Implementing an Electronic Information System in Georgia (Epi Defender)

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Evolution of TB Electronic Database

- Between 1996–2004, National Tuberculosis Program (NTP) database was entered into software Epi-Info, DOS version Epi6

- Between 2005–2008, Windows™ version Epi-Info 2000 was introduced

- Regional and district TB units were sending TB notification forms to the NCTBLLD monthly by regular mail and data was entered centrally
SAFE Project

• During 2008–2009, the European Union (EU) co-funded SAFE (SAtellites For Epidemiology) project was implemented by French company MEDES (Institut de Medecine et de Physiologie Spatiales).

• The satellite communication means (both fixed and mobile) delivered during this project enabled the TB centers in Abastumani and Zugdidi to get internet access—which was previously unavailable—starting in 2009.
Former System

Central level
Data analyzed

District level
Confirm diagnosis of TB suspects referred to them by GP, detect or follow patients suffering from TB

Communicate suspected cases to TB doctors

World Health Organization (WHO)

Central coordination site

Individual TB notification form sent monthly

TB doctor

Confirmation
Sputum sent whenever needed

Suspected case of TB

GP

Laboratory
New Surveillance Network—10 Regional Sites

**District level**
- **TB Doc**: Confirm diagnosis of TB suspects referred to them by GP, detect or follow patients suffering from TB

**Regional coordination site**
- **Individual TB notification form sent weekly**
- **Central coordination site**
  - **TB control manager + DB manager**: Analyze data from all regions, report to WHO
  - **Regional TB control manager + DB manager**: Check the forms sent from the district, analyze data at regional level

**Laboratory**
- **Sputum sent whenever needed**

**WHO**
- **TB control manager + DB manager**
Overview of the SAFE Services Provided to NTP

- Data collection IS for TB and MDR-TB case notification
- Satellite communication means
- GIS application
- Web conference tool

Currently, only data is collected
Development

• Created data collection system April—December 2008

• Deployed web application, December 2008
  – Delivered/configured server to host the information system
  – Delivered/configured the web application to collect TB data
  – Imported 2006-2008 TB data
  – Staff trained on server and IS administration
Current Information System

- Currently, National Tuberculosis Program (NTP) maintains customized data collection IS for TB, MDR, and XDR-TB individual case notification and treatment outcome monitoring. It is the only system used to record TB cases, making it essential for surveillance.
- IS represents itself a relational database.
- The access to the database is password-protected.
Main functionalities of IS

• Search entered data
• Provide an internationalized user interface (Georgian and English)
• Generate TB reports (WHO/ECDC/NCDC templates)
• Check user login/password
• Filter the data that a given user can view/edit depending on her or his privileges
• Filter the data that a given user can access depending on the region he or she belongs to
Information System Use (1)

- Number of users
  - 13 regional DB managers trained and using the system on a daily basis

- Entered data (only TB cases counted here)
  - Previous data from 2006–2008 entered in the system (18,089 entries)
  - 28,634 new entries created by users since 1/1/2009
Information System Use (2)

- Generates reports and epidemiological analyses
  - Aggregated report forms for local and supra-national purposes
  - Spread-sheets with raw data for non-standard analyses
  - Tables for data processing
  - Ad-hoc analyses at central level is performed using SQL tool
- Provides initial data for operational research and surveys
- Provides information for quantification of anti-TB medicines
Room for improvements/challenges

• The system is not routinely linked with second- and third-level lab database
• The system does not have a drug management module so not capable of handling stock management
• Life-long technical assistance is not available since February 2010
• No officially nominated staff available for database
• Availability of underused useful modules
Future Challenges

• Mandatory e-health project in Georgia under MoLHSA including TB module—under development

• Projected roll-out expected to begin April 1, 2014

• Risk of existence of dual IS in TB during transition period