

Global Antimicrobial
Resistance Surveillance
System

Developing AMR Surveillance Platform in Human Health

Regional Symposium on AMR
Fighting AMR - Partnership in Action
Hong Kong, 13-14 November 2018

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<http://www.who.int/who-campaigns/world-antibiotic-awareness-week>



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Our time with antibiotics is running out.
CHANGE CAN'T WAIT

Advocacy material



World Antibiotic Awareness Week
12-18 November 2016

Change Can't Wait: Our Time with Antibiotics is Running Out

Each year, 700,000 people die from antibiotic-resistant infections. In 2016, the World Health Organization (WHO) launched the World Antibiotic Awareness Week (WAAW) to raise awareness of the problem of antibiotic resistance and to encourage the public to use antibiotics responsibly.

WAAW focuses on several key areas:

Antibiotic material	WAAW theme and messaging	Interactive graphics	WAAW News & Content
			
			

Outline



- Considerations for developing AMR surveillance
- Core components of AMR surveillance in human health
- Case study: capacity building in 4 LMIC
- Conclusions

Building or strengthening the AMR surveillance system



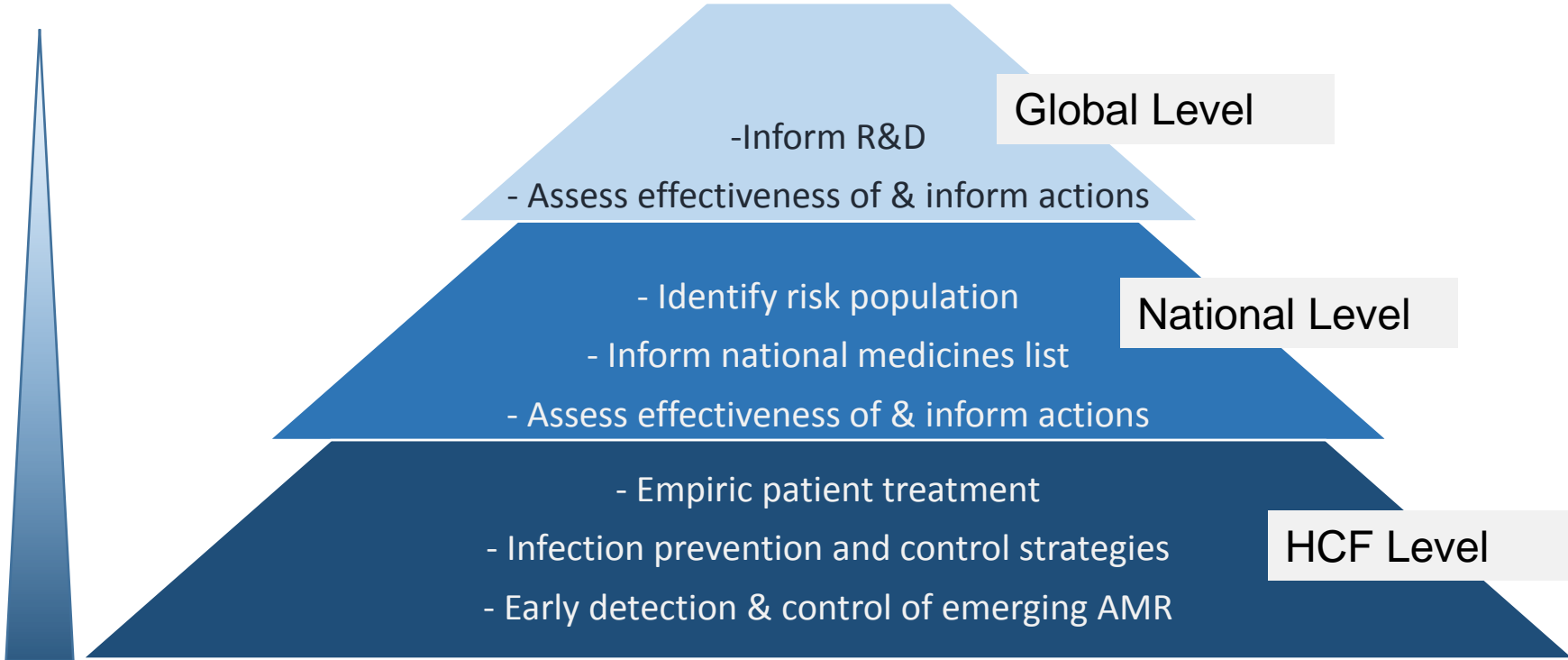
- What is the needed information to inform policies?
 - Inform empiric treatment?
 - Detect and control at early stages the emergence of a new type of AMR?
 - Identify risk population to mitigate the impact of AMR on health?
 - Inform what antimicrobials should be available in the country?
 - Inform actions by all stakeholders?
 - Assess the effectiveness of interventions to tackle AMR?

