TeamCare Application: Process Documentation
# Table of Contents

**BACKGROUND**

About SNEHA .................................................. 4
About Research, M&E, and IM at SNEHA .................. 4
Integration of Technology in Public Health Interventions at SNEHA .................................................. 4
Purpose of this Document ..................................... 5
About SNEHA Centres ........................................... 5

**PART 1: TeamCare Application Ideation and Development**

Findings from Focus Group Discussions .................. 6
TeamCare Application Development ......................... 8
Key Features of TeamCare ...................................... 9
TeamCare Architecture ........................................ 9
Implementation .................................................. 10
Challenges and Learning ...................................... 10
Impact of TeamCare for SNEHA Staff ...................... 10
Next Steps ....................................................... 10

**PART 2: Using TeamCare** .................................. 11

The Application ................................................ 10
The Portal ....................................................... 19

**FIGURES**

Figure 1: TeamCare Features ................................ 7
Figure 2: TeamCare Architecture ............................ 8

**ANNEXES**

Annex 1: SNEHA Visit Schedule Protocols ............... 26
Annex 2: Application Development Process ............... 27
List of Abbreviations

APD: Associate Program Director
BI: Business Intelligence
CAGs: Community Action Groups
CHVs: Community Health Volunteers
COs: Community Organizers
FGDs: Focus Group Discussions
ICDS: Integrated Child Development Services
IDIs: In-Depth Interviews
IM: Information Management
MCGM: Municipal Corporation of Greater Mumbai
M&E: Monitoring & Evaluation
PCs: Program Coordinator
POs: Program Officers
SC: SNEHA Centres
Background

About SNEHA
The Society for Nutrition, Education and Health Action (SNEHA) is a secular, Mumbai-based non-profit organization that works with women, children and public health and safety systems. Its innovative work in urban informal settlements aims to reduce maternal and neonatal mortality and morbidity, child malnutrition, gender-based violence and improve adolescent health. SNEHA’s two-pronged approach recognizes that in order to improve urban health standards, its initiatives must target both care seekers and care providers. It works at the community level to empower women and slum communities to be catalysts of change in their own right and collaborate with existing public health systems and health care providers to create sustainable improvements in urban health. As an organization, SNEHA seeks to consolidate its learning, create strong domain knowledge, and develop scalable models of intervention which can be taken up by either the government or other nonprofits.

About Research, Monitoring & Evaluation, and Information Management at SNEHA
The Research and Monitoring & Evaluation (M&E) Domain of SNEHA aims to create evidence for models of urban health intervention that can be scaled and replicated through the government and other NGOs, thus increasing their impact. In addition to evaluating the impact of interventions with regard to the stated objectives of the program, the M&E division is working with the information management (IM) team to help design and implement an efficient business intelligence (BI) system. In collaboration with M&E, the IM team seeks to develop useful and innovative solutions for SNEHA programs in order to maximize functional efficiency.

Integration of Technology in Public Health Interventions at SNEHA
Throughout the world, Community Health Workers are increasingly using mobile technologies in order to deliver health-related services in the fields of maternal and child health, usually to collect health data from the field and provide health education through use of videos and other resources. Through using these technologies, organizations have seen improvement the quality and quantity of services that health workers are able to provide to the surrounding community, while also facilitating program monitoring and evaluation.\(^1\) SNEHA currently has integrated some technological tools within its public health interventions with different levels of success. The main application used, hugely successfully, is CommCare, a data collection and management tool used to track longitudinal health data records on community members. In SNEHA community organizers (COs) use CommCare to collect data to monitor women and children’s health using Android smartphones, enabling them to access it immediately at the field level which aids them in determining program priorities for beneficiaries. Information can be collected offline in the application and sent to CommCare’s cloud server when connected to a cellular network. The data is then downloaded from the cloud server to SNEHA’s staging on-premise database. The CommCare application can be customized to collect multiple data points depending on the needs of SNEHA’s monitoring programs.

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A study conducted by SNEHA in 2016 demonstrated that using CommCare to collect data for a child health and nutrition program in Dharavi, Mumbai, led to significantly fewer errors in the diagnosis and screening of acute malnutrition. Evidently, technology can be a powerful tool to increase the efficiency and accuracy of COs and aid their completion of programmatic tasks. Given this success, SNEHA undertook to explore further opportunities to develop and integrate technological tools to support program implementation, development and monitoring and evaluation across its different programs.

