Over the course of the past two decades, inspiring progress has been made in improving the health outcomes of women and their newborns. It is estimated that since 1990, the rate of maternal mortality has fallen by 45%, while the rate of newborn deaths, defined as within 28 days of birth, has fallen by 40% (WHO 2014). While these declines indicate advancements in quality healthcare, the fact remains that each year 289,000 women die as a result of complications experienced during pregnancy or in the immediate postpartum period and 2.8 million newborns do not make it through their first four weeks of life (UNICEF 2014). Many of these deaths, the majority of which occur in low-income countries, are due to preventable complications that could be addressed through better access to quality health care, including improved accessibility to clinics and community health workers (CHWs).

Benefits of Dimagi's Technology for Maternal and Newborn Health

Of Dimagi's extensive experience across a wide range of sectors, we have worked with more MNH projects than in any other sector, including 58 projects globally that use CommCare to support CHWs working directly with mothers and their children. These 58 projects have equipped over 4,000 CHWs with CommCare in countries including Bangladesh, Benin, Ethiopia, Guatemala, Ghana, India, Kenya, Malawi, Mozambique, Nepal, Nigeria, Sierra Leone, Senegal, South Africa, Tanzania, and Uganda. With CommCare, CHWs are able to do their work more efficiently by supplementing or eliminating the need for paper records and providing them with a job aid that supports counseling, decision-making, and referrals for emergencies.

Maternal and Newborn Health Programs

Many maternal and newborn health programs are built on a foundation that relies heavily on access to clinics or hospitals, particularly when it comes to referrals for high-risk patients, burdening CHWs who often encounter difficulties in identifying emergency symptoms and working within inadequate and complex referral systems.

- Forms enable CHWs to use **standardized, complex workflows** to identify symptoms in mothers and newborns that require emergency care.
- **Case sharing** enables CHWs to immediately send medical information directly to clinicians at the referral facility and improve lines of communication between field and clinical work

Health Workers

CHWs undergo extensive trainings, which require them to retain large amounts of information, which is frequently forgotten after a short time. Additionally, CHWs often have to track their own patients and submit that data to managers with little organizational support. This process often leads to lack of follow-up with patients and inadequate data collection systems.

- Training manuals and behavior change communication materials are integrated within the app on a CHW's phone, ensuring easy access to **accurate information**.
- **Multimedia** allows pregnant women and mothers to listen to messages in their own language or view culturally relevant visuals alongside their CHW.
- **Real-time submission of data** directly from the CHW's phone enables managers and supervisors to access data on health outcomes and CHW performance with **up to date records**.

- **Case management** gives CHWs **autonomy** to manage their own case list directly through the mobile application, rather than relying on their memories or paper records systems when it comes to reaching patients.

Health Facilities

Health facilities often have limited supplies or face stock-outs of essential medicines for pregnant and postpartum women and their newborns. Many facilities rely on paper records systems, which can be difficult to maintain.

- **SMS interactions** enable central medical warehouses and clinics to distribute medicines based on need and availability.
- SMS interactions allow stock-outs to be **reported** before they occur.
- Electronic data reduces error by streamlining **complex stock algorithms** previously recorded on paper.
- Real time information dissemination **prevents** unavailable medicines from being prescribed.

Women and Newborns

In many countries, women are required to keep track of their own paper medical records, which can be lost or damaged. In many cases, if a woman forgets or loses her medical records the facility staff will refuse to see her or her baby. Additionally, women may lose track of time between ANC or PNC appointments.

- Mobile applications eliminate the need for paper medical records by **storing** medical information for each woman and newborn registered through the application.
- Case management allows women and newborns to **rely on their CHW** to recall the details of their medical histories.
- SMS reminders enable women to be **automatically notified** about upcoming appointments without requiring CHW prompting.

Highlighted Projects

Reducing Maternal and Newborn Deaths (ReMiND) Project, Catholic Relief Services
The ReMiND project in Uttar Pradesh, India is well known as a leading example of best practices for using mobile health technology to increase key maternal and newborn health practices. Through ReMIND, Catholic Relief Services (CRS) and Dimagi are using CommCare to help Accredited Social Health Activists (ASHAs) counsel and evaluate women and their newborns for danger signs both before and after birth. Case management allows ASHAs to register and track every pregnant patient through pregnancy to the postpartum period, as well as the newborns through their first year of life. Over 200 ASHAs have been trained to use these applications, ultimately reaching over 20,000 women and their children.

Deploying MOTECH Suite to Support Global MNCH and Nutrition Programs, World Vision
In partnership with Dimagi and the Grameen Foundation, World Vision has deployed the MOTECH Suite for maternal, newborn, and child health (MNCH) and nutrition mobile applications in ten countries, including Afghanistan, Burundi, India, Indonesia, Mozambique, Niger, Sierra Leone, Sri Lanka, Uganda, and Zambia. These applications are designed to support CHWs to deliver MNCH and nutrition services more efficiently by reinforcing intervention protocols, serving as job aids and acting as monitoring tools.

Better Birth, The Harvard School of Public Health
The Harvard School of Public Health, in collaboration with the Indian government, the World Health Organization, the Gates Foundation and Population Services International, aims to assess whether the introduction of the WHO Safe Childbirth Checklist results in a decline of maternal and newborn deaths. Outcomes of 172,000 births will be tracked, in addition to the provision of essential supplies for safe birth. Dimagi is supporting the research data collection process through CommCare and CommCareHQ, where managers, supervisors, and researchers on the Better Birth Project will be able to access and analyze submitted data.

mSante mHealth Project, Pathfinder
Pathfinder International, in collaboration with Dimagi, USAID, and the Haitian Ministry, has trained more than 300 CHWs under the mSante mHealth Project. This mobile application focuses on case management, health service delivery, referrals for tracking patients between home and the health facility, and features modules focused on interventions targeted at family planning and maternal and child health. Pathfinder and partners are currently working toward scaling this project to the national level.

mHMtaani: Mobile Health for Our Communities, USAID
Under the APHIAplus project in Kenya, Pathfinder, with the support of USAID, has worked with Dimagi to monitor and track the health of pregnant mothers and orphans and vulnerable children. Using CommCare, CHWs are better able to monitor maternal and newborn health indicators, keep women informed of their expected delivery date and signs of complications, and help women prepare for delivery. As of spring 2014, over 260 CHWs trained through mHMtaani were using CommCare. The application also contributed to an increased number of facility-based deliveries as a result of due date reminders.