Mobile & Wireless Technologies in Support of FP & Health Programs: Better, Faster, Cheaper

International Family Planning Conference
Kampala, Uganda
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20 Years Ago Uganda DHS
mHealth

- **mHealth** or Mobile Technology for Health describes the use of mobile telecommunication tools and services and as they integrate *within health systems with special emphasis on Developing Countries*
Areas of mHealth Applications

• **Remote Data Collection**
  
  *survey, routine data, patient, at home or at facility.*

• **Diagnostic & Treatment Support**
  
  *mobile phone as point-of-service device*

• **IEC among CHWs**
  
  *managing household CHW visits, outreach services*

• **Remote Monitoring**
  
  *health provider appointments or prescription monitoring*

• **Disease & Epidemic Outbreaks**
  
  *tracking or reporting health care emergencies*
mHealth Technologies

• **GSM**

  *Global System for Mobile communication, Platform for telecom service, a cellular network, more widespread*

• **SMS & MMS**

  *texting or short-message-service is least expensive, best for sending messages to a large audience (160 char. Max.) MMS extends SMS to include pictures, but is an older technology*

• **GPRS**

  *General Packet Radio Service (3G), Richer content, Faster, needed for more complex questionnaires*

• **GPS**

  *Built in to many phones now, capture location along with form data*
Telecom global growth

Note: * Estimates.
Source: ITU World Telecommunication/ICT Indicators database.
Mobile Phone Subscriptions

Figure 1 Mobile Phone Subscriptions in Developing and Developed Countries, 2000–07

Source: International Telecommunication Union (ITU), World Telecommunication/ICT Indicators Database.
Cost of Connectivity

Figure 8 Monthly Price of Internet Services in Various Sub-Saharan African Countries, 2005–07

Source: ITU, World Telecommunication/ICT Indicators Database.

Note: Price basket for Internet service is calculated based on the cheapest available tariff for accessing the Internet for 20 hours a month (10 hours peak and 10 hours off-peak). The basket does not include the telephone line rental but does include any telephone usage charges.
Reasons Behind the Trends

• Cost for a simple handset has come down (under $20)
• Pre-paid billing systems, no credit necessary
• Liberalized government licensing in many countries
• Local mobile operators selling air time, promoting competition, driving prices down
• Thousands of recharge card re-sellers
• Knowledge is Empowering
He used to sell masks and statues... now its Mobile Phone SIM recharge cards
mHealth Quotes and Facts

• “the single most transformative tool for development”
  – Jeffrey Sachs, Columbia University development guru

• “adding 10 mobiles per 100 population boosts growth in GDP by 0.8%”
  - The Economist, Sept. 25-Oct. 2

• **New Mobile Subscriptions April, 2008 – March, 2009**
  – India 128 Million
  – China 89 Million
  – Africa 96 Million

• **Mobile operators investing $50 B in Sub-Saharan Africa in the next 5 years** (90% potential coverage)

• **In 5-10 years it is projected that there will be universal 3G coverage**
Red Cross Albania, 2004
FP/RH Survey

• Flashback to the early days of mHealth (2004) we piloted PDAs for collecting survey data for a community-based family planning project funded by USAID and implemented by the Albanian Red Cross.

• This saved time & money & resulted in better quality data.
Red Cross Albania, 2004
FP/RH Survey

• 30 Cluster Sample in 3 Districts
• < 200 Questions
• 6 Days of Field Work
• 660 Targeted Respondents
• Most enumeration areas within close proximity to project office
• Data physically returned to project office for downloading each night
• Results were ready in 10 days
• Cost/Benefit Analysis Results Positive
Problems remain for larger/more remote surveys with greater geographical spread

- Physically transporting questionnaires or data back to the office
- Rugged terrain or political unrest
- Transport problems & costs
- How to get data entry program updates back to interviewers already in the field
Adding transmission of data via Mobile Phones enables Real Time Reporting

- Transmission of data over phone lines creates the possibility of real-time reporting and monitoring via the web across large distances.

- Especially important for time critical information such as routine reporting, supply stock outs or cold chain monitoring.

- Results can be displayed on the web, and GPS data can be geocoded and displayed as a map.
Checklist for Implementing remote mhealth data collection & reporting

✓ Knowledge of reliable connectivity protocols in country (SMS, GPRS, 3G)
✓ Costs and platform for mobile data handsets, rollout & connectivity
✓ Develop data collection instrument with data quality skips and checks
✓ Interviewer training on questionnaire and mobile entry
✓ Interviewer teams collect and backup data on mobile devices
✓ Supervisors check and transmit encrypted data to central database
✓ Data Management Strategy employed/ Web server receives data
✓ Web Pages display updated information in Real Time Data Monitoring and/or Dissemination Strategy
✓ Knowledge of reliable connectivity protocols in country (SMS, GPRS, 3G)

Diagram:

- Survey Data Entry
- SMS, GPRS or 3G Connectivity
- Country Office
- HQ
✓ Costs and platform for mobile handsets & connectivity
✓ Data entry with enforced range & consistency checks
✓ Interviewer training on paper questionnaire and mobile form
Interviewer teams enter and backup data on mobile devices
✓ Supervisors check and transmit encrypted data to HQ Server
Data Management Strategy employed. Web server receives data and passes data to web database.
Web Pages display updated information in Real Time

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✓ Collected Records plotted as Data points on Google Maps Web Page (simulated)
Thank you