

## “Do the right thing”: Mentoring and birth simulations help nurses manage obstetric complications in Nampula Province, Mozambique

*Alcançar is a consortium comprising eight international and national organizations whose goal is to reduce maternal, newborn, and child mortality in Nampula Province, Mozambique. The consortium is led by FHI 360 and funded by the U.S. Agency for International Development (USAID) for 5 years (April 2019 – March 2024). Alcançar aims to establish Nampula Province as a model for improving provision and increasing use of high-quality, patient-centered maternal, newborn, and child health services by delivering a package of technical support to all levels of Nampula’s health system. The project strategy includes innovative, evidence-based, quality improvement approaches to sustain and enhance health service delivery. Alcançar includes FHI 360 (prime), Dimagi, Ehale, Institute for Healthcare Improvement (IHI), Viamo, Associação de Jovens de Nacala (AJN), HOPEM Network, and PRONTO International.*

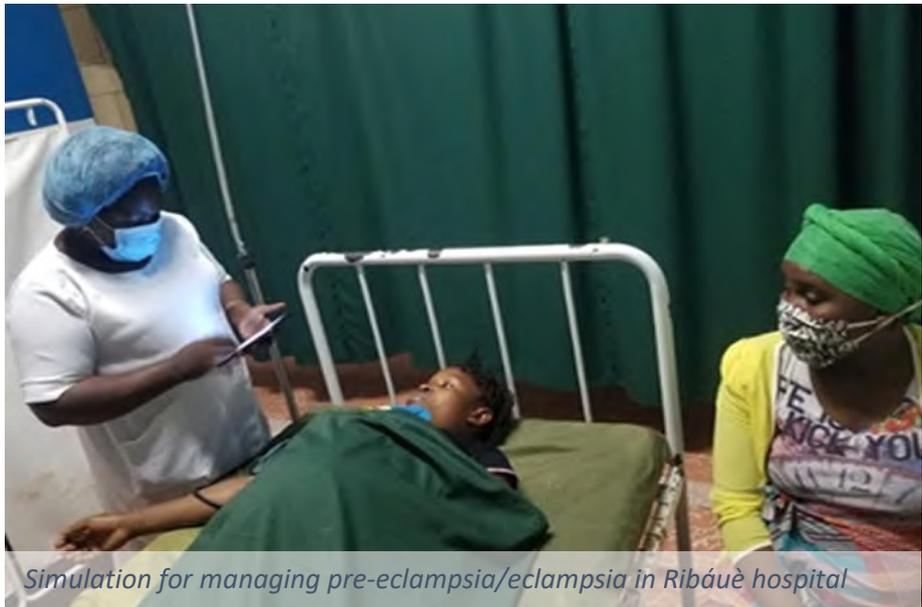


Photo: Moisés da Conceição Roberto

Simulation for managing pre-eclampsia/eclampsia in Ribáuè hospital

### PROBLEM OVERVIEW

Maternal and newborn mortality rates in Mozambique have remained persistently high. The national maternal mortality ratio has stagnated at around 450 deaths per 100,000 live births (INE, 2019), and the newborn mortality rate is 27 deaths per 1000 births; neither have improved substantially since 2000 (MISAU, 2011). Improving the quality of obstetric and intrapartum services is essential to reduce maternal and newborn deaths, which occur most frequently during labor and in the 24 hours after delivery. High-impact interventions for improved maternal and newborn outcomes are well-established, but they must be delivered through a functioning and integrated system by competent, motivated, and resourced staff to achieve their desired effect. Frontline health care providers must have the appropriate skills to provide high-quality, evidence-based obstetric and intrapartum care, and the confidence and capacity to respond appropriately during obstetric and newborn emergencies. Alcançar’s baseline assessment identified gaps in knowledge and practice among health care providers, including the proper monitoring of labor, and the ability to record and interpret vital signs, diagnose and treat severe hemorrhage, and diagnose and manage newborn asphyxia.

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## PROGRAM/ACTIVITY DESCRIPTION

Alcançar is working with the Ministry of Health at provincial, district, and facility levels to build the competencies of clinical health care providers through an innovative, simulation-based training approach.

