Nicaragua 2010
Visit to Path Nicaragua Office

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Feedback on Nicaragua Visit

• Requirements gathering for Smart Connect project
• Identify collaboration opportunities for HMIS project portfolio
• Gain familiarity with Nicaraguan public health system

Smart Connect

• Develop a low cost device to bring a “digital dial tone” to rural health clinics

• Facility based device for low bandwidth data communication
  – Initial implementation SMS messages using GSM
• Rural clinic with vaccine storage
  – Temperature monitoring and alerts
  – Reporting stock levels
• Partners
  – Development partner: Inveneo
  – Deployment partner: Path Nicaragua

Cold Chain Equipment Management (CCEM)

• Manage and forecast cold chain equipment needs based upon a national equipment inventory
  – MS Access based inventory management / forecasting tool
    • Initial development at Path
    • Revision by external software company
    • Ongoing product management by Path
Handheld CCEM

- Implement components of CCEM on mobile device
  - Data collection for equipment inventory
  - Facility level evaluation of required refrigeration capacity
- Partner with UW
  - Implement on Android phone with ODK
  - Focus on smart phone capabilities

SARA

- Systematic, architected rational approaches to ICT systems and solutions
  - Methodology for gathering user and systems requirements
    - Facilitated workshops with users, experts, and stakeholders
    - Templates for Health Usage Scenarios
    - Define business processes and workflows

Monday, January 11 (with JJA)

- Morning, MINSA, Minesterio de Salud
  - Cold Chain
  - Epidemiology
- Afternoon, Travel
  - SILAIS Managua
  - SILAIS Boaco
  - Health Center, Juigalpa

Yolaina Staff

Yolaina
Yolaina

Tuesday, January 12 (with JJA)

- Nueva Guinea
  - Health Center, Nueva Guinea
  - Health Post – Yolaina
  - Health Post – El Serrano
  - Health Post – La Fonseca

El Serrano: Cuban Doctor with Assistant

Wednesday, January 13

- Morning, MINSA (with Margarita Quintanilla and JJA)
  - Meeting with Minister of Health, Dr. Guillermo Gonzalez
- Afternoon, Managua (with Dr. Maribel Orozco and JJA)
  - SILAIS (to see incidence reporting system)
  - Health Center, Villa Venezuela
  - National Children’s Hospital
Thursday, January 14 (with JJA)

- Leon
  - SILAIS Leon
  - Health Center Santa Rosa Del Piñon
- Jinotepe
  - SILAIS Carazo

Friday, January 15 (with Dr. Magda Sequeira)

- Jinotega
  - SILAIS Jinotega
  - Health Post Pueblo Nuevo
  - Health Post Las Cruces
  - Health Center Pantasma
  - Health Post Zompopera (Red Ant Hill)

Jinotega SILAIS district map

Health Post Zompopera

Nicaragua Public Health System

- Health Post
- Health Center
- SILAIS
- MINSA (Ministry of Health)

“Under resourced but functional and rational”

Cell Phone Coverage

- Two companies
  - Claro
  - Movistar
- Claro has much broader coverage for rural areas
- Electricity may have wider distribution than cell phone coverage
  - Did not see any candidate solar + cell phone sites
Health Post Connectivity

• Visit included moderately remote health posts. — All were close to cell phone connectivity, some on site, some required a walk up the hill, other it depended on the quality of the phone
• Previously, Health Posts had radios, but these are being phased out where cell phones are available
• Communication from HP to HC often easier than communication from HC to HP
• Travel and visits another important communication mechanism

Cold Chain

• 1350 refrigerators, including 250 solar. Kerosene is going extinct
• Vaccine distributed monthly to Pacific, once every three months in Caribbean
• Electric refrigerators considered reliable
• Problems with solar refrigerators — Primarily with solar generation

Cold chain reporting

• Consistent recording of temperature twice a day
• SILAIS has refrigerator technician — On call for repairs — Annual maintenance visits
• Vaccination data reported up from Health Posts
Power situation

- Grid power generally good
  - Has improved in recent years (help from Hugo)
- Power lost one evening during visit
- Some health centers identified power as a problem
- Low voltage (should be 110)
- Some sites recently added to grid recently

La Fonseca: Solar Panels (not in use)

Surveillance Reporting

- Reports on diseases and mortality
- Daily or weekly from Health Post to Health Center to SILAIS to MINSA
- Submitted through different mechanisms
  - Phone, Radio, Hand delivery
- Commitment to accuracy at all levels
- MINSA wanted more frequent reporting
  - Complained no data came in on weekends

Use of surveillance data

- Summarize at Health Center and above
- Health Centers and SILAIS generated statistics and used them for evaluating programs and tracking results

Computer Use

- Computers at SILAIS and Health Center
  - Even a few health posts
  - Used for data entry (Excel)
- Internet only at SILAIS level
- Carazo SILAIS has long distance WIFI project to connect with health centers funded by Luxembourg

Incidence Reporting Pilot

- Three month cell phone pilot of incidence reporting
  - Prompted by need for data on cases of Dengue
- 50 phones distributed to facilities in Managua
  - Forms based data submission
  - Frontline SMS
- Considered very successful by all participants
  - Effective data collection
  - Model of facility controlled, special purpose phone worked well
  - Used for incidence reporting and patient tracking
Information flows

- Surveillance data
  - From Health Posts to MOH, collated at various levels
- Immunization
  - Twice daily temperature recording (reported??)
  - Vaccination numbers
  - Adverse reports, incidence reports on vaccination preventable diseases
- Pregnancy tracking
  - HP to HC only?
- Incidence reporting
  - PILOT Program: HC to SILAIS level

What will Smart Connect be useful for? (or other feedback)

- Minister of Health
  - (real time) temperature reporting, surveillance data
  - Comments on participatory design, sustainability, and training
- Epidemiologist
  - Surveillance data every day
- Health center
  - Worry that device will replace radios
  - Tracking pregnancies
  - Communication with Health Posts

Feedback

- Health Posts
  - Reporting surveillance data, emergency communication, reporting vaccinations
    - “If it can send text messages, it can be used for anything”
    - Notification of power off
- SILAIS
  - Temperature data important
  - Surveillance and Incidence data
  - Patient tracking: “abandonment”

Things that didn’t come up much

- Stock reporting and ordering
  - General model for HP supply is to pick up stuff on regular visits and to report back
  - Higher levels have a regular distribution schedule: “vaccines sent out on the 23rd day of the month”