

DIMAGI

Quarter 1 Milestone Report- CommCare ASHA

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Contents

Overview	2
Milestone Reporting Questions	2
Beta-test Partners	4
CommCare-ASHA Design.....	5
Phone-based Client	5
CommCare-ASHA Server	6
Appendix A: Design of the CommCare Mobile Client	7
Appendix B: Design of CommCare-HQ.....	21
Appendix C: Roles and responsibilities for Beta Test.....	23
Objective	23
Timeline.....	24
Roles and responsibilities	24
Scaling and future support after beta-test	25
Appendix D: Beta-Test FAQ.....	25



Overview

Dimagi has achieved the proposed milestones by completing the designs for the phone-based software and server for CommCare-ASHA. We have developed software prototypes for both components and will begin field testing of the phone-based software in Deoghar, Jharkhand with an Indian NGO called NEEDS. We are on schedule to have refined versions of both components by the end of February, 2011.

In addition to our technical progress, much activity has been devoted to developing partnerships with organizations to beta test CommCare-ASHA. We are confident we will have at least five signed MOU agreements by the end of February as well. We have developed a standard description of the roles and responsibilities and a FAQ to establish clear expectations from all parties.

We have been highly encouraged by the enthusiasm in the discussions with our partner organizations including World Vision, Catholic Relief Services, Intrahealth, Save the Children, NEEDS, and LifeSpring. In most cases, CommCare-ASHA is being incorporated into large, externally funded, multi-year projects and being done in conjunction with local government from the beginning.

We have encountered some challenges with obtaining government approvals for us to work directly with ASHAs, which was part of our initial plan. We submitted permission for our pilot to the office of the Principle Secretary of the National Rural Health Mission in Uttar Pradesh in mid-November. We are still hopeful to obtain this permission but currently are working with ASHAs through our partner organizations.

Moving forward, our focus will be on developing a strong evaluation plan and working with USAID to accelerate scale-up beyond our initial proposal.

Milestone Reporting Questions

Below, we provide answers to the standard milestone reporting questions provided by USAID.

1. Was DIMAGI able to reach its December 31st milestone as indicated in its initial agreement?

Yes, we completed the design phase for both the CommCare-ASHA mobile client and the CommCareHQ adapted website by December 31st. We provide details of these designs in the section below and in the appendix.

2. What were some DIMAGI successes and/or challenges that were encountered during this milestone period? What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

All proposed activities have been completed. We have been particularly successful in our discussions with potential partners for beta-testing CommCare-ASHA. We have an agreement and are starting work



with NEEDS, and are close to agreements with World Vision, Intrahealth, Catholic Relief Services, LifeSpring, and Save the Children. What has been particularly exciting is that most of these organizations are fitting CommCare-ASHA into larger, long-term projects.

Our biggest challenges center around discussion and coordination with the National Rural Health Mission (NRHM) in Uttar Pradesh. We had hoped to obtain permission to work directly with ASHAs. We have submitted the request but now expect it to take several more months. Fortunately, we are working with ASHAs in Deoghar, Jharkhand with a group, NEEDS, starting on January 10, 2011 so this is not a setback. We have also held a meeting with USAID in India to make sure we are aligned on how best to approach the NRHM.

3. Will these activities be completed? When and/or how? If the activities completed differ from your proposal, what caused these changes? Were activities delayed and if so, why?

All proposed activities have been completed.

4. What stage has the project reached in the research process and what has been accomplished during this milestone period, including any preliminary findings.

We have no results at this period, but do have a preliminary evaluation design. We are happy to share this with USAID if requested, but otherwise will include a final version in our next progress report.

5. How did these accomplishments help DIMAGI reach its project goal? If relevant, what indicators or milestones were used to determine your progress? Briefly describe the activities carried out this reporting period to meet these goals, as described in your proposal.

The primary focus of our first few months has to be to recruit partner organizations to beta test CommCare-ASHA, and the design itself of our system. All of these have gone very well. The milestones reached were the completion of our initial design and prototype and the signing of our first MOU to be a beta-test with NEEDS. We also have a draft evaluation plan and a FAQ for the beta testing.

6. Indicate the number of people reached during the Attendance checks, Surveys and Random Checks; and how these processes were completed. If the project is still in the planning or development stage, indicate what has been accomplished to date.

We are still in the planning and development stage, so have not reached any clients yet. We are beginning work directly with ASHAs on January 10th, 2011.

7. Are there any activities you will not be able to complete during the course of your grant?

We anticipate completing all of our proposed activities. The biggest concern we have centers around government permissions. The situation will vary from partner to partner, but it is difficult to predict how quickly this will move. By leveraging our partners' existing permissions with the government, we will still be able to accomplish our goals of 5 beta tests under the planned timeline.



8. Is there anything else you want to tell USAID? Please feel free to tell us about any other unexpected issues, concerns or successes you have had during this reporting period.

We would like help from USAID in identifying an appropriate evaluation partner in India. We also welcome advice from USAID about how to accelerate scale up beyond our current plans. Our meetings with USAID India and USAID in Washington, DC were both very helpful. We hope to schedule additional meetings to seek guidance as well as update the USAID teams.

Beta-test Partners

We have had many conversations with a range of potential partners to beta-test CommCare-ASHA. We circulated a 1-page overview widely and followed up with phone conversations with interested parties. We have developed a document detailing the roles and responsibilities of Dimagi and the partner organization, Appendix C, and refined this based on feedback. We have also created a Frequently Asked Questions (FAQ) document, shown in Appendix D, to help clarify how we envision the partnerships to work.

After discussion with the partners, we have slightly shifted the emphasis of the beta tests. The objective is now that the partner organization has the ability to add additional CommCare-ASHA users at the end of the beta test without help from Dimagi, rather than focusing specifically on making it easier for new organizations to adopt CommCare. This goal motivates the transfer of knowledge and technical expertise to staff in the partner organization, and still allows us to learn what is needed to help future organizations quickly adopt CommCare.

While it will vary from beta test to beta test, we have established a basic timeline that we expect to follow. We will spend the first two weeks in an Initialization phase. The Dimagi field engineer will come on site to train the project coordinator and support the initial setup and training. The coordinator will work full-time with the Dimagi engineer to fully understand the project and use of the mobile and online systems. We will then spend about two weeks in a Startup phase. The project coordinator will stay in close contact with the Dimagi field engineer and work closely with the ASHAs to ensure they are able to comfortably and consistently use CommCare-ASHA. The project coordinator will report feedback in provided templates detailing the progress of the startup phase to both Dimagi and the host organization. We will then have about six weeks in Deployment. After the ASHAs are using the mobile system on their own, the coordinator will monitor their progress and report feedback weekly to the Dimagi field engineer via report templates. Monitoring will consist of regularly checking data submitted by the ASHAs through the CommCare-HQ website, addressing issues with the ASHAs as they come up, holding bi-weekly meetings with the ASHAs for group discussion, and documenting all feedback. Finally, we will spend two weeks in Evaluation. After the deployment period is complete, a Dimagi field engineer will again come on site to work closely with the coordinator to evaluate the impact of the pilot.

Our conversations with the partner organizations have been very encouraging. They are very enthusiastic about the potential for CommCare and clearly planning to scale it further once the beta



tests are complete. We are close to agreement with World Vision, Catholic Relief Services, Intrahealth, Save the Children, NEEDS, and LifeSpring. They are all working with the local governments to ensure that the project can continue beyond the beta test.

CommCare-ASHA Design

This section provides an overview of the design of the phone-based mobile client as well as the server for CommCare-ASHA.

Phone-based Client

Upon opening CommCare-ASHA, the ASHA will be presented with a login screen where she will enter her unique username and password. After login, she will be presented with a menu which will lead her through the workflow depicted below in Figure 1 to arrive at the correct module. Once the module is completed, all data will be stored temporarily on the phone and sent automatically to the server if the mobile phone is within range of a cell tower. If not, the data will be sent whenever the mobile phone is in range and CommCare-ASHA is running.

Except for some data entry prompts (for example name and date fields), all prompts described in the modules below will be represented by an audio message and an illustration depicting a message. The messages outlined in each module will be translated to the spoken language appropriate for each pilot site (Hindi, Telugu, or other), then recorded locally.

We have designed four modules initially for CommCare-ASHA:

1. **Antenatal** – This module is used on each visit the ASHA makes to a pregnant woman. Includes emergency and danger signs screening, urgent and non-urgent response and referral steps, a one-time pregnancy registration, and an antenatal checklist which covers key, advised practices for the mother and gives a score as feedback.
2. **Neonatal** – This module is used at the end of the pregnancy. Includes emergency and danger signs screening, urgent and non-urgent response and referral steps, delivery details, newborn registration, and a neonatal checklist of essential messages on newborn care.
3. **Anemia / Nutrition** – This educational module is used on each visit the ASHA makes to any woman. Includes an Anemia screening, details on Anemia, possible complications that could arise in pregnancy, and pertinent information on nutrition. Although designed specifically to inform pregnant women, it is applicable to anyone.
4. **Submit Incentive** – This module is used each time the ASHA performs an incentivized service. Includes details for each service and a summary of incentives previously submitted to provide the ASHA with a tool to keep track of the work she has done and the payments she should receive.

After the ASHA using CommCare logs in, she will indicate if she is using the application during a client visit or to process incentives. If the former, she will then pick from the first 3 modules listed above.

Each of these modules contains step-by-step instructions and educational prompts. Appendix A presents screenshots and details of the module.

Pregnant women will be registered into CommCare-ASHA, following the prompts shown in Appendix A.

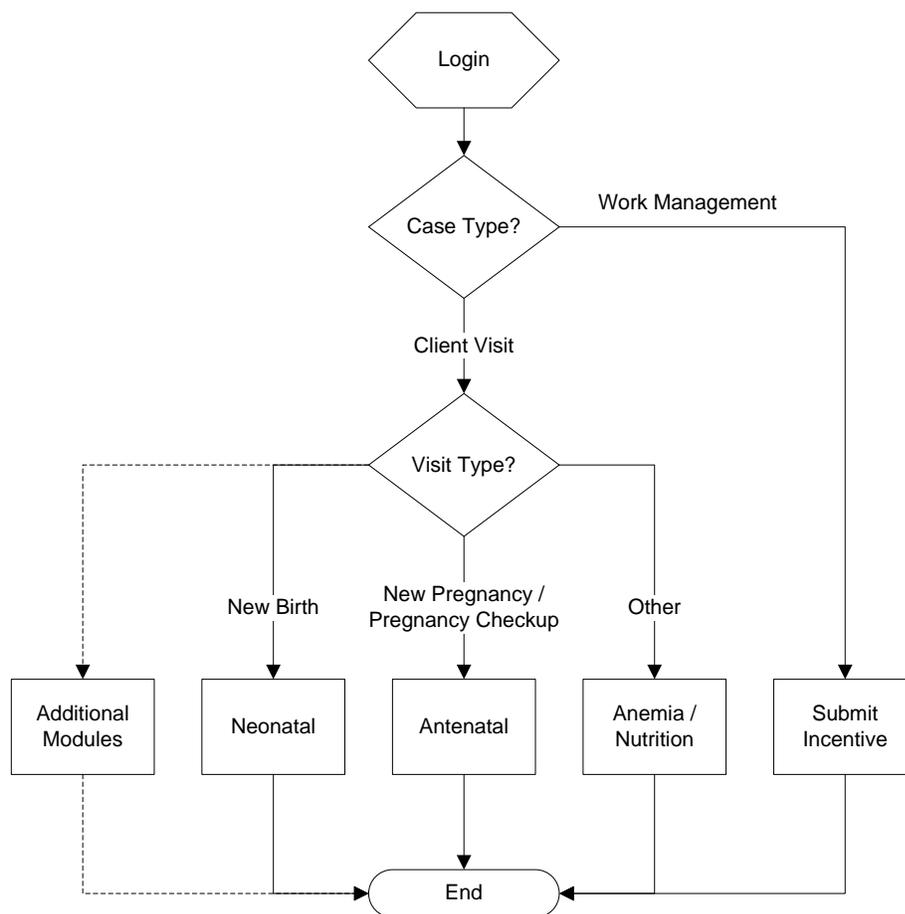


Figure 1: Comprehensive workflow of CommCare-ASHA mobile component. The focus of this design, shown here along the vertical, is maternal health.

CommCare-ASHA Server

Appendix B shows wireframes from our design of CommCareHQ, the server for CommCare-ASHA. In order to support wider-scale adoption of CommCare, we are designing a system to facilitate standardized service accessibility via a simple website. CommCare-HQ will allow users to quickly open an account, register new users, customize the mobile phone-based application, and download the mobile app onto their CHWs' phones. The site will back-up the data, generate automatic reports, and contain instructional videos and other training materials both to help implementers use the site and for use in training CHWs.

As shown in the wireframes, CommCare-HQ will allow users to browse the forms being submitted by ASHAs. Each individual form on the mobile client will be able to be examined on CommCareHQ. Additionally, the users of HQ will be able to download the raw data submitted by their ASHAs, as well as generate reports from within CommCareHQ. The reports will summarize the activity of the ASHAs, the services delivered to their clients, and the health status of the clients from data collected on pregnancies, births, nutrition, etc.

CommCare-HQ will allow users to customize many aspects of CommCare and manage new releases as they modify the protocols or multimedia content of CommCare. They will be able to change the language settings, create and manage new users, and set schedules for the delivery of the automatic reports.

Appendix A: Design of the CommCare Mobile Client





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Antenatal: Overview

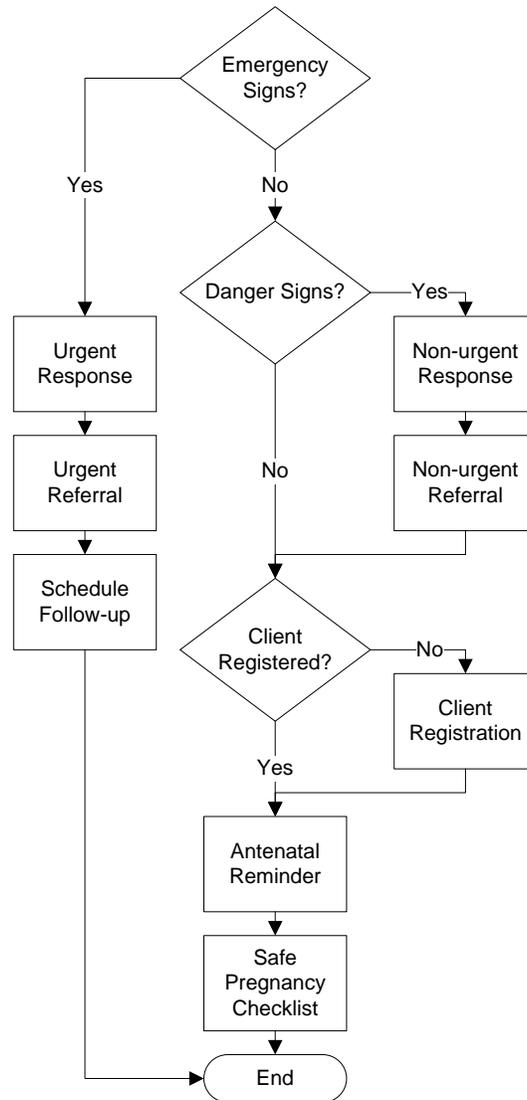


Figure 2: Antenatal module workflow.