Purpose of this Document
The first part of this document focuses on the ideation and development phase. It aims to help SNEHA and potentially other organizations to understand the development process of the TeamCare Application from the initial idea through the development, rollout and pilot phases of the project. It outlines the reasons behind the introduction of the application and its pilot launch within the SNEHA Centres program, as well as the steps taken to develop the application, the challenges and the plans for its further integration into SNEHA’s work.

The second part of the document focuses on using TeamCare, laying out the application’s features in detail, how it is used within SNEHA programs and acts as a user guide to support day to day use.

About SNEHA Centres
The SNEHA Centres program focuses on a lifecycle approach, delivering integrated care services and influencing health-seeking behaviors surrounding maternal and newborn health, child health and nutrition, adolescent health, sexual and reproductive health and prevention of violence against women and children. The delivery of these bundled interventions is executed through a multifaceted strategy of working with individuals, groups, and systems through home visits, group meetings, community events, and the formation of community action groups. Maternal and newborn health interventions focus on early registration of pregnancy through monthly menstrual surveillance, encouraging uptake of antenatal services, referral of high-risk cases, maternal nutrition counseling, anemia prevention & treatment, promoting institutional delivery, and proper care of newborn. Child health and nutrition activities address growth monitoring, infant and young child feeding practices, immunization, and morbidity care. Adolescent health interventions comprise of life skill sessions and nutrition counseling. Reproductive and sexual health interventions include awareness and availability of modern contraceptives for birth spacing and limiting. The program also works with public health (Municipal Corporation of Greater Mumbai) and nutrition (Integrated Child Development Scheme) systems to provide and improve quality and access to services. Community organizers are the frontline workers for intervention execution, who are supported and supervised by program officers (POs) for effective reach and delivery. Middle and higher-level management leads by strategic planning, liaising, and advocacy.

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Part 1 - TeamCare Application: Ideation and Development

Despite the positive impact, following the introduction of CommCare and the automation of SNEHA’s data collection systems, little had been done on the technology front in SNEHA. Therefore, SNEHA wanted to explore further the potential of technology to maximize organizational impact, particularly to help COs perform program activities more efficiently and effectively.

With the aim of understanding the implementation challenges faced by the foot soldiers of SNEHA, in 2018, focus groups discussions (FGDs) were conducted in each of the following four programs: Healthy Cities Project, SNEHA Centres, Aahar, and Maternal and Newborn Health program. Each focus group discussion included 15-20 participants that were a mix of COs, POs, and Program Coordinators. Associate Program Directors of some programs participated in the discussions. Additionally, in-depth interviews (IDIs) were conducted with three Anganwadi workers and one supervisor from Integrated Child Development Services (ICDS) to understand the public systems mode of data collection and data processing given that SNEHA works in partnership with the public systems. The idea was to explore and implement technological solutions to overcome the identified implementation challenges.

Findings from Focus Group Discussions

Following the FGDs, the data were analyzed for common themes, particularly focused on those which could be tackled through technology. These included:

- The amount of time spent in following up on cases to ensure all needed home visits are completed (i.e. each visit may require the CO to return to a house on multiple occasions before they find the person at home and are able to implement all the visit protocols)
- CommCare does not allow for these multiple attempts to undertake visits to be captured and only allows the data to be entered once a visit is complete
- CommCare has no function for prompting or reminding staff of upcoming tasks such as visits
- The importance of a range of materials for use with people in the field, including audio-visual materials due to high numbers of people with limited literacy levels

