USAID COMMUNITY CAPACITY FOR HEALTH PROGRAM

Effective Community Response Reduces the Impact of the Plague Epidemic in Communities of Rural Madagascar

PROGRAM SUMMARY

The USAID Community Capacity for Health Program, locally known as Mahefa Miaraka, is a five-year (2016–2021) community-based integrated health program funded by the United States Agency for International Development. The program is a collaborative effort between Madagascar's Ministry of Health, USAID, and JSI Research & Training Institute, Inc. (JSI). The program provides tools and capacity-building training to about 10,000 community health volunteers (CHVs) who support maternal and child health and family planning services. In addition, Mahefa Miaraka works with national and local government entities to strengthen the health sector and health policies.

MAHEFA MIARAKA

- OPERATES IN **7** REGIONS OF MADAGASCAR
- COVERING A TOTAL OF **4,708** VILLAGES
- WITH A TOTAL POPULATION OF **6.6** MILLION PEOPLE
- OR **28** PERCENT OF THE COUNTRY'S TOTAL POPULATION

JSI

OVERVIEW

The vision of Madagascar's National Strategy on Community Health (2017) relies upon assured community ownership, active participation, and management of local health interventions that are linked to and strengthened by the formal health system. Fostering strong and responsive leadership within existing community structures, combined with effective implementation of a basic package of health services provided by CHVs, is essential to the success of this vision. During Madagascar's 2017 record plague outbreak, the community health system was put to the test.

Plague is endemic on the central high plateau of Madagascar, where a seasonal upsurge in plague cases, normally of the bubonic form, occurs yearly between September and April but is normally locally contained. Starting in August 2017, Madagascar experienced a plague epidemic that included predominantly pneumonic cases and affected both endemic and non-endemic areas, including major urban areas such as the capital Antananarivo and the port city of Toamasina. The pneumonic form is highly contagious, spreads through person-to-person contact and can trigger severe epidemics. Unless treated early, it results in death.

In response to the rapidly spreading outbreak, Mahefa Miaraka worked closely with national, regional, and district level health officials to implement a well-coordinated and effective response to the epidemic, focused on community education and vigilance, surveillance, and containment strategies. CHVs were at the forefront of response strategies, educating and mobilizing their villages, coordinating village clean-up and disinfection campaigns, and ensuring effective surveillance and containment strategies at the village level.

The intensive response efforts resulted in a decline in plague cases, which led the Ministry of Health (MOH) to declare the end of the pneumonic plague epidemic in urban areas on November 27, 2017. By April 2018, MOH reported 2,417 confirmed, probable, or suspected cases of plague, including 209 deaths (9% fatality rate). The seven coastal regions where the Mahefa Miaraka program operates were less affected than the central high plateau region, with a total of 61 suspected plague cases and one death, in part due to the vigorous response described in this briefing paper.

APPROACH

Because of the Program's expertise working at every level of Madagascar's health landscape, Mahefa Miaraka was uniquely well-placed to lead efforts to contain and end the plague epidemic. The program's approach was to transform the existing community health structures that it supported into a well-functioning emergency response system to the epidemic, while strengthening the emergency response and management capacity of MOH regional and district health teams.

At the national, regional, and district levels, the program provided technical and strategic guidance to all leading actors for monitoring and reporting cases, support to health checkpoints for screening travelers, case response at district level and logistical support for the distribution of materials. With the goal of breaking the chain of plague transmission, the program engaged its platform of community stakeholders, mobilizing nearly 10,000 trained and experienced CHVs who, in collaboration with community leaders and local authorities, facilitated timely implementation of health education, community vigilance, vector control, case surveillance, and contact-tracing strategies.

Through its strategic engagement and logistical support, they ensured that health actors at all levels had the competencies to respond to the epidemic, and were empowered to carry out their responsibilities in an effective manner.

KEY ACTIVITIES

Strengthening the national and regional level responses. The program played an active role in the formation of the national level crisis response, contributing to the national action plan and participating in stakeholder coordination meetings. Critical program contributions included the establishment and logistical support provided to seven regional and 34 district plague crisis and response committees, and 109 commune-led vigilance committees tasked with surveilling plague cases in their areas. In addition, Mahefa Miaraka provided logistical support to the MOH, ensuring the distribution of plague-related drugs, supplies, and informational materials throughout program areas.