Figure 3: Screenshots of mobile application showing example prompts from the Safe Pregnancy Checklist. Shown from left to right: (1) “Birth Attendant” question, (2) language selection, (3) “Birth Attendant” question in Hindi, (4) “Breastfeeding” question in Hindi,



1. Emergency Signs

- 1.1. Have you had heavy vaginal bleeding? (More than a fistful) [Yes, No]
[If Yes]
 - 1.1.1. Call for help (transportation, care, money)
 - 1.1.2. Lie down and rest
 - 1.1.3. Put cloth firmly between legs to control bleeding
 - 1.1.4. Cover with a blanket if necessary
 - 1.1.5. Drink fluids every hour during the day
 - 1.1.6. Pass urine frequently
 - 1.1.7. Urgent referral: Go to the clinic as soon as possible
- 1.2. Do you have pain in the abdomen? [Yes, No]
[If Yes]
 - 1.2.1. Call for help (transportation, care, money)
 - 1.2.2. Sit or lie down and rest
 - 1.2.3. Take a bath if needed
 - 1.2.4. Take 1000mg paracetamol every 6 hours
 - 1.2.5. Drink fluids every hour during the day



- 1.2.6. Pass urine frequently
- 1.2.7. Urgent referral: Go to the clinic as soon as possible
- 1.3. Do you have a fever or chills? *[Yes, No]*
 - [If Yes]*
 - 1.3.1. Call for help (transportation, care, money)
 - 1.3.2. Sit or lie down and rest
 - 1.3.3. Take a bath if needed
 - 1.3.4. Take 1000mg paracetamol every 6 hours
 - 1.3.5. Drink fluids every hour during the day
 - 1.3.6. Pass urine frequently
 - 1.3.7. Urgent referral: Go to the clinic as soon as possible
- 1.4. Do you having uncontrolled fits/convulsions? Headache, blurred vision, swelling of feet, arms, face? *[Yes, No]*
 - [If Yes]*
 - 1.4.1. Call for help (transportation, care, money)
 - 1.4.2. Lie on side to prevent injury
 - 1.4.3. Cover with a blanket if necessary
 - 1.4.4. Drink fluids when awake
 - 1.4.5. Urgent referral: Go to the clinic as soon as possible
- 1.5. Have you not felt your baby move in some time? *[Yes, No]*
 - [If Yes]*
 - 1.5.1. Call for help (transportation, care, money)
 - 1.5.2. Sit or lie down and rest
 - 1.5.3. Cover with a blanket if necessary
 - 1.5.4. Drink fluids every hour during the day
 - 1.5.5. Urgent referral: Go to the clinic as soon as possible

[if emergency signs]

- 2. Schedule Follow-up

[if no emergency signs]

- 3. Danger Signs
 - 3.1. How have you been feeling since the last time I visited? *[Good, Not well]*
 - 3.2. Have you had fever since the last time you went to the clinic? *[Yes, No]*
 - [If Yes]*
 - 3.2.1. Sit or lie down and rest
 - 3.2.2. Take a bath if needed
 - 3.2.3. Take paracetamol 1000mg every 6 hours
 - 3.2.4. Drink fluids every hour during the day
 - 3.2.5. Pass urine frequently
 - 3.2.6. Non-urgent referral: Go to the clinic as soon as possible
 - 3.3. Have you had any pain since the last time you went to the clinic? *[Yes, No]*
 - [If Yes]*
 - 3.3.1. Sit or lie down and rest
 - 3.3.2. Take a bath if needed

- 3.3.3. Take paracetamol 1000mg every 6 hours
- 3.3.4. Drink fluids every hour during the day
- 3.3.5. Pass urine frequently
- 3.3.6. Non-urgent referral: Go to the clinic as soon as possible
- 3.4. Do you have swelling (hands, feet, face)? *[Yes, No]*
 - [If Yes]*
 - 3.4.1. Lie down and rest
 - 3.4.2. Eat 5 small, nourishing meals every day
 - 3.4.3. Drink fluids every hour during the day
 - 3.4.4. Non-urgent referral: Go to the clinic as soon as possible
- 3.5. Do you have dark urine, or does it burn when you urinate? *[Yes, No]*
 - [If Yes]*
 - 3.5.1. Drink fluids every hour during the day
 - 3.5.2. Non-urgent referral: Go to the clinic as soon as possible
- 3.6. Have you lost weight recently? *[Yes, No]*
 - [If Yes]*
 - 3.6.1. Eat 5 small, nourishing meals every day
 - 3.6.2. Non-urgent referral: Go to the clinic as soon as possible
- 3.7. Have you been feeling sad or had times when you want to cry? *[Yes, No]*
 - [If Yes]*
 - 3.7.1. Share your feelings with your health provider or counselor
 - 3.7.2. Non-urgent referral: Go to the clinic as soon as possible
- 3.8. Have you had any other illness since you last went to the clinic? *[Yes, No]*
 - [If Yes]*
 - 3.8.1. Non-urgent referral: Go to the clinic as soon as possible

[if not yet registered]

- 4. Register Pregnancy
 - 4.1. Mother's name *[text input]*
 - 4.2. Father's name *[text input]*
 - 4.3. Mother's Age *[numeric input]*
 - 4.4. Village name
 - 4.5. Block name
 - 4.6. District name
 - 4.7. Do you know how many months pregnant you are? *[Yes, No]*
 - [If Yes]*
 - 4.7.1. How many months pregnant are you? *[numeric input]*
 - [If No]*
 - 4.7.2. How many months since last menstrual period? *[numeric input]*
 - 4.8. How many pregnancies have you had including this one? *[numeric input]*
 - [If >0]*
 - 4.8.1. How many previous deliveries have you had? *[numeric input]*
 - 4.8.2. How many terminated pregnancies have you had? *[numeric input]*
 - 4.8.3. How many living children do you have? *[numeric input]*



5. Antenatal Reminder
 - 5.1. To ensure a safe pregnancy, visit the clinic 4 times before delivery
 - 5.2. Do you have an Antenatal 4 card? [\[Yes, No\]](#)
[\[If Yes\]](#)
 - 5.2.1. Are you due for an antenatal visit? [\[Yes, No\]](#)
[\[If No\]](#)
 - 5.2.2. You can get an Antenatal 4 card at the clinic

6. Safe Pregnancy Checklist
 - 6.1. Have you registered your pregnancy at the clinic? Do you know the importance of visiting the clinic 4 times during your pregnancy? [\[Yes, No\]](#)
 - 6.2. Do you have a Birth Preparation or Birth Emergency Plan? Do you know what you will do for transport, communication, and resources? [\[Yes, No\]](#)
 - 6.3. Have you identified and planned for a skilled birth attendant to assist the delivery at the health facility? [\[Yes, No\]](#)
 - 6.4. Have you been counseled on infant feeding and the importance of early and exclusive breastfeeding? [\[Yes, No\]](#)
 - 6.5. Do you take Iron and Folic Acid tablets daily? [\[Yes, No\]](#)
 - 6.6. Have you been counseled on nutrition and take an additional meal every day of fruit, vegetables, meat, or eggs? [\[Yes, No\]](#)
 - 6.7. Have you started tetanus immunization? Have you gotten your second tetanus immunization? [\[Yes, No\]](#)
 - 6.8. Do you sleep under a mosquito net? [\[Yes, No\]](#)
 - 6.9. Have you been tested for HIV? Have you been counseled on prevention of HIV and the use of condoms for dual protection? [\[Yes, No\]](#)
 - 6.10. Have you been counseled on healthy timing and spacing of pregnancies and family planning? [\[Yes, No\]](#)
 - 6.11. Have you been tested for syphilis and screened for other sexually transmitted diseases? [\[Yes, No\]](#)
 - 6.12. Have you received IPT2? [\[Yes, No\]](#)
 - 6.13. Have you received a deworming tablet? [\[Yes, No\]](#)
 - 6.14. Do you take additional rest every day? [\[Yes, No\]](#)
 - 6.15. Have you had your blood pressure checked? [\[Yes, No\]](#)
 - 6.16. Have you had your hemoglobin checked? [\[Yes, No\]](#)
 - 6.17. Have you received vitamin A supplements? [\[Yes, No\]](#)
 - 6.18. Have you reviewed maternal and newborn danger signs? [\[Yes, No\]](#)
 - 6.19. Have you been counseled on newborn care? [\[Yes, No\]](#)
 - 6.20. Do you know the importance of activities, drinking fluids, and positions during labor? [\[Yes, No\]](#)
 - 6.21. Do you know the importance of hand washing and personal hygiene? [\[Yes, No\]](#)

END

Neonatal – Current: Overview

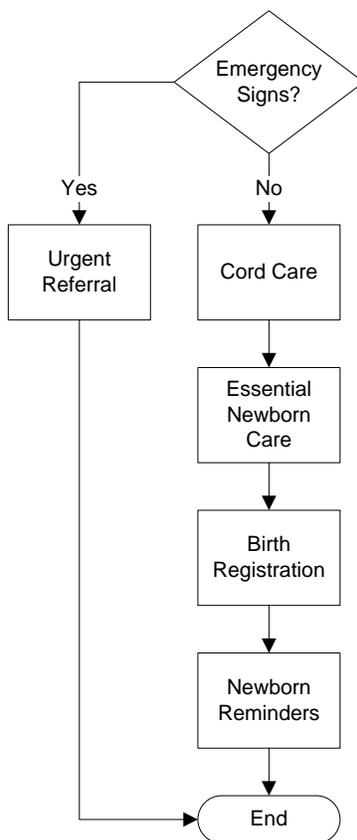


Figure 4 Current Neonatal module workflow.

Neonatal: Content

1. Emergency Signs

- 1.1. Have you had heavy vaginal bleeding? (More than a fistful) [Yes, No]
[If Yes]
 - 1.1.1. Call for help (transportation, care, money)
 - 1.1.2. Lie down and rest
 - 1.1.3. Put cloth firmly between legs to control bleeding
 - 1.1.4. Cover with a blanket if necessary
 - 1.1.5. Drink fluids every hour during the day
 - 1.1.6. Pass urine frequently
 - 1.1.7. Urgent referral: Go to the clinic as soon as possible
- 1.2. Do you have pain in the abdomen? [Yes, No]
[If Yes]
 - 1.2.1. Call for help (transportation, care, money)
 - 1.2.2. Sit or lie down and rest



- 1.2.3. Take a bath if needed
- 1.2.4. Take 1000mg paracetamol every 6 hours
- 1.2.5. Drink fluids every hour during the day
- 1.2.6. Pass urine frequently
- 1.2.7. Urgent referral: Go to the clinic as soon as possible
- 1.3. Do you have a fever or chills? [Yes, No]
[If Yes]
 - 1.3.1. Call for help (transportation, care, money)
 - 1.3.2. Sit or lie down and rest
 - 1.3.3. Take a bath if needed
 - 1.3.4. Take 1000mg paracetamol every 6 hours
 - 1.3.5. Drink fluids every hour during the day
 - 1.3.6. Pass urine frequently
 - 1.3.7. Urgent referral: Go to the clinic as soon as possible
- 1.4. Do you having uncontrolled fits/convulsions? Headache, blurred vision, swelling of feet, arms, face? [Yes, No]
[If Yes]
 - 1.4.1. Call for help (transportation, care, money)
 - 1.4.2. Lie on side to prevent injury
 - 1.4.3. Cover with a blanket if necessary
 - 1.4.4. Drink fluids when awake
 - 1.4.5. Urgent referral: Go to the clinic as soon as possible
- 1.5. Have you not felt your baby move in some time? [Yes, No]
[If Yes]
 - 1.5.1. Call for help (transportation, care, money)
 - 1.5.2. Sit or lie down and rest
 - 1.5.3. Cover with a blanket if necessary
 - 1.5.4. Drink fluids every hour during the day
 - 1.5.5. Urgent referral: Go to the clinic as soon as possible

[if emergency signs]

2. Schedule Follow-up

[if no emergency signs]

3. Danger Signs

- 3.1. How have you been feeling since the last time I visited? [Good, Not well]
- 3.2. Have you had fever since the last time you went to the clinic? [Yes, No]
[If Yes]
 - 3.2.1. Sit or lie down and rest
 - 3.2.2. Take a bath if needed
 - 3.2.3. Take paracetamol 1000mg every 6 hours
 - 3.2.4. Drink fluids every hour during the day
 - 3.2.5. Pass urine frequently
 - 3.2.6. Non-urgent referral: Go to the clinic as soon as possible
- 3.3. Have you had any pain since the last time you went to the clinic? [Yes, No]

- [If Yes]
- 3.3.1. Sit or lie down and rest
 - 3.3.2. Take a bath if needed
 - 3.3.3. Take paracetamol 1000mg every 6 hours
 - 3.3.4. Drink fluids every hour during the day
 - 3.3.5. Pass urine frequently
 - 3.3.6. Non-urgent referral: Go to the clinic as soon as possible
- 3.4. Do you have swelling (hands, feet, face)? [Yes, No]
- [If Yes]
- 3.4.1. Lie down and rest
 - 3.4.2. Eat 5 small, nourishing meals every day
 - 3.4.3. Drink fluids every hour during the day
 - 3.4.4. Non-urgent referral: Go to the clinic as soon as possible
- 3.5. Do you have dark urine, or does it burn when you urinate? [Yes, No]
- [If Yes]
- 3.5.1. Drink fluids every hour during the day
 - 3.5.2. Non-urgent referral: Go to the clinic as soon as possible
- 3.6. Have you lost weight recently? [Yes, No]
- [If Yes]
- 3.6.1. Eat 5 small, nourishing meals every day
 - 3.6.2. Non-urgent referral: Go to the clinic as soon as possible
- 3.7. Have you been feeling sad or had times when you want to cry? [Yes, No]
- [If Yes]
- 3.7.1. Share your feelings with your health provider or counselor
 - 3.7.2. Non-urgent referral: Go to the clinic as soon as possible
- 3.8. Have you had any other illness since you last went to the clinic? [Yes, No]
- [If Yes]
- 3.8.1. Non-urgent referral: Go to the clinic as soon as possible

