mTikka – a virtual, interactive, mobile-phone based "Immunization Record" to improve vaccination rates in rural Bangladesh

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Focus : Infants in resource-poor settings.

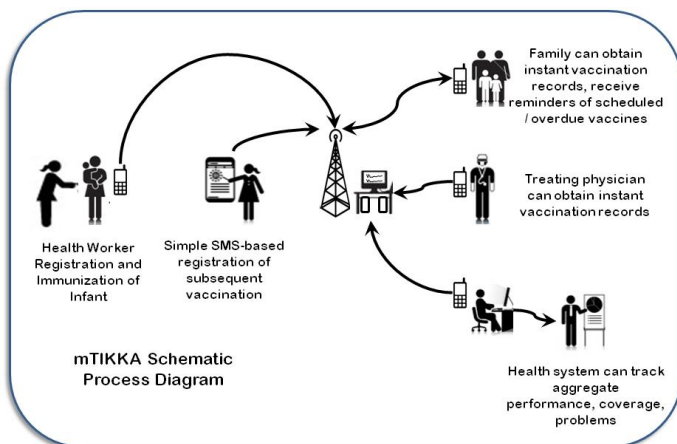**Project Period :** 12 months (2012 - 2013)

Location : Rural Bangladesh

Project Overview : mTikka is an electronic, cloud-based system for infant registration, vaccination recordkeeping, incentivization, and survey of vaccination beliefs. mTikka will focus on the poorest and hardest to reach segments of the population, helping to identify (in real-time) regions where vaccine coverage is limited, and to permit community-based, targeted interventions that will increase the reach of immunizations. Vaccine workers (VWs) will use the mTikka application loaded on low-cost smart phones to register an infant at birth. mTikka will then generate an automated vaccination and reminder schedule, customized to the infant's birth date, to ensure timely vaccination. Due to its location on the cloud database, the infant's vaccination status can be accessed anytime and anywhere, by scanning a unique barcode assigned to each infant. Parents who own cell phones will be able to monitor and receive reminders about the vaccination status of their infants and will receive cash incentives for the timely completion of the prescribed vaccination schedule by the infant's first birthday. The smart phone interface will also be leveraged for presenting educational modules pertaining to vaccine effectiveness to parents.

Context: In 2011, the vaccination coverage rates for fully immunized Bangladeshi children between 12 to 23 months of age were 86%. However, in rural hard-to-reach areas evidence suggests that complete immunization rates are significantly lower and range from 44% to 60%. Studies show that coverage rates further decline for follow-up doses. Major obstacles to achieving high immunization coverage in Bangladesh include: irregular EPI schedules, few strategies to access poor resource settings, and limited community engagement with the EPI.

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mTIKKA Schematic Process Diagram

Objectives : The goal of mTikka is to ensure timely vaccination among infants in rural Bangladesh and avert morbidity and mortality due to preventable diseases. mTikka will address four barriers to scheduled vaccination compliance –
1. Inability to track a child's vaccination history,
2. Lack of timely reminders,
3. Lack of incentives to parents, and
4. Limited awareness about vaccine effectiveness
- by using a cloud-based infant registration system, SMS-based reminders to parents and vaccine workers, cash incentives to parents whose children are vaccinated, and harnessing the mobile interface for health education.

Expected Outcomes:
• A cloud-based infant registration system using android phones for data entry.
• Timely vaccination of infants through SMS-based reminders to parents and vaccine workers.
• Empowering parents to access their child's vaccination records.
• Identification of barriers, and implementation of targeted, community-based interventions to increase vaccine coverage.