

# **eHEALTH IN INDONESIA: DEVELOPMENT STRATEGIES**

Hari Kusnanto

Gadjah Mada University, Indonesia

Faculty of Medicine

**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

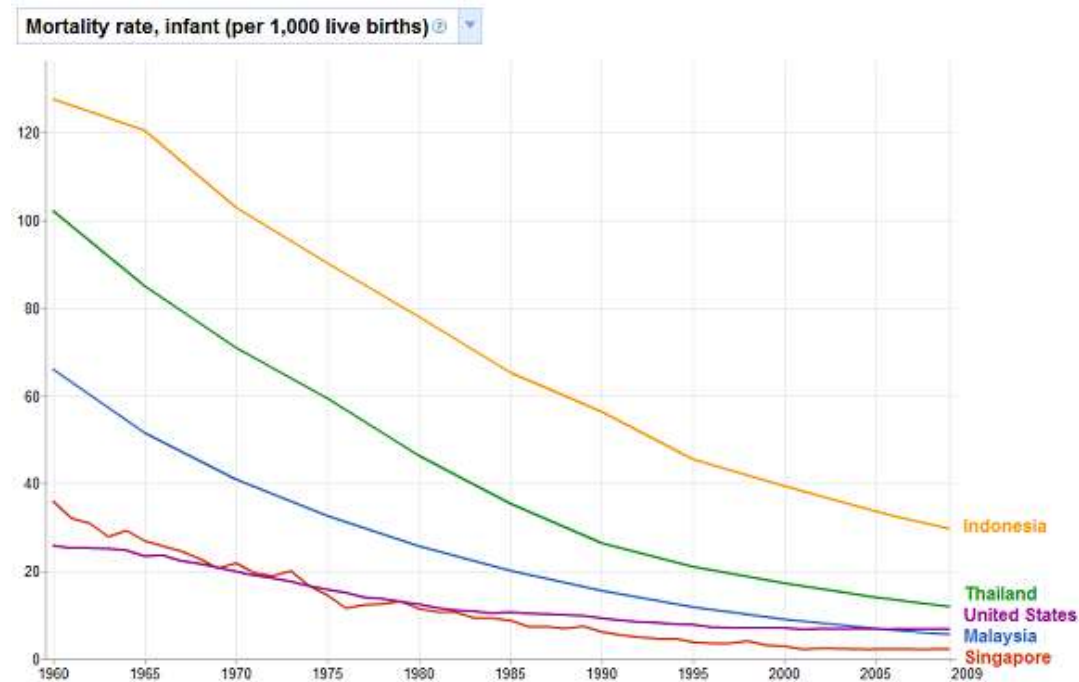
- 1,6 doctors per 10,000 population
  - WHO Health for All-standard: 2/10,000
- 3,5 midwives per 10,000 population
  - WHO Health for All standard: 2-4 / 10,000
- 2,4 nurses per 10,000 population
  - WHO Health for All standard: 2-4/10,000
- Hospitals: +/- 1.700
- Primary health centers +/- 8000

**NOT EQUALLY DISTRIBUTED**

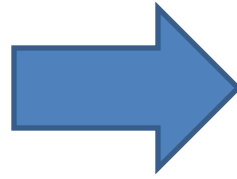
# Indonesia's Health System Challenges

## (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**



**Secondary & Tertiary Care**

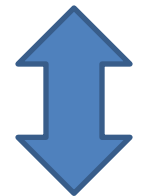
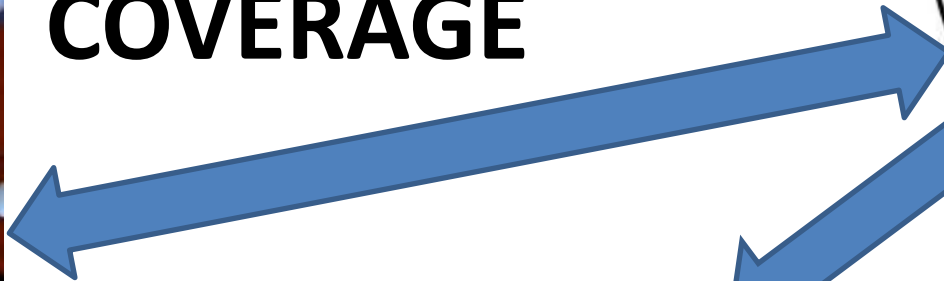


