



# My Visit to **Africa**

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**PHILIPS**

# My Visit to Africa

A personal report from the frontline of a successful public/private innovation partnership



**W**ant to know “first hand” the kind of progress Philips and its partners are making on the ground in Africa to help mothers and their babies live healthy, happy lives? Well, you can! I’m Meera Gopalakrishnan, and I direct program management & operations for [Philips’ Imaging the World \(ITW\) partnership](#). I traveled to Africa in August 2014 to meet with our partners at Imaging the World. The Philips/ITW partnership creates social and business value by strengthening resource-constrained communities around the world. Through an integrated solution comprising portable ultrasound, teleradiology, education and an innovative care delivery model, we are already bringing much needed antenatal care to women in rural Uganda. Our solution has achieved significant success, as demonstrated by a two-year study at the Nawanyago Health Center III in Uganda, where we verified that ultrasound technology has a direct impact on maternal/neonatal clinical outcomes.

I blogged about my experiences in *My Visit to Africa*, and now I invite you to follow me as I explore the challenges, the possible solutions and Philips’ success creating the future of healthcare! I am so proud to work for a company that creates meaningful innovation for people and reaches out beyond traditional boundaries to create partnerships that bring high-quality, affordable and sustainable care. There is no greater gift we can give to mothers around the world than the confidence to bring their children safely into this world. I hope you enjoy coming along on my journey. ●

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## About Uganda:

Uganda population in 2012—**32.2 M**

Expected population in 2020—**44M**

Ugandan population live in rural areas—**87%**

Number of Ugandan women who die each year due to pregnancy complications—**6,000**

Number of birth complications occurring daily in rural Uganda—**555**

Total number of doctors in Uganda—**644**

Percentage of doctors in urban areas—**70%**

Number of radiologists in Uganda—**34**

# Philips Partner Imaging the World

Before Meera takes you on her journey, I'd like to take you on another one.

A pregnant woman lives in Nawanyago in eastern Uganda, home to some 23,000 people, and due north of the source of the Nile River as it emerges from Lake Victoria. She, and everyone she knows, is very poor, relying almost entirely on subsistence farming. She is part of a polygamous, male-dominated society where women tend the farm, manage the house, cook for their husbands and bear and raise children. She probably has no access to family planning. She could have at least six pregnancies, perhaps up to 10 or 12. Some 22 year olds like her are already on their 6th pregnancy. And pregnancy is the leading cause of death for girls between the ages of 15 to 18.

There is a less than five percent chance she will have antenatal care or a skilled delivery. The nearest public hospital where she can get a C-section if her delivery is complicated is two hours away by "boda boda" – that's a motorbike ride. She could easily end up like many Ugandan women who arrive at a health center in obstructed labor, bleeding and near death. It's also possible that her motorbike driver simply pulls off to the side of the road, and she delivers in the dark,



the cold and the mud. Hers is not a happy journey to motherhood.

Portable ultrasound used in innovative ways can help change all this. In partnership with Philips, Imaging the World has evaluated more than 1,000 pregnant Ugandan women. Since the program's inception in 2007, antenatal care visits have increased 80 percent and rural health center deliveries by 63 percent. We are making progress.

ITW will soon expand in Uganda and elsewhere in sub-Saharan Africa. Last year we began a pilot breast cancer diagnosis program using ultrasound. Most recently, we did a feasibility study to evaluate TB in pediatric patients. Portable ultrasound is just the first step (but a big one!) in launching a transformation by providing accessible, affordable, sustainable, high-quality healthcare to underserved populations.

Kristen DeStigter, M.D.  
President & Co-founder  
Imaging the World

# Flying August 1, 2014

t's hard to believe that the first quiet moment I've had in the past few days is at 35,000 feet. Between preparing for the trip, getting all of the necessary equipment, packing, organizing things at work and home and checking the news for the latest on the Ebola outbreak, it's been a busy week. Now, I finally have a moment to reflect on this trip that I am embarking upon. You see, I am on my way to rural Uganda to meet with one of our innovation partners, Imaging the World.

For me, this is unlike any other business trip. While writing this blog, my state of mind is 80 percent excitement and 20 percent anxiety. Why anxious, you ask? Because I have never been to Africa before, let alone rural Uganda. Maybe the fact that my suitcase looked like it should belong to a contestant on the television show Survivor rather than a business traveler. Add leaving my family behind. Yet, here I am, two plane rides and multiple car rides away from the heart of the pearl of Africa.

So what makes this trip exciting from me? First, my daughter and I grew a mini-butterfly habitat this summer. Every day, we would study the progression of those little larvae into beautiful butterflies. Now, we both have a new appreciation for not just a caterpillar's journey but also the nuances of metamorphosis. Depth of insight matters, as it leads to the creation of solutions that are uniquely tailored for specific needs. Second, do you remember the first time you saw rainbow colors in a soap bubble and wondered where they came from? Curiosity often gives us the ability to look at challenges as opportunities and to think differently.



