Maternal and Child Health

Electronic Medical Record Proposal

Proposal prepared by:

Dr John Haskew, Director Uamuzi Bora

November 2013

ABSTRACT

- Uamuzi Bora is a medical project that supports the Ministry of Health (MoH) and partners in Kenya to implement an electronic medical record (EMR) to improve clinical and public health decision-making. The EMR is built using free, open source software and is based on the Open Medical Record System (OpenMRS) platform, increasingly being adopted in developing countries around the world.

- The maternal and child health (MCH) EMR pilot, implemented in partnership with the Japanese International Cooperation Agency (JICA) and MoH, took place in five clinics in Kisumu West District, Nyanza Province between April and June 2013.

- The pilot has demonstrated the feasibility of implementation of an MCH EMR in resource-constrained settings and the ability to make health information available at different levels of the health service to inform clinical and public health decision-making. A total of 946 women, 206 deliveries and 302 children were registered in the EMR between 2 April and 24 June 2013. An average of 1.9 clinic visits were attended per pregnant woman during pilot period.

- The budget will facilitate implementation of the MCH EMR by MoH to cover at least 20,000 pregnant mothers and their children across 25 health facilities (including 5 facilities currently supported in Kisumu West). Technical support and training will be provided within the budget to support MoH ownership and sustainability for the long-term.

- The budget assumes that MoH staff costs (at national, county, district and facility levels) are covered by the MoH themselves, as use of the EMR will become part of the daily work of public health and clinical staff. These staff costs include data entry and routine use of the EMR, as well as attendance at training.

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1. The MCH Electronic Medical Record

The maternal and child health (MCH) electronic medical record (EMR) is built using free, open source software and builds on common platforms and previous work, notably that of Open Medical Record System (OpenMRS).

The MCH EMR uses a cloud-based model of deployment that only requires a single server to be maintained centrally, with no infrastructure required by the individual clinic (Figure 1 and 2). The EMR uses a secure, encrypted virtual private network (VPN) with Safaricom, a mobile phone provider in Kenya, to which the server and clinic computers can connect securely. The VPN is air gapped from the internet and only computers that have been registered by the project can access this secure private network.

Each clinic only requires a single computer to run the EMR and the Google Chromebook has been selected as the clinic computer of choice. Chromebooks function as a laptop and are capable of hosting a SIM card to connect directly to a mobile data network. In this manner, each clinic can connect securely to the EMR server via the VPN on the mobile data network.

The cloud-based model allows health information to be shared in real-time between different levels of care to improve clinical and public health decision-making (Figure 3). Every 24 hours, the database of individual patients (which remains encrypted and secure and only accessible to clinics) is copied and all patient-identifiable information is removed. This anonymous version of the database is then used to provide health information to different users at different levels of health care.

