2016 GBCHealth
Business Action on Health Awards
Women & Girls

GBCHealth
BUSINESS ACTION ON HEALTH AWARDS
Commended
2016

PHILIPS

Mobile Obstetrics Monitoring (MOM)

A leading designer of healthcare solutions for the future, Philips is leveraging its global reach to meet the ambitious goal of improving the lives of three billion people a year by 2025. Through investments in innovative research and design, and strategic partnerships with local governments and organizations, Philips is touching the lives of millions of people in emerging geographies across Southeast-Asia, Africa and India. Philips aims to improve the health of pregnant women across the world through the MOM solution, a mobile software to enhance delivery of antenatal care in community settings.

0 maternal deaths
attributed to early detection & appropriate referral of high-risk pregnancies

Early detection of very high risk pregnancies increased from
5% ◢ 17%

99% reduction in anemia
from 1st to 3rd trimester

Improved midwife capacity to detect high-risk & very-high-risk pregnancies

Increase in patient engagement

INTRODUCTION

Despite significant declines in maternal mortality over the past two decades, efforts must be significantly ramped-up to meet the Sustainable Development Goal for reduction in maternal mortality. Every day over 800 women die from preventable causes related to pregnancy and childbirth, many of which could be avoided by cost-effective, high-impact interventions. Even with this arsenal of proven interventions available, new tools and technologies are required if significant strides are to be made in improving maternal and newborn survival and health.

Successful interventions have targeted the different barriers women face in accessing both timely and quality healthcare, including delays in the decision to seek care, reaching the point of care, and then receiving quality healthcare. Philips' MOM solution aims to address 'Phase 3' delays, or delays in receiving adequate healthcare.

With one of the highest maternal mortality rates in Southeast Asia, Indonesia lags behind many other countries with 190 maternal deaths per 100,000 live births (WHO World Health Statistics 2015). While Demographic Health Survey data

indicates that a majority of women in both rural and semi-urban areas have access to antenatal care services, the package of services and accompanying clinical protocols is not standardized and quality of care is lacking. Philips Healthcare partnered with the Indonesian Ministry of Health, local government, and a private medical center to implement a pilot project designed to improve antenatal care and reduce maternal mortality through the use of a new, Philips-designed mobile technology and a strategic partnership between OBGYNs from the private sector and government midwives.

ABOUT THE PROGRAM

Philips Mobile Obstetrics Monitoring (MOM) is a software solution, developed in consultation with OBGYNs and operated via a mobile device, which enables health workers in community- or primary-care settings to deliver improved antenatal care and enhance overall patient management. A streamlined interface, accessed on a mobile device, assists health workers – such as midwives – in identifying pregnant women's risk profiles, diagnosing issues such as anemia, and monitoring patients' progress through easy access to comprehensive health records. The system, designed so health workers can enter and save data even when it is offline, is also capable of generating reports of various conditions or health outcomes at a health facility or on a broader district level. The software and pilot project to test the application of the MOM platform were designed to overcome a host of challenges that arise from providing quality antenatal care in a community setting.

ABOUT THE PILOT PROJECT

The lack of a universal standard of antenatal care has meant that pregnancy risk identification and subsequent management are not handled in a standardized way, contributing to poor maternal and newborn survival and health outcomes. Philips and its partners – including Indonesia's Bundamedik Healthcare System, the Indonesian Ministry of Health, and the local government in the city where the study took place – wanted to test two promising approaches to improve antenatal care in a cost-effective manner: mobile monitoring and a public-private partnership model. A program was designed to combine these two approaches, providing mobile monitoring through a public-private partnerhsip between government midwives and private sector OBGYNs, to try to positively impact patient outcomes.

The year-long study, which enrolled 656 women in Padang, Indonesia, was implemented to assess whether this approach had an impact in five related areas:

- Detection of high-risk and very high-risk pregnancy
- Appropriate and timely referral of very high-risk pregnancies to an appropriate healthcare center
- Remote monitoring by OBGYNs of high-risk pregnancies, facilitated by midwives' home visits
- Patient engagement in antenatal services
- Skill and knowledge of midwives

After enrollment into the study, women completed the standard series of antenatal examinations, with one small change. Midwives from different government health centers across Padang used the MOM application to enter patient history and clinical presentation. Between routine antenatal check-ups, the midwives conducted home visits with pregnant women to assess and assign risk levels. Each midwife was equipped with a backpack containing basic but vital diagnostic equipment, including a kit to test hemoglobin, blood glucose and urinary proteins; scales; a fetal monitor; and a tape measure. Midwives were also paired with OBGYNs from a private medical center. Each trimester, the OBGYNs performed an ultrasound on the pregnant women to check their risk level and compare it to that given by the midwife. If the OBGYN modified a risk level, the midwife would receive an update on her cell phone via the MOM application. This feedback loop aimed to aid the midwife in benchmarking her assessment against that of the OBGYN. High-risk cases were then referred to more advanced healthcare centers; OBGYNs at a government-run District Hospital then evaluated whether the referrals were both timely and appropriate.