Alcançar, using an approach developed by partner PRONTO International, has trained 25 clinical health care providers in basic and advanced simulation for obstetric and newborn emergency responses. The basic simulation training occurred in November 2019 and covered simulation facilitation and debriefing skills and clinical content related to normal birth, postpartum hemorrhage, respectful maternity care, and newborn resuscitation. After this training, 15 of the trainees — called *simulation facilitators* — integrated the approach into their routine clinical mentorship visits in seven districts in Nampula Province. The advanced training was implemented in February 2020, with the goals of improving the facilitation and debriefing skills of the mentors and introducing additional curriculum content that contains more advanced, clinically complex scenarios. The Nampula Provincial Health Directorate and Alcançar are now beginning to share their experiences across the province with the support of the district- and provincial-level trainees and advocates. Alcançar provides technical support to the simulation facilitators, including remote support and feedback, and monitors the acceptability, effectiveness, and impact of the approach. Further, Alcançar has provided direct grants to district health teams that support the simulation facilitators to make their routine facility visits.

During routine mentorship visits at the 35 focus health facilities, the trained simulation facilitators guide health care providers through highly realistic simulations of obstetric scenarios to provide opportunities for them to practice management of rare events such as birth asphyxia, postpartum hemorrhage, and pre-eclampsia. Simulation facilitators lead post-simulation debriefs on the challenges, solutions, and observations of team functioning and adherence to clinical protocols. During the simulation practice, providers engage in a safe learning environment where patients' lives are not at risk; trouble-shoot in real-world, low-resource contexts; and build confidence to calmly face complex clinical situations when they are often alone

### Alcançar adapts to the COVID-19 context by pivoting to deliver hybrid technical support

Despite the challenges that the COVID-19 pandemic brought to provision of technical support and rollout of the new simulation approach, the simulation facilitators, supported by Alcançar, adjusted to provide support via telephone, WhatsApp groups, Zoom, and intermittent face-to-face visits to the health facilities, observing all precautions and measures of individual and collective protection. The use of the WhatsApp group among the simulation facilitators has been a particular benefit. Further, PRONTO International developed two specific simulations that cover the management of a patient during COVID-19, and has prepared a set of virtual assets to implement learning activities. The Alcançar team is adapting these to be used in Mozambique.

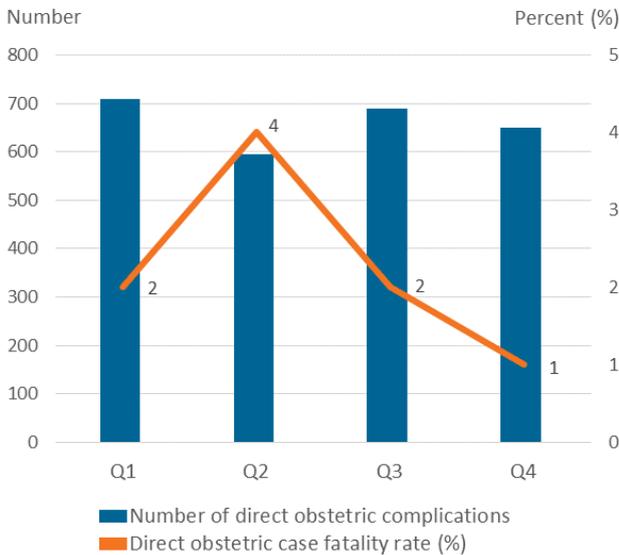
and without the required resources. Besides the application of clinical skills, the approach emphasizes teamwork, practical problem solving, improved interprofessional collaboration, effective communication, and respectful care. The full curriculum implemented with the frontline providers includes 10 simulation modules, or SimPacks™. To date, providers in all 35 health facilities have participated in each SimPack™ at least once.

## PROGRAM/ACTIVITY OUTCOMES

This simulation approach is leading to improved maternal and newborn health outcomes in Nampula Province. Furthermore, health care providers who have taken part in these simulations report feeling more comfortable and competent when confronted with an obstetric complication.