[if not yet registered]

4. Register Pregnancy
- 4.1. Mother's name [text input]
 - 4.2. Father's name [text input]
 - 4.3. Mother's Age [numeric input]
 - 4.4. Village name
 - 4.5. Block name
 - 4.6. District name
 - 4.7. Do you know how many months pregnant you are? [Yes, No]
- [If Yes]
- 4.7.1. How many months pregnant are you? [numeric input]
- [If No]
- 4.7.2. How many months since last menstrual period? [numeric input]
- 4.8. How many pregnancies have you had including this one? [numeric input]
- [if >0]
- 4.8.1. How many previous deliveries have you had? [numeric input]



4.8.2. How many terminated pregnancies have you had? *[numeric input]*

4.8.3. How many living children do you have? *[numeric input]*

5. Antenatal Reminder

5.1. To ensure a safe pregnancy, visit the clinic 4 times before delivery

5.2. Do you have an Antenatal 4 card? *[Yes, No]*

[If Yes]

5.2.1. Are you due for an antenatal visit? *[Yes, No]*

[If No]

5.2.2. You can get an Antenatal 4 card at the clinic

6. Safe Pregnancy Checklist

6.1. Have you registered your pregnancy at the clinic? Do you know the importance of visiting the clinic 4 times during your pregnancy? *[Yes, No]*

6.2. **Do you have a Birth Preparation or Birth Emergency Plan? Do you know what you will do for transport, communication, and resources?** *[Yes, No]*

6.3. **Have you identified and planned for a skilled birth attendant to assist the delivery at the health facility?** *[Yes, No]*

6.4. **Have you been counseled on infant feeding and the importance of early and exclusive breastfeeding?** *[Yes, No]*

6.5. **Do you take Iron and Folic Acid tablets daily?** *[Yes, No]*

6.6. **Have you been counseled on nutrition and take an additional meal every day of fruit, vegetables, meat, or eggs?** *[Yes, No]*

6.7. **Have you started tetanus immunization? Have you gotten your second tetanus immunization?** *[Yes, No]*

6.8. **Do you sleep under a mosquito net?** *[Yes, No]*

6.9. **Have you been tested for HIV? Have you been counseled on prevention of HIV and the use of condoms for dual protection?** *[Yes, No]*

6.10. **Have you been counseled on healthy timing and spacing of pregnancies and family planning?** *[Yes, No]*

6.11. **Have you been tested for syphilis and screened for other sexually transmitted diseases?** *[Yes, No]*

6.12. Have you received IPT2? *[Yes, No]*

6.13. Have you received a deworming tablet? *[Yes, No]*

6.14. Do you take additional rest every day? *[Yes, No]*

6.15. Have you had your blood pressure checked? *[Yes, No]*

6.16. Have you had your hemoglobin checked? *[Yes, No]*

6.17. Have you received vitamin A supplements? *[Yes, No]*

6.18. Have you reviewed maternal and newborn danger signs? *[Yes, No]*

6.19. Have you been counseled on newborn care? *[Yes, No]*

6.20. Do you know the importance of activities, drinking fluids, and positions during labor? *[Yes, No]*

6.21. Do you know the importance of hand washing and personal hygiene? *[Yes, No]*

END

Submit Incentive: Overview

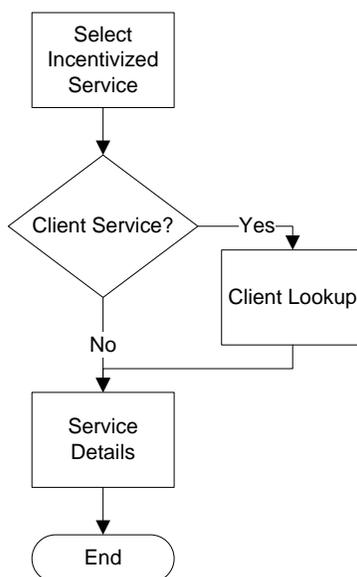


Figure 5: Submit Incentive module workflow.

Submit Incentive: Content

1. Incentivized Services
 - 1.1. Which service have you provided? *(Select one from the following list)*
 - 1.1.1. Escorted patient from village to clinic (200Rs)
 - 1.1.2. Paid travel expenses to escort patient from village to clinic (250Rs)
 - 1.1.3. Stayed overnight with patient and paid for personal food and lodging (150Rs)
 - 1.1.4. Escorted female patient to clinic for sterilization (150Rs)
 - 1.1.5. Escorted male patient to clinic for sterilization (200Rs)
 - 1.1.6. Assisted Pulse Polio Campaign work for one day (75Rs)
 - 1.1.7. Escorted patient to receive general vaccinations (150Rs)
 - 1.1.8. Have followed one TB patient through completion of treatment (250Rs)
 - 1.1.9. Escorted patient for [single] vascillary leprosy treatment (300Rs)
 - 1.1.10. Escorted patient for multi-vascillary leprosy treatment (500Rs)
 - 1.1.11. Counseled mother on postnatal care and colostrum feeding (50Rs)
 - 1.1.12. Escorted patient to clinic in case of postnatal mother or infant complications (200Rs)
 - 1.1.13. Ensured comprehensive vaccination and vitamin A solution delivered to a child under the age of 1 (100Rs)
 - 1.1.14. Completed village health register and annual village health plan (500Rs)
 - 1.1.15. Ensured a birth or a death has been register (5Rs)
 - 1.1.16. Organized a group meeting in village (100Rs)

- 1.1.17. Ensured eye exam administered to a child under the age of 15 (25Rs)
- 1.1.18. Visited post-operational cataract patient for follow up (50Rs)
- 1.1.19. Paid travel expenses to escort woman or child in serious condition to clinic (100Rs)
- 1.1.20. Ensured full vaccination, vitamin A supplements, and DPT given to a child up to the age of 3 (50Rs)
- 1.1.21. Paid travel expenses to attend meeting at Primary or Community Health Center (30Rs)

[If service involved a patient]

2. Client Lookup

3. Service Details

3.1. Date service was provided *[date input]*

3.2. Has incentive already been paid? *[Yes, No]*

[If Yes]

3.2.1. How was payment delivered? *[Cash, Check, Transfer to Bank Account]*

3.2.2. How much payment was received? *[numeric input]*

END

Appendix B: Design of CommCare-HQ

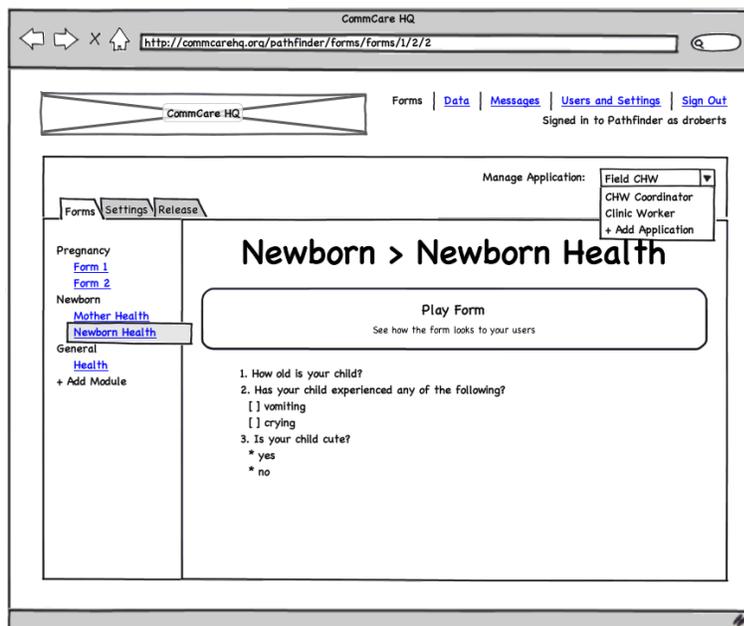


Figure 6: Examining forms in HQ

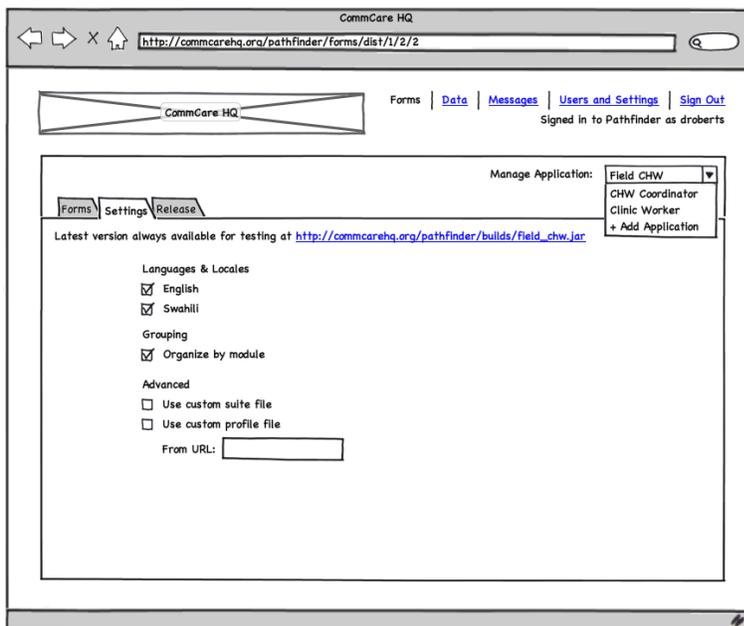


Figure 7: Language settings in HQ

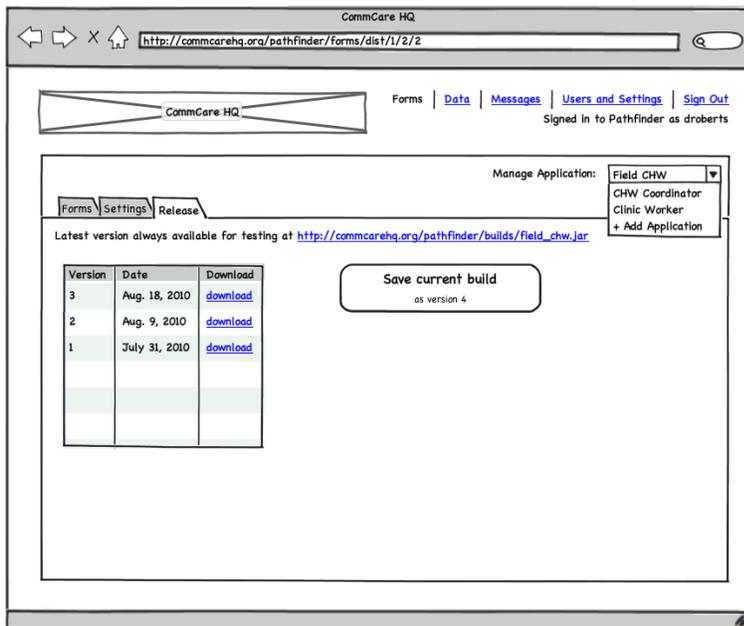


Figure 8: Managing different builds of CommCare as forms change

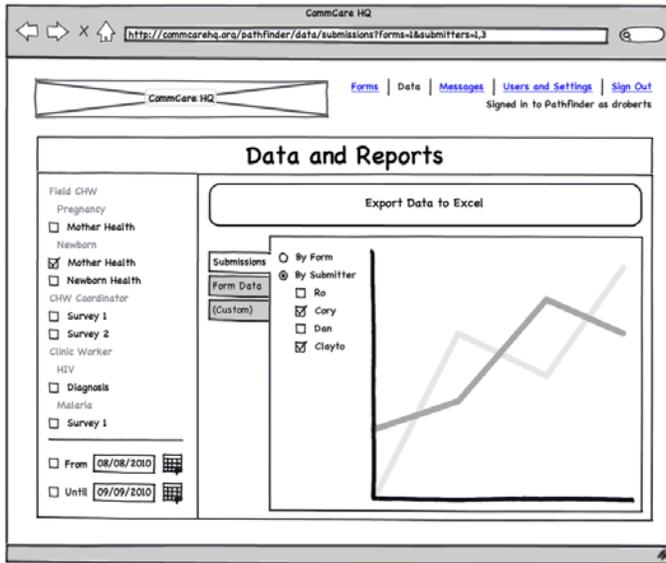


Figure 9: Automatic reports in HQ

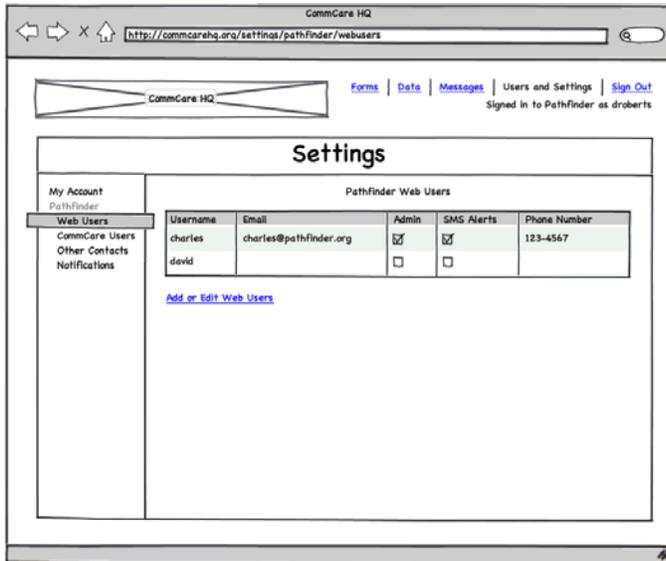


Figure 10: Managing users in HQ

Appendix C: Roles and responsibilities for Beta Test

Objective

Dimagi will work with the host organization for a period of three months to deploy CommCare-ASHA with a small number of ASHAs. By the end of the three months, the host organization should be able to enroll additional ASHAs without Dimagi's help and thus begin to scale up CommCare-ASHA if it chooses to. During the three months, the host organization will provide frequent feedback to Dimagi to improve the CommCare-ASHA application as well as the resources for deploying it.



