



# M-Health - Polio and Immunization Project

Largest Mobile Health Project with CHWs

A Joint Initiative of:

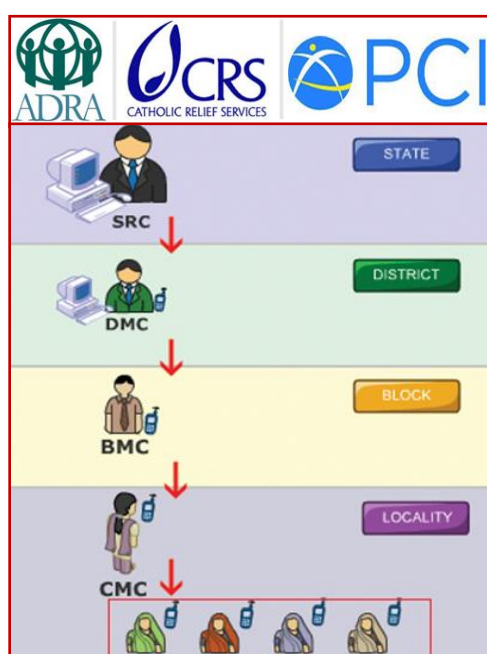


## INTRODUCTION

Freedom Polio is a Holistic M-Health Solution designed for effective Community Level Health Management. The project is designed and developed by **ZMQ Development**, a Technology for Development social enterprise, in partnership with **CORE Group Polio Project**, working in community-driven health and development. The project is implemented via an extensive network of over 1300 Community Mobilization Coordinators (**CMCs**). The CMCs conduct social mobilization activities in high-risk areas to promote implementation and acceptance of the oral polio vaccine (OPV), supplementary immunization activities (S.I.A) and routine immunization (RI) coverage. The CMCs also work with the **Social Mobilization Network (SM-Net)** that works with underserved communities in high-risk areas in coordination with district governments, NPSP (National Polio Surveillance Project) and other partners.

## IMPLEMENTATION STRUCTURE

The Project is implemented on the ground through three NGOs partners of Project Concern International (**PCI**), Adventist Development and Relief Agency (**ADRA**) and; Catholic Relief Services (**CRS**) in **56 Blocks of 13 high-risk districts** in Uttar Pradesh and West Bengal. The project is reaching annually to more than 21 million children under 15 years old through a network of over 1300 CMCs.



CGPP's Hierarchical Implementation Structure

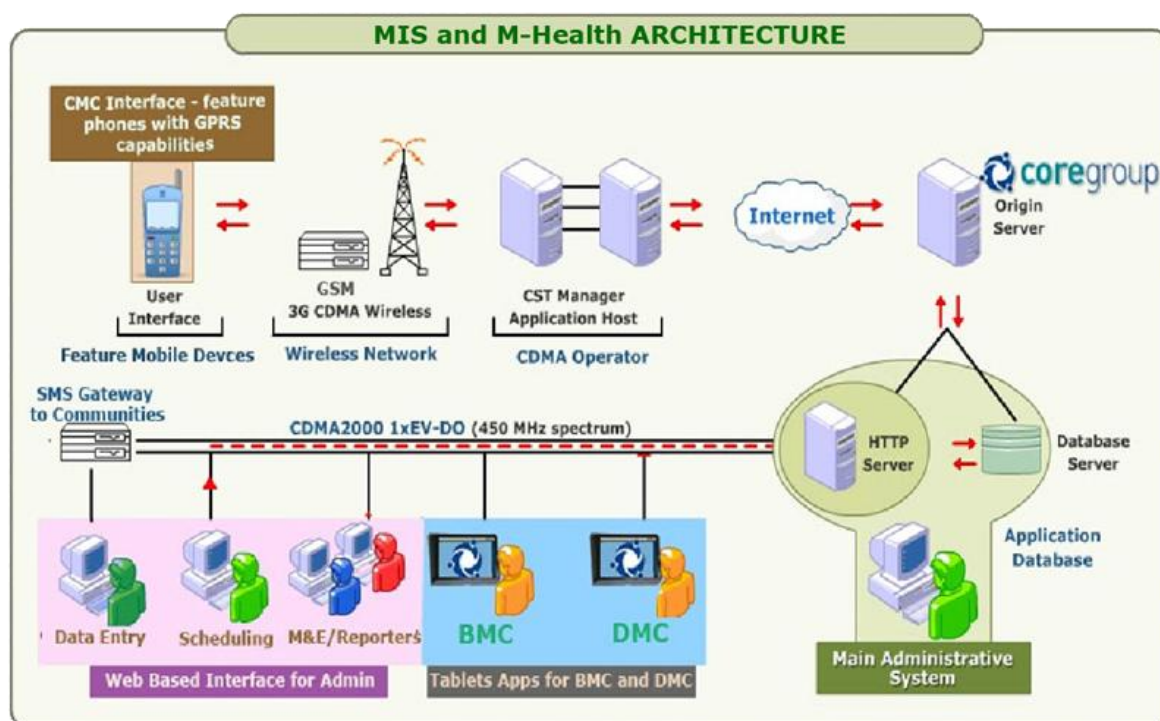
These variety of Staff work in close association with Government implementation Structure and other partners and players implementing the program on ground like UNICEF, CARE, ROTARY etc. On ground implementation structures are:

