

Scaling Mother-Baby Wellness Coaching in LMICs

Overview

Dimagi seeks to develop and scale a mother-baby wellness program to digitally train and pay frontline workers (FLWs) to deliver a series of coaching sessions. The sessions will start during the third trimester of pregnancy and continue through the first few months of motherhood. Two pillars of the program will be increasing exclusive breastfeeding (EBF) of the baby and self-care/resilience for the mother.

At scale, this program can address global problems that take millions of lives. There is substantial evidence that FLW-delivered coaching can increase breastfeeding rates by 48% [1], which in turn can reduce mortality.[2] We expect that incorporating self-care techniques for the mother will further enhance the uptake of breastfeeding while increasing her wellbeing and potentially reducing perinatal depression. Numerous studies reflect the bidirectionally, reciprocal nature of mental wellbeing and breastfeeding. Breastfeeding is associated with fewer maternal mental health symptoms [3,4] and maternal anxiety and depression are associated with decreased exclusive breastfeeding uptake. [5,6] The coaching program can also integrate additional high-impact services such as enrolling the household in a vaccination reminder program for the child and promotion of syphilis testing.

We will replicate and scale this coaching program through CommCare Connect, a new digital platform for scaling high-impact interventions via locally-led organizations (LLOs) and existing frontline workers. We have demonstrated success in using CommCare Connect for a wide range of interventions, including a coaching program for responsive caregiving to promote early childhood development. Dimagi is also leveraging Artificial Intelligence for related use cases that can be used to provide supervision and coaching to the FLWs, as well as provide additional information and encouragement to the mothers who have access to phones.

Benefits of Mother-Baby Wellness Coaching

Pillar 1: Increasing Exclusive Breastfeeding (EBF): There is enormous potential benefit from increasing rates of exclusive breastfeeding. It has been described as having “the single largest potential impact on child mortality of any preventive intervention”.[7] Increasing breastfeeding worldwide to recommended levels would prevent 820,000 child deaths annually.[8] Breastfeeding can improve health and cognitive development for infants and young children, leading to better learning, educational attainment and productivity, increased household wages, and economic benefits.[9,10] Long-term health benefits include reduced risk of overweight, obesity and type 2 diabetes. [11] Breastfeeding protects women from adverse health outcomes, including breast and ovarian cancer. It is estimated that 20,000 maternal deaths from breast cancer could be prevented every year by improving breastfeeding practices. [8]

Coaching can help women understand the benefits of EBF, and help overcome the challenges of doing so for women who opt to. There is a compelling body of evidence that a FLW-delivered, six-visit coaching program can increase EBF rates.[12,13] A recent systematic review found that counseling programs could increase EBF rates by up to 48%, and that programs with at least 4 contacts were more effective than those with less. Based on this systematic review of the evidence, the World Health Organization breastfeeding counseling guideline development group recommended provision of at least six breastfeeding counseling contacts to allow for a full range of support to breastfeeding mothers and

their families, beginning in the antenatal period through to the introduction of complementary feeding and beyond. A randomized controlled study on the efficacy of home-based breastfeeding counseling found that 3 months postpartum, exclusive breastfeeding was practiced by 67% of six-visit mothers, 50% of three-visit mothers, and 12% of control mothers who had no intervention.

Pillar 2: Improving Maternal Mental Health: Postpartum maternal depression is a widespread challenge, affecting as many as 20% of women in LMICs.[14] Fortunately, there is a growing body of evidence that non-specialist providers can provide highly effective mental health interventions in these settings.[15] Our mother-baby coaching program will incorporate evidence-based strategies, such as Problem Management Plus (PM+), that reduce the risk of depression by enhancing their overall wellbeing. Following the [WHO's guidance](#) on preventing and addressing mental health conditions, mothers will be coached in building competence (essential life skills for interpersonal communication, decision making, problem solving, self-care, and healthy lifestyle choices), resilience (ability to deal with stress and adapt to stressors and adversity), and empowerment (confidence, choice, mastery, agency, and hope).

Scaling Mother-Baby Wellness Coaching via CommCare Connect

CommCare Connect is a digital platform that enables CHWs to perform additional paid, purposeful work through scalable, cost-effective learn-deliver-verify-pay cycles that strengthen the existing workforce and community health system. Dimagi is using CommCare Connect to support the efficient delivery of a wide range of proven interventions, including child health campaigns, kangaroo mother care, mental health group therapy, and parenting programs for early childhood development (ECD). Interventions delivered through CommCare Connect are facilitated through a smartphone app that FLWs use in real-time while conducting household visits.

In the last 18 months, Dimagi has partnered with 12 LLOs to support over 350 FLWs to deliver services to over 125,000 clients in Ethiopia, Kenya, India, Nigeria, Tanzania, Uganda, and Zambia. GiveWell is funding Dimagi to scale the child health campaign to 300,000 child visits in vulnerable communities across northern states in Nigeria. USAID-DIV is funding an RCT of this campaign in partnership with Innovations for Poverty Action and Vitamin Angels. And we are finalizing a contract to develop and pilot test CommCare Connect for kangaroo mother care in Uganda and Kenya.