How is healthcare consumed by over 80 percent of the population that has access to only 30 percent of medically trained care providers? How is it that a market where mobile networks seem ubiquitous does not have access to basic antenatal care? What solutions are needed to bridge the access and affordability gaps? Most important, what can we do about it?

It's often been said that necessity is the mother of invention. I submit that curiosity has something to do with it, as well. So here I am, driven by my sense of wonder, questioning the status quo, pushing myself outside of my comfort zone. Isn't that what innovation is all about? ●

# Kampala August 2, 2014

We landed in Kampala at 11:30 pm local time. I was greeted by the warm tropical air and struck by the familiarity I felt with the ambience -- a throwback to my childhood days in India. Very soon, I was joined by another volunteer, and we both were received and escorted to the hotel by an ITW staff member.

Tomorrow morning, I will meet with ITW team members, who have made all of the arrangements for the trip. Next up, meeting the entire group consisting of the ITW team, ITW/Africa team, physicians and student volunteers to plan the week. Dr. Kristen DeStigter will give an overview of the week, and we will set off to our first village, Nawanyago in Kamuli district. My take so far on Uganda: warm weather, warmer people. ●



Kampala skyline and local businesses



# Nawanyago August 5, 2014

Our first stop is our pilot site, Nawanyago, where the ITW program took root. The program was started in 2009 and has grown by leaps and bounds. At Nawanyago, we met with Sister Angela, Nurse Midwife, Nawanyago Health Centre, the heart and soul of the clinic. Sister Angela is a bundle of energy, exudes compassion and has such an amazing, positive attitude. As she runs from patient to patient, scanning them, counseling, guiding them on their care plan, I am struck by how much she has been able to accomplish with such limited resources. And she does it all with a smile.

Prior to the program's establishment at Nawanyago, pregnant mothers had to travel to Kamuli Mission Hospital to get ultrasound. This is a 25-mile journey on dangerous motorcycle taxis with treacherous road conditions. In addition to saving lives of pregnant mothers, the ultrasound program serves as a magnet, drawing in the community to the clinic. Given that most healthcare decisions in rural Uganda are made by men, educating the men along with the women on antenatal care, as well using that opportunity to diagnose and treat diseases and conditions like malaria, HIV, anemia etc., is critical to improving community health. The success of the program is now bringing women from surrounding villages to the clinic.



Counterclockwise  
from bottom left:

1) ITW's Sister Angela and Dr. Kristen DeStigter explain the program.

2) The new ambulance;

3) At the entrance



# Nawanyago (cont.)

Today was a very exciting day at the clinic because, for the first time, pediatric ultrasound scanning was done. The day started with a long line of young children waiting to be scanned. This is in addition to a full load of pregnant mothers waiting to be scanned, along with a woman delivering twins. Not a dull moment at the Nawanyago clinic!

We also had the opportunity to test Philips' new handheld ultrasound system in the field. There was a lot of "wow!" Dr. DeStigter, Sister Angela and other radiologists in the group were very excited about VISIQ — its portability and image quality. They offered some great feedback on how handheld systems might be optimized for resource-constrained markets.

And this really stands out for me: While we were scanning the children at the clinic, a woman who had delivered the first of her twins earlier in the day and had been laboring for hours was yet to deliver the second twin. Sister Angela wanted to take a look at the baby but the clinic only has one Philips ClearVue 350 ultrasound device, and the children were being scanned with it. She would have had to interrupt the pediatric clinic and wheel the ClearVue 350 into an incredibly cramped delivery room. Instead, we were able to pull out the VISIQ and take it right to the patient. Dr. DeStigter was able to scan the woman and determine that the baby was still alive, determine the position of the baby and advise that the woman be transferred to the district hospital — where she safely delivered her baby later in the day. Having a portable ultrasound device of diagnostic quality made a big difference in that patient's care path and outcome. Seeing it live was incredibly powerful. ●



Top: VISIQ elicits "wow."



Left: Educating local young people.



Here is a selfie that I will cherish. I'm with Sister Angela, an absolute inspiration, who also makes the best donuts you can imagine!

# Mubende August 6, 2014

t's almost midnight, and I'm exhausted. We spent the day at Mubende Regional Referral Hospital in Mubende, Uganda. Our day started at 8:30 am and ended just about an hour ago (10:30 pm). It was a very insightful and productive day in so many ways. The drive to Mubende through the picturesque Ugandan countryside dotted with tea plantations, sugarcane farms and vibrant tropical foliage was breathtaking.

