peer-reviewed publications, and participated in numerous international and regional COVID-19 meetings, helping to ensure that up-to-date public health information was available to the project team and partners in a rapidly changing environment. Considerable emphasis was placed on information and experience-sharing within the project team, and with partners at different levels.

¹ World Health Organization, 2019, **World Malaria Report 2019**. Geneva: WHO.

² Green, C. Quigley, P. Kureya, T. et al, 2019, "Use of rectal artesunate for severe malaria at the community level, Zambia", **Bulletin of the World Health Organisation** 97, 810:817.

³ In Chama MAM@Scale worked in partnership with the USAID Program for Advancement of Malaria Outcomes and in Vubwi and Manyinga, the Churches Health Association of Zambia.

⁴ WHO, 2020. **The potential impact of health service disruptions on the burden of malaria: a modelling analysis for countries in sub-Saharan Africa**. Geneva: World Health Organization.

Results

Over the seven month period April to October 2020 the following results were achieved in the project's intervention districts:

Community health volunteers and riders

- **1,673** CHVs oriented on COVID-19
- **238** bicycle ambulance riders trained in COVID-19 safety protocols



Strengthening community resilience

- **180** food banks provided with top-ups of essential food items
- Food banks adapted in case families affected by COVID-19 needed support



Public health education

- Information on COVID-19 integrated into ongoing community health activities in **5 districts**
- **72** radio programmes broadcast reaching a population of over 400,000



- Series of 'special feature' phone-in radio programmes broadcast on GBV

- PA systems used to disseminate information on COVID-19 to **335** remote communities



- **12,000** COVID-19 and anti-GBV posters distributed to communities in 5 districts

- **20,000** door-to-door visits made by CHVs in 5 districts for COVID-19 awareness-raising

Personal Protective Equipment

- **2,500** face masks procured locally and distributed
- Over **4,000** disposable gloves procured and distributed
- **256** tippy-tap water system containers and **1,440** bars of soap procured



Access to Essential Health Services

- **1,420** child health emergencies were managed by CHVs
- **1,241** children were transferred to a health facility by bicycle ambulance

In addition, MAM@Scale's experience was integrated into national COVID-19 guidelines for community health workers and into UNICEF/WHO COVID-19 community engagement guidelines.

Lessons learned and policy implications

Ensuring good communication flow and utilising feedback loops:

The project's COVID-19 strategy involved working at community, district and national levels, and ensuring that all activities were informed by the latest global public health advice in a fast-changing environment. Emphasis was placed on ensuring feedback within and between different levels: community to district level (e.g. so that COVID-19 myths and misconceptions could be addressed in radio broadcasts by district health teams); community to national level (e.g. information on how to adapt food banks to build community resilience was shared with MOH and development partners); and global to national level (e.g. severe malaria protocols for CHVs were adapted in response to changes in global public health advice).

Danger of behaviour change fatigue:

Unlike Europe where COVID-19 cases were increasing rapidly, resulting in tens of thousands of deaths, only a handful of COVID-19 cases had been recorded in Zambia by April 2020. This offered a window of opportunity to intervene in order to prepare rural communities. By late November 2020, Zambia had recorded 17,600 COVID-19 cases and 357 deaths, but few, if any, cases had been recorded in the project's intervention districts. The lack of first-hand experience of the virus reduced some individuals' motivation to follow COVID-19 advice. In the project's intervention districts, regular COVID-19 radio broadcasts and community phone-in sessions provided important opportunities to challenge myths, misconceptions and counter 'prevention fatigue.' Trained CHVs, who undertook 20,000 door-to-door visits in the project's intervention sites between April to October 2020, reinforced key prevention and response messages. Maintaining public health education investments for the duration of a pandemic, and ensuring consistency of messaging, is therefore crucial.

Impact of disrupted supplies of essential drugs and consumables:

The majority (84%) of health facilities supported by MAM@Scale indicated that they had been affected by a disruption in supply of medicines and essential consumables as a result of COVID-19.⁵ Between April

Results from midline survey

A midline survey undertaken in July 2020, three months into the COVID-19 response, found the following:

More than **80%** of CHVs knew the three main danger signs of COVID-19

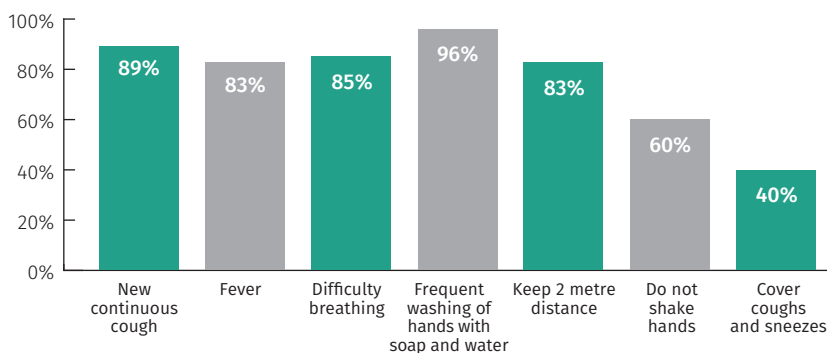
Only **1%** of CHVs indicated that they lacked formal training on COVID-19

79% of CHVs reported that GBV had disappeared or reduced a lot in recent years

5% of CHVs reported that GBV had increased because of COVID-19

Less than 4% of CHVs indicated that they lacked PPE

CHVs who knew COVID-19 signs and symptoms and preventive actions



Source: MAM@Scale Midline Survey, July 2020

⁵ MAM@Scale, 2020, MAM@Scale Midline Survey Report. July 2020. Compiled by Tendayi Kureya et al.

and October 2020 eight child deaths from malaria were reported in two of the project's intervention districts (Serenje and Chitambo). These coincided with the period of stock-outs of essential drugs at facility and community level. It is likely that the health systems disruptions caused by the pandemic played a role in the deaths. The importance of ensuring reliable supplies of essential drugs and consumables at all times, and especially during a pandemic, cannot be over-stated.

Increase in GBV: Early on in the pandemic there was evidence of a rise in GBV in many countries affected by COVID-19. Because GBV affects 49% of Zambian women and is a social determinant of children's access to health care⁶ MAM@Scale had already integrated a focus on violence against women into its severe malaria community engagement activities. However, recognising the risks that any

type of emergency brings for women and girls, an early decision was taken to run a focused 'zero tolerance for GBV' campaign. Anti-GBV campaigns need to be an integrated part of the public health response to any pandemic considering the indirect and often hidden side-effects of emergencies on women and girls.

Importance of investing in community health systems: The COVID-19 pandemic brought to the fore the importance of investing in community health systems so that pandemic responses reach rural communities, including 'the last mile'. In the MAM@Scale intervention districts, being able to work through a large network of well-trained CHVs who were accepted and respected by their communities, and trained to reach the least-supported members of the community, enabled the rapid dissemination of public health information on COVID-19. Health systems in Africa have limited

capacity to absorb large-scale disease outbreaks and hence aggressive preventive measures are required. Strong community health systems can help deliver these interventions.

"MAM@Scale is the only project that has supported our district with intensive community awareness on COVID-19... Other organisations gave us more PPE but forgot the aspect of community education which MAM@Scale has done."

Member of district health team, Vubwi District

⁶ Zambia Statistics Agency, Ministry of Health (MOH) Zambia, and ICF, 2019, **Zambia Demographic and Health Survey 2018**. Lusaka, Zambia, and Rockville, Maryland, USA: Zambia Statistics Agency, Ministry of Health, and ICF.

