Mount Meru Foundation for mother and child care in Tanzania

Mobile Ultrasound

For better mother and child care in Tanzania

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Mount Meru Foundation

The Mount Meru Foundation was established in 2015. Click on this link for an impression of what the Foundation has set in motion in Tanzania in the past 5 years.

Mission

The Mount Meru Foundation is committed to improving mother and child care in Tanzania. Particularly in the Tanzanian countryside and in the vast outlying areas, there is often a lack of the necessary medical infrastructure and expertise. Pregnancy check-ups are often limited and birth and infant care leaves much to be desired. Information about pregnancy, childbirth and care of the newborn is limited. The knowledge and expertise of the traditional birth workers and the midwives in these rural areas is often scant. As a result, problems during pregnancy and around birth are often not recognized or not recognized in time. This is one of the main causes of maternal and child mortality. The Mount Meru Foundation's primary goal is to transfer knowledge and expertise in obstetrics and ultrasound to local doctors and midwives. Good education, good pregnancy checkups and the use of tools such as an ultrasound machine can be life-saving.

Bottlenecks: Distance to healthcare, infrastructure and expertise

Well-trained people in the right place with the right resources can make all the difference, especially in rural areas where the distance to well-equipped hospitals is great. It is crucial that health professionals are able to distinguish in a timely manner between which women need more care and should be referred to a clinic and which women in the villages can give birth.

Timely risk selection possible through ultrasound

Ultrasound is an important tool in making risk selection. It can yield crucial ultrasound findings that can have a direct positive effect on pregnancy management policy. This can be vital for mother and child and improve the birth outcome.

Some examples of this are:

- Multiple Pregnancies
- Positional Deviations
- Pregnancy outside the womb (life-threatening)
- Birth defects and growth retardation
- A placenta in front of the exit (life-threatening)
- Term determination (duration of pregnancy)
- If the term can be determined correctly early in the pregnancy, a child that is too small or a premature birth can be discovered later in the pregnancy.

Ultrasound imaging as an imaging diagnostic technique has been widely used in medicine in the West for years. In developing countries such as Tanzania, and especially in rural areas, ultrasound is often still in its infancy.

Mobile ultrasound: a chance card

In the rural areas of Tanzania, the use of a portable ultrasound device is a godsend, it is easy to transport and can be used in several places. Modern mobile ultrasound devices are the size of a laptop. As a result, unlike in the past, due to the emergence of good mobile ultrasound equipment, ultrasound can now also be used in rural areas that are difficult to reach and where there is no electricity. Working with a mobile ultrasound machine can be learned well with the right training. This makes it possible to quickly diagnose during pregnancy, without medical intervention.

2019 – 2020: Project 'Adopt a Sonographer'

Over the past two years (2019 – 2020), the Mount Meru Foundation has successfully launched the “Adopt an Ultrasoundist” project. Four students could be trained through the local shortened ultrasound course at the KCMC in Moshi. The trained ultrasound technicians are substantively coached and supported by the Foundation for up to two years after their training (both on site and remotely via WhatsApp) so that their expertise and experience in ultrasound can continue to grow in their workplace and in the ultrasound practice every day.

2020 – 2021: Project 'Adopt an Ultrasoundist' temporarily on hold

Due to a national curriculum change and redesign of medical imaging education, the shortened training at the KCMC was put on hold by the government in mid-2020. At that time, the Mount Meru Foundation had several candidates on the waiting list for the training. It is unclear when and how the training will start again. It seems likely that the shortened course will be converted into an annual course aimed at obtaining a diploma in ultrasound. The admission requirements in terms of previous education may also be adjusted, so that midwives and nurses will not automatically be admitted. The revised training is expected to start again in 2022. We hope to be able to place 3 candidates for the annual training.

2021 - 2022: 'Mobile ultrasound scan'

Because it is currently difficult to anticipate changes in local ultrasound education that are not yet clear, the Mount Meru Foundation has decided to temporarily shift its focus and get a new project off the ground. In this way, the existing potential of trained people can be utilized as much as possible and ultrasound in rural areas can be strengthened through other means. Below you will find the project plan.