**Primary Care**



**The Vision:  
UNIVERSAL  
COVERAGE**

**Individual  
Care**

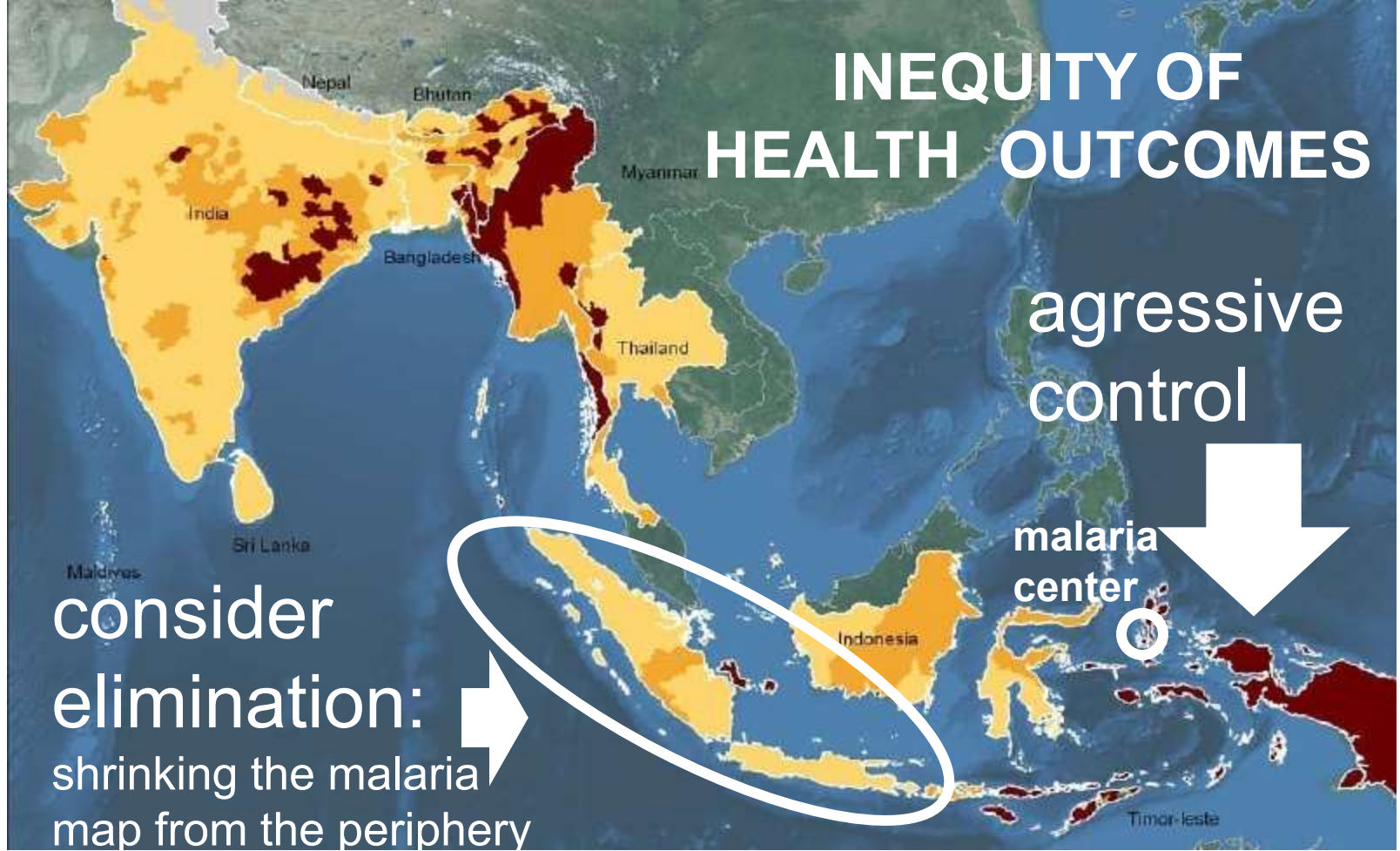


**Community  
Health  
Programs**





# INEQUITY OF HEALTH OUTCOMES

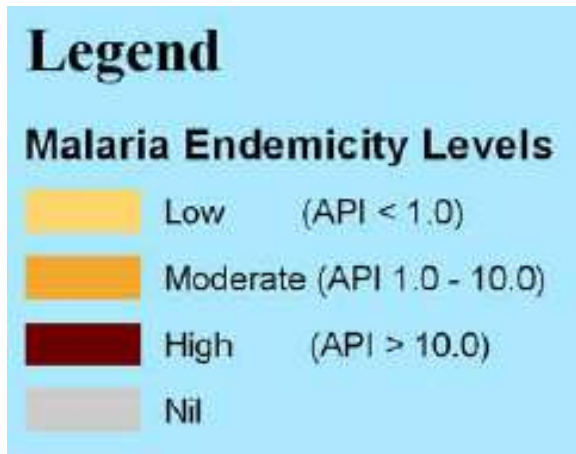


agressive control

malaria center

consider elimination:  
shrinking the malaria map from the periphery

## Malaria Endemicity Level (WHO, 2009)





# **e-HEALTH SITUATION IN INDONESIA**

# e-HEALTH

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



Need

Comprehensive

Socio-

Technical

Approaches

Fragmented

Techno-centric

**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

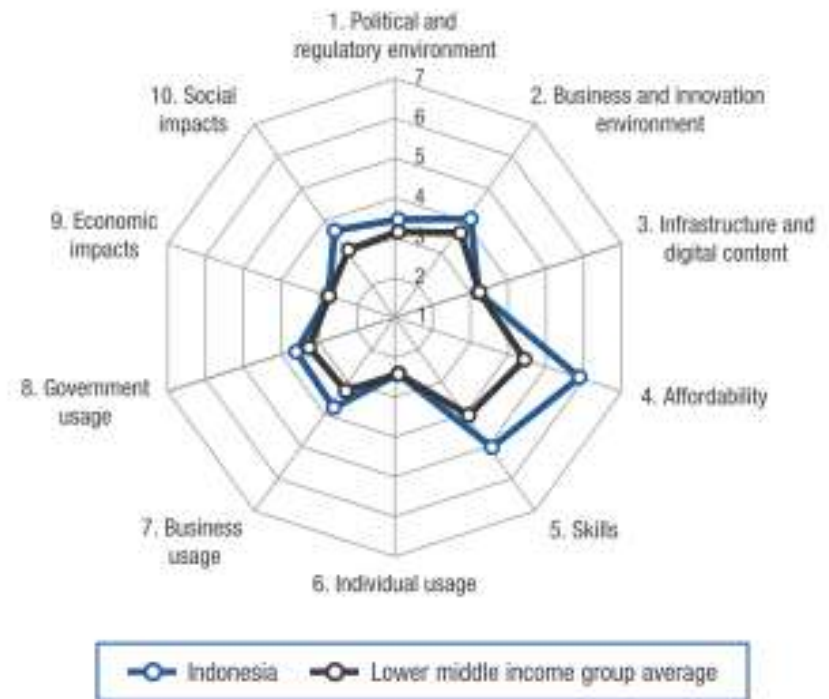
OpenMRS workshop



# IT Readiness

# Indonesia

	Rank (out of 142)	Score (1–7)
<b>Networked Readiness Index 2012</b> .....	<b>80</b>	<b>3.7</b>
<b>A. Environment subindex</b> .....	<b>72</b>	<b>3.8</b>
1st pillar: Political and regulatory environment .....	88	3.5
2nd pillar: Business and innovation environment .....	64	4.1
<b>B. Readiness subindex</b> .....	<b>74</b>	<b>4.6</b>
3rd pillar: Infrastructure and digital content.....	103	3.1
4th pillar: Affordability .....	34	5.8
5th pillar: Skills.....	69	5.0
<b>C. Usage subindex</b> .....	<b>85</b>	<b>3.3</b>
6th pillar: Individual usage.....	103	2.4
7th pillar: Business usage.....	49	3.8
8th pillar: Government usage.....	75	3.7
<b>D. Impact subindex</b> .....	<b>86</b>	<b>3.3</b>
9th pillar: Economic impacts.....	106	2.8
10th pillar: Social impacts.....	66	3.7





Selamat datang Openmrs. Silakan log in (masuk) untuk melanjutkan.

Nama Pengguna:   
Kata Sandi:   
  
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### Buat seorang Pasien Baru

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	Garis Bujur <input type="text"/>	Kode Pos <input type="text"/>	
<b>Meninggal</b>	Cek jika orang ini telah meninggal <input type="checkbox"/>		



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.<sup>110</sup> 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



**e-health success factors**

development of  
**e-health strategies**  
e-health, it is a journey, not  
a destination!!!

