

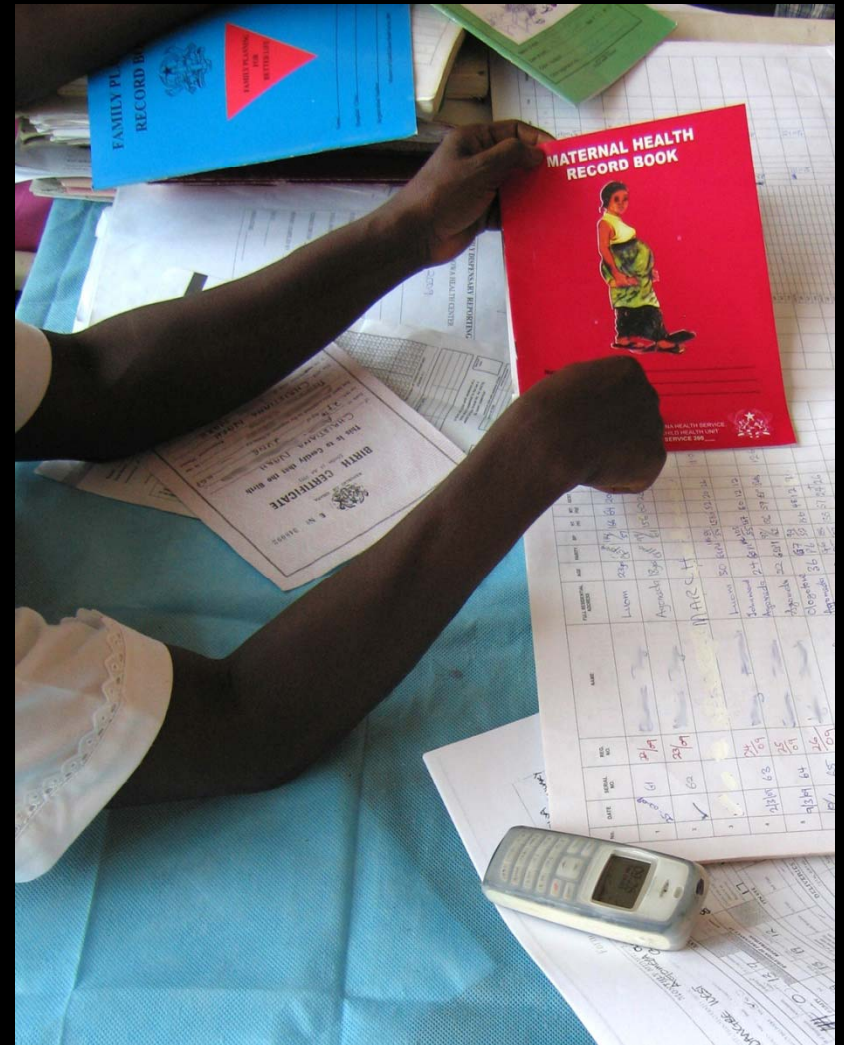


MoTeCH: A Comprehensive Overview



MoTeCH Ghana Overview

- Objective: Develop mobile-phone-based health information technology and test the proposition that improved health information improves health outcomes.
- Seeking to increase the quantity and quality of antenatal and neonatal care while building a long-term software platform
- Focus: 1) Health Information delivered to pregnant and new parents and 2) Deliver information relevant to the delivery of health services by Community Health Officers
- Location: Two impoverished districts in the Upper East region of Ghana.