TeamCare Application Development

SNEHA was approached by CitiusTech, a healthcare IT company who, as part of their CSR initiatives, were keen to fund the development of technology that would facilitate the implementation of SNEHA’s programs. The FGD results were shared and discussed with the funder, and the challenges and suggestions were carefully considered, using the lens of where solutions could be found in technology. Home visits were a key area that had been highlighted as a challenge, but also as an area where a technological solution might be possible, and this was identified as the focus area for the project. CitiusTech selected Designscape to work with SNEHA’s IM Team to develop the SNEHA TeamCare Application which would help COs to plan and organize their workload by generating visit schedules based on SNEHA protocols, removing the need for these to be planned manually.
SNEHA Centres was identified as the program in which the application would be piloted as the application is hugely relevant to their work, and also a new project cycle was due to start in April 2019, providing a perfect platform on which to pilot the application. Of the different visit activities undertaken, the 5 most critical were selected to be part of the pilot, and the SNEHA Centre program team provided the developers with a brief on the process of monthly planning, methods of visit scheduling, visit protocols (see Annex 1) and challenges in scheduling future visits. The IM team also shared information the developers about the current data architecture, specifically about the way that data is captured on CommCare and stored on SNEHA’s local databases. This allowed Designscape to understand the features already available on CommCare and design the data architecture for TeamCare to ensure it would be compatible with the existing system. SNEHA M&E, IT and Programme teams also actively inputted into the development of display preferences, case logic etc. to ensure they met program requirements. Full details of the development process can be found in Annex 2.

The app was released on June 17, 2019, to two pilot groups at the SNEHA Centre in Chembur: 5 COs operating in the Community Resource Centre in Janta Nagar, and 7 COs in Indira Nagar. These were chosen due to being at the start of a new project cycle, and also as they are centres in which SNEHA delivers programs directly rather than with partners, making rollout of a new approach easier to manage. COs were given two days of training in using TeamCare, and access it through the Android tablets already in use for CommCare and no additional hardware was required.

**Key Features of TeamCare:**

![Diagram of TeamCare features](image)

**Figure 1: Features of TeamCare**

The TeamCare app is fully functional offline; however, information (such as the day’s schedule, or notifications from the system administrator) can only be received and synced when connected to the
Internet. To receive these and to ensure the data staff are accessing remains up to date, the device must be connected to WiFi at least once a day so that data can be synced to the CommCare server. This data is then downloaded and cleaned overnight on SNEHA’s internal server using Talend (ETL Tool). The clean data is then synced to the TeamCare cloud which generates new schedules etc. based on the updated data, to be downloaded to the app when the user connects the device to WiFi.

**Figure 2: The Architecture of TeamCare**

TeamCare is the intellectual property of SNEHA and an MOU is in place to guarantee the security of data between the TeamCare and CommCare systems.

**Challenges and Learnings**

In the early stages of the pilot there were some technical issues for 5 COs from Janta Nagar. Upon logging in, they could only view a white screen and were unable to access the app without reinstalling it. However, the error could not be simulated by the technical support team and it has now been resolved.

Another issue occurred when a variable changed in the data protocols. The data based on the new variable was synced to user devices, and the data based on the old variable was deleted from the server. However, the data was not removed from the user devices, leading to some devices still trying the sync the old, now unavailable, data. It was unclear why this was happening, and additional support needed to be sought from the developer who was able to test a number of devices and resolve the problem.

Additional challenges and learnings will be added following the full review of the pilot.

**Impact of TeamCare for SNEHA Staff**
This section will be added following the full review of the pilot.

**Next steps**
The initial pilot phase of this project comes to an end in October 2019, following which a full review of challenges and learnings will be undertaken and work will be done to resolve outstanding practical and technical issues. Following this, an assessment will be made on further rollout TeamCare, including the potential to scale up its usage to other SNEHA programs, to ensure it is included in plans and budgets for the FY 2019/20 as needed.
**PART 2: Using TeamCare**

TeamCare consists of two interfaces; the application for use on android phones and tablets predominantly by field staff, and the portal, accessed through a computer for managers, program officers and administrators. This section of the document gives a step by step guide of the functionality of each interface.

**The Application:**

The TeamCare Application consists of three main components:

- Visit scheduling – giving staff information about pending visits they need to undertake
- Case intervention information – about past visits to each beneficiary
- Resources – to support staff in the field

Once a case (a person’s information) is entered into the CommCare system, and this system is synced to the TeamCare server, the TeamCare application immediately does two key things:

1. Generates all follow up appointments/visits with the subject up to the end of the current project (April 2021) based on the visit protocols (see Annex 1)
2. Enables staff members to view the case details and history of their allocated cases

No case information is entered into TeamCare. On any visit the CO will need to use both applications; TeamCare to identify the person/household to visit, and to update the visit status, and CommCare to enter the details of the content of the visit, status of the case, follow up/next steps needed with the person etc.

