

Bill & Melinda Gates Foundation Ultrasound Innovation Grant for Philips - FAQ sheet

Philips leadership in Ultrasound worldwide

Delivering high-quality images and clinical information at the point-of-care, Philips Ultrasound devices provide one of the most advanced portable solutions with ease of use across a variety of settings. The integration of AI applications within ultrasound technology can also help lead to improved access to care. Philips Ultrasound systems installed around the world perform an estimated 1.33 billion diagnostic and interventional procedures each year[1]. With this latest AI-enabled point-of-care ultrasound (POCUS) prototype, Philips continues its commitment to deliver industry-first innovations in areas such as 3D imaging of the heart, AI-powered quantification tools, and ultra-mobile portable ultrasound solutions. Visit [Philips Ultrasound](#) for more information.

What is Philips Lumify?

Philips Lumify is an app-based handheld ultrasound system that combines the exceptional quality of Philips imaging technology with the mobility and connectivity that can now make point-of-care ultrasound truly accessible. Lumify provides a handheld diagnostic ultrasound platform that offers an affordable solution to assess pregnancy, while providing a portable option to be used in community-based pre-natal and post-natal care.

How does Lumify support this program?

Built into the Philips Lumify handheld ultrasound, the AI-driven algorithms identify six critical parameters of ultrasound measurement. Connected to a smart device, this innovative technology provides expectant mothers the opportunity to receive a health check of their unborn child. Healthcare professionals are empowered and enabled to use this particular technology of the Lumify ultrasound through a short training program. As this program works differently to a standard Lumify, the user will be given instructed actions to perform and, once complete, a report is produced for the expectant mother to show if a referral is recommended.

How was the pilot conducted and what results has initial feedback shown?

The program, in collaboration with Aga Khan University and the Kilifi County Ministry of Health, saw initial pilot testing over four days in clinical sites in Kilifi County, Kenya – with continued testing planned. Nurse-midwives with no previous ultrasound experience were enrolled to take part in the pilot and trained to use the prototype with supervision from trained ultrasound personnel. The prototype scans were cross checked against a standard ultrasound scan to validate the information. To-date, the pilot has shown initial positive feedback, with ongoing data collection, interpretation, and review.

Aimed as a tool to support early intervention, where concerns may be raised for expectant mothers, a second opinion can be obtained through an existing antenatal referral process to health centers, where comprehensive obstetric ultrasound expertise exists.

What are the six critical parameters?

Built into the Philips Lumify handheld ultrasound, our prototype technology – powered by artificial intelligence - identifies six critical parameters for high-risk assessments to help improve the health of both mom and baby, such as:

- Gestational Age
- Presentation
- Placenta Location
- Amniotic Fluid Index
- Cardiac Activity
- Multiple Gestation

Patients can then be referred to a credentialed sonographer for a more detailed image review and further investigation if need be. With this new tool, users can identify abnormalities earlier, helping to increase confidence and comfort of the mother in any decisions or care pathways she decides to pursue or not.

How is using AI-driven algorithms different to traditional ultrasound?

Through digitalization, informatics, and artificial intelligence (AI), interpretation of the images is no longer required by the operator, which reduces the training needed to perform a sonogram. When the results are reported, patients can be referred to a credentialed sonographer for image review and further investigation.

Will this new solution take work away from the sonographers?

With sonographers in short supply around the world, this approach provides the opportunity for expectant mothers to understand the health of their child at an early stage of pregnancy. Should the results recommend a referral, the patient will be sent for an additional full ultrasound exam with a sonographer. The pilot of the new ultrasound-based prototype technology is a preventative measure, aimed to increase access to maternal care, helping to further reduce fetal mortality and morbidity in the future.

Why is this such an important development?

The World Health Organization recommends at least one ultrasound scan before 24 weeks of gestation for pregnant women to evaluate gestational age and improve detection of fetal abnormalities with greater confidence [2]. With this latest development, Philips Lumify handheld ultrasound will be one of the first point-of-care ultrasound devices to be introduced commercially to assist non-expert users by automating image acquisition or image interpretation for obstetrics measurements, increasing quality access to early fetal ultrasound scans.

How does this contribute towards environmental priorities and the digital transformation of healthcare?

At Philips, sustainability is a differentiator for us with our environmental and social priorities – focused on reducing carbon emissions and material usage, and expanding access to care – are deeply connected with the digital transformation of healthcare systems. We drive an open ecosystem approach, built on open APIs and international standards, that facilitates equitable governance of health data when deploying and scaling digital health solutions – in particular in underserved and resource-constrained settings.

