

Cell phones help save the lives of mothers, infants and children

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Simple mobile technology, like basic cell phones, can be used to save the lives of mothers in childbirth, and improve the care of newborns and children, reaching underserved populations in remote areas.

More advanced mobile technology can do even more, such as checking on patients, keeping records, improving diagnosis and treatment in the field, and letting community health workers consult [general practitioners](#) and specialists for guidance.

"With mobile technologies for health, called 'mhealth' or 'mobile health,' we're extending capabilities to where they don't exist today," says David Aylward, who heads mHealth Alliance, a partnership founded by the United Nations Foundation, the Rockefeller Foundation and the Vodafone Foundation.

"At the most basic level, mobile phones can be used to keep track of people, call for [emergency assistance](#), remind them of appointments and share information," says Julian Schweitzer, PhD, former Chair of The Partnership for Maternal, Newborn & Child Care (PMNCH) and the Chair of the Finance Working Group for the UN Secretary-General's Global Strategy for Women's and Children's Health, launched in September. "But then you can layer on things like check lists, protocols, the steps to ensure a safe birth and action instructions in particular circumstances," says Dr. Schweitzer.

Used by midwives in rural, urban slums and isolated areas, cell phones

can also be attached to diagnostic devices, including those used for remote fetal monitoring or remote wireless ultrasound. This lets a midwife or health worker know in advance that a mother must get to a clinic. They can also be used for recording births and deaths or assuring that both women and children get the care they need when and where they need it.

"In the near future, wireless diagnostics like stethoscopes, blood pressure, temperature and insulin monitors, and ultrasounds will enable remote diagnosis and treatment far from the closest doctor or clinic, " says Mr. Aylward.

Use spreading rapidly

Five years ago, the idea of using cell phones to improve health care for mothers, infants and children wasn't feasible.

That has changed rapidly. Consider these facts:

- 70 percent of the world's 5 billion cell phone subscribers are in the developing world.
- Today almost 90 percent of the world's population has access to a wireless telephone signal.
- In India alone, 33 percent of people living in villages have mobile phones.
- About three quarters of mobile phone users have texting capability and features such as GPS that can pinpoint their location.

- By 2015, about 60 percent of mobile phones are expected to be web-enabled.

"These networks are being extended almost everywhere. People are paying for the devices and the service, which shows that people value access to information and the ability to communicate, and that includes health information and communication," says Mr. Aylward.

mHealth Summit and Partnership meeting

Two thousand technology and health experts are expected at the second annual mHealth Summit, Nov. 8-10 in Washington, D.C. The summit is co-sponsored by the mHealth Alliance, the Foundation for the National Institutes of Health and NIH to further explore the potential of mobile technology in the health field, to promote its use, and to seek ways to overcome some of the current obstacles.

Featured conference speakers include William Gates, head of the Gates Foundation, Aneesh Chopra, U.S. Chief Technology Officer, Julio Frenk, M.D., Dean of the Harvard School of Public Health and Chairman of The Partnership for Maternal, Newborn & Child Health, Ted Turner, Chairman and Founder of the United Nations Foundation and Judith Rodin, President of the Rockefeller Foundation.

Mobile technology and mHealth also will play a key role as the partners in The Partnership for Maternal, Newborn & Child Health (PMNCH) meet in New Delhi on Nov. 13-14. In addition to a number of speakers during the plenary sessions, PMNCH and the mHealth Alliance are organizing a detailed mHealth implementation workshop bringing together expert practitioners with industry to discuss specific ways to deploy mHealth systems.

PMNCH was formed to ensure that all countries meet the UN's

Millennium Development Goals (MDGs) for improving the health of women and reducing the toll of infant and child deaths by 2015. Widely used, mobile technology could help less developed countries meet those goals. "I'm not saying that mobile technology is a panacea, but there's such tremendous possibility, primarily because the cell phones are already there and usage is growing so fast," says Dr. Schweitzer.

Help for meeting MDGs

The potential for the rapid spread of mobile technology suggests it will help those countries that lag behind, many of them in sub-Saharan Africa, in meeting the MDGs.

Of special concern are MDGs 4 and 5, which call for reduced child and maternal mortality. At the most recent assessment, 49 of the 68 high-burden countries had made little, if any progress toward meeting those goals.

