CAPTURING DATA THROUGH WORKFLOW GUIDANCE FOR STRONGER HEALTH SYSTEMS

Tufts Center for Global Public Health
Global Health Research and Innovation Day

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Centralized Health Care

Decentralized Health Care
Care vs Data
Care & Data
Fio vanana
Guided Digital Diagnosis

- **Deki Reader**
- **RDT Identification**: Auto-detects RDT make and model
- **RDT QC**: Detects RDT use errors and prompts corrective action
- **RDT Incubation**: Parallel throughput of multiple patients
- **RDT Interpretation**: Digitally analyzes RDT result
Accurate, Complete, Timely Data Capture

- Touchscreen, pick-list data capture
- Customizable forms & surveys
- Patient demographics
- Easy-to-use data entry
- Phone
- Deki Reader
- Tablet
- Alerts & messages
- Workflow guidance
- Training & education

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Supervisors can now remotely oversee diagnostic activity and provide feedback.
They can pinpoint inappropriate case management and intervene.

- Negative cases treated
- Negative cases untreated
Researchers and other stakeholders can map real-time primary data against existing disease information.
Case Study

Meru County Health System, Kenya: Fionet Deployed to Support Malaria and HIV Programs
Key Drivers of Visits (2012-2013)

- ‘Malaria’- 33% (in a non-malaria endemic area)*
- Respiratory tract infections - 27%
- Worm infestations - 17%**
- Diarrheal diseases - 14%**
- Accidents*
Why So Many Repeat Visits?

- Syndromic management (of fevers)
- Poor diagnostic skills of HRH involved
- Poor efficacy of the dispensed commodities
- Poor adherence to prescribed treatment(s)
Focus: Malaria screening and HIV testing

Training undertaken in March 2014 (50 staff trained); in 10 Sites

Ran from 1st May 2014 – 31st July 2014

Deki Readers guided RDT performance, including new 3-RDT HIV algorithm

Data from each patient encounter uploaded to Fionet database, including automated analysis and high-definition image of RDT results, patient data and treatment decisions

Fionet web portal provided tools for oversight/analysis/two-way messaging
On-the-job feedback helped health workers reduce RDT use errors nearly 10-fold in 5 weeks.
Programmatic Results

Malaria

- Only ~0.6% of malaria cases (out of ~2,220 screened) vs. ref. data that overall incidence was 33% from 2012-13; 17% from 2013-14)
- Repeat visits were only ~0.75% overall in the 10 sites vs. 70% county aver. from 2012-2013
- ~65% (1428/2204) patients with negative RDT results at the 10 sites got antibiotics

HIV

- ~500 HIV RDT tests run in the 10 sites
- The estimated HIV prevalence is 4.7%
- Adherence to the new HIV testing algorithm - 98.7%
- Referred and tracked PLHIV were at 97%
Case Study

Kisumu County, Kenya: Fionet Deployed to Support Gates-Funded Insecticide Resistance Research (IRR) Study
Study Background

This study relies on the work of basically trained community health workers going into rural households to:

1) Test for malaria with rapid diagnostic tests (RDTs)
2) Collect information on patient demographics, bed net usage and quality

KEMRI hypothesized that Fionet could improve:

- Health worker performance of rapid diagnostic testing
- Accuracy of diagnostic data collected
- Completeness of data collected
- Timeliness of data reaching supervisors and researchers
Fionet Revealed High Usage of Bed Nets of Poor Quality

This Fionet data is courtesy of:
Dr Charles Mbogo, Principal Investigator, KEMRI
Dr Solomon Mpoke, Director, KEMRI
Fionet Provided Significant Value for Money

- The cost per useful dataset provided by Fionet was estimated to be 25% less than the cost of using paper-based data management methods.

- Fionet significantly improved the quality of data gathered:
  - 10x greater rate of complete data compared to paper data
  - Transparent, objective diagnostic data
  - 87% of aggregated data available in less than one day

- Investigators concluded Fionet significantly improved overall data quality and management, and enhanced ability to meet IRR program objectives.
Busy clinics and decentralized labs everywhere
Remote communities
Private pharmacies
$75 billion spent by Africans on cell fees in 2013
Thank You

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