# e-health strategies

surveillance  
reports

accessible to the  
president in the  
form of dashboard

participative  
development  
with strong and  
sustainable  
leadership

useful



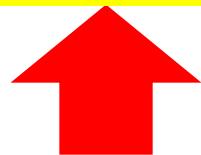
usable



operational



affordable



appropriate

e-health

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RANCANGAN



# SISTEM INFORMASI KESEHATAN INDONESIA

ROADMAP-RENCANA AKSI PENGUATAN - TAHUN 2011-2014

**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

## SASARAN STRATEGIS

Sasaran strategis Sistem Informasi Kesehatan yang akan dicapai pada tahun 2014 adalah :

1. 100% Provinsi dan 60% Kabupaten/Kota sudah menyelenggarakan SIK terintegrasi.
2. Tersedianya dasar kebijakan strategis SIK dan *eHealth*.



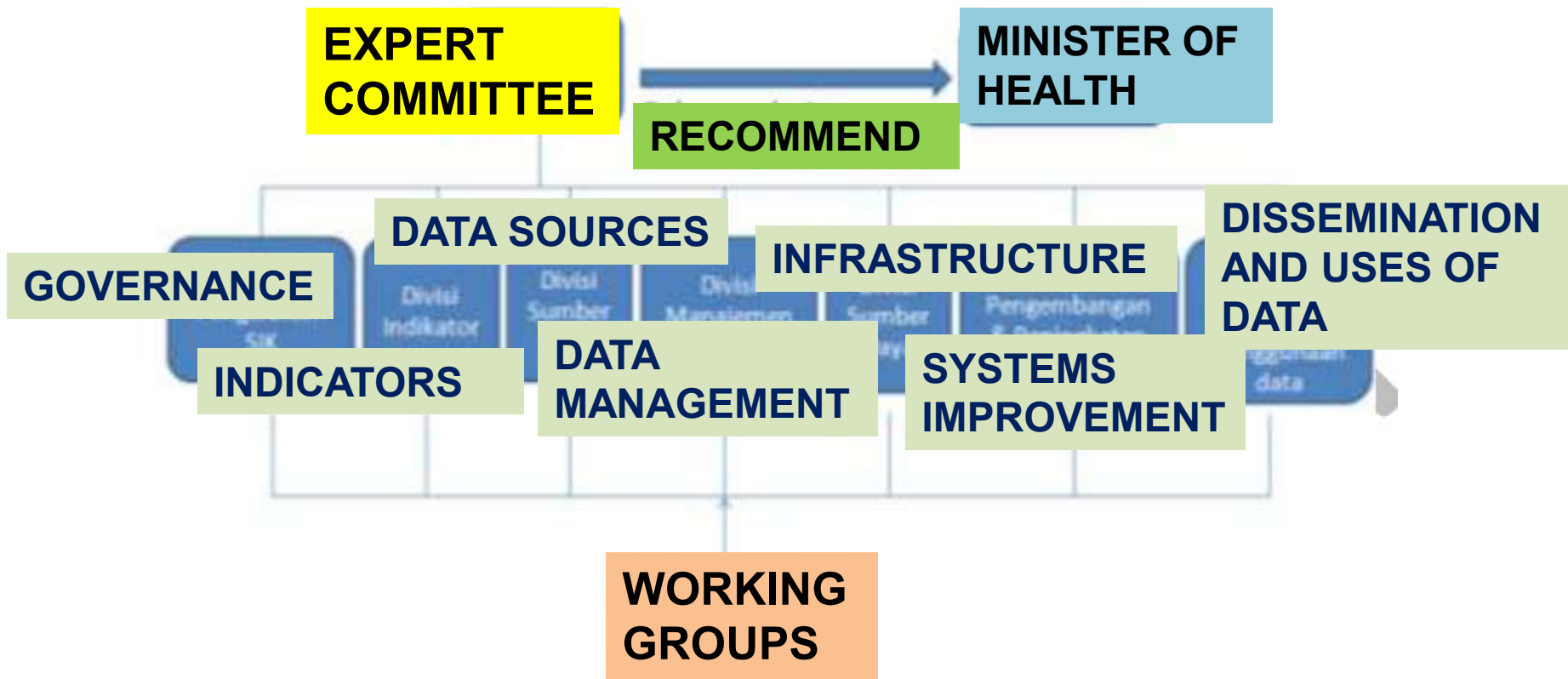
**100% Provinces and 60%  
Districts/Cities implement  
integrated Health Information  
System in 2014**



**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**

Web 3.0 cloud computing  
Indonesia Goes Open Source

