the support of the Bruno Kessler Foundation in Trento we were able to reconstruct the chain of infection starting from the index case, to measure transmission times and the basic reproduction number (RO), and to assess the effectiveness of outbreak containment measures (isolation and contacttracing). Our operational research (five published works), carried out with local and international partners, enabled us to test ideas, check out hunches, and answer questions from different perspectives – epidemiological, organizational and policy-wise;

• Organizational innovation: It gradually became clear that In the aftermath of the outbreak it would be necessary to review intervention strategies and to help pregnant women with complications and children with complex cases to access hospital services by way of an innovative call system for ambulance and motorcycle transport. Once the emergency phase was over, this organizational model spurred the setting-up of a national emergency/urgency system that now offers around-the-clock service in all 14 districts of Sierra Leone, thanks to a fleet of 90 ambulances.

Although it was a very trying time, our experience with Ebola left us with many ideas and lessons learned, both human and professional, bequeathing CUAMM with a valuable framework vis-àvis the strengthening of health systems in Africa, as our work in other countries shows. Yet that valuable experience is still not enough.

## **EMERGENCY AND DEVELOPMENT: AN INTEGRATED APPROACH**

We need to go further, galvanized by the lessons of the Covid-19 pandemic. Africa is constantly being hit by emergencies: 2019 alone saw 21,600 episodes of armed conflict, 96 infectious disease outbreaks and 89 natural disasters. Many of these took place in so-called "fragile" nations, where both the poverty and the health situation are extreme. One such example is Capo Delgado Province, in northern Mozambique, currently enduring terrorist attacks, broad-based insecurity, population flight, and outbreaks of Covid-19, measles and cholera.

It is both shortsighted and counterproductive for local and international actors to take either an "either/or" approach (i.e., emergency *or* development) or a purely reactive one (i.e., intervening only after an emergency). The traditional conceptual parameters that draw dividing lines between emergency, rehabilitation and development, or line them up one after the other, are outdated and impracticable. Things need to change and evolve.

Strengthening a health care system and making it resilient, if we can consider this one of the current pandemic's potential lessons, must involve taking on and embracing every dimension of an emergency and attendant shocks: from the ex-ante readying of the system (something that is dangerously lacking today) through management of the initial phase of the crisis and the broad-based consequences thereafter, up through the recovery and learning phase.



## **IN MOZAMBIQUE**

A three-pronged approach to the fight against Covid-19: working with institutions and decisionmakers; giving ongoing assistance to communities; raising awareness and providing information.

TEXT BY / GIOVANNA DE MENEGHI AND EDOARDO OCCA / DOCTORS WITH AFRICA CUAMM

The first case of Covid-19 in Mozambique was found on 22 March 2020. Since then, CUAMM has worked at multiple levels to support the population as it works to respond in an effective manner to the outbreak. At the institutional level, CUAMM is collaborating with local health organizations and is part of the network of technical groups of the Ministry of Health for Epidemiological Surveillance and Case Management, as well as of that for Community Health and Advocacy. In this capacity we have taken part in formulating nationwide strategies, operational flow charts, guidelines and tools. At the community level, CUAMM has adapted its interventions to guarantee the safety of both its own staff and the local population, at the same time ensuring the continuity of services. Providing information to communities and raising awareness in both urban and rural areas have been vitally important activities, made possible thanks to an extensive network of around 500 local activists. Their support has also made it possible to carry out preventive activities at health points as well as in local markets and youth centers. Radio ads, videos and songs have been produced in a range of dialects, and messages have been broadcast from loudspeakers mounted on cars to reach those living in the most remote areas. CUAMM has also worked with village health committees to identify and refer suspected cases of infection, establishing valuable partnerships, including one with local religious authorities, who allowed us to use their minaret loudspeakers to disseminate virus-prevention messages.

In terms of our health interventions, in addition to providing training to community activists on the prevention of Covid-19 infection, we developed a procurement plan for the purchase of personal protective equipment (PPE) for CUAMM staff, as well as for the hospital and health centers that we work with. We also purchased ten hospital tents, each with an eight-bed capacity, which will be set up outside several key health centers, to be selected together with local health authorities; they will be used for pre-triage activities.

Currently (22 June 2020) the situation in Mozambique is thus: the cities of Nampula and Pemba have been declared locations with community transmission. CUAMM is working to help contain the outbreaks, supporting the epidemiological surveillance activities carried out by health authorities in the Provinces where we are active; shortly we will begin organizing community-based surveillance activities.