This document outlines how we can implement the next steps for the [Mother-Baby Wellness Coaching (CCC-MBW) program](#) that Dimagi is proposing.

Design Phase

Note We've split the Design Phase into Design and Test Phases, though both together make up what we had previously discussed as the Design Phase.

The design phase will consist of the following steps. These steps are iterative and will overlap in time with each other as we build out more and more of the coaching program. We have confidence in the general structure outlined here because it closely mimics what we have done for the CommCare Connect Early Childhood Development (CCC-ECD) parenting program. While the content will be different, the basic approach and steps will be similar. And we will be able to leverage the digital platform, partnerships, contracts, and procedures we developed over the last two years.

Step 1: Content Design and Digitization

Dimagi will work with content experts to craft content and build digital components in CommCare Connect. These will include:

- **Learn** modules: self-paced offline modules that teach the FLW the content she needs to deliver the MBW coaching sessions to her clients.
- **Deliver** modules: digital forms the FLW will use while delivering the coaching sessions. These are similar to the type of digital job aids that Dimagi has been making for over 15 years on CommCare. They will be designed to remind FLWs of the key counseling points and to collect some basic data from each client on each session (while not requiring FLWs to be using the app during most of the coaching session). The exact duration and number of visits in the Mother-baby Wellness Coaching program will be determined in this phase.
- **Verification** rules: We will design a series of verification rules to operate on the data collected by the Deliver modules, such as those that require a minimum length of time per visit. We can also have a verification rule which expects a photo of an ANC or PNC card to be taken. When FLWs submit forms for a coaching session that trigger a verification rule, the visit will only be paid for once verified that it met established requirements.
- **Supervision** modules: We will develop forms that are used when supervisors observe a FLW performing a coaching session. These standardized forms cover interpersonal skills as well as content knowledge and will provide supervisors with a means of targeted coaching to enhance the quality of the FLW sessions [example of [ECD observation checklist](#)].

All of these digital components currently exist in our CCC-ECD program, and will be used as the template for the CCC-MBW program application.

Step 2: User Acceptance Testing of Digital Components

Since early 2023, Dimagi has been working with partners in Malawi, Flow Informatics and PACHI, to implement what we call User Acceptance Testing (UAT) sessions. Our partner assembles a number of FLWs, presents them with some new digital component developed under Step 1, and then conducts some informal tests and/or solicits feedback. These sessions are based on Dimagi's human centered design approach to involve FLWs in designing the digital components of CommCare Connect. We have done more than 20 UAT sessions, some involving as many as five days of testing, in the last 12 months.

For CCC-MBW, we expect to conduct a minimum of 15 UAT sessions to work with approximately 120 FLWs to refine our Learn, Deliver and Supervision modules. The Learn UAT sessions will test different learning approaches that will be best suited to digitally train FLWs on the CCC-MBW coaching program. We will also refine the supervision approach to check FLWs' preparedness to deliver quality services in their communities. The Deliver UAT sessions will focus on developing an efficient job aid tool that will support FLWs during service delivery and for data collection. The partner provides a written report to Dimagi after each UAT, summarizing activities and learnings.

Step 3: Development of AI Chatbots for FLWs (and possibly Clients)

Dimagi has been experimenting with building AI-based chatbots that mentor FLWs while they are implementing CommCare Connect programs. We require that the FLW engage with the bot over WhatsApp in their local language once per working day (and cannot proceed to do more CommCare Connect visits until they do so.) We are field testing feasibility and utility of bots for CCC-ECD (English demo) and CCC-vaccine-promotion (English demo). This work builds on Dimagi's growing portfolio of work with Large Language Models with our Open Chat Studio platform.

Dimagi will build an AI coachbot for CCC-MBW which will also be tested during UATs. We have no evidence of the effectiveness of these AI coaches yet but are optimistic they can add value to many CommCare Connect programs, in a variety of ways:

- Reinforce the content included in the Learn app and answer questions, e.g, on troubleshooting breastfeeding challenges.
- Debrief with FLWs on issues that arise during coaching sessions. We have found our chatbots are able to guide users through effective techniques, such as motivational interviewing.
- Identify FLWs who do not understand content and are likely not providing effective coaching. When we have more data for CCC-ECD, we plan to apply machine learning techniques to see if the coaching transcripts can be used to predict the performance ratings by supervisors on observed visits. We will experiment with inserting questions from the coach (e.g., quizzing on the material from the Learn module) to improve this further.
- Administer dynamic user surveys. We can dynamically insert a question or two per week for the AI coach to ask all the FLWs, to help further improve the CommCare Connect program overall.