Figure 1. Features of a local clinic model of EMR implementation

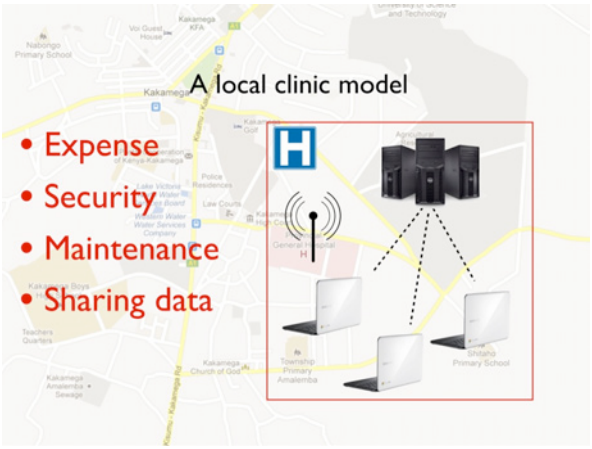


Figure 2. The Uamuzi Bora model of EMR implementation

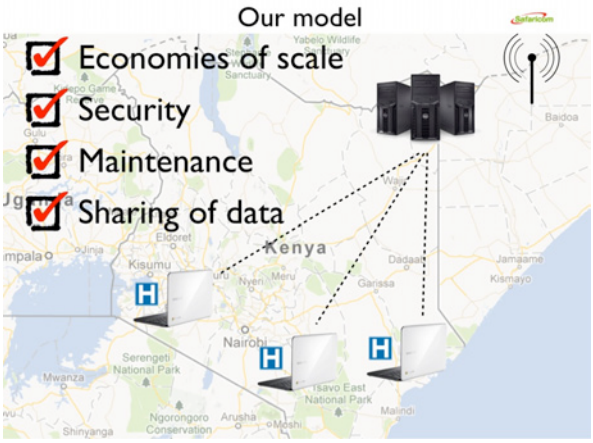
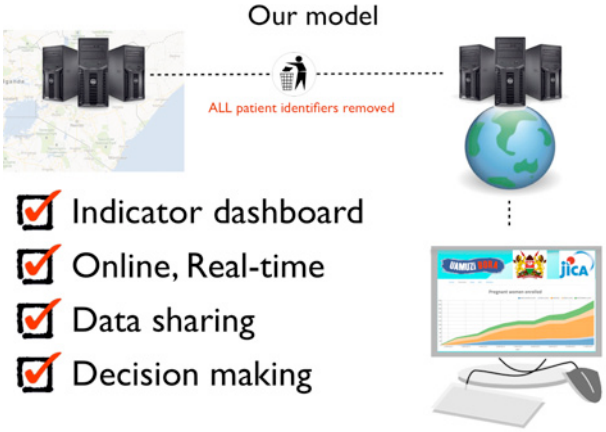


Figure 3. The Uamuzi Bora model of EMR implementation



1.1 Features of the EMR

1.1.1 Data Entry

Data is entered from the paper record to the electronic medical record either by the clinician or a data entry clerk.

During the first phase of Uamuzi Bora EMR implementation in a new clinic, the existing paper-record is entered into the electronic database. Clinic data clerks are trained in data entry and Uamuzi Bora data entry assistants support data entry and supervision in high volume sites.

Once the "backlog" of historical patient data is entered, prospective new patients and clinic visit data continues to be entered. Depending on the site, this data entry can proceed in two ways:

1. Data is entered during the patient consultation by the clinician
2. Data is entered after the patient consultation has finished by a data entry clerk

1.1.2 Data Verification

Data checks are run automatically on all data collected in the electronic medical record to ensure data is valid, accurate and complete.

Once data is entered into the MCH EMR, the system automatically reviews all data every 24 hours and produces a data verification report to indicate if pertinent data is missing from the record. Individual patient records are also flagged to highlight which data is missing. Clinic data clerks can then review these reports and flags to correct missing data from the patient record.

1.1.3 Clinical Decision Support in Care

Clinical reminders and decision support is designed to ensure standardised care is provided that will improve the quality of care delivered.

Adherence to clinical guidelines is essential for ensuring a high standard of health care provision. The MCH EMR automatically reviews the database every 24 hours to generate a clinical verification report and flag patients who have not received care according to standardised guidelines and protocols. Clinicians then regularly review the clinical verification report and individual patient flags to review appropriate management plans.

1.1.4 Follow Up and Retention in Care

A successful outpatient program must ensure continuity and retention in care

Continuity of care and retention in care remain particular challenges for many health services in resource-constrained settings. The MCH EMR can automatically flag and provide a list of pregnant mothers who have not attended clinic or have not attended the minimum number of antenatal clinic visits. The EMR can also automatically send out SMS text message reminders to these mothers or a phone call can be made from the clinic to ensure the pregnant mothers are retained in care and followed up appropriately.

1.1.5 Reporting

Standardised reports can be automatically generated to enhance the monitoring and evaluation functions of the clinic, as well as district and provincial health management.

