MoTeCH Calling

MOBILE TECHNOLOGY FOR COMMUNITY HEALTH IN GHANA

What is MoTeCH?

The Mobile Technology for Community Health (MoTeCH) pilot was launched in June 2010 in the Bongo District with the aim of building a flexible, scalable platform to support a wide variety of mobile health (mHealth) initiatives covering different contexts and geographical areas.

The MoTeCH system uses low-cost GSM mobile phone technology to capture, transmit and analyse health data collected by community health workers during client encounters. The data captured by health workers is transferred through the mobile phones to a central patient electronic medical records system stored on the MoTeCH server. The MoTeCH system analyses this client data and determines vital information about a client's pregnancy needs, including due dates for certain care events such as immunizations and routine checkups. The system then sends reminders to the healthcare workers and clients, notifying them of these clinical care needs. The full functionality of the MoTeCH system is largely dependent on the efficiency of the data collection and uploading tasks by the health workers. The promptness and accuracy in these tasks are crucial for ensuring that the system and its benefits can be properly utilized by the health workers and client base.

The Basics - Understanding the MoTeCH System:

1. Client Data is sent to MoTeCH through GPRS
Community health workers enter a patient's data on the MoTeCH application, which is run on the low-end java-enabled handset provided to each facility. Once the data forms have been completed, they are saved onto the phone and uploaded to the MoTeCH server. Once transmitted to the server, data is stored on a central patient electronic medical records system.

2. Community volunteers send alerts to MoTeCH via Call Centre
Community health volunteers are encouraged to report pregnancy deliveries in their communities to MoTeCH by phoning a toll-free call centre. Call centre operators use a web version of the form to update the patient's record in the MoTeCH database, immediately prompting postnatal care reminders for both the clients and nurses.

3. MoTeCH Sends SMS Alerts and Reminders to Nurses and Enables Queries

Alerts and Reminders
Once the client data is stored in the database, the MoTeCH system compares the care received by pregnant women and newborns with recommended guidelines by the Ghana Health Service. After calculating critical due dates for necessary points of care, the system automatically notifies the mothers of these upcoming events. If the mother fails to go to the clinic for her care event, the nurse is notified by a message outlying all overdue clients, or defaulters. These reminders allow for nurses to directly follow up with the defaulters on an individual basis. These messages promote compliance with patient encounters, increasing the continuum of care for pregnant women and their newborns.

Mercy Tidinchana, a CHO from the Kajelo Community Health Centre, learning how to upload data into the MoTeCH system

Decision Making Tools
*MoTeCH analy*ses clinical trends and snapshot data to help nurses make decisions about appropriate care. For example, abnormal blood pressure trends, hemoglobin results, or infant growth development, alerts nurses of potential issues, allowing them to advise on the next proper steps of care, such as referral.

Queries
MoTeCH enables nurses to perform database queries when needed through submitting a mobile application form on their phones. Nurses can use this function to request lists of defaulters in their catchment area, individuals due for delivery, or clients that recently gave birth. The nurse can also request individual client's information, such as their upcoming clinical care needs, contact details, or their estimated due date for delivery.

4. Mobile Midwife: MoTeCH sends care reminders to clients
Mobile Midwife is a service that delivers weekly time-specific health information to clients through their mobile phone. Clients can opt to receive SMS or voice messages in English or their local language. The information is a collection of:

- Practical and action-orientated information and advice on handling pregnancy challenges (e.g. tips for saving money for transportation, what is needed in a birthing kit, and nutritional recommendations).
- Fun educational facts (e.g. milestones in fetal development).
- Reminders about upcoming and overdue healthcare events for the mother and child.

5. MoTeCH automatically generates monthly reports
Client information sent to MoTeCH's centralized database is automatically aggregated and tabulated to generate the facility's monthly caseload reports. These completed reports are downloaded by Information Officers at the district level. The reports are then printed and circulated to health workers for verification.

--Esther Azasi, Maggie Schmitt, Allison Stone