Plague responders training. One of the most important contributions was the training of village community leaders, CHVs, and MOH officials at the regional, district, and commune levels on plague epidemic and the response, with the aim of breaking the chain of transmission and to reduce the spread of plague cases. The trainings focused on plague surveillance, community measures to counter plague, contact monitoring, suspected case referrals to health facilities, and management skills. Mahefa Miaraka used a cascade training approach, starting by training MOH officials at the regional and district levels. Once trained, the trainers then trained health center heads, who in turn trained CHVs. This model of training was designed to reinforce the capacity of MOH staff and CHV capacity and to reinforce the supervisory role at each level.

Mobilizing communities to combat plague and clean-up and vector control. Following the plague responder trainings, community leaders returned to their communities to mobilize them to counter the plague threat. Community leaders conducted information, education, and communication (IEC) campaigns to educate and mobilize the community; organized community efforts to counter plague vectors, including through clean-up efforts, improved sanitation, and rodent deaths reporting; and provided logistical support at the local level to distribute materials and implement the national action plan.

Information and communication to mobilize community action. Throughout the epidemic, the program used a robust

communications campaign to mobilize community action. The program translated those messages into the local dialect and contracted with 23 local radio stations to broadcast public health messages about the plague epidemic multiple times a day. The program also developed and distributed a household action sheet detailing actions to take at the household level, and posters that detailed plague transmission-prevention measures.

Each village developed its own action plan, which included an intensive clean-up and sanitation campaign. Each household was required to clean their home and the immediate area around it, and the community mobilized to clean common areas such as market places. Each village identified potential plague vectors, such as uncollected garbage or open defecation, and took action to eliminate them.

Immediate action to contain plague risks and suspected outbreaks. While encouraging vigilance in all program areas, Mahefa Miaraka prioritized the response in villages where plague was historically endemic and those in which suspected cases were reported. District-level crisis response teams visited priority villages and conducted intensive clean-up and counter-plague efforts, including spraying insecticides and setting pest control devices. The program also supported health screening checkpoints along national highways to prevent the spread of infection.

Monitoring, reporting, and tracing any suspected cases. In order to contain the epidemic, CHVs closely monitored their villages for suspected cases of plague. When a suspected case was found, the CSB investigated and diagnosed it, and recommended treatment at home on lockdown to prevent infecting others. The case's contacts were given prophylaxis treatment for seven days. CHVs traced and monitored all persons who had contact with the suspected case.

RESULTS

- **Program staff participated in 1,041 planning, coordination, and review meetings.** Collectively, the program team took an active part in the MOH response to the plague epidemic at the national, regional, district, and community level (32 national, 100 regional, 121 district, and 788 community epidemic response meetings). This took place during the active plague season between October and April. The meetings led to the formulation and implementation of the national action plan to combat plague and improved epidemic response; resource mobilization; coordination on training and control measures; and community mobilization for vector control, identification, and referral of cases by CHVs, and case contact tracing.

- **Trained 13,777 people on plague prevention and response.** Through its cascade training approach, the program trained 937 MOH staff in plague response (41 regional; 276

			Suspected Cases	Suspected Cases received at CSB and treated		
Regions	Bubonic plague	Pneumonic plague	Suspected cases	Bubonic plague	Pneumonic plague	Cases treated
Analanjirofo	6	19	25	6	19	25
Boeny	17		17	17		17
DIANA	2	6	8	2	6	8
Menabe	1	2	3	1	2	3
SAVA		2	2		2	2
SOFIA	4		4	4		4
Melaky	2	0	2	1	0	1
Total	**32**	**29**	**61**	**31**	**29**	**60**

district management team members; and 620 basic health center heads) and 187 program staff. These trainers in turn trained 8,349 CHVs and 4,304 community leaders.