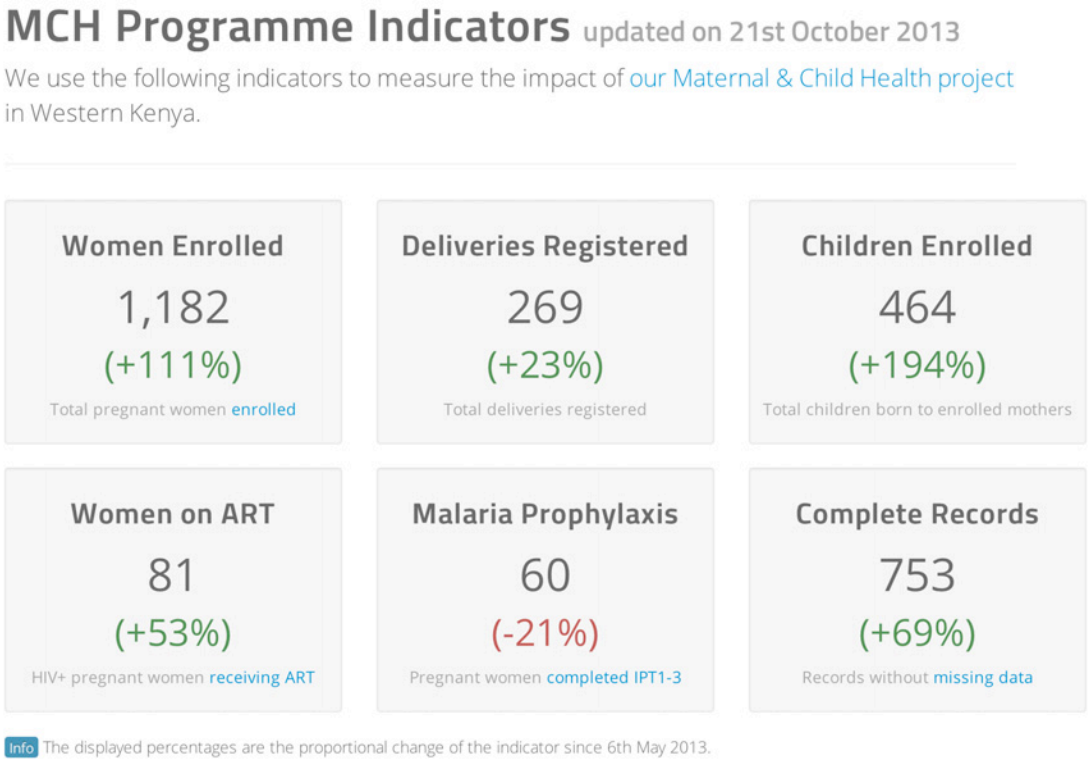
The MCH EMR provides standardised reporting to the Ministry of Health and partners. Both external and internal reporting is essential to determine the success of programming and the MCH EMR provides the ability to generate such reports quickly and accurately. Reports can be generated via the EMR itself. Online aggregated data tables are also available via the following web address: https://uamuzibora.org/reports/mch

1.1.6 Indicator Dashboard

A real-time online indicator dashboard provides feedback and monitoring at all levels of health management and decision-making.

The MCH EMR improves access to and use of health information at all levels of public health and clinical decision making, from the clinic to national level, through the use of an online indicator dashboard. An example view is shown in Figure 4. The indicator dashboard can be accessed at the following web address: https://uamuzibora.org/data/mch

Figure 4. The Uamuzi Bora MCH EMR indicator dashboard



1.2 System Infrastructure

1.2.1 Network

Uamuzi Bora utilises a secure, encrypted virtual private network (VPN) with Safaricom, a mobile phone provider in Kenya, to which the server and clinic computers can connect securely. The VPN is air gapped from the internet and only

Chromebooks and SIM cards that have been registered by the project can access the secure, private network.

1.2.2 Server

The physical server is hosted for Ministry of Health by Uamuzi Bora, and is currently located in Kakamega. It uses a WiMAX radio connection to connect to the VPN.

The Uamuzi Bora server runs a customised version of OpenMRS 1.9: a Java application running on top of Apache Tomcat 7, using MySQL 5.5 as a database server, and run behind Nginx as a reverse proxy server, on a server running Ubuntu 12.04 LTS Linux. Regular security updates are applied to the system from the main Ubuntu repositories.

The BIOS is password protected. The hard drives are encrypted using *dm-crypt* and a key file is used to decrypt the hard drives at boot time. The key file is stored on a separate USB memory stick that is required to be plugged into the server to boot. The USB stick is then removed after booting and stored in a locked cabinet elsewhere in the building.