Project plan 2021 – 2022: 'Support the mobile ultrasound scan'

Goal project ‘Mobile ultrasound scan’

1) *Strengthening existing potential of ultrasound technicians*

Now that it is temporarily not possible to train new people, the Mount Meru Foundation wants to make the most of the existing and present potential, namely the people who have already been trained. The Mount Meru Foundation wants to support them in expanding their ultrasound services, within the setting of their institution (by means of expanding to mobile ultrasound) and/or through existing or future outreach projects in which mobile ultrasound can be integrated.

2) *Expanding resources and capacity, especially to rural areas*

The Mount Meru Foundation wants to enter into a collaboration with institutions, whereby the Mount Meru Foundation supplies the mobile ultrasound equipment as well as the substantive guidance and coaching. The institution itself will deploy the existing infrastructure and its own logistics resources to integrate mobile ultrasound into existing or yet to be set up outreach projects.

3) *Strengthen existing collaborations*

The approach is to first look at how we can use the existing network of local ultrasound technicians of the Mount Meru Foundation. We also want to look at how we can further set up or expand existing projects by means of the 'Mobile ultrasound scan' project. This can ensure a 'quick start' because the basis is already there: good contacts, knowledge of the area, short lines with competent authorities, etc.

4) *Monitoring impact*

The 'Mobile ultrasound scan' project is ideally suited to monitoring the impact of ultrasound scans on mother and child care. Part of the agreement with the collaborating institutions for borrowing mobile ultrasound is therefore also the commitment to contribute to reports and data collection.

‘Target areas’ for 'Mobile ultrasound scan'

As indicated above, it will be explored how existing projects can be used as a stepping stone for mobile ultrasound design and outreach.

1) Himo

This is a rural area east of Moshi, close to the Kenyan border. dr. Maeda is one of the driving forces behind ultrasound at the local clinic, Himo OPD. Last year, one of the midwives in his clinic was trained by the Mount Meru Foundation to support him in expanding ultrasound services to pregnant women. Since the visit of the Foundation in 2018, Dr. Maeda for support so that he can also enable ultrasound in the medical outposts in the remote areas that are also under his responsibility. dr. Maeda, who is a pioneer in his work, was already a visionary back then: he immediately asked the Foundation for mobile ultrasound and he has repeatedly asked for help on subsequent visits of the Foundation. He is convinced of the potential that a mobile ultrasound device could offer in his area, precisely to reach that population that is now deprived of crucial diagnostics and risk selection. According to him, a lot of health benefits and better pregnancy outcomes can be achieved with this.

2) Karatu

Karatu offers various starting points as a project area.

a) In 2020, a partnership has already been explored in Karatu between the Mount Meru Foundation, Driving Nurses and the Lutheran Hospital in Karatu. A letter of intent was also

drawn up to start providing pregnant women in the rural areas of Karatu with mobile antenatal checks and to support this with mobile ultrasound. The Driving Nurses Foundation will be responsible for equipping the mobile services, facilitating transport and the care providers. Karatu Lutheran Hospital provides staff and transportation. The Mount Meru Foundation organizes the ultrasound training locally. An inventory will also be made of whether there is sufficient mobile ultrasound equipment and, if necessary, the Mount Meru Foundation will facilitate this. The intention is to set up the project in Karatu on the basis of the acquired knowledge and experiences with the mamabus in Moshi. Due to Covid19, it has remained with a declaration of intent to date. It can be explored how this can be tackled and how this can be integrated into the 'Mobile ultrasound scan' project.

b) In another hospital in Karatu (Karatu DD), a doctor trained in 2019 by the Mount Meru Foundation works as an ultrasound technician. Partly thanks to the donation of an ultrasound device by another NGO (Wombs of the World), a thriving ultrasound department has been set up. More than 1500 obstetric and gynecological ultrasounds are performed every year. The doctor has also worked in the outlying areas of Karatu in the past and is very interested in setting up mobile ultrasound outreach. Some areas can only be reached with the back of a motorbike during some seasons. A mobile ultrasound system can easily be carried in a backpack, so this contact also offers starting points for the 'Mobile Ultrasound' project

c) Karatu has a number of hospitals that are equipped with ultrasound and can be referred to, good follow up after risk selection during outreach is just as crucial as the outreach itself.