Our first stop was at the Mubende District Headquarters where we met with the key district officials: the District Health Officer (DHO) and the Chief Administrative Officer (CAO). Dr. DeStigter shared the progress of the ITW program within the district. We also had the opportunity to show them VISIQ. Dr. DeStigter described the product as a game changer in facilitating access to care within the district. Both the DHO and CAO were very impressed; specifically, the potential to enhance access to care within the district.

Next stop was at the Mubende Regional Referral Hospital. The Mubende Regional Referral Hospital is a government facility and one of fourteen such regional referral centers in Uganda, each serving approximately three million people. Patients from HCIII clinics (like Nawanyago) are referred to these regional centers. The regional center offers both out-patient and in-patient services and has OR capabilities.



Counterclockwise  
from bottom left:

- 1) Demonstrating VISIQ;
- 2) The team!
- 3) Fields around Mubende



## Mubende (cont.)

At the Mubende hospital, Dr. Belard and Dr. DeStigter set up pediatric scanning clinics for diagnosing Tuberculosis (TB) using ultrasound. Dr. Belard is an expert in the use of ultrasound for detecting TB. Her research has found that ultrasound is a very good tool to diagnose TB in children, especially in the case of extra-pulmonary TB. This is a novel and very promising application for ultrasound, especially in areas where TB is endemic. The worldwide TB burden, specifically in low- and middle-income countries is very high. The use of ultrasound for detecting TB, combined with ultra-portable handheld devices and new care delivery models using local skills, has the potential to become a game changer for TB diagnosis in this market.

We ran two parallel TB scanning rooms and finished up at around 8:30 pm. You can imagine the volume of patients that were scanned. We met a young girl who had been treated for TB on and off for over five years...she must have been around seven or eight years old. As a marketer, the need for and potential value of an ultrasound based TB detection program was very clear. On a personal note, this was by far the most difficult part of the trip. It was heart breaking to see so many children, mostly under the age of six, who were infected with TB and/or were HIV positive.

After the TB clinic (8:30 pm), we went to the maternity ward and were able to offer ultrasound scanning for patients in their third trimester, some of whom were in active labor. This was the first scan for many of the women in their entire pregnancy. ●



Top: In the maternity ward.

Bottom: The team scanning with VISIQ in one of the TB scan rooms.

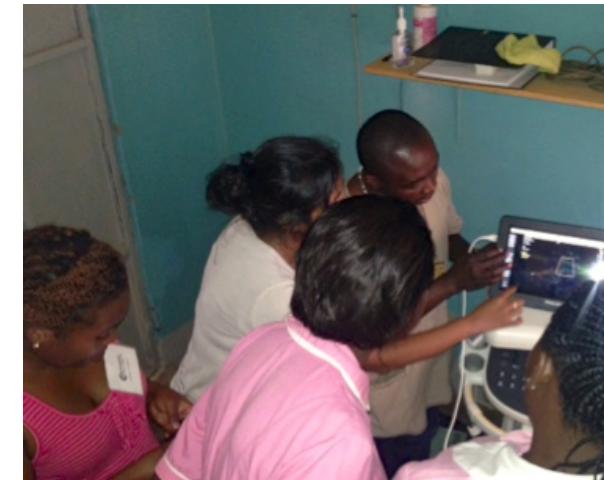


# Kasambya August 7, 2014

Kasambya is a small town within Mubende district. It is, however, a milestone for the program because ITW was able to gain direct support from the Ministry of Health to allow, for the first time, a fee-for-service model to finance the presence of ultrasound at public clinic sites. The nominal fee of about \$2 was found to be affordable and is critical to the sustainability of the program.

At the Kasambya HCIII, we met with Hakim, who is the on-site program coordinator as well as primary sonographer at the clinic. Hakim tells us that over the past two months, they have scanned over 120 patients as part of the antenatal program at Kasambya. These are patients who presented with pain/bleeding, which prompted a clinic visit.

As the community sensitization process ramps up, Hakim anticipates seeing a high volume of patients at the clinic. In order to build and strengthen the capacity needed to handle the patient volume, the ITW team has trained two additional midwives to perform ultrasound scans and provide basic interpretation. Today, the trainees will go through their final assessment. ●



## Kampala August 8, 2014

This was a day of many meetings, and the first one was perhaps the most significant. We had the opportunity to meet with Dr. Jane Ruth Aceng, Director General of Health Services, Uganda Ministry of Health. She serves as the advisor to the Uganda president on healthcare programs. We were able to demonstrate VISIQ to Dr. Aceng, and she was very impressed with the innovation.