We will also explore the possibility of providing a similar AI chatbot for clients who have phones. We are cautiously optimistic that we can create a chatbot that can help mothers mitigate common barriers to exclusive breastfeeding.

Test Phase

Once we have Designed CCC-MBW, we will launch a test of the entire program with approximately 100 FLWs who will reach up to 2,000 mothers. This will take 6-7 months, as the coaching intervention with each mother is expected to last about 5 months (to be confirmed in the design phase). We'd expect the FLWs to only register mothers for the first 2-3 months of the pilot and then complete the coaching intervention for those registered for the remainder of time.

Dimagi now has substantial experience partnering with locally-led orgs (LLOs) to launch cohorts of 25-50 FLWs at a time with CommCare Connect. FLWs with their own smartphones are onboarded to the CommCare Connect vision and platform in a one-day training. A few days after the training, the FLW are notified that there is a new CommCare Connect opportunity available to opt into. The opportunity indicates a new intervention the FLW could learn and deliver, and specifies payment terms and verification conditions for deploying it.

For each cohort, we set up a group WhatsApp channel. We have found this to be a highly valuable resource for FLWs to encourage each other and to help answer questions. The LLOs also join, but provide minimal inputs. This also turns out to be a highly valuable view into how the FLWs are experiencing CCC, and what challenges they are facing.

We are now launching 2-4 cohorts per month with our partners in Malawi, Mozambique, and Nigeria for the CCC-ECD, and the process would look similar for CCC-MBW.

The following two charts are screenshots of our current monitoring dashboard applied to an active cohort of about 25 FLWs delivering CCC-ECD. The first chart shows the number of FLWs that progressed through various stages from being offered the opportunity to learning it digitally to deploying it. The second chart shows the total number of home visits by this cohort as the days progressed. We limit the FLWs to a maximum number of payable new clients per day, so some visits are categorized as 'over limit". Others are rejected according to our verification rules, including ones that detect retrospective data entry rather than collecting data while delivering the intervention.

Visit count by day of opportunity
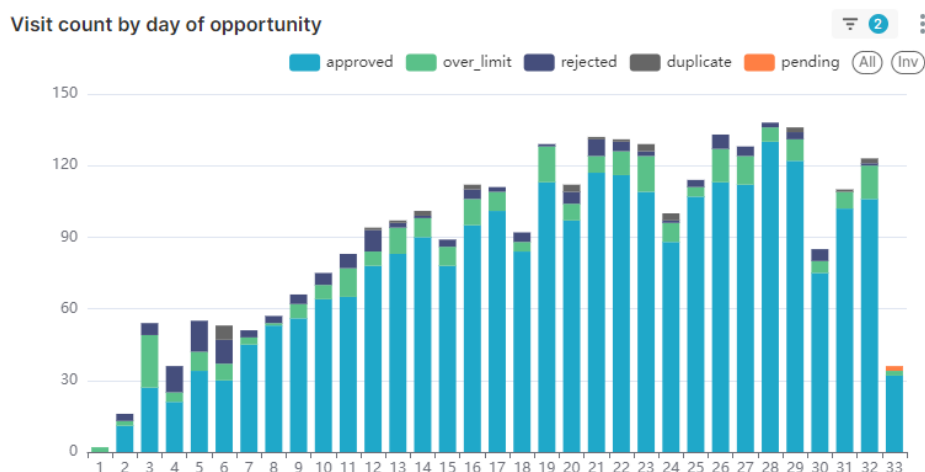
Joint Learning during Design and Test Phase

There will be many opportunities for joint learning with our partners throughout the design and test phase, depending on how involved the partner would like to be. Dimagi can share the UAT reports, provide access to the CommCare Connect backend which would provide real-time visibility into what is happening, and/or share the Whatsapp group chats. Partners could periodically join our internal meetings to manage the project and/or schedule update calls.

Dimagi is interested in generating reusable resources from this project that can be used independently of the CommCare Connect program itself. For example, we will open source our digital learning materials which themselves can be used in a variety of programs, whether or not they adopt our payment and verification schemes.

Initial Scale Phase

Note We are using 'Scale" somewhat loosely here. We could also call this an Operational Pilot. And there is no need to commit to the Initial Scale Phase vs. starting with the Design and Test Phases, though there would be some time savings from deciding whether to do Initial Scale before Design and Test ends.

