

Malnutrition is disproportionately prevalent in poor, rural regions and developing countries. Nutrition efforts are often coordinated via large, integrated paper-based systems, and often lack real-time data. Subsequent delays in data reporting and aggregation results in poor decision-making and limited nutritional support for those who need it most. Errors in data collection and reporting are also common due to multiple data entry points as information is reported up through uncoordinated systems and complexity of calculating malnutrition metrics. Finally, data transcription is often time consuming, costly, and error-prone.

Dimagi's Technology For Nutrition

A variety of nutrition programs exist that can be supported and augmented with mobile technology to reduce the issues resulting from the abovementioned limitations. Examples of these types of programs include Growth Monitoring and Promotion (GMP), Community-based Management of Acute Malnutrition (CMAM), and Positive Deviance/Hearth (PD/H).

Nutrition Programs and Organizations

Data contributing to programmatic decision-making is often out of date and resources are frequently misallocated. Coordination of records among health centers is challenging.

- More accurate and complete data on malnutrition prevalence and treatment informs **resource allocation** and other programmatic decisions.
- **Real-time** data collection enables programs to provide immediate feedback based on nutrition workers' activities, including frequency of visits, speed of follow up, number cases identified, and the length of nutritional counseling sessions.
- Individual **record sharing** capability enables multiple CMAM sites to **track referrals** specific children through to completion of a nutritional rehabilitation program.

Frontline Workers

Frontline workers must calculate anthropometric data in the field or return later for referral, which is time consuming and results in delays in services.

- Complex anthropometric calculations (e.g. weight-for-age tables, breath rate counting, etc) are automatically carried out to simplify health workers' workflow.
- Basic **data validation** reduces common data errors (e.g. birthdates in the future, parameter errors).
- Interactive **multimedia** empowers low-literate workers to deliver appropriate nutritional counseling.
- **Skip logic** hides irrelevant questions and reduces frontline workers' time spent on data entry.
- Frontline workers input data as they visit beneficiaries, ensuring **protocol adherence** and **data completeness** at point of entry.

Beneficiaries

Patients sometimes do not have a record of health histories and have had varied exposure to behavior change messaging.

- Registration enables beneficiaries to be easily **tracked** across multiple visits, facilitating a continuum of personalized care according to individuals' specific anthropometric status (weight-for-age, growth faltering, and MUAC).

- Automatic calculation of anthropometric status enables beneficiaries to be referred to appropriate nutritional facilities.
- Multimedia-enabled **behavior change messaging** engages beneficiaries about positive health practices and notifies them of the availability of local nutritional programs.

Highlighted Projects

World Vision, Africa, Southeast Asia, and the Middle East

World Vision is implementing a standard set of CommCare applications for nutrition in nine countries in Africa, Southeast Asia, and the Middle East. CommCare supports community health workers to regularly screen children for nutrition status and related illness, in addition immunization status. The application includes tools for GMP, PD/Hearth, and CMAM.

Real Medicine Foundation (RMF), India

RMF implemented CommCare to assist Community Nutrition Educators (CNEs) in identifying children with Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM) through measuring MUAC. In addition to tracking MUAC over time, the application supports counseling to families of malnourished children and refers these children to government treatment facilities for rehabilitation in villages of Madhya Pradesh. Their work was previously recorded in paper format and implementation of mobile data collection has reduced the latency period from 45 days to eight hours. [Published Study]

Food for the Hungry, Mozambique

Food for the Hungry implemented CommCare to improve surveillance and counseling during GMP sessions in northern Cabo Delgado, a province with one of the highest malnutrition rates in Mozambique. The CommCare application calculates and records children's weight-for-age Z scores and MUAC. [Application Demo]

Society for Nutrition, Education and Health Action (SNEHA), India

SNEHA implemented CommCare to replace its manual data collection and entry system to track mothers and newborns in Mumbai's slums, accompanying a programmatic scale-up in strengthening referral linkages within the municipal health system. The CommCare application allows individual children's weights to be updated on a monthly basis, and support the health worker to follow-up with malnourished children. [CommCare Application]

Adventist Development and Relief Agency (ADRA), Madagascar

ADRA implemented a CommCare application in Madagascar to achieve improved nutritional data quality for children under five who participate in a GMP program. The project also sought to improve nutrition counseling skills for Community Health Volunteers.

Operation Smile, India

Operation Smile implemented a CommCare application to track the nutritional status of children with cleft lip and palates in Assam. The application tracks the children's progress in becoming sufficiently nourished to undergo cleft palate surgery. [CommCare Application]