Dimagi will have two full-time field engineers working to support beta-testing and will provide up to 10 phones to the host organization. The host organization will identify one of its staff members as a project coordinator, who will manage the project during the beta-test period and keep in frequent contact with a Dimagi field engineer.

Timeline

While flexible, we expect beta-testing to adhere roughly to the following schedule:

Initialization (~2 week): The Dimagi field engineer will come on site to train the project coordinator and support the initial setup and training. During this week, the coordinator will work full-time with the Dimagi engineer to fully understand the project and use of the mobile and online systems. The coordinator will review the content with the field engineer to ensure its validity and help make changes if appropriate.

The coordinator will conduct a two day training of the ASHAs during this phase with support from the Dimagi field engineer.

Startup (~2 weeks): The project coordinator will stay in close contact with the Dimagi field engineer and work closely with the ASHAs to ensure they are able to comfortably and consistently use CommCare-ASHA. The project coordinator will report feedback in provided templates detailing the progress of the startup phase to both Dimagi and the host organization.

Deployment (~6 weeks): After the ASHAs are using the mobile system on their own, the coordinator will monitor their progress and report feedback weekly to the Dimagi field engineer via report templates. Monitoring will consist of regularly checking data submitted by the ASHAs through the CommCare-HQ website, addressing issues with the ASHAs as they come up, holding bi-weekly meetings with the ASHAs for group discussion, and documenting all feedback.

Evaluation (~2 weeks): After the deployment period is complete, a Dimagi field engineer will again come on site to work closely with the coordinator to evaluate the impact of the pilot.

Roles and responsibilities

The following table summarizes the role and responsibilities of each group.

	Dimagi	Host Organization
Personnel	<ul style="list-style-type: none"> Full time field engineers working on the project, based in Varanasi. The host organization will be visited at least twice during the beta-test. The project Primary Investigator will be available by email and skype. 	<ul style="list-style-type: none"> Project coordinator to manage project and oversee ASHAs. Must be available full-time during key weeks of beta-test. 5 or more ASHAs for beta-testing. Project manager to act as point of contact.
Permissions	<ul style="list-style-type: none"> Dimagi is in the process of getting 	<ul style="list-style-type: none"> Obtain any other necessary



	permission to deploy CommCare-ASHA in Uttar Pradesh	permissions (Dimagi happy to help.)
Equipment	Provide up to 10 Nokia 2700c handsets, and airtime to transfer data for 3 months.	Provide any additional phones needed or replacement phones.
Technical Support	Provide technical support remotely or with additional visits if needed.	
Customization of CommCare	Field engineers will provide guidance.	Project coordinator will work with ASHAs to customize content.
Training and supervision.	Field engineers will provide guidance.	Project coordinator will train ASHAs, and meet with them every two weeks to monitor progress.
Feedback	<ul style="list-style-type: none"> Share feedback from all beta-tests at end of project. Provide report templates for the project coordinator to complete on regular intervals. 	<ul style="list-style-type: none"> Send a short report every week describing activity, challenges or suggestions. Fill out four feedback reports provided by Dimagi, starting at beginning of beta-test and at end of each month.
Evaluation and next steps	Work with host organization at end of beta-test to evaluate CommCare-ASHA and possible roll-out plans.	Will work with Dimagi to evaluate potential scale-up of CommCare-ASHA.

Scaling and future support after beta-test

Dimagi supports the host organization in scaling its deployment of CommCare-ASHA after the completion of the beta-test. Dimagi commits to providing continued basic hosting which entails access to CommCare-HQ tools for managing, monitoring, and scaling the deployment. Hosting and support will be offered free or for low-cost depending on the host organization’s needs. Although a concrete pricing model has not yet been defined, Dimagi will work with the host organization to find an arrangement suitable for both organizations. Dimagi will also provide technical support at cost to all beta-testing partners.

Appendix D: Beta-Test FAQ

What costs will the host organization incur during the beta test?

The costs will vary from organization to organization based on how their operations are set up, their staff, and if they want to do a larger pilot. We will discuss the costs here for doing a small pilot with approximately 10 ASHAs.

- *How much time will this require from the project manager?*



Minimally, the project manager just needs to partake in meetings with Dimagi at the beginning and end of the beta-test and oversee the project coordinator to ensure that the project coordinator provides sufficient feedback to Dimagi. Of course, if problems arise then this will require more time of the project manager.

- *How much time will this require from the project coordinator? What are the key weeks they will need to work the most?*

This is the biggest resource required of the host organization. We expect that the first month will require near full-time focus. After that, the project coordinator should meet with the ASHAs at least once every two weeks and spend about 2 days per week supporting the ASHAs and communicating with Dimagi. At the end of the beta-test, there will be another week-long visit in which the project coordinator will be fully occupied.

- *Can the project coordinator role be split between two people?*

This is up to the host organization. It will probably take the focus of one person during the key weeks mention above but in principle it seems fines to split the role among multiple staff.

- *How is the ‘close contact’ between the Project Coordinator and Dimagi’s Field Engineer to be maintained? What is the expected frequency?*

Dimagi will do whatever works best for the Project Coordinator. The short weekly updates should be sufficient—but we expect more frequent communication if there are problems or issues to be worked out.

- *How often is it expected that the Project Coordinator will be in the field with the ASHA?*

We recommend the Project Coordinator meet with the ASHAs at least once every two weeks. At the discretion of the host organization, it may be useful to spend some time with the ASHAs as they use the system in the field as well.

- *Can you give an example of how the Project Coordinator might work with ASHAs to customize the content (host organization responsibilities on page 2)?*

The Dimagi Engineers will show the Project Coordinator how to replace the images or the audio prompts in the application. Recording the audio prompts in the local dialect may be especially important. Dimagi will also instruct the Project Coordinator on how to modify or re-order the questions and prompts in the program, which will require slightly more technical expertise—but Dimagi will assist with this as needed during the pilot.



- *What is required for the trainings*

During the startup phase, we would recommend 2 full days of training with one follow up meeting per week for the next 3 weeks. If the number of ASHAs is small, we would expect that these could be done without renting a special room.

- *Does the host organization need to develop training materials for the 2-day training course for the ASHAs?*

Dimagi will provide training materials and be on hand to help with training. There may be the need to adapt the training materials for local context or language. Dimagi will work with the host organization to do this, but the host organization will likely have to do the translations.

- *Does the host organization keep the 10 phones?*

Yes.

- *How much do the phones cost?*

We recommend Nokia 2700c be used, which cost less than \$100 USD each in India. The price seems to be steadily going down and discounts are available if in bulk. As of the day this was written, then can be bought online via Amazon for \$102 USD each. Lower prices are also available in the US, though one should be cautious about the reputation of the seller.

- *Are there incentives for the ASHAs*

This is at the discretion of the host organization. We have found that most ASHAs are excited to be part of the initial work. We will give the 10 phones to the host organization which they could use as an incentive, but any other incentives are the host organizations responsibility.

- *What are costs of power and airtime*

Dimagi will pay for sufficient airtime to transfer all the data for 10 phones, as well as provide funds to charge the phones. The phones need to be charged about once a day.



Evaluation

Dimagi will work with the host organization to design a mutually agreed upon evaluation framework. Dimagi will have relatively small minimum requirements but will support more extensive evaluations if of interest to the host organization.

- *Does the two-week evaluation period include the time for write-up of the evaluation or is that just the period of field work?*

The two week period will focus primarily on data gathering and field work. If desired, we can jointly produce a simple write up at the end of those two weeks. The host organization will not be committed to any further work on the evaluation, but it will be welcomed.

- *What is the host organization's specific role in the evaluation?*

Dimagi will prepare a simple methodology and simple tools for evaluation. Minimally, the project coordinator will just facilitate interviews with the ASHAs and some of their clients, if appropriate. We will also produce survey tools to do a simple pre- and post- quiz on client knowledge which can be deployed optionally.

The host organization is welcome to conduct and publish its own more extensive evaluation, or to propose joint work with Dimagi.

- *Does the host organization have a role in analysis or write-up, etc?*

Nothing is required or expected, but it is welcomed and any contributors will be co-authors on Dimagi-led publications. The host organization is also welcome to lead and first-author a publication, though we would appreciate if we could coordinate so as not to duplicate efforts.

- *Is there any room for the involvement of local health authorities in the evaluation process?*

Absolutely. We would be eager to discuss this.

Elaboration on Roles & Responsibilities, etc.

- *Who will pick the district for the beta-test?*

The host organization will select the district—and the only requirement from Dimagi will be if we can reach it easily enough.



- *Are weekly reports also due the weeks that Feedback Reports are to be submitted?*

Yes, but weekly reports can be very short—they are really just to document issues and keep communication going. If everything of note is in the Feedback report, the weekly report can simply say that.

- *Can you give us an idea of the extent of the documentation and reporting? How long are the weekly reports, are they mostly reporting data generated from the beta-test or is extensive narrative reporting required? Same questions for the four Feedback Reports.*

If things are going smoothly, the weekly report should take 15 minutes or less to prepare, and only need be a quick description of that week's activity.

We will design the feedback reports after more experience in the field. But they should just take about 2 hours.

If the host organization finds the reporting onerous or if any of the requested information seems unnecessary, we will work together to address the concerns.

- *What is Dimagi's recommendation for the extent of involvement/collaboration with District and Block-level Department of Health and Family Welfare (NRHM) where the host organization is participating in the beta testing?*

This will vary greatly by situation. We welcome any involvement by the NRHM, and will follow the host organization's lead. One factor however, is the impact it will have on the timing. One approach to consider is that representatives of the NRHM are brought in to help define the assessment and produce the recommendations for next steps.

Background: What is CommCare?

- *What is a one line description of CommCare?*

CommCare is an innovative use of mobile phones to strengthen community health workers.



- *What are the benefits of CommCare?*
 - CommCare provides tools for ASHAs to more effectively communicate with their clients.
 - CommCare helps ASHAs remember to mention every important point during their sessions with clients.
 - CommCare increases the authority and credibility of ASHAs.
 - CommCare collects data in real time about ASHAs activities to help with monitoring and program improvement.
- *Where has CommCare been used?*
 - In Tanzania, Pathfinder International is using CommCare for their home-based care for HIV+ and other chronically ill patients. There are about 115 users of CommCare who have collected over 20,000 forms.
 - In Tanzania, Dimagi is supporting a 50 CHW program that does routine care, pregnancy care, and newborn care. They have submitted over 45,000 forms.
 - Catholic relief services ran a pilot in Arusha, Tanzania that collected over 2000 forms for supporting orphans and vulnerable children.
 - CommCare is being used in Bangladesh by Grameen to promote safe pregnancy practices. A small number of users have submitted about 750 forms.
 - PATH ran a small pilot in Tanzania to support community-based TB detection.
 - World Vision is running a pilot in Afghanistan for safe pregnancy.

- *What modules are available?*

All of the above modules are available, but the most tested and useful ones are for pregnancy and newborn care.

DIMAGI

Milestone Two Report - CommCare ASHA

Neal Lesh, Dimagi Inc

3/14/2011



Contents

Overview	2
Milestone Reporting Questions	3
Partnerships	4
Meeting with USAID-India	4
Beta test partners	5
Potential partners	6
CommCare-ASHA Deployment	6
Phone-based Client	7
CommCare-ASHA Server	9
Conclusion.....	10

Overview

Dimagi has achieved all the milestones proposed for this reporting period by deploying CommCare-ASHAs with community health workers in Jharkhand and by launching our server, CommCareHQ, which allows any organization to author CommCare applications. Overall, we are ahead of schedule and expect to launch 4-6 beta tests by the end of May and to significantly exceed the five beta tests we proposed for the scope of this grant.

As expected, we've determined numerous areas for improvement with our initial field deployment of CommCare-ASHA. We have two excellent field staff living and working full time in our beta test sites. They are making rapid progress on improving the application by constantly working with our engineering team back in Boston to provide new feature requests and bug reports. We have hired a professional illustrator in Delhi to create images for CommCare ASHA, as shown in Figure 1.

In this reporting period, we spent additional time in Delhi talking to USAID-India, our partners, and potential users of CommCare. We feel the situation in India is incredibly exciting and CommCare is well-timed in the market. Highlights include:

- India is experiencing tremendous growth in mobile applications in general, and mHealth applications in particular. Punjab recently funded a 5,000-phone deployment of mHealth application by HISP-India, who have signed on to be our fourth beta-test partner.
- Huge investments in community health are being made by Indian government and external donors.
- CommCare is a strong fit for community health efforts. Every group we are talking to with community health field operations has identified a potential use for CommCare including Abt, CARE, CRS, Engender Health, IntraHealth, JSI, JHPIEGO, Pathfinder, PSI, Save the Children, and World Vision.
- We are already involved in discussions concerning state-wide scale-up for CommCare in Uttar Pradesh, Jharkhand, and Bihar.

Moving forward, we will be expanding our pool of beta tests and partners, and exploring the best way for CommCare-ASHA to strengthen community health programs. For example, we are interested in adding functionality to encourage ASHAs to enroll more pregnant women from their catchment area. We look forward to working with USAID to accelerate scale-up.

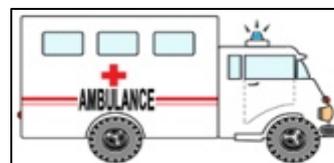
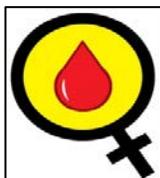


Figure 1: Illustrations in CommCare ASHA

Milestone Reporting Questions

Below, we provide answers to the standard milestone reporting questions provided by USAID.

1. Was DIMAGI able to reach its Feb 28th milestone as indicated in its initial agreement?

Yes, we completed the beta deployment phase for both the CommCare-ASHA mobile client and the CommCareHQ adapted website by Feb 28th. We provide details below.

2. What were some DIMAGI successes and/or challenges that were encountered during this milestone period? What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

This has been a highly productive period. Our conversations with potential partners has exceeded our expectations in terms of level of interest and potential for scale. We expect to have 4-6 beta tests launched by the end of May which will be ahead of schedule.

As expected, we encountered several issues with the deployments when the ASHAs starting using it. For example, the ASHAs removed the memory card in the phones to put music and video on it, which caused problems with the flash memory. We have found ways to address all these problems, and continue to improve our software, training, and supervision.