- ◆ **District Mobilization Coordinators (DMCs)** - there are 17 DMCs. Each DMC is responsible for supervising the BMCs and conducting social mobilization activities throughout the district.
- ◆ **Block Mobilization Coordinators (BMCs)** - there are 97 BMCs. Each BMC is responsible for social mobilization activities at the block level and overseeing and leading the CMCs.

- ◆ **Community Mobilization Coordinators (CMCs)** -There are 1325 salaried CMCs. Each CMC is responsible for mobilizing about 500-600 households, including holding community meetings, bringing local influential people to home visits, and holding health camps. Each CMC maintains immunization status records for all of the under five children in their assigned areas and for those participating in vaccination campaigns.

## ARCHITECTURE AND DESIGN

The solution is designed as a Universal model based on the new strategy shift from fixed site immunization to mobile vaccination strategies also called as ‘**house-to-house**’ immunization strategy in the final battles against polio and achieving higher rates of immunization.



Arch

itecture of the M-Health Project Polio and Immunization Project

Due to the nature of top down implementation and high level of on ground mobility of health workers for implementation of **Supplementary Immunization Activity (SIA)** and provisioning **Routine Immunization (RI)** it was important to integrate a platform with total mobility solution. Also, the supervision level health officers also need mobility tools integrated in the design of the solution for monitoring, decision making and designing effective immunization activities.

### Solution - Modules and Component

The project is designed using **open source technology** with localization option to for region specific adaptation. ZMQ team mapped each on ground process and developed a **fully - Technology Linked Model (f-TLM)** for the program specially focusing on achieving CHWs complex task using a basic feature phone device. The platform developed keeping in mind the universality of the project design, as per WHO standards. The platform is designed for managing global immunization activities organized at any country with its country specific needs like hierarchy management and immunization need. Based on the design the following components were developed:

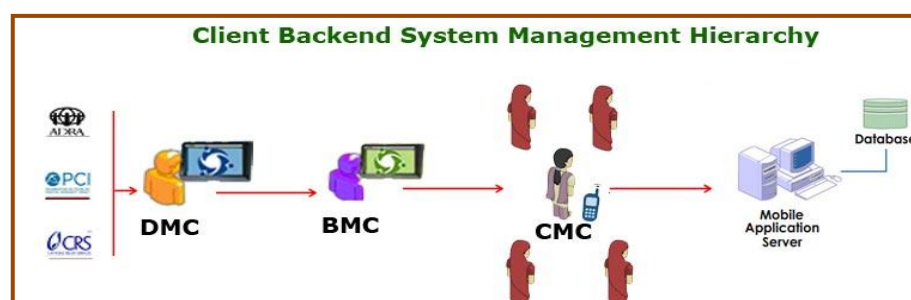


## A. Universal Backend of MIS System with Reporting System

Universal MIS system has been put in place which carries the whole data, operations and management of the Polio management in the project districts. The carries all information of the communities, house-holds, families, children, pregnant mothers in each and every block of the Pilot districts. It also has the data of the Community Mobilization Coordinators (CMCs) who are directly interacting with the communities. MIS also carries the complete hierarchical information of its Block Mobilization Coordinators (BMCs) and District Mobilization Coordinators (DMCs). It resides on a dedicated Web Database Server (as an online infrastructure). It consists of following components:

- a. Regional Hierarchy Designer (for example **State- District-Block-Clusters** in CG project);
- b. Country level Designing System;
- c. Regional Hierarchy Designer and Mapping System;
- d. Hierarchical Mode Organizational Staff Manager;
- e. House-Hold Mapping System;
- f. Family Mapping System based on '**shared kitchen fire**';
- g. Child Registration System – under 5 and between 5 and 15 years;
- h. Family Structure Manager;
- i. Universal Vaccine Designer;
- j. Immunization Implementation Structure for **RI** and **SIA**;
- k. Dynamic Data Manager for Routine and SIA immunization;
- l. Pregnancy Tracker and Manager;
- m. Macro and Micro Planning Designer - All levels;

n. Report



Management System and other tools.