**Dashboard and Menu:**

Upon logging in, the first screen is the dashboard which shows:

1. Visits scheduled for TODAY
2. Visits PENDING (this is visits that have previously been left incomplete or undone, shown longest pending to most recent)
3. All visits are sorted by household number (HH no.) (as per the numbers given to households through SNEHA programme’s mapping), and the pending visits are also sorted in date order. Sorting by HH no. allows COs to see clearly where there are multiple visits due in the same HH or neighborhood, enabling them to plan their work
4. Date and time of last data sync – to enable staff to check that their data is up to date
When the CO visits the household/person listed they click on the entry on the dashboard to report the visit.

Update the visit status in the drop-down menu – completed, unsuccessful or cancelled.
If visit was unsuccessful or cancelled, a reason must be selected

Select Option.....
Situational reasons-fluid, local transportation problem, festivals etc.
Unplanned/last minute activities of program (events, campaign, meetings, training etc)
Leave of CO
Planned activities of the program (events, campaign, meetings, training etc)
Workload

Save the information.

Report a Visit

Zikra Ansari
Child (0 to 2 years)
Scheduled On : 18-Oct-2019
Visited On
18-Oct-2019
Status
Completed

SAVE
TeamCare Application Menu - lists all the functions of the app.

1. Schedule a Visit
This function is used to schedule an additional visit outside the standard protocols (i.e. where a CO feels that additional follow up is needed).

Select person to be visited by name or household ID.
All other information (case type, community, house number) automatically populates

Select the date for the visit and save.
2. Forthcoming Visits
This function lists all upcoming visits from the current date to end of project. Visits are listed by date and are sorted by HH number. The search function allows COs to search for people by name or HH number, allowing them to search for an individual’s record or for all forthcoming visits to the same household. By combining visits (i.e. where a pregnant woman already has a 0-2 child, both of which require visits) the CO maximizes their time but also reduces the disruption that multiple visits might create for a household.

3. Past Visits
This function lists all past visits by date. COs can filter by month if they need to look back at visits from a specific day, and, as above, search by name or HH number to find particular visit records.
4. Search for a Case

This function gives a list of all cases in the COs portfolio, listed alphabetically by name, and giving the HH number.

If we click on an entry the record of that case comes up in full, with the date of the next scheduled visit at the top, and all past visits listed below.

The search function allows COs to search for cases by name or HH number.

Entries can also be filtered by case type.
5. Schedule for a Case
This function generates the same list as ‘search for a case’. Again, this list can be searched by name, HH number or case types and when an entry is selected all forthcoming scheduled visits will be shown for that person or household.

6. Video Library
The video library is made up of a range of audio-visual resources to support field staff in their work. As many of the project beneficiaries have low levels of literacy, written materials are not a useful tool for emphasizing and reiterating messages given through discussions. However, showing videos has been found to help in cementing messages and helping people understand the importance of what the field staff are communicating. TeamCare has a range of different videos, arranged into 3 categories based on the types of visits COs are undertaking (pregnant woman home visit, child (0-2 years) registration and home visit, pregnant woman registration) that are pre-downloaded and can be played without internet access. SNEHA are able to carefully select the chosen videos in advance to ensure they are appropriate and in line with the organization’s messaging and approach and field staff can access and use these quickly and easily in their day to day work to reinforce health messages.

If downloaded videos are not played within 29 days, YouTube will remove them from the device, therefore staff need to monitor their usage of the videos and download them again regularly as needed.
7. Contacts
The contact page in TeamCare contains the contact information (email and phone number) of the COs wider team (Managers etc.), allowing them to contact them quickly and easily if needed. Clicking on the person brings up the contact menu and allows the CO to call the number directly from the app without needing to exit and go into the phone’s contact list.

8. Notifications
The notifications function allows SNEHA Managers and IT administrators using the portal version of TeamCare to communicate messages easily to all field staff. The notifications only update when the device is connected to the internet so feature cannot be used to give immediate messages and updates, but can be used to give advance notice of things such as system updates etc. Application users can only receive messages, they cannot send notifications.

