E-DEVELOPMENT SERVICES
THEMATIC GROUP
In collaboration with infoDev and ITSLC
a Quickstart BBL

Adding value and efficiency through ICT

Focus on Public Health / Governance

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Today’s Topics

Question: Can applied ICT in developed countries be leveraged to support poverty reduction, economic improvement, capacity building and improved public health in developing countries?

A few STC examples and suggestions
- Applied Information and Communications Technology in:
  - Domestic and International public health
    - Disease reporting
    - Immunization tracking
  - Local Governance in Senegal
- Goal → Effective use of ICT to promote economic growth, self governance and public health, leveraging best practices in developed countries into developing countries

Suggest 1 idea and a possible strategy for facilitating the implementation of ICT and capacity building in developing nations
Who is STC

- 100+ medical and informatics professionals
- Business since 1988
- Offices throughout US and 3 international
- Business is:
  - Public health ICT
  - Government services ICT (i.e. local governance)

More @ www.stchome.com
Today’s ICT Examples

International and Domestic
ICT Examples-Disease Reporting

Disease Reporting Examples

- Domestic example → US CDC based electronic disease reporting initiatives

- Asia example → China CDC system developed from SARS
ICT: Domestic Disease Reporting

Based Upon US CDC Vision
- Electronic disease reporting systems
- Standards based (new to the US)
- Moving from silos to enterprise

Example based upon work in:
- New York City, Dallas County, MI, ND, SD, CT, WV
- Expanding to WDC, NH, and LA
ICT: Domestic Disease Reporting

Goal: Provide a web-based application that integrates disease, lab, and GIS reporting capabilities

List of features:
- Case geo-coding/integrated GIS mapping
- Electronic laboratory reporting
- Master patient index
- Disease-specific extended record forms
- Robust analysis and reporting
ICT: Domestic Disease Reporting

Core System

- Add-on Options
- PDF Disease Specific Forms
- Case Edit Case Entry
- Automatic Case Assignment
- Patient Vaccination Display
- Immunization Registry
- GIS
- Maps Services Spatial Database
- Alerts
- HAN
- Animal Disease Surveillance
- SSO User Authorization/ Authentication
- ADS Interface
- Data Export/NETSS Export
- Users/Security
- Audit Logging
- Deduplication/Unmerge
- UI Web Interface
- Reports
- PAMS
- ELR
- Lab Data Files
- Program Area Modules
- Single Sign On
- Master Patient Index
- HTML, PDF, CSV Files
- Public Health Applications
- Core System
ICT: Domestic Disease Reporting

Lessons Learned:

- New ICT applications for disease reporting is improving state public health capacities.
  - Added ICT infrastructure …benefits all
  - Allows expansion to other programs…chronic, environmental health
  - Provides improved information for decision making and assessments

- Partnership approach is best to optimize resources, reduce cost and enhance value

- New tools are only ½ the answer, clients must assume accountability for ongoing success and evolution
ICT: International Disease Reporting

Slides: Acknowledgement to China CDC
**ICT: China Early Warning, Surveillance, Detection, Alerts, & Risks**

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**ENTRY-EXIT INSPECTION AND QUARANTINE**
THE PEOPLE’S REPUBLIC OF CHINA
HEALTH AND QUARANTINE DECLARATION FORM ENTRY

- **Name:**
- **Sex:** ☐ Male ☐ Female
- **Birth Date:**
- **Nationality/Region:**
- **Passport No.:**
- **Vehicle/Ship/Flight No.:**

1. The contact address and telephone number in the next 14 days:

2. Please mark ☐ before the items of following symptoms or illness if you have any now:
   - ☐ Fever
   - ☐ Difficulty breathing
   - ☐ Cough
   - ☐ Vesicular disease
   - ☐ Psychosis
   - ☐ AIDS/HIV
   - ☐ Diarrhea
   - ☐ Active pulmonary tuberculosis
   - ☐ Vomiting

3. Have you had close contact with any probable or suspected SARS case in the past 14 days?
   - ☐ Yes ☐ No

4. Please mark ☐ before the items of following articles if you bring any of them:
   - ☐ Animal
   - ☐ Animal carcasses and specimen
   - ☐ Animal products
   - ☐ Human tissues
   - ☐ Microbes
   - ☐ Biological products
   - ☐ Plant
   - ☐ Blood and blood products
   - ☐ Soil
   - ☐ Plant propagating materials
   - ☐ Plant products

I hereby declare that all the information given above is true and correct.

- **Date:**
- **Signature:**

Body temperature (quarantine official use)
ICT: Immunization tracking

- Immunization registries
  - Examples based upon work in
    - AZ, ID, IN, LA, MA, WA, WV, WY, (Houston)
    - Expanding to: NM
STC Immunization Demonstration
ICT: Immunization Reporting

Lessons Learned:

- Similar to Disease Reporting
  - Capacity building...

- Also
  - The Hurricane Example
    - Before and after
ICT: Public health application strategy in a developing country

Phase I: Assessment of infrastructure
- Establish baseline resources, communication channels, data collection mechanisms, etc.

Phase II: Identify diseases and public health issues, current public health projects, partners, also:
- Establish standards that will allow developed applications to share information
  - Vocabulary and messaging standards
    - Domestic examples: HL7, LOINC, SNOMED
    - Vocabulary access distribution system (VADS)

Phase III: Implementations
- Leverage “best practices” in developing countries to increase likelihood of success
ICT: Public health strategy in developing country

Phase IV: Build capacity in regions, districts, and territories around the ICT implementation

- Disease reporting: strengthen surveillance; provide training and improve lab support

- Immunization: integrate with current vaccine programs for VPD, data to support monitoring and evaluation efforts for specific programs

- Stagger regional/local implementation gradually over time
ICT: Developing Countries – another view

- HEMS (Disease reports)
  - Data collection instruments for disease reporting...disk

- Local Governance System for Touba, Senegal
  - in support of Cholera Outbreak
An Information System for “Ownership & Governance”
Titles & Ownership Promote Economic Growth
Ownership equates to revenue generation for communities
Extensive use of GIS
(A readily available technology)
Capacity Building Through Education
Value Added Benefits of this system
(Integrate public health IT to support Cholera outbreak)
ICT in Touba Next Step

Add on modules for:
- Utilities and transportation
- Public health
- Government inventories

Moving toward a low cost integrated government information system to support growth...
ICT: Local Governance

Lessons Learned:

- Promotes community based economic growth
  (Research funded effort from Canada…)
- Promotes local accountability
- Promotes capacity building
- Promotes value added “add-ons” (i.e. health)
- 3rd Parties benefit
  - WHO for health
  - NGO programs, available data for evaluation…
A strategy for facilitating ICT into developing countries

- Do not always focus on the national government to facilitate efforts
  - Touba example driven by religious leader & community

- Local governance and health applications are good places to start
  - Add health to local governance is optimal

- Leverage the IT infrastructure that is growing
  - Mobile and wireless communications
  - GIS and GPS
ICT: Final Thoughts

- Best practices:
  - Extended funding mechanisms of ICT
  - Low cost technical solutions and value of GIS
  - Architect plan that extends beyond core ICT application
  - Establish regional, national and global partnership communities for the specific applications
Discussion

The effective use of technology promotes growth, reduces poverty, …