Use of CommCare Connect to Coach Caregivers

The initial success in deploying an ECD parenting program through CommCare Connect illustrates how we can use CommCare Connect to deploy other coaching programs. Our ECD coaching program consists of a series of home visits to coach caregivers on essential skills such as recognizing and responding to children's cues, fostering secure attachments, and providing age-appropriate cognitive stimulation. The program also helps caregivers understand why psychosocial stimulation is crucial for laying the foundation for lifelong learning, behavior, and health of their children.

Dimagi iteratively developed and tested CommCare Connect's Learn, Deliver, and Verify modules for ECD with our partners, PACHI and Flow Informatics, in Malawi. The parenting program currently consists of 3 visits spaced 1-2 weeks apart (which we will broaden to include more content and more visits.) The initial phase of development involved intensive iteration through User Acceptance Testing (UAT) sessions run by Flow Informatics. While the Learn modules include a knowledge test, we assessed the effectiveness of our digital training modules by how well FLWs scored on practical tests, using an

observation scoring instrument developed by our subject matter expert. We found that practice is needed for FLWs to gain competency, and that it helps most FLWs even when that practice is unsupervised.

In the rollout of our ECD program, PACHI equips Community Health Volunteers (CHVs) with CommCare Connect on their own smartphones through a one day training. We later push out notifications of new job opportunities. CHVs then opt-in to the self-paced, digital training program. After they take a knowledge test and practice the intervention with their friends, they are authorized to deliver the intervention to pregnant women and young parents in their communities. For pregnant women, CommCare Connect prompts the CHVs to capture a photo of the antenatal care card if available. PACHI staff coordinates with the CHVs to observe them while delivering the program in the community and rates them using the instrument described above.

In Malawi, over 100 CHVs have been offered this opportunity to provide early childhood education with CommCare Connect, of which 98% have opted into the digital learning course and 70% have succeeded at conducting at least one digitally verified and paid session. Each cohort of CHVs are placed on a Whatsapp channel, and often encourage each other and help troubleshoot issues. They have conducted over 2,500 sessions collectively. On the observed visits, 80% pass it fully (scoring over 80%) and only 2% fail completely (less than 20%). We are incorporating an AI-based coach on Whatsapp that we hope will help improve performance as well as detect the FLWs likely to fail.

Amplifying a Growing Network of Locally-led Organizations

CommCare Connect is helping to demonstrate that the communities that most need low-cost, proven interventions often already contain the human capacity to deploy them. A key barrier for LLOs getting funding to deliver these interventions, [identified by USAID](#) itself, is lacking the grant writing, contract management, and legal infrastructure to access donor funding. Through CommCare Connect, LLOs are able to get the vast majority of the funding (Dimagi will only take 10-20%) of the total program funding. We've already seen many LLOs use their CommCare Connect experience to help seek independent additional funding.

CommCare Connect digital technology can substantially enhance LLOs ability to implement interventions. CommCare Connect provides a real-time dashboard of service delivery, including verification flags based on time, location or quality of submitted data. CommCare Connect also helps LLOs "leapfrog" other programs by providing them detailed and higher quality data, including GPS locations, time stamps and photos, than most programs. We've been encouraged by the demand and enthusiasm from LLOs for CommCare Connect, including over 45 expressions of interest for the scale-up of CommCare Connect-CHC in Nigeria, primarily through word of mouth.

Deployment Model

CommCare Connect can be used in a variety of ways, but we will focus on one here. Dimagi will engage LLOs to become CommCare Connect "network managers" through the standardized contract we developed in Malawi, and are now using with partner LLOs in Mozambique and Nigeria. The network manager role will be to onboard FLWs to CommCare Connect, oversee their work, conduct supervision visits, and provide technical support to LLOs and for digital payments as necessary.

In a given setting, we will determine a fair hourly rate for the FLWs and pay them 1.2 hours of work per coaching session which includes a 45-minute session and travel time. For every \$1 the FLWs make, we will pay 40% of that to the LLOs, and Dimagi will charge 10-20% on the total. Thus, each six-session coaching effort will cost approximately 12x the hourly wage to the FLW.

We may fund some LLOs for additional impact evaluation, such as screening for depression, breastfeeding uptake, and childhood diseases that are indicators of EBF levels.

Cost-Effectiveness Considerations

We anticipate numerous health, wellness, and economic benefits from this coaching program, but focus our cost-effectiveness analysis on the most tangible outcomes. GiveWell's [preliminary cost effectiveness analysis](#) estimates that a program that pays \$27.80 per mother to increase breastfeeding rates by 16% would prevent a death for every \$5,943 spent. We expect we can improve substantially on these parameters. In Nigeria, for example, we expect that we can deliver a six-visit coaching intervention for under \$12-\$15 USD per coached mom, which would decrease the cost per death averted by 2x. With CommCare Connect, we can also target areas of higher need than the baseline estimates GiveWell used. We are hopeful that we can achieve greater than 16% improvement as well through the incorporation of resilience techniques and because we are providing fairly intensive levels of coaching. We will target achieving \$3,000 per death averted, using conservative assumptions.

Next Steps

Dimagi is seeking partners and funding to develop, pilot, and scale breastfeeding and resilience coaching for mothers. We estimate the need for \$300,000 USD to design, build, and pilot the new CommCare Connect program that will train and pay FLWs to deliver the Mother-Baby Wellness Coaching program. We estimate an additional \$500,000-\$1,000,000 to create robust processes and materials to scale it, which will include training and paying hundreds of FLWs to deliver the coaching program to approximately 25,000-50,000 mothers.

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