mHealth solution to improve the skills and performance of health workers and to strengthen the health monitoring system

Dr. M. Achchuthan[1*], Dr.E. Srinath[2], D.R. Peiris[3], V. Miralan[3], P. Logitharajah[3]

[1] *MOMCH, Batticaloa, Sri Lanka.*

[2] *MOH, Chenkalady, Batticaloa.*

[3] *World Vision Lanka.*

Introduction

- Child under-nutrition remains a public health problem in Sri Lanka, despite relatively advanced health indicators compared to other countries in South Asia
- Manual data collection, analysis and data processing across the various levels takes time as well as there are chances of quality lapses and errors.
- Introducing mobile technologies to record data improves the efficiency of work, accuracy of the data , analysis and enables viewing of real-time data possible at all levels.

Objectives of the project

- To strengthen community health services by linking households, community health workers, and health facilities with real-time health information system that tracks child growth and provides updates and reminders for timely interventions
- To make available real-time data for easy comparison of nutrition status and timely follow up
- To establish a simplified child monitoring process that saves time by optimizing the data collection, registration, storage and sharing (simple devices for data capture linked to web-based database)
- To equip individuals and institutions to effectively adopt and maximize the use of mobile applications in regular monitoring

Methodology

- Customized the application according to the MOH level needs
- PHMs were trained to collect the data using mobile application
- Data collection was done at the weighing post by PHMs during June 2015
- Data was synchronized by PHMs on daily/weekly
- Data generation was done by MOH at office
- Information were shared with PHMs in the reflection

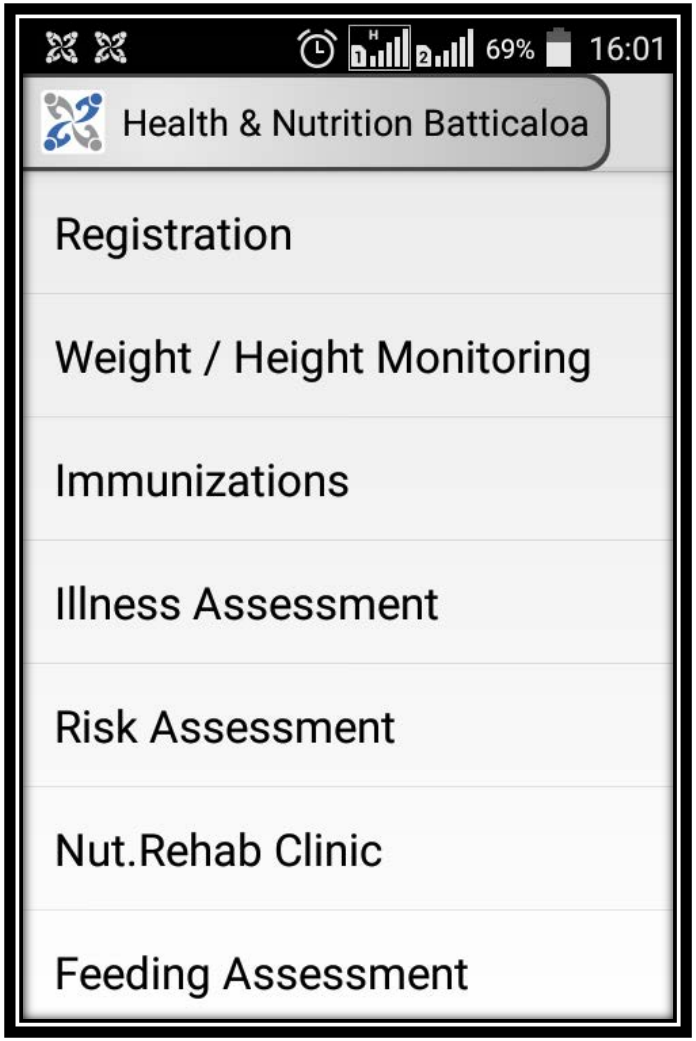
Features of the Technology used

- An Android application was customized using CommCare software
- The application has TWO environments
  1. Mobile device based environment(front end)
     - PHMs
  2. Cloud based environment(internet - backend)
     - MOH / RDHS office /Administrators
- User restrictions were imposed based on the user authorization level
  - Admin, App editor, Field implementer (cloud users) &
  - Field user (Mobile users)
- Data collection could be done both online and offline