The server runs a fully patched version of Ubuntu using only packages from official Ubuntu stable repositories. Only ports 80, 443, and 22 are open; the rest firewalled. SSH has a stringent configuration to resist brute force attacks and root login is disabled. MySQL has been secured from its default configuration, and only accepts connections from the localhost. Tomcat only serves pages over HTTPS: it redirects all port 80 traffic to port 443 and uses SSL/TLS with our own self-signed certificate.

All server processes are owned by non-privileged users and are sandboxed. OpenMRS user accounts have permissions relevant to their roles and may only access relevant data, as per principle of least privilege. A strong password policy is enforced.

1.2.3 Clinic computers

Clinic computers are Google Chromebooks, which use a 3G mobile internet connection to connect directly with the VPN. The 3G mobile internet connection

does not permit access to the internet, and Wifi and Ethernet networking on the client machines is disabled.

Clinicians and data clerks use the Chromebooks to search, view, edit and create electronic patient records and access verification reports and clinical reminders within the OpenMRS web application.

1.3 Data Management

1.3.1 Data Protection

Uamuzi Bora stores patient data confidentially and, in accordance with best practices, data are protected through a variety of mechanisms.

The server is physically secured in a locked office in Kakamega, and physical access is limited to select Uamuzi Bora staff. An alarm is triggered if the server case is tampered with and the BIOS requires a password to continue booting. Patient identifiable information (such as the MySQL database) is stored on an encrypted file system that is decrypted at boot time using a USB key, which is then stored in a different secure physical location to the server.

Connections between the clinic computers and the server use exclusively HTTPS over an IPsec VPN. Core Uamuzi Bora staff can also connect to the server from the internet using public-key authenticated SSH over the IPsec VPN. All connections and connection attempts to the server are logged and audited.

1.3.2 Data transfer and backup

Encrypted backups are made of patient identifiable data. These backups are encrypted using GnuPG to a private key, which is split between four lead Uamuzi Bora staff using Shamir's Secret Sharing in a (2,4)-threshold scheme. This means that no-one person can decrypt the backup - it requires two people to combine their shares of the private key to decrypt it.

Encrypted backups are transferred to long-term storage on Amazon Glacier over the VPN and held for a period of 6 months for the purpose of disaster recovery after

which time they are securely deleted. All backups are protected with strong encryption. Only the project's public keys are on the server; the corresponding private keys are held out of country by the research team. Temporary files are immediately securely deleted after encryption is completed.

1.3.3 Anonymisation

In addition to backups for the purposes of disaster recovery, regular anonymised versions of the database are created automatically by the server, which contain no patient identifiable data. This anonymous database is encrypted with a different key to the main backup and is held by all core project members.

The anonymisation process is automated by a backup script and does not involve any human intervention. It occurs on the same physical machine as OpenMRS, so data are anonymised at point of source.

Patient identification numbers, names, data of birth, relations, first line of address and free-text fields are considered represent patient identifiable data and these are deleted as part of the anonymisation process, apart from date of birth which is rounded to the nearest year. Our anonymisation process thus performs the following functions:

- Deletes the UPN (the unique patient identification number).
- Deletes the patient's forename(s) and replaces it with 'Unknown'.
- Deletes the patient's surname and replaces it with 'Unknown'.
- Deletes the patient's middle names (if applicable).
- Deletes the patient's maiden name or previous surnames (if applicable).
- Deletes any prefixes or suffixes of the patient's name (if applicable).
- Deletes the first line of the patient's address
- Deletes the patient's telephone number
- Rounds the patient's date of birth to the nearest month (e.g. 14/07/1970 would be come 01/07/1970)
- Deletes all details of the patient's treatment support (names, phone numbers and addresses)

The anonymous database is used to create aggregated data that is transferred over a VPN to a public webserver for use in the dashboard indicators and application programming interface (API), which allows partners to access aggregated data.

2. Objectives, Outputs and Activities

2.1 Principal Objective

To improve clinical care of pregnant women and children attending maternal and child health services through implementation of an electronic medical record.