Assuming the Test phase goes well enough to proceed to the scale phase, we will scale CCC-MBW through replication with additional LLOs, and the funding of larger cohorts. We have created a budget and plan to reach 35,000 mother-baby pairs over the course of 15 months.

Our initial plan is built around working in Malawi, Mozambique, and Nigeria, which all have ongoing cohorts of CCC-ECD. However, we should explore other countries, factoring in estimated baseline rates of exclusive breastfeeding, as well as child mortality. One source of information for this is Global Breastfeeding Collective country scorecards from WHO and UNICEF. We would welcome guidance on how to select countries.

We are assuming that we'll work in areas where there are ~30 births per 1000 population. We'll assume each FLW will cover a population of 1,000--though through this phase we will determine if this is realistic, and/or if an FLW can cover a wider area.

We're exploring a few different models of how to reach 35,000 mother-baby pairs in 18 months. Depending on how many LLOs we work with, and how quickly they can ramp up, we could achieve this target with 1200-1800 FLWs. We're confident that LLOs can onboard onboard and launch at least 100 FLWs in a month though it would take some time for a new LLO to ramp up to that level. In this deployment model, FLWs use their own smartphones.

We can refine these estimates further, but we are currently estimate we can fund a six-visit coaching series at the following rates (USD):

- Malawi: $15
- Nigeria: $12
- Mozambique: $22

We expect these rates to cover fair FLW hourly pay, LLO startup and supervision, and Dimagi operational costs. We have put together a budget which averages out to about $15 per delivery to get to 35,000 mother-baby pairs for $525,000.

Our plan and budget includes funding for Dimagi to develop more robust operational plans and procedures, and educational content to help LLOs deploy CCC-MBW. We expect to make adjustments to these components during the initial scale up.

Additional Considerations

The current plan and budget do not include resources for assessing the impact of CCC-MBW on exclusive breastfeeding or maternal wellbeing. We would be interested to add this in. It could be done at modest cost through surveys implemented by LLOs. We would also welcome working with external research partners on this, possibly focusing on one country to reduce evaluation costs.

Our current plan is to conduct the Design and Test phase in Malawi, because it is where we have the strongest operational presence there. However, Malawi has a relatively high rate of exclusive breastfeeding, so we could consider doing the Design and Test phase elsewhere, or perhaps excluding it from the Initial Scale Phase.

We may be underestimating some of the costs. Dimagi is happy to co-fund this effort. One area that may take more iteration with end clients than we are anticipating is the maternal wellbeing content, though Dimagi has substantial experience with both mental health and resilience efforts.

One thing we've realized through our scale modeling, is that if we execute against a fixed funding amount, we'd expect that FLWs would have to stop enrolling new clients 5-6 months before that funding runs out, since it will take that long to complete the last supported clients. Our current thinking is to seek more funding before that point to continue the program, if it seems to be going well.

Timeline and Budget

Please see our initial budget which comes to USD $320K for the Design and Test Phase, and $708K for the Initial Scale phase.

The table below illustrates a 27 month timeline – 15 months for Design, 15 months for Scale – in which the Design Phase's 'test' activities can overlap efficiently with the Scale Phase kick off. This assumes a seamless transition between Design and Scale, however if the phases are split into 2 separate contracts, then the Scale phase may take longer.

Phase	Activities	Design phase timeline	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Design - build	Consult experts to design content and intervention	1-2	d	d	d	d																										
	Build Learn and Deliver applications (iteratively, while testing)	2-5		d	d	d	d	d																								
	Iterative Learn experiments with NM to validate digital learning tool	3-5			d	d	d	d																								
	Iterative pilot cohorts to validate LDVP	6-8					d	d	d	d																						
Design - test	Full 5-6 month cohort	9-14									d	d	d	d	d	d																
	Document analysis & learnings from design phase	12-15												d	d	d	d															
Scale	Establish contracts with scale phase partners	13-15 / 1-3 of scale phase																■	■	■												
	Permissions and other preparations by LLOs	4-5																		■	■											
	Application and implementation readiness by Dimagi for scale pilot	4-5																		■	■											
	LLOs register new FLWs in monthly cohorts (increasing in scale)	6-12																				■	■	■	■	■						
	FLWs register new mothers	6-14																				■	■	■	■	■	■	■				
	FLWs conduct visits with mothers	6-18																				■	■	■	■	■	■	■	■	■	■	■
	Document analysis & learnings from scale phase	15-18																												■	■	■