## Hierarchical Model of Implementation

### B. Supplementary Immunization Scheduling System

The web based MIS has a universal tracker for the Supplementary Immunization Scheduling. The immunization scheduling is done a day prior to the start of the Polio round (Polio Sunday). The

whole scheduling is done online and the community mobilization coordinators can start conduct the immunization process once the tracker is set “On”.

This backend System have a provision for Designing Scheduling of Immunization Camps at different Locations and regions. It will have following components:

- a. Universal Immunization Planner;
- b. Polio Vaccine Designer (Dosage);
- c. Supplementary Immunization Activity Manager;
- d. Regional level Camps and Immunization Scheduler;
- e. Data Structures for Children Immunized under different Regions;
- f. Missed Children Manager;
- g. Phased Activity Manager;
- h. Vulnerable Community Planner;
- i. Staff Login Management for SIA activity;
- j. Reporting Tools for Immunization Planner



### C. Reporting System for Administrators and Partners

On the MIS is a detailed web system based system is a specialized section form which can be assigned to the administrators and donors to monitor the performance, and see the operations & transactions. The system has the following components:

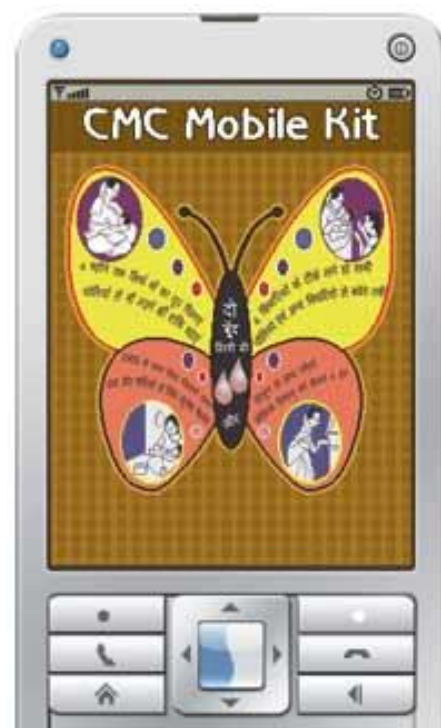
- a. User Login System;
- b. User Specific Tools Generation;
- c. Report Management System;
- d. Top-Down Communication System for CHWs;
- e. Reporting System;
- f. Organizational Reporting System ( Daily, Weekly and Monthly, Annual);
- g. Partner Reporting System;
- h. Flexible Reporting System Designer.

### D. Mobile Application for CMCs (for basic java enabled feature phones)

This is one of the most vital components of the project as all the data capturing happens here. It comprises of a feature phone based Java application for the CMCs to do daily activities. A CMC can enter and manage a data of 500 house-holds without network connectivity. The CMC toolkit is designed to assist them perform all their ground duties.

Some of the Key components and modules of the CMC Toolkits are:

- ◆ CMC Information Module
- ◆ Registration Module – House, Family and Children



- ◆ Routine Immunization (RI) Module
- ◆ Supplementary Immunization (Polio) Module
- ◆ Pregnant Women Registration and Tracker
- ◆ Micro-Planner and Social Mobilization Module



### Screenshots of CMC Mobile Application Modules:

**Login Page**

Login Id :

Password :

Login Clear

**Welcome**

CMC Name: Zebunnisa

CMC ID: 176123

CMC Area: Phulera

BLOCK : Rohta

District Meerut

PVO Name: PCI

Total Houses: 624

Total Children <5 yrs: 437

X Missed Children: 39

Pregnant WOMen: 82

new Born in June 2013: 17

Menu Next

**Add New House**

CMC Area

House Number

Address

Head of the Family

Member

Cast

Registration Date

Number of child

Father Name

Mother Name

Child Name

Sex

Date of Birth

Enter

Back Clear

**Supplementary Immunization Activity**

SIA Main Menu

Request Data

Child Track Sheet

X Childs

SIA New Registration

**Request Data**

Polio Day

Starting Round H No

Ending Round H No

(≤433)