Another notable meeting was with the radiologists at Mulago Hospital in Kampala. The Mulago National Referral hospital is a 1,790-bed hospital founded in 1913. It serves as a national referral center for the entire country, as well as the general hospital for the Kampala metropolitan area. At Mulago, we met with Dr. Sam Bugeza, head of radiology at Mulago, and were able to showcase VISIQ. Dr. Bugeza and team were very impressed with the image quality and portability. They offered feedback on optimizing the product for their needs. ●

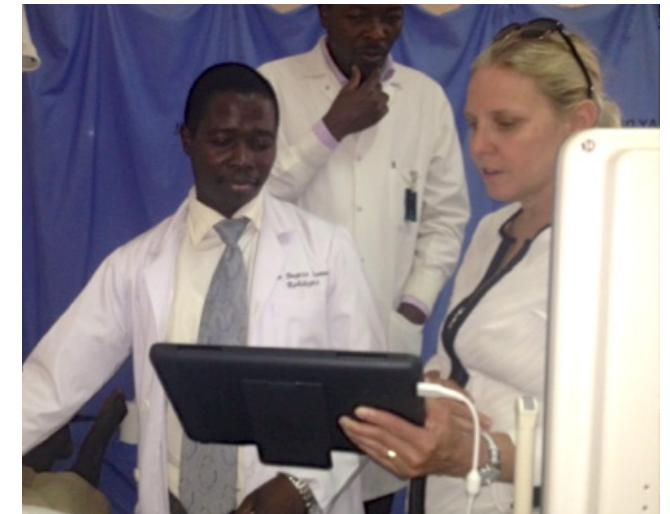


Counterclockwise  
from bottom left:

1) The team with  
Dr. Jane Ruth Aceng,  
Director General of Health  
Services.

2) Mulago Hospital;

3) Dr. Bugeza and  
Dr. DeStigter scanning with  
VISSIQ while one of the  
radiologists looks on.



# Leaving August 9, 2014

Today is our last day in Uganda. We were at dinner with the entire team at a restaurant overlooking Lake Victoria singing along to *Leaving On A Jet Plane*, when it hit me. I will miss this place and all the people I've had the opportunity to meet. It's strange how I feel a connection to a place I was apprehensive about visiting a week ago. Maybe it was the genuine warmth that people have in them, maybe it's the can-do attitude despite the hardships, maybe it's just walking a mile with people in need. I really can't explain it.

Every insight was an adrenaline rush that kept me going until the next one – and there were many! Besides market insights, I have seen first hand that along with education, access to affordable, high-quality care is essential to strengthening communities. Strong communities are more informed healthcare consumers and make better health-related choices. I have also learned that technology is one element of the ecosystem needed to bring affordable, high-quality care to resource-constrained areas. In order to optimize healthcare delivery and consumption, we need holistic solutions that combine technology innovations with new care delivery models using local skill levels along with community education and sensitization.

As a team, we must have clicked about a thousand photos during the trip but there is one that stand out. The photo was taken on the way to Nawanyago. I see hope, ambition, strength and the drive to succeed in those eyes. I also see disease and death in the background, trying to hold them back. We have a choice to make, either stay on the sidelines or find ways to empower them. The choice is pretty clear to me. ●



Local children by the roadside

# ITW Partner Philips Healthcare

Join us on the journey to improving healthcare for women everywhere

Philips believes that many of the global healthcare challenges we face can best be addressed by developing affordable, accessible and cost-effective solutions that satisfy patients' needs. Simple solutions can offer dramatic results, and local implementation means solutions are in tune with cultural preferences and economic realities.

Nowhere are opportunities to deliver simple, and locally relevant, solutions more evident than in sub-Saharan Africa, in a country like Uganda. Here, the non-governmental organization Imaging the World (ITW) is working to offer affordable, accessible and quality maternal medical services through a revolutionary concept that integrates technology, training and the community. ITW is making a significant impact on the lives of women and their families in rural villages where women have limited access to healthcare throughout their entire lives.

With guidance from the Ugandan Ministry of Health, ITW is using ultrasound technology, in conjunction with a financially modest, state-of-the-art image compression and communications infrastructure, to enable rural clinics to provide life-saving local healthcare to the poorest regions in Uganda.

By using volume ultrasound scans to replace static images with a series of images that are gathered by sweeping the transducer across the organ or area of interest, the need for physician scanning is eliminated. This enables locally trained midwives to gather images without anatomy knowledge. The image sets are sent via cell phone to expert readers anywhere in the world. This groundbreaking technology is changing lives in Uganda. And it is affordable – with a cost equivalent to about \$1 per patient visit.

This clinical model works anywhere that cell phone reception is available, and there can be many more applications: emergency medical services, disaster relief, military deployment and assistance for other medical relief organizations. The ITW program could also be a solution to providing low-cost, high-quality medical imaging to remote or under-resourced medical clinics in the United States and other developed countries. Philips is proud to expand access to care worldwide by partnering with organizations like ITW.

– Philips Healthcare

## Partner with us to change the world!

Fabric of Africa

Imaging the World

Philips VISIQ