The Context

- The project is situated within the Community-based Health Planning and Services (CHPS) in the Upper East Region of Ghana
- Community health officers (CHOs) are posted to a community to provide a defined package of essential health services
- Mobilization of volunteerism, resources, and local institutions
- According to recent data, nearly 20% of the population were reached by the CHPS program in 2008

The Case for MoTeCH

- CHOs use numerous data collection forms/registers but the use of collected data to inform/enhance clinical practice and supervision is limited
- Health workers indicated the need for further training on service provision to mothers and children, especially neonates
- Information / knowledge gap among community members – especially maternal and newborn health
- **Patients are passive in seeking health care and CHOs are passive in providing services**

Inefficiencies within the CHPS program

- The CHPS program has not reached its full “potential” as a scaled-up service system
 - Community health workers are “swamped” with numerous data collection forms/registers
 - Collected data is not used to inform/enhance service delivery and clinical practices
 - The District Health Information Management System (DHIMS) to support decentralization does not provide adequate and timely feedback to CHOs.
 - Use of collected data for supervision is unclear

Early Lessons Learned: Health Workers

- Workers are inundated with data collection and reporting requirements
- Registration solution needs to account for various scenarios from short bursts of multiple quick encounters to more in-depth care scenarios
- Input and buy-in from various levels of GHS is critical
- More economical in the long run to provide java enabled handsets to nurses