Features of the mobile application

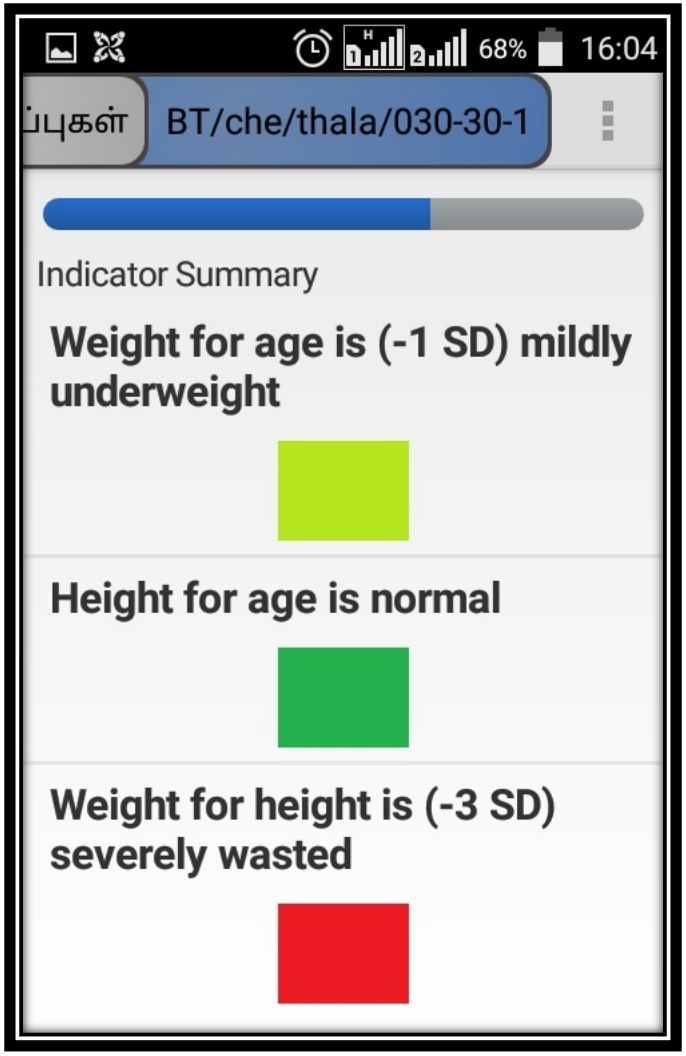
- Registration:
  - ✓ Mother
  - ✓ Child

- Collect basic information about
  - ✓ Geographical location
  - ✓ MOH/PHM area
  - ✓ Gender
  - ✓ DOB
  - ✓ Birth Weight
  - ✓ Disability

