

Mavalane Epidemic Center: How IsDB, UNDP, and Mozambique Joined Forces to Strengthen National Epidemic Response



Sergio Barros
Civil Engineer - Health Portfolio, UNDP

The COVID-19 pandemic has underscored the imperative to bolster preparedness and fortify responses against epidemic outbreaks worldwide. Over the past five years, threats from outbreaks—such as Ebola and monkeypox—have exacerbated the multifaceted vulnerabilities of emerging economies, such as Mozambique. The urgent need for reliable health infrastructure has exposed significant deficiencies within the national healthcare system. Recognizing these challenges, the Islamic Development Bank (IsDB), the United Nations Development Programme (UNDP), and the Government of Mozambique (GoM) joined forces to establish the Mavalane Epidemic Center, a state-of-the-art facility designed to bolster national epidemic response capabilities. The General Hospital of Mavalane in Maputo was selected as the site for this critical healthcare hub, strategically

positioned to enhance access to quality medical services nationwide. The project focused on building a climate-resilient and energy-efficient facility, integrating advanced medical technologies and sustainable infrastructure. The Mavalane Epidemic Center was not only designed to address immediate public health crises, such as COVID-19, but also to enhance Mozambique's ability to respond effectively to future infectious disease outbreaks.

A Model for Climate-Resilient Healthcare Infrastructure in Mozambique

A defining feature of the center is sustainability. The facility is equipped with hybrid solar energy systems, backed by an uninterruptible power supply (UPS) system and a backup generator, ensuring continuous operations during emergencies. By reducing reliance on the national grid, these measures enhance energy efficiency while promoting environmental sustainability. Additionally, the construction incorporates climate-resilient materials, enabling the facility to withstand extreme weather conditions based on Eurocode 1.

The center includes an advanced epidemic response ward with 87 beds, equipped with a digitalized nurse call system, the first of its kind in Mozambique, to facilitate real-time communication between patients and healthcare staff, enhancing safety.

“

A defining feature of the center is sustainability. The facility is equipped with hybrid solar energy systems, backed by an uninterruptible power supply (UPS) system and a backup generator, ensuring continuous operations during emergencies. By reducing reliance on the national grid, these measures enhance energy efficiency while promoting environmental sustainability.

A key enhancement to the facility is the installation of a reticulated medical gases system, providing centralized access to Oxygen and other medical gases. This system ensures reliable respiratory support for patients, particularly those with severe respiratory conditions.

To maintain high sanitation standards, the facility has an in-house wastewater treatment and water recycling plant, along with antiseptic sanitary ware. These measures not only help prevent the spread of infections but also reduce operational costs by lowering water consumption by up to 28%. Furthermore, a waste management system ensures safe and environmentally friendly disposal of medical waste.

In addition to its epidemic response capacity, the Mavalane Epidemic Center incorporates a surgical block and medical support buildings to optimize healthcare service delivery. A morgue is also included,





ensuring dignified and secure handling of deceased patients during epidemic outbreaks. Security and accessibility have been considered, with the inclusion of a guardhouse, internal roadways, and a well-planned landscape featuring green spaces to create a healing environment for patients and staff alike.

Healthcare workers, including doctors and nurses, have been equipped with knowledge on managing infectious diseases, handling medical equipment, and operating the facility's energy-efficient systems. This focus on staff training ensures that the center remains fully operational and prepared to address future health crises.

Since its official handover to the Government of Mozambique in 2023, the Mavalane Epidemic Center has improved the country's ability to respond to epidemics and pandemics. By integrating

sustainable energy solutions, climate-resilient infrastructure, and advanced medical technologies, the center stands as a model for healthcare development in Mozambique and beyond.

As stated by Dr. Maria Helena, from Mavalane Hospital and Epidemic Center, "As part of our commitment to providing humanized care for hospitalized patients, the new ward, with its modern infrastructure, has significantly improved the quality of care and comfort for patients. This ward offers a greater capacity in terms of beds and space, as well as an increased number of sanitary facilities, reducing patients' waiting times. Additionally, it is equipped with a centralized medical gas system, which enhances the treatment of patients with respiratory conditions—something that was not available in the previous ward. Furthermore, the inclusion of a nurse call

system ensures timely and efficient patient care. This facility represents a major advancement for both the hospital and its patients."

Plans for the facility include the expansion of intensive care unit (ICU) services, the integration of smart healthcare technologies, and the additional medical training programs. A wellness center for long-term healthcare personnel and enhanced remote security access control are also under consideration. These improvements align with the broader One District, One Hospital initiative, which seeks to decentralize healthcare services and ensure comprehensive medical coverage across Mozambique.

Through the collaboration of IsDB, UNDP, and the GoM, this initiative underscores the power of strategic partnerships in driving meaningful and lasting progress in global health security.