2.2 Specific Objectives

- The Ministry of Health maintain and implement a maternal and child health electronic medical record for public health and clinical decision-making.

- At least 20,000 pregnant women and their children are enrolled and registered in a maternal and child health electronic medical record across 25 health facilities.

- All patients registered in the maternal and child health electronic medical record are reviewed daily to ensure clinical care delivered is standardised and appropriate.

2.3 Outputs and activities

Output 1: A maternal and child health electronic medical record is implemented and co-ordinated by Ministry of Health

Activities:

A1. Server and network infrastructure
A server and virtual private network is registered, implemented and maintained by Ministry of Health for implementation of the maternal and child health electronic medical record.

A2. MCH EMR reporting and updates
Regular reporting and updates are provided on the status and outcomes of implementation of the maternal and child health electronic medical record at national, county and district levels.

Output 2: At least 20,000 pregnant mothers and their children are enrolled and registered in the maternal and child health electronic medical record across 25 health facilities

Activities:

A1. National, county and district EMR training
National, county and district training is completed on the role of the maternal and child health electronic medical record in public health decision making and reporting.

A2. Health facility EMR training
Maternal and child health electronic medical record training is completed in 25 health facilities on the role of the maternal and child health electronic medical record in clinical decision making, record keeping, retention in care and follow-up.

A3. Data entry
Data entry of at least 20,000 pregnant women and their children into the maternal and child health electronic medical record is completed across 25 health facilities.

Output 3: Quality of record keeping, clinic attendance and retention in care is improved through implementation of the maternal and child health electronic medical record

Activities:

A1. Record keeping
All patient records are screened daily to ensure missing administrative and demographic data is complete.

A2. Clinic attendance
All patient records are reviewed daily to ensure a minimum number of antenatal, delivery and postnatal care appointments is attended per patient.

A3. Retention in care
All patient records are reviewed daily to ensure that patients who have missed a clinic appointment are reviewed and followed up.

Output 4: Quality of clinical care is standardised and improved, according to predefined clinical reminders and indicators through implementation of the maternal and child health electronic medical record

Activities:

A1. Screening
All patient records are reviewed daily to ensure that all patients have received appropriate screening for hypertension, Malaria, TB and HIV.

A2. ART prophylaxis
All women and children who are HIV positive are reviewed daliy to ensure that appropriate care and treatment is provided according to standardised guidelines.

3. Logical Framework Matrix

	Intervention Logic	*Objectively Verifiable Indicators*	*Sources of Verification*	*Risks and Assumptions*
Principal Objective: **(IMPACT)**	To improve clinical care of pregnant women and children attending maternal and child health services through implementation of an electronic medical record	Women and children enrolled and registered in the EMR Women and children attending MCH services Women screened for HTN, TB, Malaria and HIV	MoH reports Health facility data MCH EMR database	
Specific Objective: ***(OUTCOME)***	The Ministry of Health maintain and implement a maternal and child health electronic medical record for public health and clinical decision-making. At least 20,000 pregnant women and their children are enrolled and registered in a maternal and child health electronic medical record across 25 health facilities. All patients registered in the maternal and child health electronic medical record are reviewed daily to ensure clinical care delivered is standardised and appropriate	At least 80% of patient records are complete At least 80% of services are attended by women and children At least 80% of screening is completed for hypertension, TB, Malaria and HIV	MCH EMR database	Funding is available to support activities Co-ordination and capacity is available

OUTCOME: At least 20,000 pregnant women and their children are enrolled and registered in a maternal and child health electronic medical record across 25 health facilities				
Results R1: Co-ordination ***(OUPUTS)***	1. A maternal and child health electronic medical record is implemented and co-ordinated by Ministry of Health	A functioning MCH EMR and network is hosted by MoH	Observation MoH Reports	Funding is available to support activities Co-ordination and capacity is available
Results R2: Registration ***(OUPUTS)***	2. At least 20,000 pregnant mothers and their children are enrolled and registered in the maternal and child health electronic medical record across 25 health facilities	At least 20,000 patients are registered in the MCH EMR	MoH reports Health facility data EMR database	
Results R3: Record Keeping ***(OUPUTS)***	3. Quality of record keeping, clinic attendance and retention in care is improved through implementation of the maternal and child health electronic medical record	At least 80% patient records are complete At least 80% of patients attend all MCH services	MoH reports Health facility data EMR database	
Results R4: Clinical Care ***(OUPUTS)***	4. Quality of clinical care is standardised and improved, according to predefined clinical reminders and indicators through implementation of the maternal and child health electronic medical record	At least 80% of patients are screened for HIV, Malaria, TB and HTN 100% of HIV patients receive appropriate care and support	MoH reports Health facility data EMR database	