Philips is shifting its solutions to the cloud, which is significantly more resource-efficient than on-premises solutions. It enables virtual care and access to data and solutions in underserved areas and care beyond hospital walls, shifting care to home by leveraging remote access to patient data and staff. Through our work here with Bill & Melinda Gates Foundation, we hope to expand our partnership work so that we can leverage our collective expertise, (digital) innovation capabilities, and shared drive to effect systemic change, combining sustainable practices to help support net zero healthcare – with safe, efficient, and effective methods, while advancing access to care and promoting health equity.

What impact will this solution have on reducing preventable deaths related to pregnancy and childbirth?

The World Health Organization estimates that each day, nearly 800 women around the world die from preventable causes related to pregnancy and childbirth [3], with nearly 95% of all maternal deaths occurring in low and lower middle-income countries. Care provided by skilled health professionals before, during and after childbirth can help save the lives of women and newborns worldwide [3]. By supporting front-line healthcare workers such as midwives to identify potential problems in pregnancy at an early stage, we aim to reduce the number of women who die as a result of pregnancy. If the pilot of this new ultrasound-based technology is successful, Philips hopes to be able to bring this innovation as a commercial offering to the market to help increase quality access to care and improve maternal health in underserved and rural communities in developed and developing countries worldwide.

How successful has the pilot been so far?

During the trial period in Kenya, prototype results show increased confidence for midwives and feedback on the new tool has shown positive impact. Weeks of training for midwives have been reduced to hours, without negatively affecting the confidence in assistance. Expectant moms also find it comforting to know how their baby is progressing.

Which countries are next? Will you only focus on underserved countries?

Currently we are running the pilot in Kenya. Once we have the initial results from the testing phase and our prototype is approved, our aim is to make this a globally available solution so that we can roll this out to wherever it is needed in the world, further increasing access to vital maternal care.

How will you continue to drive future innovation?

Even in countries with well-funded health systems, people in marginalized and underserved communities (e.g., remote rural areas or specific groups) often cannot access the health services they need. By partnering to leverage our collective expertise, (digital) innovation capabilities, and shared drive to effect systemic change, we can combine sustainable practices – and support net zero healthcare – with safe, efficient, and effective methods of care, while advancing access to care and promoting health equity. To realize systemic change, equitable and sustainable healthcare need to go hand in hand. They cannot be achieved in isolation.

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Bill & Melinda Gates Foundation shared goals and innovation grant

Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people's health and giving them the chance to lift themselves out of hunger and extreme poverty. At Philips, by 2030, we aim to improve 2.5 billion lives per year, including 400 million in underserved communities. Over the last two years, through an accumulative \$60m grant from the Bill & Melinda Gates Foundation, we've been working to develop a new prototype of AI-driven algorithms aimed to help reduce fetal mortality and morbidity to transform the delivery of maternal care, increasing access to those that need it most.

How does this link to the Philips ESG goals?

At Philips, we believe that for healthcare to be equitable, it must also be sustainable. We focus on innovating ultrasound technology to not only provide exceptional imaging but also elevate the overall healthcare experience – empowering a human connection between technology, clinicians, and patients. By enhancing our ultrasound technology to streamline use and enable accessibility across locations and care settings, we break boundaries for care providers and patients to enable better care and improve access to it. By partnering to leverage our collective expertise, (digital) innovation capabilities, and shared drive to effect systemic change, we can combine sustainable practices – and support net zero healthcare – with safe, efficient, and effective methods of care, while advancing access to care and promoting health equity.

What more is Philips doing with AI?

By facilitating the development and integration of AI-enabled applications, Philips aims to enhance its ability to deliver on the Quadruple Aim of better patient outcomes, improved patient and staff experiences and lower cost of care. We are committed to using AI not just to aid image interpretation, but across the entire system of imaging – from image acquisition to smart reading and reporting to operations support and follow-up care.

Citations:

[1] Calculated with internal data based on Philips Lives Improved Calculations (<https://www.philips.com/c-dam/corporate/about-philips/sustainability/lives-improved/lives-improved-our-methodology-2022.pdf>)

[2] Guidelines Review Committee. (2022, March 28). *Maternal and fetal assessment update: imaging ultrasound before 24 weeks of pregnancy*. <https://www.who.int/publications/i/item/9789240046009>

[3] World Health Organization: WHO. (2023, February 22). *Maternal mortality*. <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>

This prototype application does not yet have global regulatory approval.