We had less interaction with the cloud-based server from our partners than our original plan indicated, because it took a little longer than planned to launch our system and to start work with the partners. We will get more feedback in the upcoming reporting period, as the CommCareHQ 1.0 website has been released in beta mode.

We are still waiting for permission to work directly with ASHAs from the National Rural Health Mission (NRHM) in Uttar Pradesh. However, we no longer need this permission and have been able to work through our partners rather than directly with ASHAs.

3. Will these activities be completed? When and/or how? If the activities completed differ from your proposal, what caused these changes? Were activities delayed and if so, why?

All proposed activities have been completed, though we need more feedback on the cloud-based server which was slightly delayed. This will happen in the next period.

4. What stage has the project reached in the research process and what has been accomplished during this milestone period, including any preliminary findings.

We have no research results at this point, but are starting more formal evaluations now. We are happy to share this with USAID if requested. We expect preliminary results in the next reporting period.



5. How did these accomplishments help DIMAGI reach its project goal? If relevant, what indicators or milestones were used to determine your progress? Briefly describe the activities carried out this reporting period to meet these goals, as described in your proposal.

We are well on our way to scaling CommCare-ASHA. The primary indicators we have used so far is the number of ASHAs successfully using our system (which is 9 of 10 using it very well, and the remaining 1 of 10 using it reasonably well) and the number of agreements we have signed with potential partners to try CommCare-ASHA. We have signed 4, have verbal agreements with two more, and several others that are close to signing.

6. Indicate the number of people reached during the Attendance checks, Surveys and Random Checks; and how these processes were completed. If the project is still in the planning or development stage, indicate what has been accomplished to date.

Our 10 current users have used CommCare-ASHA to educate 200-300 people so far.

7. Are there any activities you will not be able to complete during the course of your grant?

We anticipate completing and exceeding all of our proposed activities.

8. Is there anything else you want to tell USAID? Please feel free to tell us about any other unexpected issues, concerns or successes you have had during this reporting period.

We welcome advice from USAID about how to accelerate scale up beyond our current plans. We are in active discussions to jointly submit CommCare-ASHA to the Business Call to Action program, of which USAID is a partner. In addition, we are receiving guidance from the World Bank on the financial model for scaling CommCare-ASHA.

Partnerships

Neal Lesh, CSO of Dimagi, spent two weeks in India meeting with USAID-India, current partners, potential partners, and our field team in Uttar Pradesh. There is clearly a great deal of momentum in India for mobile health applications as well as for community health projects.

Meeting with USAID-India

Neal Lesh and Vikram Kumar met with Sheena Chhabra and Jennifer Graetz from USAID-India. We presented our progress, results from the field, and the discussions we are having with potential partners. Sheena and Jennifer confirmed that we were talking to most of the groups we should be, and pointed out a few we should reach out to. We talked about evaluation of CommCare-ASHA as well. Sheena and Jennifer offered guidance on how and when to do this. One idea that came out of the meeting was to assess CommCare-ASHA as a tool for increasing the number of women enrolled by the ASHAs, which has been identified as an area that needs improvement. In addition, we are in discussions



with renowned experts in RCT at Harvard Business School and public health experts at the Public Health Foundation of India (PHFI) for supporting evaluation of CommCare.

Beta test partners

We have signed four MoUs and expect to sign two more in the coming week. The following table summarizes these six partnerships.

Organization	Status	Location	Scale-up plan
NEEDS	Started in January	Deoghar, Jharkand	Interested to scale to 150 ASHAs if funding found for phones. Could be model for state-wide scale up in Jharkhand.
IntraHealth	Started in March	Bahraich, Uttar Pradesh	Part of the Mathan project, an integrated system being demonstrated in two districts with intention of being adopted by government of UP state wide.
CRS	Signed MoU, planned April start	Kaushambi, Uttar Pradesh	Plan to quickly scale to block-wide after the beta test as part of a 3-year mHealth project that CRS has independent funding for.
HISP-India	Signed MoU	Himachal Pradesh	HISP-India has a large team working on eHealth and mHealth projects, and strong ties to government. Recently deployed 5,000 phones in Punjab.
KP Centre for Technologies in Public Health (ICTPH)	Expect to start in coming weeks.	Thanjavur, Tamil Nadu	They are going to build their own app and represent an important segment of users who can use CommCare for data collection in a variety of scripts (e.g., Tamil, Hindi.)
Abt	Working out final details	Gonda and Chandauli, Uttar Pradesh	Part of USAID funded project to demonstrate new model to ITC, with intent to scale to all 6,500 e-Choupals in 10 states ITC works with.

As a fun note, during our field team’s initial visit to Kaushambi, we were interviewed and made page 3 of the Daink Jaagan with the title “Health Department goes High Tech”



Figure 2: CommCare in the News!

Potential partners

We spoke to large number of other organizations including Abt, CARE, Engender Health, Futures Group, MCHIP/JSI, JHPIEGO, Pathfinder, PSI, and Save the Children. In every conversation, we found interest in CommCare. Though some groups did not have active field efforts currently for which we are appropriate. We review a few possible opportunities here.

CARE is planning a wide scale rollout of our technology in Bihar as part of the 5-year project with Gates Foundation funding. They have already invested substantially (through our partner organization D-tree International) to fund the development of prototype applications to support protocol adherence of many health workers. They are discussing reaching state-wide scale up with technology and other interventions. They expect to utilize the systems we develop as well.

MCHIP/JSI are familiar with our partner NEEDS and also work in Deoghar, Jharkhand . After discussion with USAID-India and were encouraged to assess the CommCare-ASHA pilot we are conducting with NEEDS and potentially work with us on a second test to expand this work and evaluate it for statewide scale-up.

We didn't find an immediate connection with PSI's current project, but they are hopeful to start a project this year with Atul Gawande at Harvard University on a checklist for improving births. They would have to follow 100,000 births and CommCare seems a strong fit for their needs, if the project occurs.

CommCare-ASHA Deployment

This section provides an overview of the deployment of the phone-based mobile client as well as the server for CommCare-ASHA.



Phone-based Client

We have deployed CommCare by working with our first beta test partner, Network for Enterprise Enhancement and Development Support (NEEDS). NEEDS is an Indian NGO with a good track record of helping communities. They are based in Kolkata and operate in Jharkhand. They support a large number of ASHAs (called Sahiyyas in Jharkhand). We have established an excellent working relationship with NEEDS and have plans to continue to work with them through the rest of the year.

All ten of the ASHAs are submitting forms to CommCareHQ. We have collected 115 forms thus far.

We've been learning a lot through our initial deployment with NEEDS. Some of the issues included:

- Memory cards: almost all the ASHAs managed to load music or videos onto the memory cards in their phones very soon after being given them. This is often done by a younger family member. This caused some initial problems with our software, but we modified the software to allow for this.
- GPRS: GPRS coverage is weaker in Deoghar and other parts of India than we anticipated. Some ASHAs need to go to a specific location in order to get coverage. We will likely have to adapt our interface to better alert the ASHAs to this problem.
- There seems to have been some misuse of the mobile phone by other members of an ASHA's family. We have emphasized the ASHA's ownership of the phone and urged her to keep it on and with her at all times, as well as giving her mobile number to clients and instructing them to call in case of any emergency.
- Our pilot was slowed down by the difficulty of communicating with the ASHAs. They often come late or not at all to the meetings. We have started to send SMS reminders containing meeting details and general feedback. We have verified that the ASHAs are reading the messages, and have received some responses by SMS as well. In addition, we have formed a hypothesis that those who are quick to respond to the SMS messages are more technically savvy and could be selected as group leaders in future trainings.
- We had some trouble finding quiet spots to record the audio clips for CommCare ASHA. This will be an ongoing issue as we expect to always want to record the audio messages locally. We determined that the best way is in a back room of the office, early in the morning before anyone else show up.

Below are some pictures from our training.



CommCare-ASHA Server

CommCare-HQ allows users to quickly open an account, register new users, customize the mobile phone-based application, and download the mobile app onto their community health workers (CHWs) phones. The site will back-up the data, generate automatic reports, and contain instructional videos and other training materials both to help implementers use the site and for use in training CHWs. We recently launched (www.commcarehq.org). A simple walkthrough demo is available online (<http://www.youtube.com/watch?v=N2QaTCdYGS4>). We will be making more polished demos and videos in the near future.

The figures below show some screenshots of CommCareHQ run on data collected from one of our Tanzania pilots. The figures show how to manage users (Figure 3) and two reports. Figure 4 shows a report indicating how many submissions each CHW has made. While this is useful information, it is hard to know how many visits a CHW should have visited which depends on how many clients they have and how recently they visited them. Figure 5 shows a workforce management report that analyzes the CHWs activity in terms of how many clients (or cases) they have that are active, and whether the CHW has visited those clients on time, or if they are late in terms of when they are scheduled to visit them. (This is not real data, so do not be alarmed at the results.) These tools are very useful for tracking which CHWs need more supervision or encouragement to follow up on their clients.

Reports | Applications | Messages | Users | My Domain

Signed in to dodoma as droberts+dodoma@dimagi.com | Sign Out

Users

My Account
Account Settings
Change Password

Domain "dodoma"
Web Users
CommCare Users
CommCare Groups

CommCare accounts in domain "dodoma"

Web Account	CommCare Account	Date Registered	Phone Numbers
test nick@dodoma.commcarehq.org		2011-03-14	
benadeta@dodoma.commcarehq.org		2011-03-14	
grace@dodoma.commcarehq.org		2011-03-14	
mariam@dodoma.commcarehq.org		2011-03-14	
monica@dodoma.commcarehq.org		2011-03-14	
jemima@dodoma.commcarehq.org		2011-03-14	
yuster gabriel@dodoma.commcarehq.org		2011-03-14	
mariamu ally@dodoma.commcarehq.org		2011-03-14	
rose@dodoma.commcarehq.org		2011-03-14	

Figure 3: CommCareHQ accounts page



dorothy	0	0	0	0	0	0	0
elina	0	1	20	0	1	1	0
emelda	0	1	0	0	0	0	0
emelsiana	0	0	51	0	0	15	0
esther	23	9	0	0	0	0	0
esther mgongolwa	10	1	8	0	0	0	0
fatuma dunga	16	9	0	0	0	0	0
flora	1	13	10	0	0	0	0
grace	0	0	0	0	0	0	0
jemima	0	0	17	0	0	2	0
jenofeva	0	0	0	0	0	0	0
josephina	0	0	0	0	0	0	0
joyce	19	6	3	0	0	0	0
maria	0	28	0	0	0	0	0
mariam	0	0	0	0	0	0	0
mariamu	0	27	0	0	0	5	0
mariamu ally	0	0	0	0	0	0	0
mary	6	11	10	0	0	9	0

Figure 4: CommCareHQ report showing submissions by day for each CHW

Reports
Case Activity

Case Activity

Show 10 entries

Username	Active/Open Cases (%)	Late Cases	Average Days Late	Visits Last Week
test nick	--	--	--	0
benadeta	75/106 (70%)	31 cases	22.5	32
grace	--	--	--	0
mariam	--	--	--	0
monica	8/75 (10%)	67 cases	32.4	36
jemima	52/87 (59%)	35 cases	44.6	19
yuster gabriel	0/50 (0%)	50 cases	47.0	0
mariamu ally	0/31 (0%)	31 cases	176.2	0
rose	50/202 (24%)	152 cases	139.7	33
dorothy	30/197 (15%)	167 cases	142.3	0

Showing 1 to 10 of 44 entries

Figure 5: CommCareHQ report showing if CHWs are visiting their clients on time

Conclusion

CommCare-ASHA remains Dimagi’s primary focus at this time. We are excited by the progress we are making and the how receptive our partners and potential partners have been. CommCare is a strong fit for the community health programs we see in India which are relatively well resourced, already producing results, but have a strong need for improved workforce management. We expect to exceed our targets by the next reporting period, and have a great deal of activity to report on.



3rd and 4th Milestone Report CommCare ASHA

Neal Lesh, Dimagi Inc.

10/31/2011



Contents

Executive Summary.....	2
Milestone Reporting Questions	3
Framework for CommCare Benefit.....	4
Beta-test Partners	5
Number of Beneficiaries Reached	7
Draft Total Cost of Ownership Model.....	7
CommCare Evaluations.....	8
Study on Benefit of Multimedia to Improve CommCare	8
Detailed Evaluation by Save the Children.....	8
Detailed Evaluation by Real Medicine Foundation.....	9
Organizational Surveys of Beta Test Partners.....	10
CHW interviews and Focus Groups.....	17
Testimonials.....	17
The work of CommCare is also shown in this video produced independently by Save the Children: http://www.youtube.com/watch?v=lgj7jlhyWdc	18
Active Data Management	18
Future Opportunities	19
BMGF-Funded efforts in Bihar	19
BetterBirths study in Uttar Pradesh.....	19
DIV Stage 2 Submission.....	19
Conclusion.....	19



Executive Summary

Dimagi has successfully completed its Stage 1 grant from the USAID Development Innovation Ventures (DIV) fund entitled “Scaling CommCare for Community Health Workers in India”. Highlights of our achievements include:

- Rapidly engaged 11 organizations to start using CommCare, eight of which are already scaling.
- Several evaluations of CommCare showing its potential to dramatically improve the health impact of India’s vast ASHA program.
- In particular, there is strong evidence from the organizational surveys, focus groups and interviews, and testimonials presented below that **clients of ASHAs with CommCare are getting more frequent, higher quality, and more engaging health counseling** than they were getting prior to the introduction of CommCare.
- CommCare is now part of several large projects in India, including two large efforts funded by the Bill and Melinda Gates Foundation.
- A business plan and validated Total Cost of Ownership model for scaling CommCare throughout India, which formed the core of our Stage 2 proposal to DIV.

In this document, we report on the final two milestones from our contract as well as other accomplishments during this period.

Milestone 3: Completion of testing the CommCare platform with 5 organizations.

Milestone 4: Completion of the assessment with the 5 organizations in the use of CommCare during the pilot.

We substantially exceeded Milestone 3 by rapidly engaging 11 organizations in India to beta test CommCare (although 2 are just starting now). Eight of these organizations are already scaling CommCare further, and the remaining three have all expressed enthusiasm for doing so.