RESULT 1: A maternal and child health electronic medical record is implemented and co-ordinated by Ministry of Health

Activities R1 ***(INPUTS)***	**<u>Activities associated with R1</u>** **A1. Server and network infrastructure** A server and virtual private network is registered, implemented and maintained by Ministry of Health for implementation of the maternal and child health electronic medical record. **A2. MCH EMR reporting and updates** Regular reporting and updates are provided on the status and outcomes of implementation of the maternal and child health electronic medical record at national, county and district levels.	**Means** Human resources Server, network, database Technical support IT and Program Consultants Developer/ Programmer	**Costs** Staff costs Transport costs Server, network, database	Funding is available to support activities Co-ordination and capacity is available
RESULT 2: At least 20,000 pregnant mothers and their children are enrolled and registered in the maternal and child health electronic medical record across 25 health facilities				
Activities R2 ***(INPUTS)***	**<u>Activities associated with R2</u>** **A1. National, county and district EMR training** National, county and district training is completed on the role of the maternal and child health electronic medical record in public health decision making and reporting. **A2. Health facility EMR training** Maternal and child health electronic medical record training is completed in 25 health facilities on the role of the maternal and child health electronic medical record in clinical decision making, record keeping, retention in care and follow-up. **A3. Data entry** Data entry of at least 20,000 pregnant women and their children into the maternal and child health electronic medical record is completed across 25 health facilities.	**Means** Human resources Technical support	**Costs** Staff costs Transport costs Training costs Data entry costs	Funding is available to support activities Co-ordination and capacity is available

RESULT 3: Quality of record keeping, clinic attendance and retention in care is improved through implementation of the maternal and child health electronic medical record				
Activities R3 ***(INPUTS)***	**<u>Activities associated with R3</u>** **A1. Record keeping** All patient records are screened daily to ensure missing administrative and demographic data is complete. **A2. Clinic attendance** All patient records are reviewed daily to ensure a minimum number of antenatal, delivery and postnatal care appointments is attended per patient. **A3. Retention in care** All patient records are reviewed daily to ensure that patients who have missed a clinic appointment are reviewed and followed up. .	**Means** Human resources Technical support	**Costs** Staff costs Transport costs Server, network, database	Funding is available to support activities Co-ordination and capacity is available
RESULT 4: Quality of clinical care is standardised and improved, according to predefined clinical reminders and indicators through implementation of the maternal and child health electronic medical record				
Activities R4 ***(INPUTS)***	**<u>Activities associated with R4</u>** **A1. Screening** All patient records are reviewed daily to ensure that all patients have received appropriate screening for hypertension, Malaria, TB and HIV. **A2. ART prophylaxis** All women and children who are HIV positive are reviewed daliy to ensure that appropriate care and treatment is provided according to standardised guidelines.	**Means** Human resources Technical support	**Costs** Staff costs Transport costs Server, network, database	Funding is available to support activities Co-ordination and capacity is available

4. Budget

A budget is requested to support Ministry of Health ownership and implementation of a maternal and child health (MCH) electronic medical record (EMR) over a one year period.

The budget will facilitate implementation of the MCH EMR by Ministry of health (MoH) to cover at least 20,000 pregnant mothers and their children across 25 health facilities (including 5 facilities currently supported in Kisumu West). Technical support and training will be provided within the budget to support MoH ownership and sustainability for the long-term.

The budget assumes that MoH staff costs (at national, county, district and facility levels) are covered by the MoH themselves, as use of the EMR will become part of the daily work of public health and clinical staff. These staff costs include data entry and routine use of the EMR, as well as attendance at training.