- **Reached more than 1,000,000 people through program-supported communication on plague prevention.** CHVs conducted community education sessions on communicable diseases, including plague, reaching 498,683 people, and 37,914 people through high-visibility events. Local radio stations broadcast information on plague in local dialect, reaching 594,960 people during the epidemic. In addition, the program distributed 10,000 household action sheets (providing seven steps families should take to protect themselves); 8,333 latrine construction guides; and 5,449 posters on plague prevention developed by the MOH.

- Conducted **61 field investigations** to villages considered at risk or with reported plague cases, including **vector-control activities in 55 villages** considered at high risk of infection, and **intensive disinfection of 49 villages** that had reported plague cases.

- Provided material support to **23 health check points** to screen travelers on major roadways in six regions.

- **22 CHVs referred suspected plague cases**, arranged for the safe transfer of the person to the local health center, and traced contacts to monitor for plague signs.

- **Of the 61 suspected cases in the program area identified by the MOH, only one fatality occurred. This is much lower than the nationwide 9% fatality rate (209 deaths of 2,417 cases).** The program's intensive efforts to support community plague response meant that suspected plague cases were quickly identified and effectively responded to, providing the correct treatment and containing the outbreak.

CHALLENGES

The poor state of Madagascar's health infrastructure significantly reduced the efficacy of epidemic responses. Many health facilities initially lacked basic infrastructure and supplies to respond to the epidemic, including running water, handwashing facilities, disinfecting agents, personal protective equipment, and isolation wards, as well as antibiotics and other drugs. Several health and sanitation sector partners mobilized emergency funding and resources to provide essential supplies.

Frequent and routine travel of the population made containing the epidemic difficult. Many people in Madagascar travel regularly for trade or family reasons, and such travel brought new plague cases to previously unaffected areas, including Antananarivo and other major cities.

Deeply held cultural beliefs about the cause of disease (particularly outside of plague endemic areas) complicated the response to the plague epidemic. Some patients were reluctant to seek medical treatment. The program's CHVs had a crucial role in overcoming community fears and in convincing suspected plague cases to seek medical care.

The majority of CHVs lack mobile phones or live outside network coverage, greatly complicating communications between the CHVs and their supervisors at health centers. This made it challenging for CHVs to alert CSBs about suspected cases and to seek guidance on actions to take.

Any response to an epidemic takes significant effort and resources, and inevitably **impacts on the delivery of the routine public health activities**. While significant time and resources had to be diverted to the epidemic response, the program mobilized additional funds and resources to support essential health activities during this period.

THE WAY FORWARD

Mahefa Miaraka's nearly 10,000 CHVs at the village level, combined with its strong presence at the national, regional, and district levels, uniquely positioned it to implement a timely, well-coordinated, and effective response to the plague epidemic. The program was able to coordinate an effective response at the higher levels of the health administration and ensure that CHVs implemented it quickly and effectively at village level. In effect, the community health system supported by Mahefa Miaraka was able to rapidly transform into a well-functioning emergency epidemic response system.

In order to prevent future plague outbreaks, continued vigilance and advances in community sanitation standards are necessary. The program has implemented such measures, including a 2018 Plague Vigilance Campaign that renewed training for 11,040 people (295 commune leaders; 2,106 village [fokontany] heads; 7,815 CHVs; 86 regional and district health team members; and 738 health care providers); radio spots on plague awareness and vigilance; and intensive clean-up and disinfection campaigns in villages considered at high risk for plague infection.

In addition, Mahefa Miaraka continues to support the **strengthening of MOH surveillance and reporting systems**. In September 2018, the program provided financial assistance to the MOH's Directorate of Disease Control and Epidemiological Surveillance for training of 91 regional and district officials in the Itasy region (a plague endemic area) on the national electronic surveillance and reporting system.

Enhancing health center and community links. Ensuring routine monthly meetings between heads of health centers, CHVs, and community leaders for reporting, continued education and skills assessments, and provision of health commodities.

Continued strengthening of community governance structures and CHV skills, and recognition of community contributions. In 2019, the MOH finalized its strategic plan for strengthening community health to improve the management of community health committees and enhancing the capacity of CHVs, with particular emphasis on identifying strategies for sustained results and means to recognize and motivate actors.

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