Milestone 4 has been achieved through multiple evaluations that Dimagi and our beta test partners have conducted, including:

- A paper on the value of multimedia in CommCare to be presented at the 3rd International Conference On Mobile Communication Technology For Development in February 2012 in Delhi, India (see Appendix A for the accepted draft).
- A detailed evaluation by Save the Children (see Appendix B for full report).
- A detailed evaluation by the Real Medicine Foundation (see Appendix C for full report).
- An analysis of surveys completed by our partner organizations before and after beta tests.
- An analysis of focus groups and individual surveys carried out by a PhD student at the University of Pennsylvania (see Appendix E for preliminary write-up).



- A collection of several testimonials from our partners and the ASHAs using CommCare (see Appendix F for a full list).

As part of Milestone 4, Dimagi also conducted a cost assessment of CommCare resulting in a cost model based on a survey of our beta test partners showing the total cost of ownership of CommCare (see Appendix D for the full cost model).

Several achievements have arisen from our Stage 1 activities that go beyond completing our original Milestones. We have improved our framework to describe the benefit of CommCare, organizing the benefit into four key areas: access to care, quality of care, experience of care, and data-driven management. We developed a new initiative called Active Data Management to take advantage of the data collected by CommCare (see Appendix G for a sample report).

Additionally, our Stage 1 efforts led to several important opportunities for Dimagi to scale the use of CommCare outside of our 11 beta test partners. Of particular note, CommCare has been added as a key component to work being funded with over \$100,000,000 by the Bill and Melinda Gates Foundation in Bihar, including partnerships with CARE, BBC World Service Trust, and World Health Partners. Further, Dimagi has been contracted to deploy CommCare to support a large-scale study in Uttar Pradesh with the Harvard School of Public Health. Finally, we have built off the success of Stage 1 to develop our Stage 2 funding to DIV, which we submitted on Oct 15.

After the success of our Stage 1 activities, Dimagi is eager to continue to expand our work and unlock the tremendous potential of India's ASHA program. We believe we have a unique opportunity to combine at scale an innovative, field-tested mHealth solution, a massive health workforce, a broad base of implementation partners, and rigorous, relevant, and timely research.

Milestone Reporting Questions

Below, we provide answers to the standard milestone reporting questions provided by USAID.

1. Was DIMAGI able to reach milestone as indicated in its initial agreement?

Yes, we initiated a total of 11 beta tests and have assessments covering more than five of them.

2. What were some DIMAGI successes and/or challenges that were encountered during this milestone period? What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

It has been an exciting year and progress has exceeded our expectations. We have rapidly engaged 11 organizations, exceeding our target of five. We have several scale-up possibilities, as described below. Working with smaller NGOs (such as NEEDS) has presented some challenges –while they may have the technical capacity to support CommCare, they are spread thin enough that they need additional



resources to oversee its use. The need for increasing staffing by organizations to deploy CommCare is reflected in our total cost of ownership model.

3. Will these activities be completed? When and/or how? If the activities completed differ from your proposal, what caused these changes? Were activities delayed and if so, why?

All proposed activities have been completed.

4. What stage has the project reached in the research process and what has been accomplished during this milestone period, including any preliminary findings.

We have exceeded our goals and are planning to scale rapidly. See below for findings.

5. How did these accomplishments help DIMAGI reach its project goal? If relevant, what indicators or milestones were used to determine your progress? Briefly describe the activities carried out this reporting period to meet these goals, as described in your proposal.

We are rapidly scaling CommCare in India and have an exciting number of opportunities, as shown in Table .

6. Indicate the number of people reached during the Attendance checks, Surveys and Random Checks; and how these processes were completed. If the project is still in the planning or development stage, indicate what has been accomplished to date.

See below for Beneficiaries.

7. Are there any activities you will not be able to complete during the course of your grant?

All proposed activities have been completed.

8. Is there anything else you want to tell USAID? Please feel free to tell us about any other unexpected issues, concerns or successes you have had during this reporting period.

Please see below.

Framework for CommCare Benefit

During Stage 1, we have developed a new framework to assess the benefit of CommCare, shown in Table 1. CommCare improves care across four areas: **access to care** through client lists on the CHWs' phones and SMS reminders when visits are due; **client engagement** through audio and video clips and improved credibility of the CHW; **quality of care** through checklists, decision support, and delivery of sensitive information through recorded voices; and **data-driven management** through real-time monitoring of the CHWs' activities.

Table 1: Benefits to Mothers and Newborns when CHWs use CommCare

Benefit	Challenges	CommCare Benefit
ACCESS TO CARE	<ul style="list-style-type: none"> CHWs do not enroll all pregnancies¹ CHWs conduct few antenatal visits Two thirds of newborns do not receive a home visit in 24 hours² 	<ul style="list-style-type: none"> Reminders increase timeliness of visit³ Encouragement to increase enrollment-To be Evaluated (TBE)
QUALITY OF CARE	<ul style="list-style-type: none"> Visits are often short and informal Sensitive topics such as HIV are skipped Insufficient training on protocols and referral conditions 	<ul style="list-style-type: none"> Checklists improve performance⁴ Decision support increase adherence to protocols⁵ Video and audio convey sensitive topics in authoritative voice-TBE Audio prompts helps low-literate CHWs⁶
CLIENT ENGAGEMENT	<ul style="list-style-type: none"> CHWs often do not bring flipbooks to meetings CHWs credibility doubted 	<ul style="list-style-type: none"> Audio, images, and video engage clients, and are easy to carry on phone⁷ Phone adds credibility to CHWs
DATA-DRIVEN MANAGEMENT	<ul style="list-style-type: none"> Monitoring reports often delayed Only aggregate data delivered Data quality is suspect 	<ul style="list-style-type: none"> CommCareHQ provides real time monitoring of daily activity of each CHW Dimagi's Active Data Management improves workforce performance-TBE

Beta-test Partners

Our strategy of rapidly engaging organizations with field support and up to 10 free phones to try CommCare has proven highly effective. We found that this approach accelerates the decision making and implementation to lead our partners quickly to a scale-up decision. This strategy follows the best practices of today's Software as a Service (SaaS) companies that is depicted in Figure 1, in which a large pipeline of new users is built by engaging them with a small proof-of-concept at no or low cost, and then additional resources are invested in those most likely to scale utilizing the full value of technology.



Figure 1: New Partner Pipeline

¹ Health Innovation Report, Innovation for Improved Maternal and Child Health Care, BMGF, Dec. 2010

² UNICEF. 2009 Coverage Evaluation Survey – Uttar Pradesh Fact Sheet. New Delhi: UNICEF; 2010

³ B. DeRenzi, L. Findlater, G. Borriello, J. Jackson, J. Payne, B. Birnbaum, T. Parikh, N. Lesh, "Improving Community Health Worker Performance Through Automated SMS", ICTD 2011, to appear

⁴ Gawande, A., *The Checklist Manifesto*. 2009, New York: Metropolitan Books of Henry Holt and Company.

⁵ B. DeRenzi, N. Lesh, T. Parikh, C. Sims, W. Maokla, M. Chemba, Y. Hamisi, and others, "E-imci: improving pediatric health care in low-income countries," SIGCHI 2008, pp. 753–762.

⁶ D. Ramachandran, J. Canny, P.D. Das, and E. Cutrell, "Mobile-izing health workers in rural India," CHI-2010,

⁷ Treatman, D., Lesh, N, Strengthening Community Health Systems with Localized Multimedia, M4D'12 to appear.



Table 2: CommCare deployments in India

State	Partners	Project Focus	Status
Bihar 103M Population 63K ASHAs	Pathfinder Intl.	Family Planning	Div Stage 1 CommCare case management tool deployed with 10 ASHAs starting in Oct'11. Interest in expanding use of Family Planning module
	BBC WST	Maternal and Child Health HW training	Div Stage 1 CommCare training app to be tested in Nov'11, and scaled within Gates-funded initiative
	BMGF, Grameen, CARE, BBC WST	Health sector reform	Result of stage 1: Part of state-wide effort in Bihar with funding from Gates, involving support for 40,000 workers. 500 HW pilot scheduled for Apr'12.
Jharkhand 32M Population	NEEDS	Maternal and Child Health	Div Stage 1 CommCare case management tool deployed with 10 ASHAs in Jan'11. Dimagi helped provide 28 additional phones from Clinton Health Access Initiative (CHAI) and Harvard Medical School (HMS). Seeking support to scale to 150 CHWs in Jharkhand.
Karnataka 52M Population	ICMR	Pediatric HIV	CommCare used to track pediatric HIV patients in research study with 13 CHWs started in Aug'11, in partnership with Karnataka Health Promotion Trust
Maharashtra 112M Population 14K ASHAs	World Vision	Maternal and Child Health	Div Stage 1 case management tool deployed with 10 ASHAs in Jul'11. Scaling with internal funds, with expectation of government uptake if successful.
Madhya Pradesh 75M Population 42K ASHAs	Real Medicine Foundation	Malnutrition	Div Stage 1 case management tool deployed with 5 Community Nutrition Experts (CNEs) in May'11. Strong interest from District Collector in Jabua, interest in scaling to 2400 centers.
Punjab 27M Population	HISP	Clinical protocols for ANMs	Div Stage 1 CommCare clinical support tool deployed started in Sep'11 with 8 health workers. CommCare being considered as addition to mobile reporting tool being used by 5,000 ANMs currently.
Tamil Nadu 62M Population	ICTPH	Risk Assessment	Div Stage 1 case management tool deployed with 10 CHWs in September. Steadily expanding its models to additional areas.
	PHFI	Chronic Care	Wellcome Trust funded 3-year large scale study of CommCare to reduce key risk factors and treat chronic illness including hypertension and diabetes.
Rajasthan 56M Population	Save the Children, HP	Maternal and Child Health	Div Stage 1 CommCare case management tool deployed with 10 ASHAs in May'11. Obtained funding from HP and phones from Nokia to scale and evaluate with 70 ASHAs.
Uttar Pradesh 166M Population 123K ASHAs	CRS, CMO Kaushambi District	Maternal and Child Health	Div Stage 1 CommCare case management tool deployed with 10 ASHAs in Apr'11. Worked closely with Dimagi to design expanded system, planning to scale to 285 ASHAs with internal funds and DIV support for evaluation.
	IntraHealth	Maternal and Child Health	Div Stage 1 training application deployed with 10 ASHAs in Mar'11. Bought 20 phones to trial in second district, building new modules, and controlled study plan. Is part of demonstration project with state-wide scale potential.
	Harvard School of Public Health	Maternal and Child Health	Result of Stage 1: Maternal and child surveillance for Gates-funded study of a Better Births checklist requiring 170,000 births to be monitored.
(Not-specific)	World Health Organization	Disaster response	Div Stage 1 rapid assessment CommCare application. Expect follow on contract from WHO to further develop and field test the application in 2012.



Number of Beneficiaries Reached

Below we show the number of CHWs using CommCare, and the total number of clients tracked. Our partner IntraHealth did not use CommCare to track clients but, rather, as a training and educational tool and thus do not track clients per se. The CHWs, however, cumulatively used the system thousands of times, presumably mostly for their clients and their families.

	Intra	CRS	Save	RMF	WVI	NEEDs	ICTPH	Total
CHWs	37	10	10	10	10	5	?	83
Clients tracked	0	393	206	567	185	76	4364	5791

Draft Total Cost of Ownership Model

An important focus of our evaluation efforts during Stage 1 was on the cost of deploying CommCare. A common concern in mHealth is the lack of information about what is required beyond the cost of the technologies for organizations to deploy mHealth solutions. We are developing several tools to address this for CommCare, including the total cost of ownership (TCO) model. Our current draft is attached as Appendix D.

We developed this TCO model based on responses to a cost survey by six of our Stage 1 partners. The model provides initial estimates for parameters based on our survey and our experience (for items such as cost of the phones, cost of SMS, etc.). With our current parameters, the total cost of ownership is an average of \$93 per year per CHW.

The total cost can be shared by governments, external donors, NGO, or others. The government is currently providing incentives that alone can amount to over \$1,000 per ASHA per year. We conservatively estimate that, beyond incentives, the training, recruitment, and supervision costs amount to another \$500 per ASHA per year, raising the total annual costs to USD \$1,500 per ASHA. At this baseline total cost, CommCare is cost-effective if it improves effectiveness by more than 6%. For example, if CommCare increases enrollment of clients by 10%, then it will have reduced the cost per beneficiary. If CommCare’s checklists increase the thoroughness of visits by 10%, it will have reduced cost per service. Given the preliminary evidence we have access and quality, we are confident that we’ll improve overall effectiveness by at least 20%, leading to a dollar-for-dollar effectiveness ratio of 3.48 for each additional dollar spent on CommCare for an ASHA program. This hypothesis will be confirmed through our randomized controlled evaluations we plan for 2012.

CommCare Evaluations

Study on Benefit of Multimedia to Improve CommCare

Prior to our work in India, CommCare was text-based. One of the contributions of our Stage 1 activities has been to pioneer the use of audio and image clips to improve the value of CommCare, as shown in Figure 2. We are publishing a paper written on this based on qualitative interviews with 8 implementers of the multimedia CommCare deployments (mostly in India) described above to achieve a better understanding of common benefits and challenges introduced by the inclusion of multimedia to CommCare. A summary of the responses is shown in Figure 3. The full paper is attached to this report.



Figure 2: Screenshots from a multimedia CommCare application.

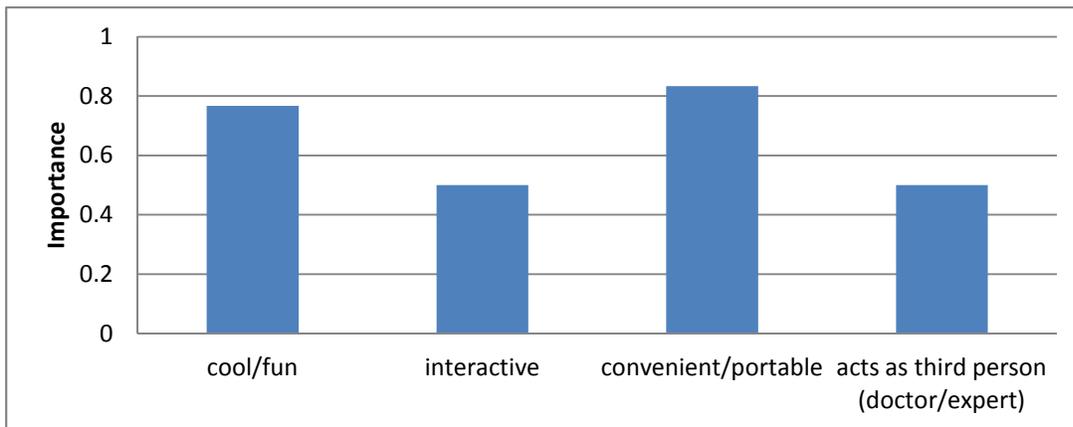


Figure 3: Benefits of using CommCare

Detailed Evaluation by Save the Children

Dimagi Field staff worked with our partners to conduct an extensive evaluation (attached to this report) for the beta test with Save the Children and their local partner, iHAT. Some of the highlight conclusions of this report are:

- ASHAs self-report that their counseling is comprehensive and of higher quality now that they are using CommCare.
- ASHAs are building more credibility and trust amongst fellow villagers, since they are spending more time with daughters of the village and also engaging family members. They are also getting recognized in their villages for being part of an innovative project, which is quite motivating.
- Many ASHAs are comfortable with simple technical troubleshooting. This is especially exciting for project coordinators and Dimagi staff as we plan to scale.