Team Number

Total 373 Children (<5) in 433 houses in the Phulera Area of Rohta Block in Meerut

**S.I.A. Child Track Sheet**

CMC House No

Child Name

Family Head

Fathar Name

DOB

Status

**Child Tracker - RI**

Zero doz ☐ OPV3 ☐

BCG ☐ DPT3 ☐

OPV1 ☐ Measles ☐

DPT1 ☐ Vitamin A ☐

OPV 2 ☐ Booster ☐

DPT 2 ☐

Enter Date

03/08/2013

Child Name: Jayant (H.No. 232)

■ Pending ■ Recived ■ Due ■ N.A.

Due Date: 02/07/2013

Submit Back

**Child Tracker - RI**

Zero doz ☐ OPV3 ☐

BCG ☐ DPT3 ☐

OPV1 ☒ Measles ☐

DPT1 ☐ Vitamin A ☐

OPV 2 ☐ Booster ☐

DPT 2 ☐

Successfully Immunised for OPV1

Child Name: Jayant (H.No. 232)

■ Pending ■ Recived ■ Due ■ N.A.

Due Date: 02/07/2013

Submit Back

## Screen shots of CMC Toolkit



### E. Mobile Application for BMCs and DMCs (on Tablets/ Android Smartphone)

The application enables the Block and District officer to monitor the activities of its subordinate officers. The application is a single window application for both BMC and DMC with different management, tracking, follow-up and reporting modules.



Tablet/Smartphone Interface for BMCs and DMCs

The DMC and BMC toolkit is developed for Android Smartphones and Tablets. Some of the key features of the toolkit are management of its staff, regional structures, mapping of high risk communities, monitoring of CMC and BMC areas for Supplementary Immunization Activities and Routine Immunization. The toolkit also has a new GPS tool to map CMC areas to the level of each house see 'Risk Pattern' based on location layout of CMC areas. The tool helps the BMCs and DMCs to design and prioritize future immunization and other health services.





Risk Analysis of Vulnerable Communities using GPS (Google Maps)

## PROJECT IMPLEMENTATION AND SCALEUP

The project has entered its 3<sup>rd</sup> phase of implementation. By the end of August 2013, the project will be fully implanted in all 13 districts, High Risk Areas as per Govt. of India and WHO-National Polio Surveillance Project designated criteria, under CoreGroup Polio Project. At present ZMQ is in the preparation stage for full blown implantation. In this stage more than **1370 CMCs** will be operating



with M-health solution and tools in with support from 56 Block Mobilization Coordinators (BMCs) and 13 District Mobilization Coordinators (DMCs) and 4 District Underserved Coordinators (DUCs). In this phase the project will cover over 1.2 million households covering over **2.8 million children** (under 5) over 250,000 pregnant women for complete immunization in the first year. The covered districts are:

- |                    |                  |
|--------------------|------------------|
| a. Baghpat         | h. Muzaffarnagar |
| b. Barielly        | i. Rampur        |
| c. Howrah          | j. Saharanpur    |
| d. Mau             | k. Sambhal       |
| e. Meerut          | l. Shahjahanpur  |
| f. Moradabad City  | m. Sitapur       |
| g. Moradabad Rural |                  |

## FUTURE OF THE PROJECT:

In the future the project has immense scope not only for immunization services but also beyond it.

- **Global Scale Up of the project:**

As the project is designed with scalable parameters and it has modules like country specific immunization planner, country specific immunization tracker and admin & regional hierarchal system designer to making it scale-able for localized needs.

- **Beyond Polio:**

The project encompasses Polio tracking and management as prime project but it can also be scaled for any other disease prevention program with a possibility to design one's own implementation strategy.

- **Integrator with National Health Programs:**



The project offers a great potential to integrate with other national health schemes and programs. Some of them can be like NRHM, MCH, FP, RNTCP, NACP etc.

- **Beyond Health:**

Integration with other national development index services like MNREGA, UID, Banking for bank-less, SSA, educational programs and others.

- **GPS Mapping Systems:**

GPS Mapping of Villages for Surveillance for High Risk, other Behavioral Patterns and GIS Data Analysis of other diseases, risks and health conditions.

- **Setting up Mobile CMCs:**

Setting up Mobile CMCs for Diagnostic services like hypertension, anemia (malnutrition), blood tests, diabetes, mental disorders depression and centers

**Prepared by:**

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