9. Change Password
System passwords are automatically generated but users can change their password using this function if needed.

10. Sync Data
Although the system automatically syncs every evening, occasionally if the data hasn’t synced properly (as can be monitored by the last sync date/time on the dashboard outlined above), COs may need to update their application, so the manual sync function allows them to do this. The device must be connected to the internet for the sync to take place.

11. Logout
In general staff are asked to simply close the application, NOT to logout, as the application needs to run in the background. However, the logout function is there as from time to time it is necessary for staff to logout to allow for updates etc.
The Portal:
The TeamCare Portal is the back-office function of TeamCare. It is used by managers and system administrators for two main purposes:

1. To make changes to the information available in the app
2. To view reports of the data collected through the app

The portal can be accessed at: www.snehateamcare.com, and users need to login with their username and password.

Home Screen:

![Home Screen Image]

Portal Menu:

Users:

Clear

![Portal Menu Image]

Add additional communities

Current Communities where app is used

List of all Users

Add new users

View user login information

Enter new user details and save
Master

The ‘Master’ menu has three parts:

- **User Profiles** – will display all user information (including Username, mobile no, email, reporting supervisor, community name etc.)
- **Case Types** - list of the 5 case types in current system (MWRA (Married women of reproductive Age), Pregnant woman (High Risk), Child (0 to 2 years), Pregnant woman Registration, Pregnant Woman Home visit) with visit schedule to be generated – this cannot be amended through the portal
- **Reasons** - list of current options for unsuccessful / cancelled visits – additional reasons can be added through the portal by clicking the ‘add’ button
**Notifications:**
In this menu manager and administrators can enter messages that they wish to share with COs. These messages will then appear as notifications on the COs dashboard in the application on their device.

**Videos:**
New videos and new categories of video can be added in the portal by Administrators. These will then be uploaded to users’ devices when the app syncs and updates and the new videos will be available for COs to download to their YouTube app so they can be viewed offline.
Contact:
The contact menu shows a list of all contacts currently in the system with their details, and both new contacts and new contact types can be added by system administrators.

- Contact Type: Can search by profile type
- Details: All contact details, including role profile, email address and contact phone number
- Add Contact: Add details of new contact and save
- New Contact Type: New contact types can be added
- Save: Add contact type and save
Manual Sync:
Like the application, the portal also has an option to ‘manually sync’ in case additional syncing is required. This may be needed if a mismatch occurs between the data in the SNEHA database and TeamCare database. Generally, syncing between the two databases takes place automatically overnight.

**Instructions for Manual Synchronization**

Use the MANUAL SYNC option in the following cases:
- The auto-sync that runs every day has failed
- A new community has been created with a large amount of data (more than 100 cases added in a day)

The MANUAL SYNC process has to be completed in 2 steps, viz.,

**Step 1:**
- Click Here to Update Case Status

**Step 2:**
- Click Here to Sync New Cases

**IMPORTANT:**
- Please complete STEP 1 and proceed to STEP 2 only after that
- Please make sure all the required data cleaning process at CommCare is completed before MANUAL SYNC
- The MANUAL SYNC process can take a few minutes to complete, please wait till the confirmation screen is displayed

Reports:
The reports menu has two components: community scheduled and monthly report.

- Schedule Report allows a report on the status of all scheduled visits, by community, by CO and by status.
- Monthly report allows a more detailed report of visits by case type and can break this data down by CO to give the details of each CO’s work.

All reports can be exported to excel to allow the data to be viewed and analyzed.
Community Scheduled report shows data by community and CO

All data can be exported to excel

Data can be filtered by CO

Report shows number and % of visits completed / incomplete by case type

Data is also shown in graph formats
Automated Weekly Report
When TeamCare was initially introduced an administrator was responsible for generating and collating a weekly report summarizing the key visit data from TeamCare plus updates on completed and upcoming work. After the initial period of rollout, a request came for the data in the report to be presented differently, to include a breakdown of:

- Visits scheduled, pending and completed by case types in each community
- Visits scheduled, pending and completed by CO / User in each community

This report is set up in the system and is automatically generated in excel on a weekly basis (on a Sunday) and emailed to a pre-set list of stakeholders.
Annex 1: SNEHA Visit Schedule Protocols

SNEHA Centres primarily seek to serve the community with regard to maternal health and nutrition, child nutrition, and preconception care. Visits are thus scheduled based on protocols created by the program which categorize the beneficiaries of SNEHA Centre Programs into five different case types: pregnant woman, pregnant woman who has not yet been registered at a health facility, child (0 to 2 years), and MWRA (married woman in reproductive age), and pregnant woman with high risk. The schedule is generated if the chosen start date variable has been inputted by the CO previously; if the base date for any case is not recorded, no visits will be scheduled.

