

Bringing the 'magic' of ultrasound to rural Uganda to reduce pregnancy complications

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In a collaborative study from Lawson Health Research Institute (Lawson), Western University (Western), Bridge to Health Medical and Dental, and Kigezi Healthcare Foundation (KIHEFO), a team of researchers found that radio advertising for free ultrasounds in rural Uganda increased the number of pregnant women who attended modern medical care by 490 per cent.

The study was conducted to address the low number of women in rural Uganda who attend free antenatal care - modern health care for expecting mothers. In Uganda, approximately 6,000 women die annually from pregnancy-related complications and up to one third of women deliver their [babies](#) at home.

"Our hypothesis was that if we could offer free ultrasounds, so that women could see their unborn baby, more women would come forward and attend the antenatal clinic," explains Dr. Michael Silverman, a scientist at Lawson and Western and senior author on the study. "Who doesn't want to see their unborn baby? It's like magic."

Dr. Silverman conducted this study alongside Dr. William Cherniak, Executive Director at Bridge to Health, and Dr. Geoffrey Anguyo, Executive Director at KIHEFO.

In the developing world, women do not present for antenatal care for a variety of reasons. "It may be against their cultural beliefs or they may view modern medicine as irrelevant," says Dr. Cherniak. "As a result,

many of these women are unaware of pregnancy complications and deliver at home without a trained [health care](#) professional."

Common pregnancy complications include the baby being turned the wrong way, the placenta being in the wrong place or even expecting twins. Another complication is the transmission of infectious diseases from the mother to child. In Africa, the biggest risk is the transmission of HIV, hepatitis B or syphilis which can be transmitted from the mother to the baby and cause chronic infection of the baby, birth defects or death. Undiagnosed maternal malaria can also lead to severe complications.

The use of portable ultrasound machines is extremely beneficial. "Portable ultrasounds allow you to screen for serious anatomical problems, like the baby being positioned the wrong way. When women present to the clinic for an ultrasound, we can also screen them for the infections which can lead to severe complications, and offer treatments," says Dr. Silverman, also Chair/Chief of Infectious Diseases at London Health Sciences Centre, St. Joseph's Health Care London and Western. "Portable ultrasound machines are fairly inexpensive to maintain and it's easy to train people to perform a simple obstetric ultrasound."

The study found that the method of advertising was important. When advertising free ultrasounds by word-of-mouth, there was no significant increase in the number of women who attended antenatal care. "It appears that the message about free ultrasounds was not spreading. Many people did not believe it was true that they could see their [unborn baby](#)," says Dr. Cherniak.

The researchers therefore decided to advertise free ultrasounds by radio with the hope that the message would be taken more seriously and spread farther. Radios are common in Ugandan households. As a result, almost six times the number of women attended the antenatal care

clinics. This increase was particularly great in women who had previously seen a traditional healer. Amongst these women, attendance increased almost ninefold when ultrasound was advertised on the radio.

With an increase in the number of [women](#) who present for antenatal care, the research team hopes that health providers can show expecting mothers that modern care is safe, friendly and trustworthy. "We want to demonstrate to expecting mothers that antenatal care is safe and beneficial, and see if this encourages them to continue attending, particularly when they are in labour," says Dr. Cherniak.

The study, "Effectiveness of advertising availability of prenatal [ultrasound](#) on uptake of antenatal care in rural Uganda: A cluster randomized trial", is published in *PLoS ONE*. The study was funded by Bridge to Health Medical and Dental, and also supported by Cole Engineering, Lebovic Enterprises, Rotary International and Rotary Club of Scarborough North.

More information: William Cherniak et al, Effectiveness of advertising availability of prenatal ultrasound on uptake of antenatal care in rural Uganda: A cluster randomized trial, *PLOS ONE* (2017). [DOI: 10.1371/journal.pone.0175440](https://doi.org/10.1371/journal.pone.0175440)

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