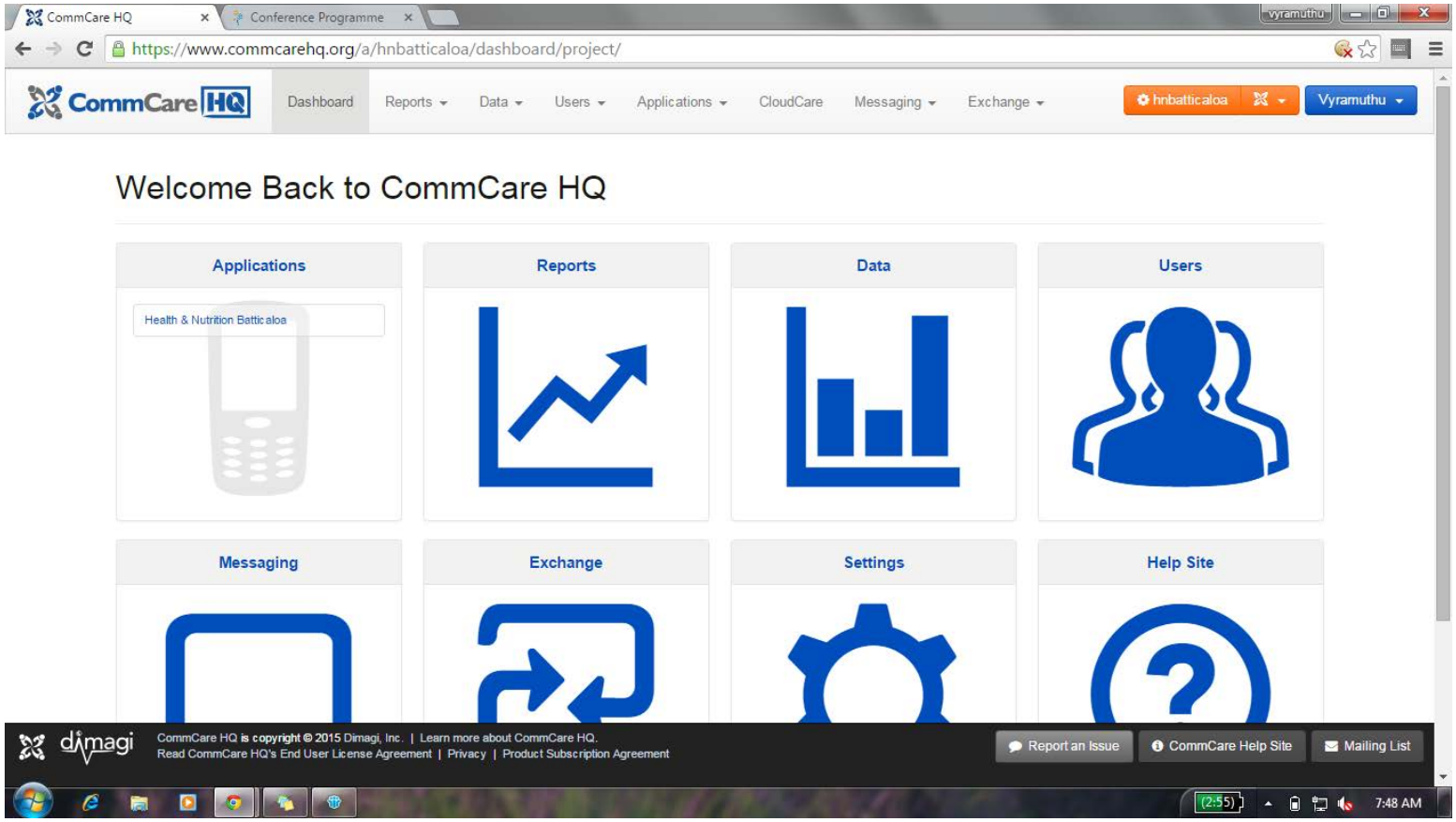


Features of the mobile application

- Recording the measurements:
  - Weight & Height
    - WAZ / HAZ / WHZ can be seen in the mobile
  - Can view previous WAZ / HAZ / WHZ status of the child
- Manage sub-cases
  - If the child is underweight the application will prompt for actions to perform illness assessment / Risk assessment / Referrals to hospital



Homepage


CommCare HQ
Conference Programme
https://www.commcarehq.org/a/hnbatticaloa/dashboard/project/
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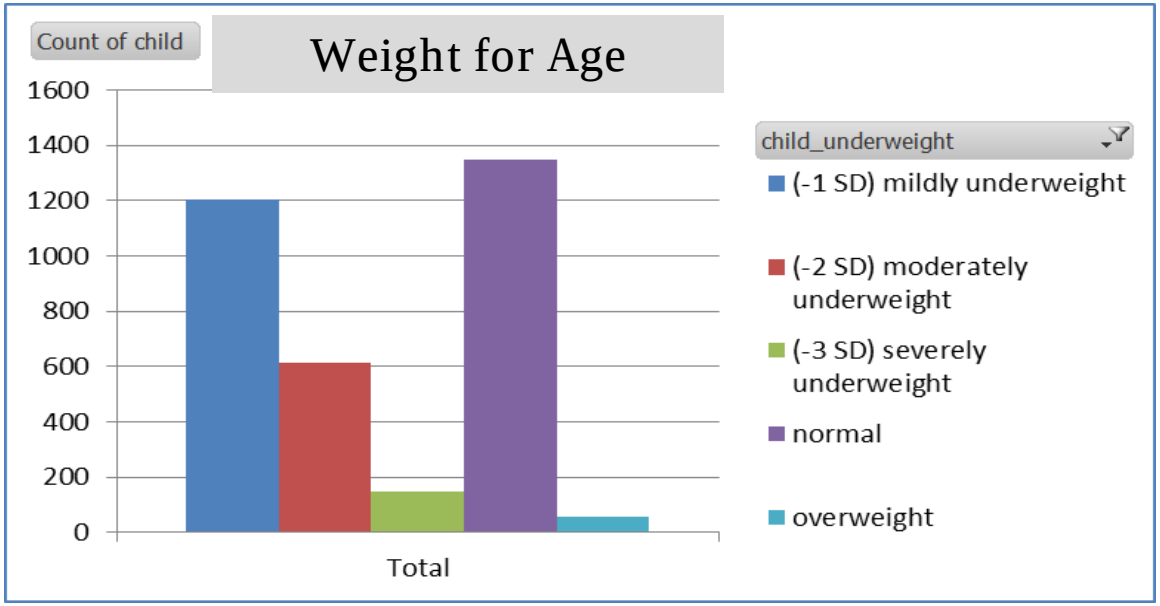
Features of the Cloud backend

- The mobile application is customized and deployed from Cloud backend
- All users and groups are created and managed
- The Data export
  - full or customized data exports with period range and user groups
- The Mobile user activity monitoring
  - How many forms were filled by a mobile user
- The cloud backend can be linked to Excel data base (Excel Dashboard) for automatic synchronization of data
- Automatic emails groups can be created

Results and Discussion

- MOH Division - 1
- PHM area covered - 25
- The total number of children monitored through the application - # 3395
- Number of mobile phones used - # 23

Data June 2015



Results and Discussion

- Existing nutrition monitoring system could be significantly enhanced with the introduction of this solution.
- This helps the system to digitalize the nutrition records of children under care from the service spot and minimize the use of paper and carbon.
- It enables the efficient capturing, storage, comparison and analysis of real time data concerning the nutrition status and thereby allow for better targeting of the most vulnerable.
- PHMs were able to use the smart phones well even though some of them were not using smart phones for their personal use.

Results and Discussion

- Since MOH/PHNS was able to generate summary reports from the cloud, PHMs workload has further reduced considerably.
- PHMs expressed their interest to use mobile application for continuous growth monitoring as they were felt it was so convenient.
- MOH has SLT Wi-Fi connection at office and therefore this can be utilized for synchronizing data and updating mobile application.

Limitations and further areas needed Improvements

- The current mobile application need error editing form to correct wrong entries
- Need to consider stolen/ lost replacement mechanism for mobile phones
- There should be a systematic process to update the mobile phones and trouble shooting with hardware and software issues
- If policy level adaption occurs to avoid dual entry (both manual and digital) that will help to reduce the workload of all categories involved and improve the data management.

- Thank You