The report also captured several best practices for the use of CommCare, including:

- Involve representative from partner organization on site for recording session and/or a staff member who understands local dialect. Although scripts can be followed, presence of native speakers will ensure integrity of message content.
- The audio-visual content and new technology is a novelty not only for women but also her family members. ASHAs can ask if family members, in-laws and or husbands are available to also join the counseling session along with the pregnant woman before starting the checklist.
- Showing how to use the mobile tool is not enough. It is equally important to reinforce the user's understanding and knowledge of the content, give guidance on how to counsel on these points, and teach this material if necessary. With use, the content itself will reinforce training and ASHAs will adapt the counseling prompts to best suit their needs.

Detailed Evaluation by Real Medicine Foundation

One of our partners, the Real Medicine Foundation (RMF), produced a report based on its first six weeks of use of CommCare. RMF is running the largest malnutrition program in Madhya Pradesh, covering a total of 600 villages across five districts with over 65 field staff. One of the largest problems facing RMF's management team is a timely compilation and analysis of data collected by its Community Nutrition Experts (CNEs). Currently, each CNE uses multiple paper reporting formats covering interactions with the communities and families. These diaries are then collated at weekly meetings; the data is aggregated by the district coordinators and entered into computers by data entry officers on a monthly basis. The lag time from data collection to analysis under optimum conditions is one to two months.

During our beta test, RMF equipped 5 of its Community Nutrition Experts (CNEs) with CommCare. Over the course of six weeks, RMF collected patient information on 306 children using CommCare. The data was analyzed internally by RMF to prepare for the phase of scaling up CommCare to five more CNEs in the next month and to present the findings of the pilot to government officials so that it could scale this up throughout entire districts.

As shown in the report, the data obtained by CommCare allowed RMF to track many important indicators including:

- Submission Times of CNEs: when CNEs were doing their house visits.
- Case Activity and Follow up: how often CNEs are visiting their clients.
- Competition Times: how long they are spending with clients.
- Counseling: Analysis of the case data produces a detailed breakdown of the counseling the family/caregivers of an individual child have received.
- Malnutrition Indicators.
- Survival Analysis.

The letter of support by RMF to CommCare for funding states:

Our initial pilot has produced impressive results. We found that our staff, women who have a basic 5th grade education and very little experience with technology, picked up CommCare right away. They were able to immediately start using CommCare in the field and had great feedback on its use. Not only did it allow them to gather accurate data quicker than their multiple paper forms, but they also felt a sense of pride using the phones in the villages. From the management side we were able to see data instantaneously and could track problems with individual staff members in order to give them targeted support and handholding. Not only did CommCare allow RMF's management team to get an accurate, real-time picture of malnutrition in our villages, but it also gave us a tool to monitor the quality of our work.

Organizational Surveys of Beta Test Partners

We conducted a pre- and post- survey with our beta test partners. We are awaiting some responses on the post-survey, but include a preliminary analysis below. The figures below show responses to several of the questions.

Some of the key conclusions:

- As shown in Figure 11, there is clear consensus that clients are benefiting from CommCare—they are getting more frequent, higher quality, and more engaging health content.
- 100% of the partners who responded to the post-survey say they plan to continue using CommCare, assuming resources are found.
- Several additional uses of CommCare were identified in the post-survey including: HIV programming, particularly in regards to ART adherence, Monitoring of sero-discordant couples, Water and sanitation, Child protection, and Nutrition.
- 100% of the partners who responded to the post-survey indicated excitement of the district officials in the areas they were working in, and two indicated that district officials were actively involved in monitoring the project and planning scale up.
- As shown in Figures 5 and 6, the perceived advantages of CommCare by our partners are aligned with Dimagi's vision, both before and after the beta test. There is some shift after using CommCare to more focus on the ASHAs' performance than on their access to information and

skills. The checklists and our ability to monitor them had a clear impact on ASHAs doing longer and better visits.

- Especially in the post-test results, there is concern about practical issues—justifying the cost of the phones and supporting the training and use of CommCare. This points to the need for rigorous evaluation of the benefit and cost of CommCare.

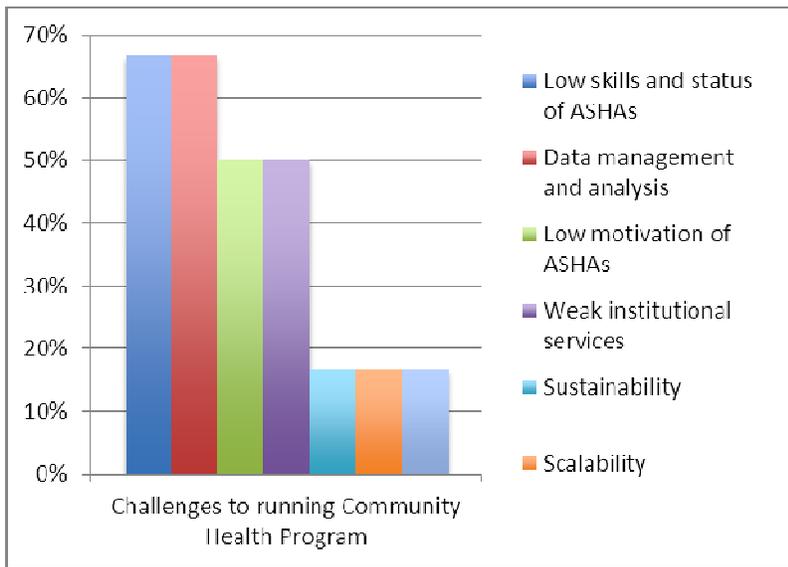


Figure 4: Pre-beta test survey answers on challenges to running CHW program

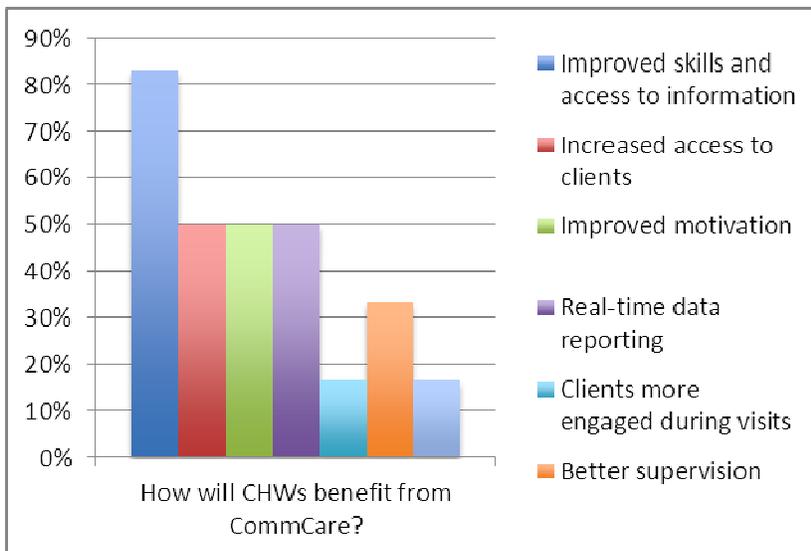


Figure 5: Pre-beta test survey answers on how CHWs might benefit from CommCare

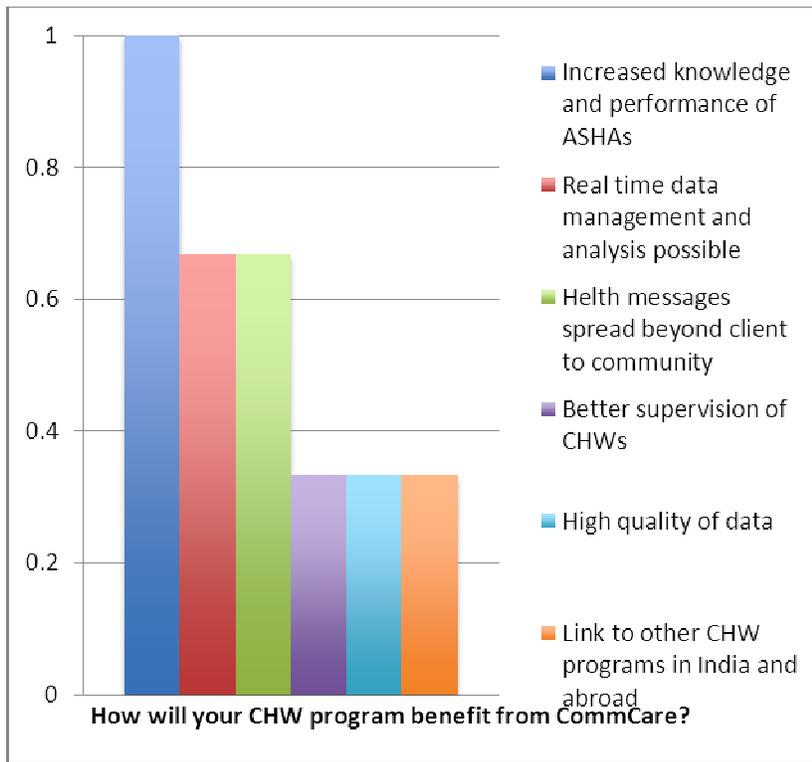


Figure 6: Post-beta test survey answers on how CHWs might benefit from CommCare

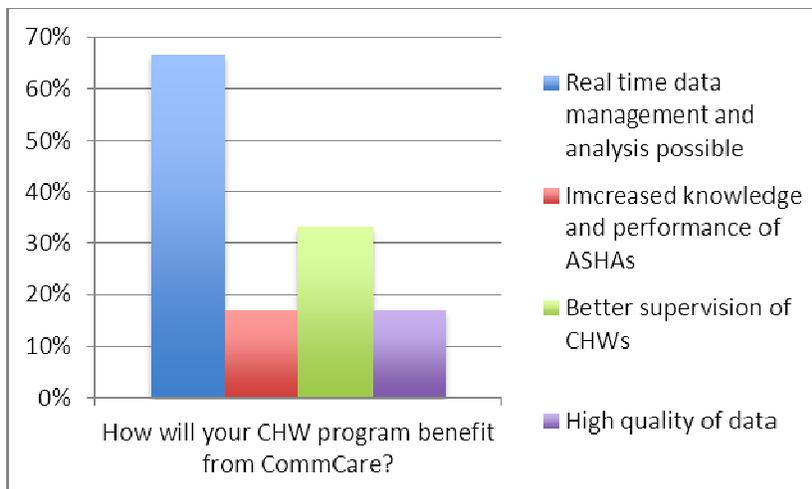


Figure 7: Pre-beta test survey answers on how the program could benefit from CommCare

