

## ***A Concept Note: Using Mobile Health Technology to Improve Nutrition and Early Childhood Development***



Television was once the newest technology in our homes, and then came laptop computers and mobile phones. Today's children in the United States are growing up in a quickly changing digital age that is much different from that of their parents and grandparents. While mobile phone technology plays a large role in our daily lives, from communications to commerce, health workers and community volunteers in remote parts of Africa look to use it for the first time to strengthen the services they provide and improve survival, health and development of children. CARE is seeking investments to allow us and our technology partner, Dimagi, to develop, test and apply mobile phone applications, geared to early childhood development (ECD), as part of the solution for malnutrition and loss of developmental potential in hard-to-reach, resource-poor communities.

In countries like India, Benin, Mozambique and Rwanda, many of the health services delivered to poor rural families come from community health volunteers or extension agents. Clinics are too far away, too crowded, or too expensive. These community level workers, however, have had only limited training, some are not literate, and the frequency and quality of supervision is poor. While many of these workers have mobile phones, few use them for their work. In this context, what can be done to improve health services and health outcomes for the estimated 42 percent of children in sub-Saharan Africa who are stunted due to chronic malnutrition? How can we help the more than 200 million children globally who will not reach their developmental potential, succeed in school or earn a good income as a result of malnutrition and lack of cognitive and social stimulation during early childhood?

But imagine the possibilities if we can give community health workers the capacity to provide quality services through a simple tool to help facilitate children's health and development – using mobile technology to connect people in isolated communities with information and skills to assess, protect and improve the health of children. Personalized counseling using the mobile health (mHealth) platform might look like this:

*Under a shade tree surrounded by thatched roof huts, a community volunteer follows simple prompts or verbal instructions on her mobile phone to ask a mother about her 1-year-old daughter's health and development. Based on the mother's answers, the volunteer teaches her how to provide good nutrition for her daughter and to engage in activities that help the child's cognitive development. Short videos on the phone help instruct the mother on improved nutrition and activities she can do with her infant to promote good development. Information collected by the worker as she talks with the mother is transmitted to a database that informs a program manager about the meeting and can be used to provide feedback and support to the worker that helps her do a better job. If a critical health issue is identified, a text message is sent back to the worker and to the nearest health clinic so that facilitating referral.*

### **CARE's Approach to ECD**

ECD programs improve the survival, growth and development of young, vulnerable children. Some programs work directly with children through growth monitoring, ECD pre-school centers or improved hygiene and health services. Others work with parents to develop their childcare skills and resources through home visits, group sessions and behavior change communications. CARE has found that ECD programs are most effective when they use a holistic approach. We developed the **5 x 5 Model for Early Childhood Development** that identifies **five intervention areas** that an ECD program should address: child development; food and nutrition; health; child rights and protection; and economic strengthening. The model also spurs action at **five levels**: the individual child; the child's family; the childcare setting; the community; and the national policy environment.

CARE has successfully applied the 5 x 5 model in several countries since 2006, and, subsequently partnered with Save the Children and the Consultative Group on Early Childhood Care and Development to formulate

an Essential Package (EP). The EP is a comprehensive set of tools and guides for policy makers, program managers and service providers to address the unique needs and competencies of young children. CARE and Save the Children are now working to introduce the EP and train implementers across East and Southern Africa.

### **Looking Ahead: mHealth Implementation and Investment**

There is no single magic bullet for nutrition and ECD. That is why CARE continues to develop and test innovative approaches for more effective implementation of ECD programming – especially for children under age 3 who aren't old enough to attend ECD pre-schools and for whom the impacts of intervention are greatest. For example, to reach younger children in Rwanda, CARE arranges home visits by community volunteers as well as training and organizing mothers' groups to take turns caring for infants in their community. To strengthen and grow these and other innovative new programs, CARE is looking for additional financial support.

CARE previously worked with Dimagi in India and Benin to develop maternal health-related mobile technology applications. Dimagi developed the "CommCare" mHealth platform to track and support the interaction of health workers with clients. Equipped with an inexpensive phone with easy-to-navigate software, health workers register clients and offer personalized counseling in areas including maternal health, family planning, HIV home-based care support and drug dosing.

Moving forward, we intend to develop and test CommCare modules for ECD based on the 5 x 5 model and the EP. These modules can be used by anyone providing ECD services and will include interactive elements for assessing child development milestones, audio-visual programs for counseling parents on positive ECD practices, a tool for assessing children's physical environment and a decision support module for determining when to refer children for care. CARE and Dimagi view the potential as transformative across four dimensions:

1. **Improve access to ECD services** through client lists on extension worker or community volunteer phones and text-message reminders when visits are due;
2. **Increase family engagement and change behaviors** through multimedia educational and counseling content (particularly important to reach people with little or no literacy);
3. **Strengthen the quality of ECD interventions** through checklists, assessment tools and guidelines for how and when to make referrals; and
4. **Improve the accountability and monitoring of ECD services** through real-time electronic reporting and monitoring of activities and child welfare indicators.

This proposed work will be built onto an already-funded ECD program. Costs will be related to developing and testing applications and refining the tools. **Funding for two years – projected at \$225,000 – would be optimal to ensure sufficient time for development and evaluation.** Once the process is validated in the pilot country – potentially India, Benin, Mozambique or Rwanda – CARE will disseminate the approach across other countries where we work and more broadly through our partners, including Save the Children as part of our joint EP training activities in Africa.

To achieve sustainable improvement in child health and development and break the intergenerational cycle of poverty, it is critical to link health, nutrition and ECD with affordable technologies through investment and collaboration between organizations like CARE, governments, private companies, communities and donors. On behalf of women and children in poor countries, we appreciate your consideration.

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