At the end of the year, the pilot had achieved several key outcomes, including:

- Early detection of very high risk pregnancies increased threefold, from 5 percent to 17 percent
- 99 percent reduction in anemia from 1st to 3rd trimester, due to improved patient management
- 0 maternal deaths, attributed to early detection and appropriate referral of high-risk pregnancies
- Demonstrable increase in patient engagement
- Improved midwife capacity to detect high-risk and very high-risk pregnancies

NEXT STEPS

After the success of the pilot project in Indonesia, Philips released the first version of the MOM solution in November 2015, which has already had its first commercial sale. The MOM solution is now being used in 3 provinces across Indonesia namely West Sumatra, Papua and North Sulawesi. A one year pilot program in India has been running since December 2016 in the state of Karnataka to detect and manage high-risk pregnancies in primary health centers in rural settings. Another pilot project is scheduled to begin in Kenya shortly. This pilot will test the applicability and impact of both the technology and the program in an African setting. Philips and its partners will build on lessons learned from these series of pilot projects to demonstrate the impact and success of the program on the health of pregnant women and newborns.

CRITICAL SUCCESS FACTORS

Undertake a thorough needs assessment and comprehensive consultative process to inform program design. Partners wanted to design a program that could identify the potential impact of the MOM technology on reducing maternal mortality. To gain a

holistic understanding of the issue and challenges of delivering quality antenatal care in a community setting, they conducted a thorough needs assessment that engaged a wide range of stakeholders, including pregnant women, health administrators, primary care physicians, midwives, different cadres of community health workers, and OBGYNs. The findings informed the design of the pilot project and helped partners understand that the new technology could only be one piece of a package of interventions. Different aspects of the project, from the Midwife Backpack to the simplified interface of the software, were included in response to the needs identified by the different stakeholders.

Focus on behavior change interventions to increase early adoption of new technology. In the pilot region, and throughout much of the world, medical records are paper based. Outside of the infrastructure and other technical challenges posed by the introduction of a new technology, such as electronic medical records, a major barrier to the successful application of these new technologies is getting people to use them. As the midwives' use of the MOM platform was central to the success of the pilot program, Philips and its partners recognized the need to work with them and other end-users to eliminate the psychological barriers to change.

Capitalize on the core competencies of different partners. Philips is partnering with Telkom Indonesia, the country's largest telecommunications service provider, to develop an innovative market entry strategy for the MOM solution. Telkom will offer the MOM software as a value added service through their platform. Leveraging the company's extensive reach, this unique partnership will enable MOM's greater market penetration into more remote areas of the country where the technology can make a huge impact.

Provide multiple touch points between patients and the health system. Home visits by midwives, in addition to routine antenatal visits, increased the number of touch points between pregnant women and the more formal healthcare delivery system. This was vital in achieving some of the program's impact; these additional interactions increased midwives' ability to provide early screening and referral for high-risk pregnancies, which tripled detection of high-risk and very-high risk pregnancies, increased appropriate referrals to more advanced healthcare centers, and improved subsequent patient management.

LESSONS LEARNED

"Offer a complete solution and not only a software in order to create impact". The project was able to offer a "complete solution" because of the valuable, on the ground knowledge of a variety of technical partners. Although the program design emphasized the software and participants' willingness and ability to use it correctly, Philips learned that a variety of approaches – not just the software – was vital to the program's success. Extensive consultations with stakeholders revealed multiple barriers to maternal healthcare that could only be addressed in a multipronged approach. This meant including ultrasound examinations by the OBGYNs, providing patients with transportation to the hospital to receive ultrasounds, and building in a feedback loop that enabled midwives to benchmark their pregnancy risk-assessments against those of the OBGYNs.

Design technology for the needs/specifications of the end-user. The Philips Research and Design teams responded to extensive feedback from the end-users (midwives, OBGYNs) to create a simplified and user-friendly interface. To have any sort of impact, the technology needs to be used – and to be used correctly. One major adjustment was to reduce the number of required fields, to aid ease of use. The team will apply lessons learned from this pilot project to the next one in Kenya, and continue to adapt and update the software as needed for the specific context.

ABOUT PHILIPS

Royal Philips is a diversified health and well-being company, focused on improving people's lives through meaningful innovation in the areas of Healthcare, Consumer Lifestyle and Lighting. With sales and services in over 100 countries across the globe, the company is a leader in cardiac care, acute care and home healthcare, energy efficient lighting and new lighting applications, as well as oral healthcare and personal care products.

LEARN MORE

Explore the "Mobile Obstetric Monitoring" program:

On the web:

- http://www.philips.com/MOM
- MOM Video

To learn more about the program, please contact **Ankur Kaul, Product Manager at Philips** at ankur.kaul@philips.com.