eHEALTH IN INDONESIA: DEVELOPMENT STRATEGIES

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THE CONTEXT: health situation in Indonesia
Indonesia: an Archipelago

238 million populations
33 provinces
530 districts/municipalities

GDP per capita 4.151 US $
Health expenditure/GPD 2.5%
Adult literacy rate 92%
Mobile network coverage 90%
Mobile phone subscription 69%

Double burden disease:
1. Communicable disease,
   Under-nutrition, MCH
2. Non Communicable Disease
Health Human Resources and Health Facilities

• 1,6 doctors per 10,000 population
  • WHO Health for All-standard: 2/10,000
• 3,5 midwives per 10,000 population
  • WHO Health for All standard: 2-4 / 10,000
• 2,4 nurses per 10,000 population
  • WHO Health for All standard: 2-4/10,000
• Hospitals: +/- 1.700
• Primary health centers +/- 8000

NOT EQUALLY DISTRIBUTED
Indonesia’s Health System Challenges
(World Bank, 2008)

- Stagnating Health Outcomes
- Geographic Inequalities
- Under-funding
- Inefficiencies (low utilization)
- Unsustainable financing
- Limited Health Insurance Coverage
- Weak Stewardship
RESPONSES BY HEALTH SECTOR
The Vision: UNIVERSAL COVERAGE

Primary Care

Secondary & Tertiary Care

Community Health Programs

Individual Care
Malaria

Endemicity Level
( WHO, 2009 )

Consider elimination: shrinking the malaria map from the periphery

INEQUITY OF HEALTH OUTCOMES

aggressive control

malaria center

Legend

Malaria Endemicity Levels

- Low (API < 1.0)
- Moderate (API 1.0 - 10.0)
- High (API > 10.0)
- Nil
e-HEALTH SITUATION IN INDONESIA
utilization of electronic communication and information technology to capture, transmit, store, and retrieve health data, information, and knowledge for clinical, educational, and administrative purposes at the local or remote site.
eHEALTH INITIATIVES IN INDONESIA

Decentralized

Piecemeal

Fragmented

Techno-centric

Need Comprehensive Socio-Technical Approaches

INFORMATION DIVIDE IN INDONESIA
Annual event of Indonesia Health Informatics Forum
Yogyakarta (2010), Jakarta (2011) and Semarang (planned 2013)

Inspired by Global Health Information Forum, Bangkok 2010
-site visit (primary health center, district health office, hospital)
-workshop (OpenMRS, Healthmapper)
-conference (200 participants)
-supported by WHO, GIZ, WB, Telkom
IT Readiness

Networked Readiness Index 2012 .......... 80.3.7

A. Environment subindex ........................................ 72 .... 3.8
1st pillar: Political and regulatory environment ............ 88 .... 3.5
2nd pillar: Business and innovation environment .......... 64 .... 4.1

B. Readiness subindex ........................................ 74 .... 4.6
3rd pillar: Infrastructure and digital content .............. 103 .... 3.1
4th pillar: Affordability ........................................ 34 .... 5.8
5th pillar: Skills .................................................. 69 .... 5.0

C. Usage subindex ............................................... 85 .... 3.3
6th pillar: Individual usage ................................... 103 .... 2.4
7th pillar: Business usage ...................................... 49 .... 3.8
8th pillar: Government usage .................................. 75 .... 3.7

D. Impact subindex ............................................. 86 .... 3.3
9th pillar: Economic impacts .................................. 106 .... 2.8
10th pillar: Social impacts ...................................... 66 .... 3.7
Continuing progress
-OpenMRS translation into Indonesian language
-specific module on Maternal and Child health
-OpenMRS for tablet
Health Information Systems in Developing Countries

A Landscape Analysis

One successful case study on implementing an open source application for district health information systems (DHIS) development is the Wonosobo district in Central Java province. In 2006, the district, with a population of over 700,000, started to develop a wireless wide area network DHIS connecting 21 Primary Health Centers (PHC) and the District Health Office (DHO). The open source DHIS software was deployed in the DHO and the PHCs. Every PHC provided two computers to run web-based applications to support community health activities, including patient electronic medical records, while at the DHO a similar web-based application was introduced. The DHO’s software application is used to incorporate data reports from the PHCs, based on data conversion inputs creating maps, charts and tables, and vertical reports. PHP 5.1 and AJAX were used to develop the DHO’s application that is supported by mySQL 5.0.23 database. The project has met with success thus far, providing a more integrated view of the health indicators across the population while still allowing for individual medical records.

**HIS Strengths:** Online NHIS represents MoH commitment and plan to move from inadequate data reporting to ICT-enabled transmission of health data

**HIS Weaknesses:** Inadequate funding for ICT, exclusion from HIS of private providers, multiple layers and standards for reporting requirements

**Critical HIS Challenges:** Improve technical capacity at lower levels in order to leverage newly built infrastructure and include private health providers
e-HEALTH STRATEGY
DEVELOPMENT
e-HEALTH

VISION:

enabling information & knowledge delivery integrated into evidence-based clinical, programmatic, educational and administrative practices
to ensure effective, efficient & equitable health outcomes and self-sufficient health behavior
e-health vision

- core competence
- resources
- capabilities
- challenges
- drivers

main opportunities

e-health success factors

development of e-health strategies

e-health, it is a journey, not a destination!!!
surveillance reports accessible to the president in the form of dashboard

participative development with strong and sustainable leadership

useful
usable
operational
affordable
appropriate

e-health

e-health strategies
roadmap of health information system strengthening in Indonesia from 2011 to 2014
STRATEGIC ISSUES

• Regulatory, policy, advocacy frameworks
• Standards of processes and indicators
• Infrastructure development, including public-private partnership
• Uses of data, information and knowledge and put them into care, program and policy practices
• Improve resources (human, technology, financing)
• Monitoring, quality control and improvement
• Governance and change management
STRATEGIC GOALS

100% Provinces and 60% Districts/Cities implement integrated Health Information System in 2014

strategic policies for health information and e-Health are in place in 2014
IMPLEMENTING ORGANIZATION

COORDINATED BY DIRECTOR OF CENTER FOR HEALTH DATA AND INFORMATION, INDONESIAN MINISTRY OF HEALTH
integrated health information system for health development to improve health outcomes and self-sufficient health behavior.

Health contexts and HIS situation

Monitoring, Evaluation and Improvement

Web 3.0 cloud computing
Indonesia Goes Open Source

strategic goals

GOVERNANCE
INDICATORS

strategic issues

DATA SOURCES
DATA MANAGEMENT
SYSTEMS IMPROVEMENT
INFRASTRUCTURE

strategic analyses

DISSEMINATION AND USES OF DATA

national health & ICT policy

mission, strategic intent for HIS

VISION

e-health as sine qua non