3) Zanzibar

Zanzibar also offers interesting starting points for the 'Mobile Ultrasound' project. For several years now, the Mount Meru Foundation has supported a German midwives who perform pregnancy ultrasounds in a birth clinic in Stonetown. Recently, the old ultrasound device on site has broken down and there has been a request for help for an alternative device. Mobile ultrasound could also offer a solution here. Importing and transporting a log standalone ultrasound device is very complex and the tropical climate is not really suitable for the current high-tech and high-end devices. In addition to being extremely expensive, these devices are also very sensitive and not very resistant to local conditions. Via the Mobile Ultrasound project, a mobile ultrasound equipment could be deployed under certain conditions and within the project frameworks in order to continue ultrasound pregnancy checks that are no longer possible.

‘Target contacts' for 'Mobile ultrasound scan’

In recent years, the Mount Meru Foundation has built up a number of 'high potential' contacts with ultrasound technicians or related expertise. They are able to independently set up outreach projects within the institution in which they would currently work. A number of these contacts have already indicated in the past that they see the enormous possibilities of mobile ultrasound. A number of them have already worked with the demonstration aircraft that the Mount Meru Foundation had with them during working visits and were very enthusiastic about it. These contacts will be tested for their interest in the 'Mobile Ultrasound' project.

Plan of approach

The starting point of the Mount Meru Foundation is always that the initiative and the request for help come from Tanzanian side and that they will also support the project. That is why we started with a project application form. This form has meanwhile been distributed among the key figures in the above-mentioned 'target areas' and among the 'target contacts'.

We will test the projects for their potential and sustainability by means of the answers in the application forms (see attached format). In 2021 we want to choose 3 projects (provided they qualify) with which we will continue in the Mobile Ultrasound trajectory.

By the end of 2021 we want to have these projects equipped with a mobile ultrasound device. The preconditions and contours will first be worked out for this.

In the coming months, extra efforts will be made to fund-raising in order to actually get the intended projects off the ground.

A visit to Tanzania is planned at the end of the year 2021. In addition to supervising the various projects, training will also be provided. If a further project analysis shows that this is necessary, an ultrasound device will be issued on loan.

It is desirable that each project can also be monitored on site in the absence of members of the Mount Meru Foundation. The Mount Meru Foundation has in mind someone who not only lives in the area but is also medically trained and can report etc. about the progress.

The Mount Meru Foundation invests in its local trainers in Tanzania for the implementation of ultrasound equipment and hands-on training. We pay a fee for providing training and maintaining contacts is supported by a small annual expense allowance (such as telephone costs).

Deadlines

May 2021	Drafting project application form	Achieved
June 2021	Distribute the project application forms among potential existing projects and contact persons	Achieved
August 2021	Selection of 3 projects	
October 2021	Equipment decision (orientation suitable equipment in progress) Have the necessary funds	
November 2021	Fine-tune preconditions and contours of the project - Work appointments - Supervision - Logistics	
December 2021	Installation in Tanzania	

Project budget

The emphasis in the project seems to be on supporting with equipment, but this is the logical consequence of previously trained doctors and support staff by the foundation who can now start operational 'in the field' with this support. Obviously, the purchase of mobile ultrasound equipment is the largest cost item for this project.

In order to successfully initiate the project and to facilitate training places and ultrasound equipment in the coming years, the following budget has been drawn up:

Required Budget Projects 2021 - 2024

Cost item	**2021**	**2022-2024** (€ every year)
Training of 3 ultrasound technicians	-	10.000
Echo devices (3 per year)	21.000	21.000
Reimbursement of local project supervisor	1.000	1.000
Related equipment costs (Ipad, installation, gel, telephone costs, internet)	2.500	2.500
Other training costs for ultrasound technicians who have already graduated	500	500
Total	**25.000**	**35.000**
Out of reserves	8.500	
Fundraising	**16.500**	**35.000**

June 2021