The 5 protocols below were selected for the pilot of TeamCare.

<table>
<thead>
<tr>
<th>Case Type</th>
<th>Base Date (Variable in Database)</th>
<th>Frequency of Visit</th>
<th>End of Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) All Pregnant woman registered</td>
<td>Last menstrual period (lmpdate)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; month; 7&lt;sup&gt;th&lt;/sup&gt; month; every 15 days after 8&lt;sup&gt;th&lt;/sup&gt; month; every other day after 9&lt;sup&gt;th&lt;/sup&gt; month</td>
<td>After delivery</td>
</tr>
<tr>
<td>(2) Pregnant woman not registered at hospital</td>
<td>Registration in SNEHA programs (started_time)</td>
<td>Every 7 days</td>
<td>After registration at antenatal care facility (case becomes type 1)</td>
</tr>
<tr>
<td>(3) Child (0-2 years)</td>
<td>Date of birth (childdob)</td>
<td>Twice a week during 1&lt;sup&gt;st&lt;/sup&gt; month; once every 15 days between 2&lt;sup&gt;nd&lt;/sup&gt; and 6&lt;sup&gt;th&lt;/sup&gt; months; once a month between 7&lt;sup&gt;th&lt;/sup&gt; and 24&lt;sup&gt;th&lt;/sup&gt; months</td>
<td>After child reaches age 2</td>
</tr>
<tr>
<td>(4) Married Woman of Reproductive Age (MWRA)</td>
<td>Registration in SNEHA programs (started_time)</td>
<td>Every 2 months</td>
<td>Case closed when woman no longer of reproductive age</td>
</tr>
<tr>
<td>5: Pregnant woman – high risk</td>
<td>Last menstrual period (lmpdate)</td>
<td>Every month until 6&lt;sup&gt;th&lt;/sup&gt; month; every 2 weeks between 7&lt;sup&gt;th&lt;/sup&gt; and 9&lt;sup&gt;th&lt;/sup&gt; months</td>
<td>After delivery</td>
</tr>
</tbody>
</table>
Annex 2: Application Development Process

<table>
<thead>
<tr>
<th>Stage of Work</th>
<th>Activity Description</th>
<th>Team Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Focus Group Discussions to determine needs of COs</td>
<td>SNEHA staff</td>
</tr>
<tr>
<td>2</td>
<td>Conceptualization of app based on FGD findings</td>
<td>CitiusTech and SNEHA (SNEHA Centre and IM team)</td>
</tr>
<tr>
<td>3</td>
<td>Brief regarding monthly planning, visit scheduling</td>
<td>SNEHA Centres team</td>
</tr>
<tr>
<td>4</td>
<td>Provision of visit scheduling protocols for the 5 selected case types</td>
<td>SNEHA Centres team</td>
</tr>
<tr>
<td>5</td>
<td>Sharing CommCare database details, tables, and variables</td>
<td>SNEHA IM team</td>
</tr>
<tr>
<td>6</td>
<td>Testing data sync in various conditions</td>
<td>SNEHA IM team and Designscape</td>
</tr>
<tr>
<td>7</td>
<td>Defining community, COs, case types, and scheduling protocols on server</td>
<td>Designscape</td>
</tr>
<tr>
<td>8</td>
<td>Testing</td>
<td>SNEHA IM team and Designscape</td>
</tr>
<tr>
<td>9</td>
<td>Action on any issues</td>
<td>SNEHA IM team and Designscape</td>
</tr>
<tr>
<td>10</td>
<td>Installation of app and training of COs</td>
<td>SNEHA Centres team</td>
</tr>
</tbody>
</table>