But mHealth has the ability to support those goals by improving information and communication for mothers, providers and administrators.

The recently announced Global Strategy for Women's and Children's Health identifies mHealth as a critical innovation that needs to be broadly applied to achieve the MDGs. PMNCH acted as the platform for the development of the Global Strategy, and will continue to advocate for financial and policy commitments to the Global Strategy.

The Government of Norway chairs the Innovation Working Group (IWG) of the Global Strategy. "We cannot reach the MDGs by merely continuing to do more of what we have been doing," says Tore Godal, M.D., Chairman of the IWG and Special Advisor to the Prime Minister of Norway for Global Health. "The best new idea is to use mobile

technology and cell phones."

Doing what everyone else is doing

As this growth has occurred, more than 100 countries are exploring ways to use mobile phones to improve health.

"The information technology is not revolutionary – its use in health is," says Dr. Schweitzer. "We are talking about applying in health care the same kinds of sophisticated information systems that most businesses use, extending them with wireless to reach everyone. In low and middle-income countries we have the opportunity to leap frog the developed world and do it right. This is a huge opportunity."

Some issues being addressed

The recently announced Maternal mHealth Initiative, a partnership between PMNCH and the mHealth Alliance, will develop a global consensus on [mobile technology](#). The new partnership will conduct trials using an integrated information and communications technology system to underpin the full continuum of recommended care for expectant mothers and newborns.

The Earth Institute's Millennium Villages Project is working with governments and ministries of health along with telecommunications companies like Ericsson, AirTel Bharti, and MTN in 10 countries in Africa, to design, test, and implement standardized and interoperable mHealth systems. "Many countries are looking at mHealth as a strategy for health service delivery," says Patricia Mechael, PhD, of The Earth Institute.

In 1994, the University of Oslo began the Health Information Systems

Programme (HISP). It developed the open source based District Health Information Software (DHIS) implemented in 15 African countries and 23 states in India, Bangladesh and Vietnam.

In the last two years, HISP has started to use basic cell phones to collect data on maternal and child health in an integrated manner where there are no computers or Internet. Because of the collaboration with ministers of health, the HISP program differs from other mobile projects.

"Data goes into the ministries' health systems so it can be read and analyzed at every level, " says project director Professor Kristin Braa of the University of Oslo. "The information comes back to the local level where it can be used to identify problems and trends. Otherwise mother and child health will not be improved."

In one pilot project in Aceh Besar, Indonesia, a group of midwives was provided with mobile phones and their use and experiences documented. Those midwives who were given the phones found them a "basic necessity." The main benefit was the ease of communication.

Midwives reported an increase in patient load because they could be contacted so easily. They also found they could get advice and information more readily, especially during emergencies, and could refer patients to the hospital when needed. Midwives were able to consult patients more often and provide a regular check of their condition, then enter the information into the patient's record, which could be updated and accessed via the [mobile phone](#).

Infrastructure was a problem in remote areas where transmission was often poor, and where midwives were in greatest need. Lack of data in the local language also proved a barrier. Most midwives in the study learned how to use the technology readily, and said they planned to keep using the phones when the project ended.

Yet the promise comes with caveats and warnings about too much hype. One reason is the absence of controlled studies. "mHealth can really expand the capability of public health, in particular, but the potential for reaching UN MDGs 4 and 5 is yet to be realized," cautions Joan Dzenowagis, M.D. of the World Health Organization.

"Anecdotally, we can see the transformative effect," says Dr. Mechael, who, sponsored by the mHealth Alliance, has recently completed an analysis of 2,400 published mHealth reports. Working with WHO, she found that many countries either have already or are considering introducing mHealth into their health systems. mHealth is so new, however, "the data is just not there yet to prove the case," says Dr. Mechael.

Many different groups and organizations are carrying out countless pilot projects. That presents a potential barrier to expansion. "Most projects are designed as a single solution for a specific problem," says Dr. Dzenowagis. "In the field everyone has a different system which means a lack of coordination. This leads to duplication of expense and effort and means information may not be available to those who need it."

The mHealth Alliance and its Maternal mHealth Initiative with PMNCH are designed to bring coordination and information sharing to the field, focusing on integrated solutions.

"We won't be talking about mobile health in 2015," says Dr. Mechael. "By then, we won't need to pull it out and talk about it and examine it because it will be a fully accepted tool for health care."

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