Early Lessons Learned: Parents

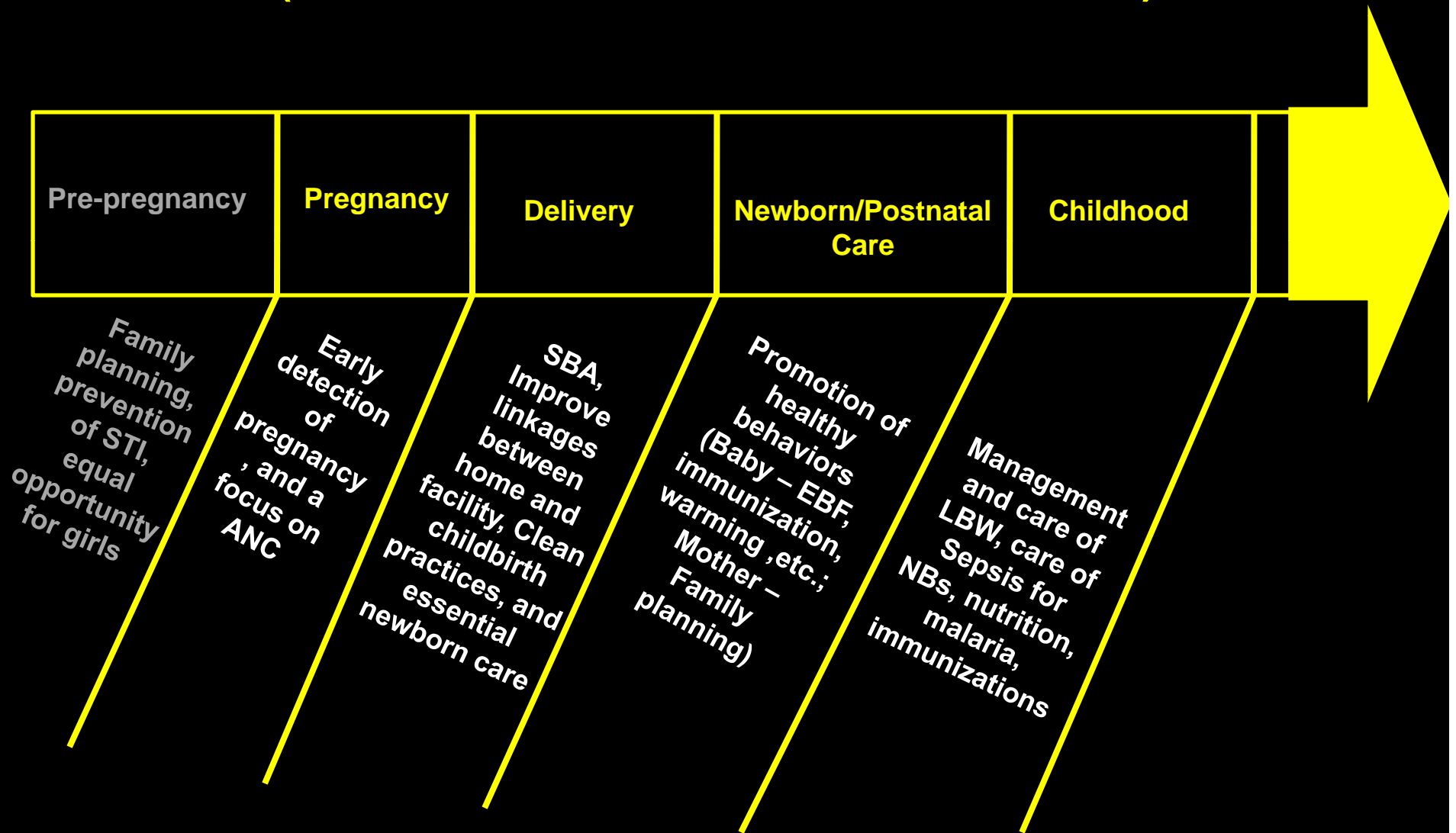


Information available in rural
areas always have access
to reproductive health
and birth choices

Focus of MoTeCH

- MoTeCH is not disease-specific
- Aims to improve access to a broad range of essential health services
- With special emphasis on pregnant women and infants
 - Coverage of interventions targeting these populations remain low (e.g. ANC, safe delivery practices, postnatal care)
 - One in every nine children dies before reaching age five
 - Neonatal deaths account for two-thirds of deaths in infancy

Focusing on mothers and infants (The Continuum of Care)



Project Components

Systems for CHPS workers

- Develop simplified register
- Enter patient encounters using existing mobile phones
- Generate reports
- Close the data loop
- Standardized CHPS operations

Systems for “Pregnant Parents”

- Regular messages sent based on estimated due date
- Can receive SMS (text) or voice messages (voice expected to get heaviest use)
- Frequency and time of day set when registering
- Informative and actionable



Health workers and mHEALTH

- Step 1: CHO enters encounter data through cell-phone
 - Transmitted to patient database
 - Automatic reporting to Ghana Health Service
- Step 2: Alerts and reminders are sent to CHO from patient database
 - Facilitate scheduling of home visits in communities
 - Ensure that services to pregnant women are provided in a timely manner (i.e. ANC, TT, IPT)
 - Reminders on vaccinations for children < 1

