Enterprise Architecture: Treating Health Information System as an Enterprise

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Objectives

- To understand and appreciate current health ecosystem in low- and middle-income countries (LMICs)
- To present challenges of integrating information technology into health information systems
- Discuss opportunities for enterprise architecture approach to strengthen health information systems
Health system challenges

- Inefficiencies in service delivery
- Low access to care, especially for the poor
- High-mortality diseases: tuberculosis, HIV/AIDS, vaccine-preventable diseases, malaria
- Weak health systems
- Duplication, fragmentation, and multiple reporting requirements
Health information system (HIS)

- Ensures the production, analysis, dissemination, and use of timely and reliable information
- Improves decision making
- Increases operational efficiencies
- Leads to better health outcomes
  - Such as high-quality patient and population care
HIS situation in low-resource settings

- Lack leadership and governance
- Fragmented HIS inhibit operational efficiency
- Rising demand for better data
- Information systems not interoperable
- Multiple systems overburden data collectors
- Ad hoc, piecemeal, and unsustainable use of technology
Is technology a bottleneck?
Weak IT integration: warning signs

- Same question, different answers
- Reinvent the wheel, lack of agility
- Same task, different information system
- Lack of critical information
- Physical moving of data from one system to another
- System conflict; potential for security breach
Strategy: Use enterprise architecture

- It’s the technical foundation of an effective IT strategy

- Four types of interrelated architecture:
  - Business
  - Data or information
  - Application
  - Technology architecture
Processes and responsibilities

Increase in IT staff involvement

Increase in management responsibility
Data architecture framework

- Designed to make systems interoperable

- Should be a flexible architecture that can grow and adapt to changes and new requirements over time

- Should ensure that indicators, data collection, and reporting systems are standardized

- Establish an integrated common data repository
Decisions

- What are ministries of health business processes?
- How are these processes related?
- What information drives them?
- How can the information be integrated?
- What technical capabilities should be standardized?
- What technologies should guide the IT approach?
Benefits for ministries of health

- Ministry-wide thinking
- Opportunity for greater interoperability
- Discipline and standardization of processes/integration
- Work prioritization
- Collaboration and communication among stakeholders
- Contributes to reduction of business risk from system failures and security breaches
Other issues

- Questions on funding (vested interests, priorities)
- Need for specialized IT skills
- Decisions on best enterprise architecture framework
- “Change management”
Global Context
Roadmap to Improved Health Measurement Reporting and Status

Creating an enabling country environment

Build demand for quality data
- Subnational, national, and international
- Clinical and population health programs

Strengthen supply of quality data
- Civil registration and vital statistics
- Census and program of household surveys
- Health facility and community information
- Disease surveillance
- Health system sources (quality, HR, finance, drugs, infrastructure)
- Non-health sector (nutrition, education, WASH, environment)

Countries will have the necessary information to measure and achieve health goals set nationally and in the SDGs

Increased use of data improves quality

Creating an enabling global environment

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Questions and answers

For more information:

MEASURE Evaluation Website Resources
http://www.measureevaluation.org/measure/resources

Defining Electronic Health Technologies and Their Benefits for Global Health
http://www.measureevaluation.org/measure/resources/publications/fs-15-165h

Health Information System Resources
http://www.measureevaluation.org/measure/our-work/health-information-systems