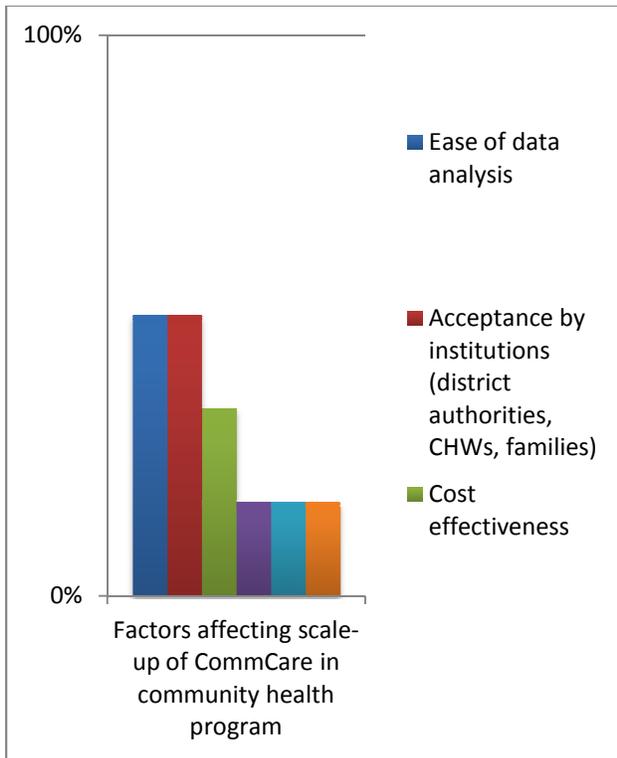


Figure 8: Pre-beta test survey answers on key factors for scale up

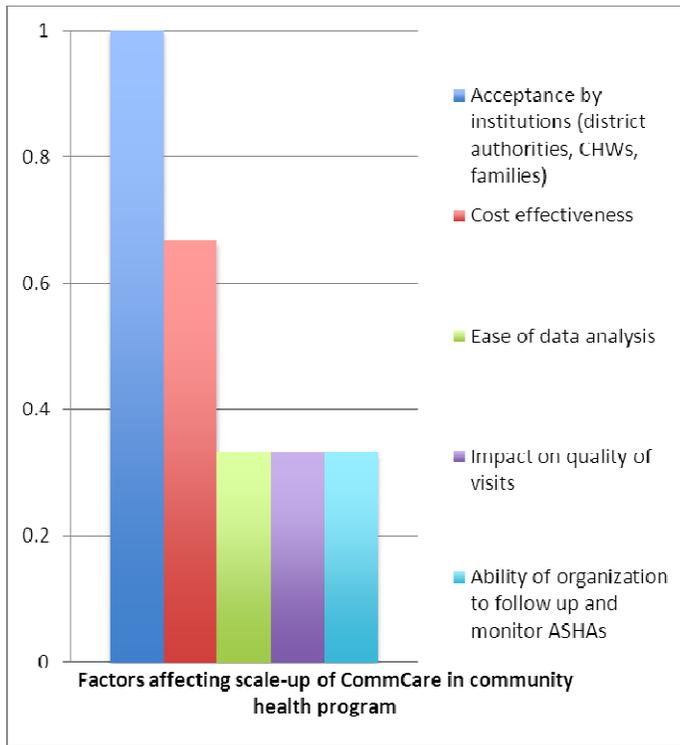


Figure 9: Post-beta test survey answers on key factors for scale up

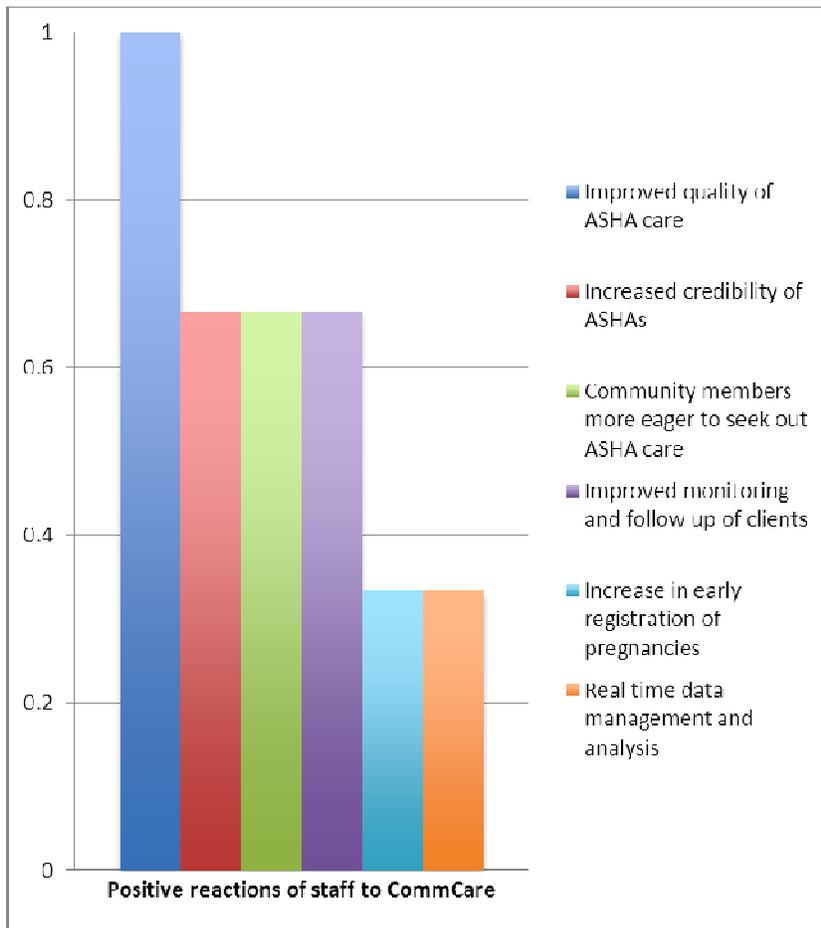


Figure 10: Post beta test answers to positive reactions from ASHAs

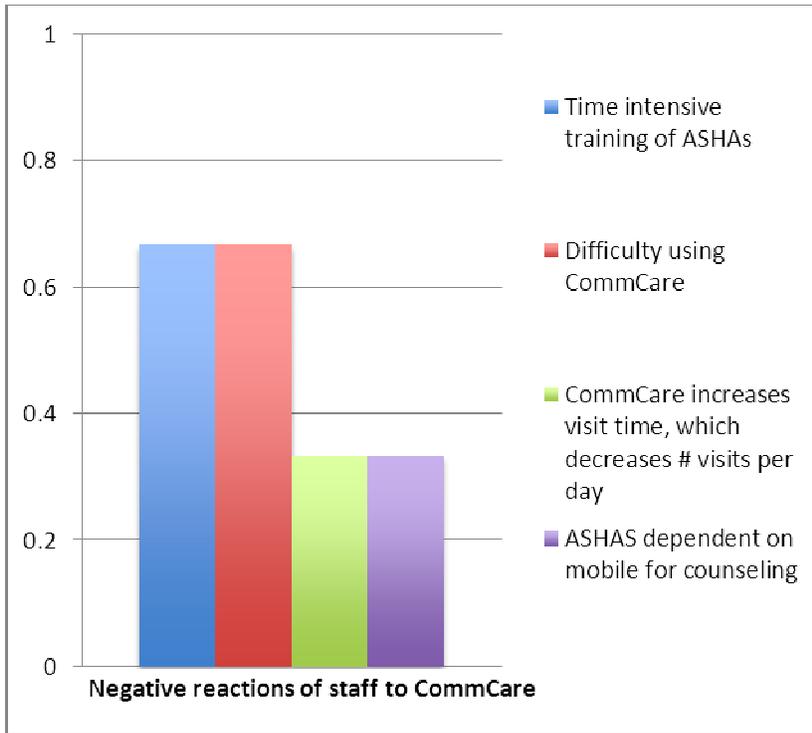


Figure 11 Post beta test answers to negative reactions from CommCare

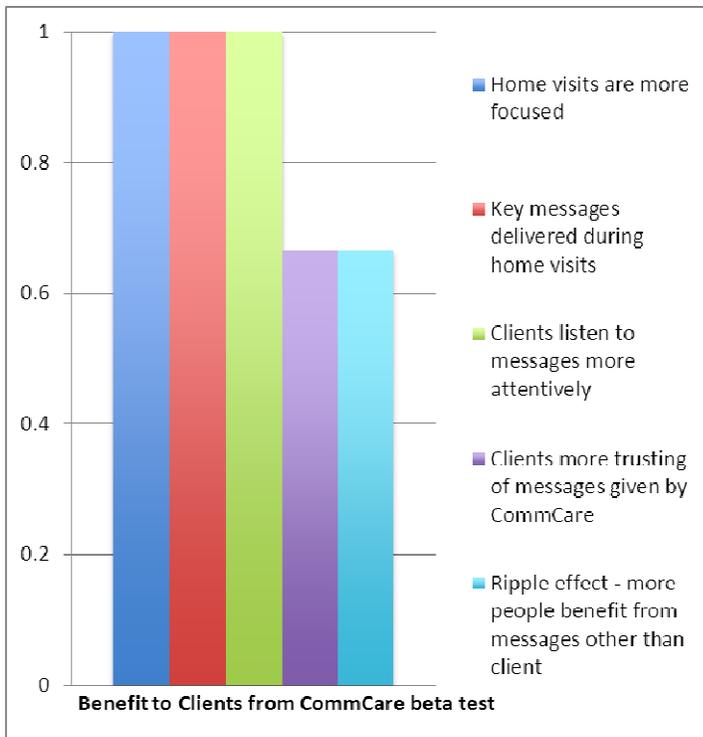


Figure 12: Post survey answers to benefits to clients of CHWs using CommCare

CHW interviews and Focus Groups

Deepti Chittamuru, a PhD student at the University of Pennsylvania, spent several weeks with our partner, NEEDs, assessing CommCare through focus groups with ASHAs as well as structured one-on-one interviews with six of them. A Dimagi field engineer has conducted several more structured interviews at two of our other sites. Appendix E shows her preliminary results. The highlights include:

- CommCare helped ASHAs be persuasive with their clients.
- CommCare helped start conversations about sensitive/taboo topics like RTIs/STIs and HIV/AIDs.
- CommCare improved the credibility of the ASHAs.
- CommCare was highly preferred as a useful intervention of the ASHA compared to alternatives that were presented to them.

Deepti also made several useful recommendations, including that we devise a version of CommCare that engages others besides the pregnant women directly.

Testimonials

As shown in Appendix F, we have collected a large number of positive testimonials from our users. These include:

“After seeing CommCare many women are convinced to get their ANC check-ups done. They think whoever is talking in the phone must have also benefited and that is why she is sharing the good information with us.” ASHA from Kaushambi, Uttar Pradesh

“Before, women in the village thought that we had nothing better to do, so we came to their homes to pass time. But now they don’t say that. They see that we’re working. They see how we’re working better with the phones.” ASHA from Kishangarh, Rajasthan

“One pregnant woman came to meet me secretly at the Anganwadi Center because she wanted to see CommCare. She had heard from other women that I had some information for pregnant women in my phone. Her husband is an alcoholic and he did not want me to show the program to his wife. That woman came to see the application at the Anganwadi Center two times secretly, without telling her husband.” ASHA from Kishangarh, Rajasthan

“Before, if we met a woman on the road, I would talk to her for a couple of minutes and consider that as part of my quota or work. Now I sit down and go through each point. Nothing gets missed.” ASHA from Kishangarh, Rajasthan



The work of CommCare is also shown in this video produced independently by Save the Children: <http://www.youtube.com/watch?v=lgj7jlhyWDc>.

Active Data Management

Our Stage 1 partners are enjoying a new level of visibility into their CHWs' performance. Supervisors can log onto CommCareHQ and view each CHW's performance including daily activity, number of clients, length of visits, and follow-up rates to help enable supportive supervision. We have begun to formalize a practice of data-driven results that we are calling *Active Data Management* (ADM). For any project utilizing ADM, the Dimagi field team produces short weekly summaries of CHW activity, a longer weekly report identifying trends as well as CHWs performing especially well or poorly, and monthly reports on health indicators. This information can be used to communicate performance back to the CHWs and program managers and promote data-driven interventions and recognition.

A portion of an ADM report is shown in Figure 13, and a sample is shown in Appendix G.

ADM Monthly Summary Report

Form Analysis (inactive CHWs are excluded here)

(by form)	Form Submissions		Form Completion Time
	Total	Average/CHW	Average time/form
All forms	174	17.4	-
Registration	71	7.1	11:27
Checklist	72	7.2	20:57
Birth	29	2.9	0:30
Cancel	3	0.3	0:58

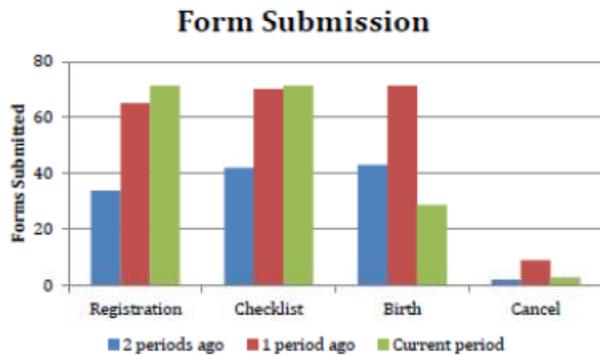
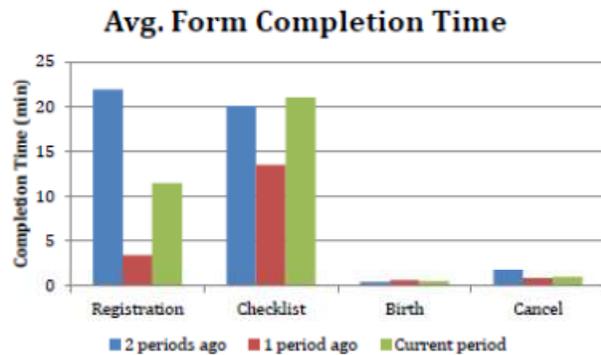
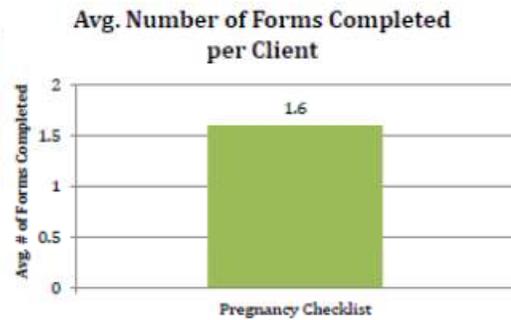


Figure 13: Portion of an Active Data Management Report



Future Opportunities

Our work with Stage 1 partners has directly led to several new opportunities for Dimagi.

BMGF-Funded efforts in Bihar

Based on the success of our DIV 1 efforts, CommCare has been chosen by the Bill and Melinda Gates Foundation (BMGF) to help support its \$100,000,000-worth of grants for health sector reform in Bihar. In partnership with the Bihar government, this effort is seeking to cover 40,000 health workers in the next 5 years and eventually be state-wide. Dimagi is working closely with CARE to run a large pilot and rigorous evaluation of CommCare with approximately 500 users in 2012, the BBC World Service trust to develop a CommCare module to train health workers, and the Grameen Foundation to integrate CommCare and the MOTECH platform to create an mHealth platform that includes job aids for health workers, outreach to end clients via voice and SMS, and an electronic medical record system.

BetterBirths study in Uttar Pradesh

Based on the success of our DIV 1 efforts in Uttar Pradesh, CommCare has been chosen by the Harvard School of Public Health as the data monitoring platform for a large study in Uttar Pradesh to test the effectiveness of a paper checklist to be used for institutional deliveries designed by Atul Gawande and the World Health Organization. CommCare will be employed as a maternal and child mortality surveillance to monitor over 170,000 births in this \$14,000,000 BMGF-funded study.

DIV Stage 2 Submission

Dimagi submitted a proposal for Stage 2 funding on Oct 15, 2011. We proposed a rigorous evaluation of CommCare's health impact and cost effectiveness in two large scale studies designed by our research partners from Harvard Business School, Mathematica Policy Research, and Maulana Azad Medical College. We presented a business plan that included scaling by continuing our strategy of rapidly engaging organizations in order to reach our target of 50 organizations in India using CommCare within two years. We project that we will become cash flow positive within three years with 25,000 CommCare users. Our proposal leverages over \$1,500,000 in investments directly in CommCare evaluation and scale up over next two years.

Conclusion

We thank USAID DIV for its support of CommCare thus far and for the potential to continue with its support to achieve scaled deployment in India. This funding from USAID is the first funding Dimagi has received specifically to spread CommCare to other organizations, and it has significantly advanced our product, as well as our positioning, in India. We are proud of what we have been able to accomplish to date and the world-class team of implementation, business, and research partners we have been able to attract for this effort.

Our Stage 1 activities have demonstrated the demand for CommCare among organizations in India, and the evidence clearly indicates that clients of ASHAs with CommCare are getting more frequent, more



thorough, and more engaging health counseling than they were getting prior to the introduction of CommCare. We believe that our approach, which combines innovative technology, rigorous research, sophisticated scaling and pipeline development, financial feasibility, and health impact, represents an incredibly strong fit for the DIV program and, if we can continue to scale, we will improve the lives of millions of people living in extreme poverty.