CHPS Mobile Phone System

Data Entry using Structured SMS



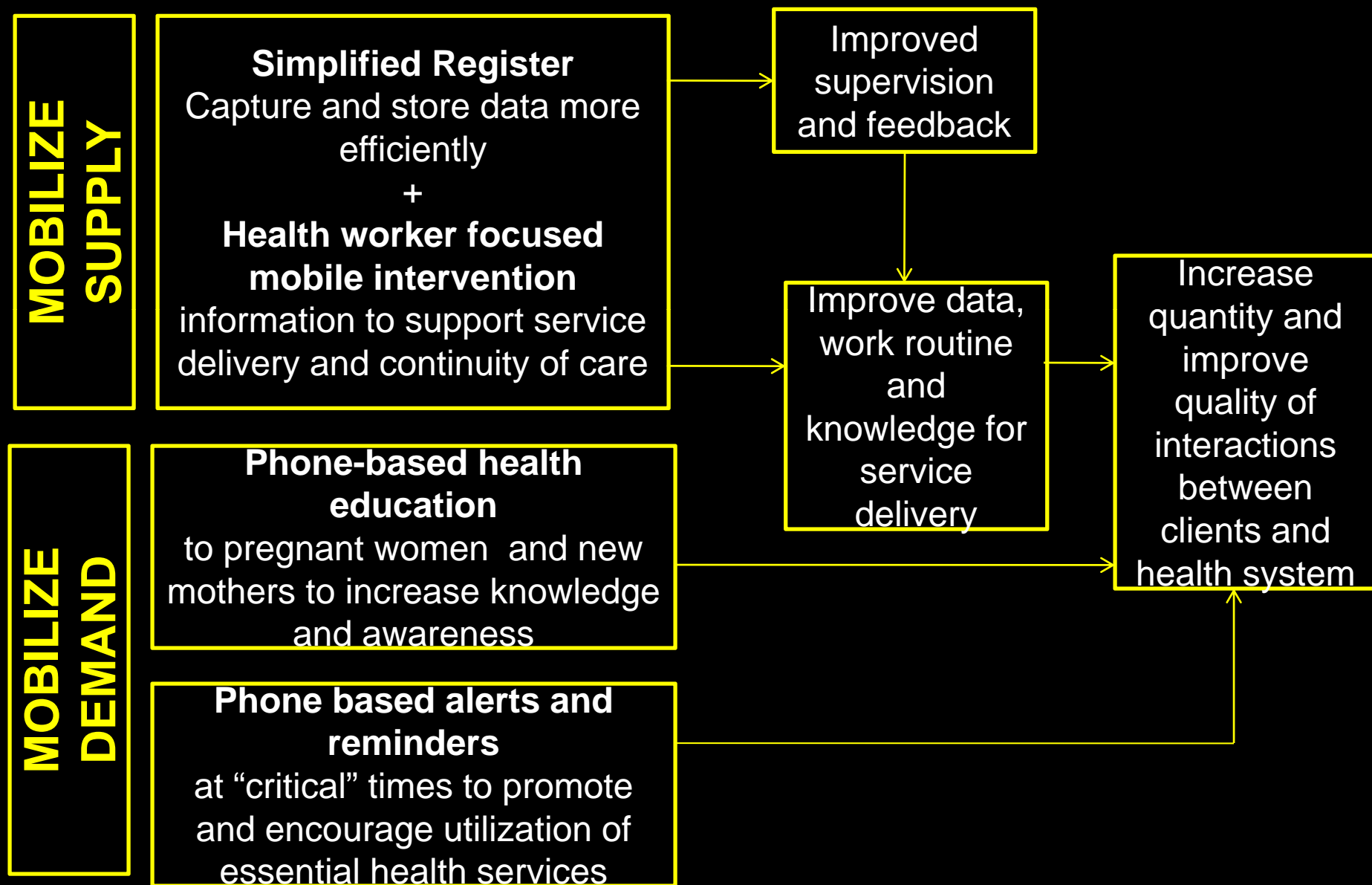
Automatic Reminders and Reports for nurses



Mobilizing Demand

- Deployment of messages to target population
 - Alerts at critical stages of pregnancy to update women on essential care
 - Information on danger signs and effective response to potential complications during pregnancy & delivery
 - Knowledge driven response to needs during pregnancy and delivery
 - Educational information about essential home practices

The MoTeCH System



Measuring Impact

- Baseline and end of project surveys on maternal care and child health in randomized treatment and comparison communities of two Kassena-Nankana districts
- Assess changes in health seeking behavior and coverage of essential maternal and child health indicators

Evaluation Framework

- Time Use Study (TUS)
- Quality of Aggregated Data Study (QADS)
- Repeated cross – sectional surveys
- Demographic Surveillance Surveys (DSS)

Outcomes of interest

- Improve access by increasing ANC 4+
- Improve quality by increasing IPT 3 and TT 2+
- Increase the proportion of deliveries attended by a skilled attendant
- Increase the proportion of newborns seen by a health professional with 24 /48 hours post-delivery
- Increase knowledge and practice of essential home practices (early identification)
- Increase the proportion of children fully immunized

The Current State of Mobile-Health

- Mobile-phone based technology for health is an emerging field in addressing health problems in the developing world.
- *However...*
 - Most of the initiatives are disease specific (HIV/AIDS, TB)
 - mHEALTH initiatives are not integrated into health systems, thus do not address system inefficiencies
 - Most programs use expensive equipment (PDAs, smart phones)
 - Impact of m-health initiatives on coverage are often not methodologically sound

mHEALTH Equipments

- Other mHEALTH initiatives
 - PDAs, smart phones, laptops...
 - High initial investment
- MoTeCH
 - Low-cost equipment (i.e. “dumb phones”)
 - Easily adaptable – familiar technology
 - Platform allows for simultaneous provider / patient based interventions
 - “Easier” to bring to scale