5. Ministry of Health letters regarding the MCH EMR

5.1 Seme Sub-County Medical Officer of Health

MINISTRY OF HEALTH

Telegrams: "Health"
Tel: 020-2082363

E-mail:
mohsemesubcounty@gmail.com

MEDICAL OFFICER OF HEALTH
SEME SUB COUNTY
P.O. BOX 60
KOMBEWA

25rd Oct, 2011

The Director,
Uamuzi Bora Project
Kakamega **(Att. Dr. John Haskew)**

RE: MCH ELECTRONIC MEDICAL RECORDS (MCH EMR) IN SEME SUB-COUNTY

In regards to the above subject we wish to convey our sincere appreciation for the great support you offered to Seme Sub County (formerly Kisumu West District), during the pilot phase of MCH EMR project. The project was piloted in 5 health facilities in the sub county, namely; Kombewa, Manyuanda, Rodi, Bodi and Bar korwa.

The overall objective of MCH EMR project was to improve the quality of Maternal and Child Health Care through the use of electronic medical records.

Highlights on the achievements made as at 23.10.2013 are as below:-

- Total pregnant women enrolled 1182
- Total deliveries registered 269
- Total children enrolled 464
- HIV pregnant women on ART prophylaxis 81
- Complete records 753

The Sub County however has some challenges with regards to sustainability of the project some of which are as enumerated below:

- Low pace of dissemination of EMR system to other staff attributed to competing tasks and limited skills in computer operation by other staff members
- Continuity of data entry after exit of data entry assistants due to low staffing and therefore over stretched schedule
- Network connectivity fluctuation making it hard to register all clients on the affected days
- Sustainability and rolling out to other facilities due to lack of enough chrome books, airtime for internet connectivity and trained personnel

Faced with the reality of the above challenges and the need to sustain the system, the Sub County Health Management Team requests that;

JICA to continue supporting

- Data entry assistant in each health facility

- Further training of staff on MCH EMR system
- Continuous support supervision

Uamuzi Bora to further support:
- OJT, mentorship and support supervision
- maintenance of chrome books
- Provision of chrome books
- Airtime for internet connectivity
- To further improve on the system so that it could be used offline to take care of clients missing during poor internet connection times

Ministry of Health to support with:
- Additional technical staff (Nurses, HRIO's and RCOs) to the health facilities
- Support supervision, OJT and mentorship to lower level facilities

Attached please find scanned reports from individual pilot facilities on the same.

Thanks for your continued cooperation and support.

NICHOLUS PULE
Ag. Medical Officer of Health
Seme Sub County

5.2 Rodi Dispensary

RODI DISPENSARY
P.O BOX 10
PAW-AKUCHE
16/10/2013

DISTRICT MEDICAL OFFICER OF HEALTH,
SEME DISTRICT,
P.O BOX 60
KOMBEWA

RE: SUSTAINABILITY OF MCH EMR PROJECT

Following the MCH EMR piloting project at Rodi dispensary, the facility had the following achievements

i. Easy follow- up of ANC clients
ii. Easy access of clients records
iii. Monthly facility records is easily generated

The following challenges were also noted.

i. Lack of enough staff
ii. Insufficient funds for sustainability
iii. Network failure

Due to the above challenges the facility is unable to sustain the project due to insufficient funds to enable the facility deal with the challenges.
It is for this reason that we are requesting your office to assist the facility sustain the project.

Thanks in advance.

NORAH ODHIAMBO
FACILITY I/C
RODI DISPENSARY

RODI DISPENSARY
P.O. BOX 10 PAW AKUCHE
DATE 16/10/13
SIGN

5.3 Manyuanda Health Centre

MINISTRY OF PUBLIC HEALTH & SANITATION

Telegrams: "Health"
Tel: 073558700/0723862185

E-mail: pscmanyuanda@gmail.com

MANYUANDA HEALTH CENTRE
KISUMU WEST DISTRICT
P.O. BOX 94
KOMBEWA
16/10/2023.

To
The DMOH SEME SUB COUNTY
P.O BOX 60
KOMBEWA.