Since November 2019, more than 450 simulation sessions were facilitated in 35 health facilities in seven districts. Mortality from direct obstetric causes fluctuated during the year and reduced to 1% in Q4 (Figure 1).

**Figure 1. Total number of major obstetric complications and case fatality rate in 35 health facilities, by quarter (October 2019–September 2020)**



Source: Alcançar Programmatic Reports

To illustrate the impact of the simulation approach on the confidence and competence of health care providers, take the example of Nurse Guinea Armando, who applied the skills she gained during simulation sessions to help 19-year-old Mércia safely deliver a healthy baby. Nurse Guinea works at the Namahaca Health Center and participated in eight mentoring sessions during which her district mentor, who was trained as a simulation facilitator, simulated different obstetric scenarios. Nurse Guinea describes the success of her intervention thanks to her experience in the simulations:

*“Generally, I have about 100 monthly births in this health unit, most of the time the births are simple, [...] one dawn, I received Mércia, 19 years old, pregnant with her body very warm to the touch and showing signs of labor [...] When [she] arrived, I looked very slowly, and I suspected [laughs] another child today again! Mércia really seemed to be 14 years young at the time, a fact that really made me panic. After asking and checking the prenatal form, I realized that she was 19 years old, and then I became calm, but still worried!”*

Nurse Guinea reflected on how she was able to stay calm thanks to her experience with the simulations, and to apply her skills to properly assess danger signs through the concept of thinking aloud:

*“With Mércia, I immediately thought of a humanized childbirth, behaviors and procedures that promote healthy childbirth, because it respects the natural process and avoids unnecessary or risky behaviors for the mother and the baby, but after a quick assessment, I discovered that little Mércia was in prolonged labor, acute fetal distress [...] I didn't stop there, Mércia's temperature was so high, even to the touch [...] I felt it was boiling. I measured the temperature and then did the rapid malaria test, where I identified that she also had malaria. Mércia had a very evident cephalic disproportion [...] I ran to my antimalarial kit and administered the first dose of artemether/ lumefantrine as recommended by MISAU in Mozambique... **What helped me to stay calm** in that case of Mércia, is that during the ... Simulations I learned a lot from the mentors [...] I learned to think out loud and to stay calm [laughs], I learned danger signs in maternal and newborn emergency, as well as newborn resuscitation, postpartum hemorrhage, and control of pre-eclampsia / eclampsia.”*

Nurse Guinea quickly determined that Mércia was in a complicated situation, and she immediately asked for the ambulance to come to transfer Mércia to Memba District Hospital, which has surgical capability and specialized technicians who could provide the needed care. Before referral, Nurse Guinea stabilized Mércia by placing a venous catheter, offered paracetamol, and psychologically prepared the family while waiting for the ambulance.



Photo: Joao Uaiite

Mércia with her baby

Nurse Guinea further described what happened:

*“That day, after stabilizing Mércia, I called so many times that I spent almost all the credit I had [...] finally our ambulance arrived [face of deep satisfaction]. I immediately carried my patient to the car, I also put young Mércia's belongings and helped her mother to get in the car, all the papers (Referral Guides) I gave to the driver and the nurse who came from the District Headquarters. I was reassured, when the car started to go, I signaled with my hand the wish of a good trip. **Actually, the simulations with the mentors were the key for me to act correctly...Do the right thing!** [laughs]. I was waiting to hear from my little Mércia as soon as she left the health center for Memba District. ...you can't imagine, I was very happy, the nurse told me that I had got the diagnosis right, according to the evaluation of the medical team and had acted very well, because it was an eminent uterine rupture and the life of the child and Mércia at risk, it was necessary to have a cesarean section.”*

Mércia's story is an example of the complex health system resources that must be in place to save the lives of women and their babies and illustrates how critical it is to have competent, confident health providers. The health care providers who participated in similar simulations as Nurse Guinea now have improved clinical skills and confidence to practice safe and respectful childbirth in their facilities, which will save more lives, like those of Mércia and her baby.

#### ADDITIONAL INFORMATION

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Practicing resuscitation during a simulation in Ribáuè hospital

Photo: Moisés da Conceição Roberto

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