

# Making child-birth safe for mothers and babies.

An innovative approach to the use of ultrasound and telemedicine within rural communities.



Image generated at the lower level health unit



Transmitted to district hospital for remote interpretation by expert



Results sent by SMS to the point of care for early detection of critical obstetric condition

Imagine a woman dying from childbirth. Now imagine it every hour and a half. 16 times a day\*. Every day of the year.

\*Source: RHU – Reproductive Health Uganda

Imaging the World (ITW), in partnership with Philips Healthcare, has pioneered and extensively tested in Uganda (N=1000s) a clinically sound, economically sustainable approach, based on ultrasound and telemedicine technologies.

## A pilot study proves potential

In 2010 -2011, ITW led a 2-year, IRB-approved study in Uganda at Nawanyago health unit (a low level HCIII) and Kamuli Mission Hospital (KMH).

### Scientific outcomes demonstrated:

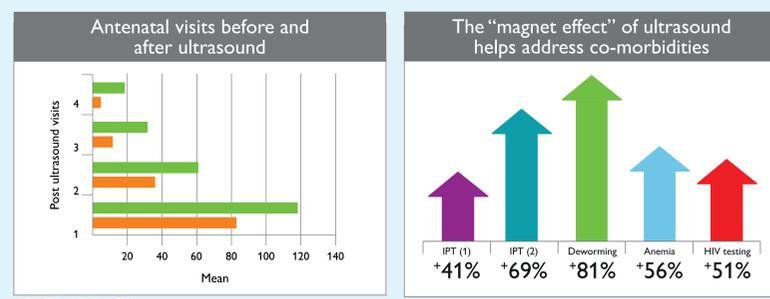
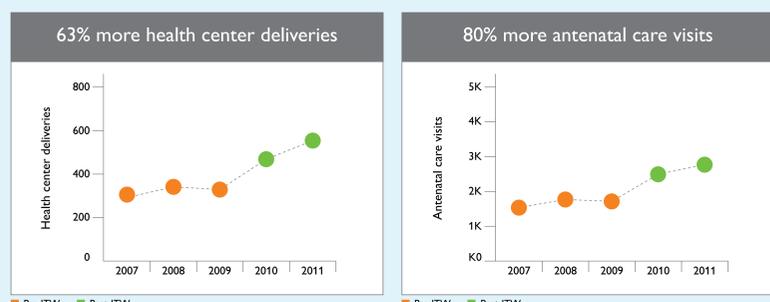
- successful compression and decompression of diagnostic quality images
- successful transfer of HIPAA-compliant confidential patient information
- reproducible and repeatable protocols
- high interobserver concordance

### Extensively tested system aspects:

- a robust quality assurance program
- optimized technical infrastructure
- integrated community outreach and ultrasound sensitization
- capacity building with knowledge, expertise, and resources
- development of criteria for future site selection

### Unexpected finding: the “magnet effect” of ultrasound due to increased trust in the health care system

- highlighted by progress toward WHO MDG 5: statistically significant increase in deliveries with skilled healthcare workers and in the number of antenatal visits (ANC's)
- vital testing and treatment of maternal co-morbidities at the time of the ANC's



## What we will do

Reduce maternal mortality rate in Uganda, and three other countries by serving 90,000 women over 4 years. Ultimately reduce worldwide maternal mortality rate by adapting the ITW ultrasound model to deploy it in all low-resource areas.

## How we will do it

Implement sustainable, low-cost ultrasound program in 6 districts: three in Uganda, and in three other countries. Below are the five cornerstones to our model:

### 1 Hub and spoke referral system

- Each district will have a “hub” regional hospital and three or more rural clinics or “spokes”
- Diagnosticians in “hub” hospital will read ultrasounds transmitted from “spokes”
- Response time goals: 2 hours for urgent cases, within 48 hours for routine cases
- Patients requiring hospitalization will be counselled, referred to regional hospital

### 2 Simple Training

- Telemedicine model eliminates need for fully trained sonographer at every site
- Simplicity of technology and scanning protocol makes it easily usable by health workers
- Requires no prior knowledge or experience
- Takes only 2 -3 days of training

### 3 Technology: Image transfer and report flow

- Makes use of existing technology

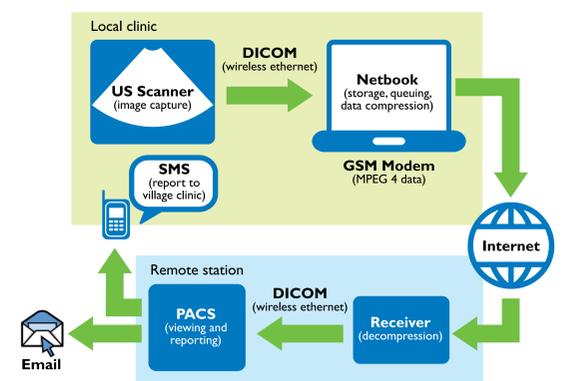
### 4 Sustainability

The ITW solution is highly sustainable because it:

- Relies on local healthcare workers and mid-wives using a three phase educational approach, establishing a “train the trainer” model
- Requires no special skills or technology experience
- Is inexpensive to implement and maintain
- Engages husbands and fathers in their family's healthcare
- Highly affordable: \$1 “equivalent” per visit per patient

### 5 Outcomes Driven

- Outcomes data will be collected to demonstrate efficacy of the model and the impact on Millennium Development Goal 5
- Results will be published to broaden awareness of the ITW approach
- Published data will be used to engage other countries/organizations to adopt the ITW model



Saving lives, one ultrasound at a time.