Dear Sir/Madam

RE:MOTHER CHILD HEALTH ELECTRONIC MEDICAL RECORDS.

Manyuanda health centre is a high work load facility serving a population of 13,524 clients annually with 3083 women of reproductive age and 475 children less than one year. We have one health records officer who also doubles up as a data entry clerk in the CCC with at list 2 nurses on duty each day having to rotate in the maternity, injection, Child welfare clinic, postnatal, antenatal and the PMTCT room.

We appreciate and embrace technology because it has helped us improve on client follow up and management. We have noted with a lot of concern that documentation is a challenge in our facility; having to use the register and at the same time do entries in the chrome book is a challenge. We as a facility are not able to employ the services of a data clerk because of financial constraints. We therefore request your humble office to consider employing us a data clerk for the betterment of our data caption in the facility to improve on clients' management and evidence based decision making.
Thank you in advance hoping this request is considered.

Zablon Kerimo

Clinical Officer I/C

5.4 Bodi Health Centre

BODI HEALTH CENTRE
P.O BOX 60,
KOMBEWA
16/10/2013

MOH SEME SUBCOUNTY
P.O. BOX 60,
KOMBEWA

RE: MCH E.M.R

Following the introduction of MCH/ EMR in our facility, the activity went on very well and active for some months then it went sluggishly there after.

The activity is unsustainable given shortage of staffs and proper training on how to use the chrome book, coupled with lack of motivation for the persons doing the job.

Yours faithfully

ROSELYNE OMONDI
FACILITY IN- CHARGE

5.5 Bar Korwa Health Centre

OUR LADY HELP OF THE SICK
BARKORWA C. MISSION HEALTH CENTRE
P.O. BOX 270 – 40102, KOMBEWA. Tel: .....

Your Ref: ..... *Date:* 17/10/13

Our Ref: .....

TO,
THE MEDICAL OFFICER OF HEALTH,
KOMBEWA DISTRICT HOSPITAL,
P.O. BOX 60,
KOMBEWA.

MCH-EMR PROJECT REPORT.

The MCH-EMR program being conducted in Barkorwa has been carried out for the last four months June 15th – Oct 15th after the pilot phase that was supported by Uamuzi Bora and JICA Semah project.

PROGRESS OF THE PROGRAM.

There has been an impressive progress of this program in our facility. The program has helped the facility have patients data well maintained. It has been a very successful mode of health data management since it is less of errors and is very efficient. It has also been a successful tool for defaulter detection and tracing.

CHALLENGES.

Generally, the challenges that may affect sustainability of the project in our facility is the issue of staffing. This issue may affect us due to the workload in the facility. Apart from the above, instability of network in our facility that causes alot of delays during data entry. We also experience system failure that makes it impossible to capture all the clients.

CONCLUSION.

We hope for further support for the continuity of the programme.

A lot of thanks to the programme inventors.

"Your health our priority"

5.5 Kombewa Health Centre

MINISTRY OF MEDICAL SERVICES

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KOMBEWA DISTRICT HOSPITAL
P.O. BOX 60
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Date: 15/10/2013

DEPARTMENT OF HEALTH RECORDS & INFORMATION

RE: MCH - ELECTRONIC MEDICAL RECORDS (EMR) PERFORMANCE REPORT

The electronic medical records - MCH piloting initially started at a low pace but gradually picked up and progressed well with a good population up to now having been captured.

The activity has been kept on-going, that is, data entry, by the HRIO i/c and his assistant (HRIT). However, the latter has been mostly hands on due to competing tasks to the former but this never contributed adversely to the quality of the information.

We (the facility) are now able to generate reports that show the performance and status as concerns the service.

Challenges

- Competing tasks
- High workload
- Staff shortage since those trained have additional professional responsibilities
- Inconsistent network that derails continuity of the service.

Way forward

- Deployment of at least one (1) permanent HRIT to man the service
- Introduction of dual simcard to alleviate frequent network loss.
- Motivation-Award of certificates to those trained.

Tom Odhiambo
For: Med.Supt.
KOMBEWA SUBCOUNTY HOSPITAL