- What is already available?
 - Data
 - Surveillance structures → build upon existing structures!
 - Analyze challenges and opportunities

Levels of AMR surveillance



Level of data detail & scope



Developing national AMR surveillance

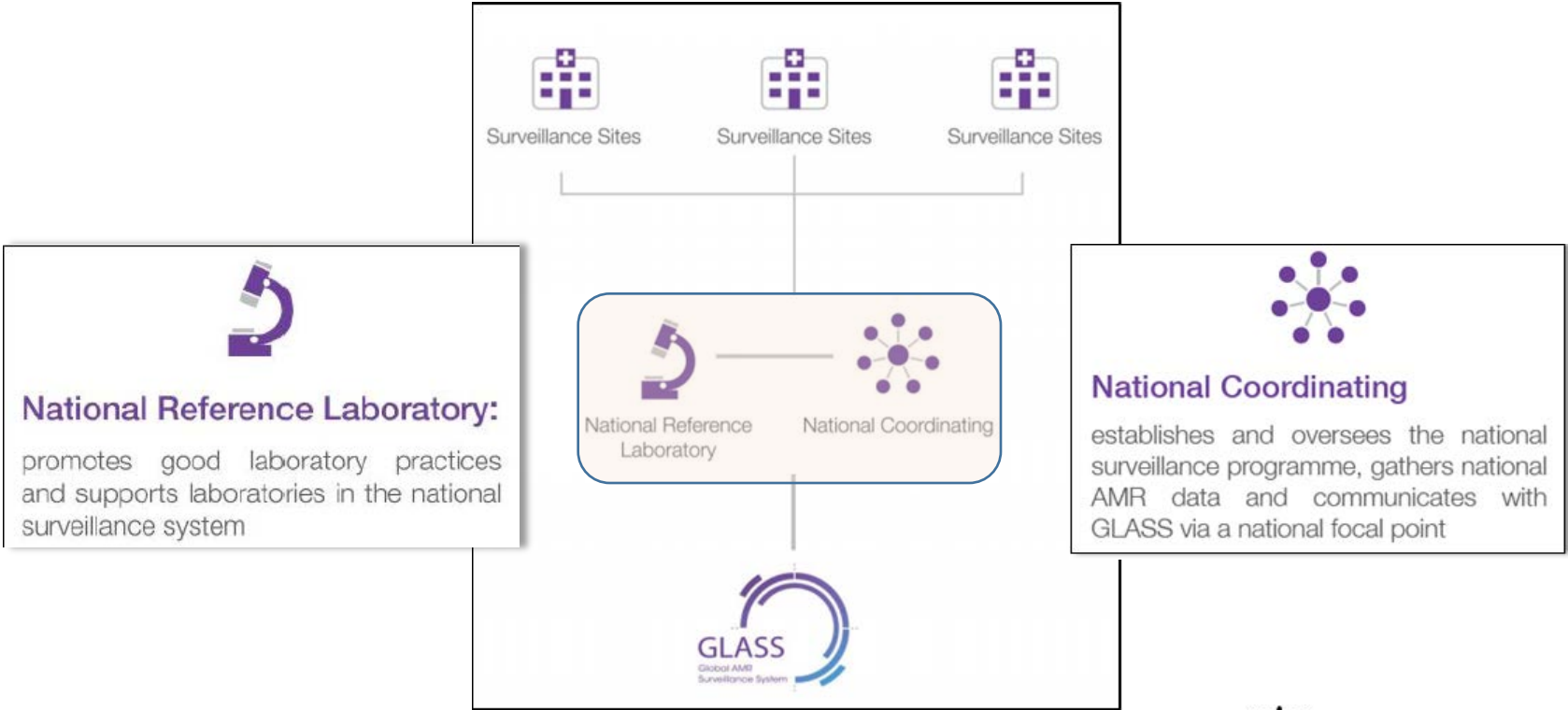


National AMR surveillance strategy

- ✓ Surveillance objectives
- ✓ Methods
 - What to be measured (type of infection, age, etc.)
 - Where to measure (for representativeness)
 - Which population (hospital, community)
- ✓ Stepwise approach for achieving the objectives
- ✓ The stakeholders
 - To coordinate the surveillance
 - To execute the data collection and reporting
- ✓ Use of the information
- ✓ Monitor & evaluation

<http://apps.who.int/iris/bitstream/handle/10665/251554/WHO-DGO-AMR-2016.4-eng.pdf?sequence=1&isAllowed=y>

Core components for national surveillance systems



Surveillance pillar: surveillance sites



Surveillance Site:

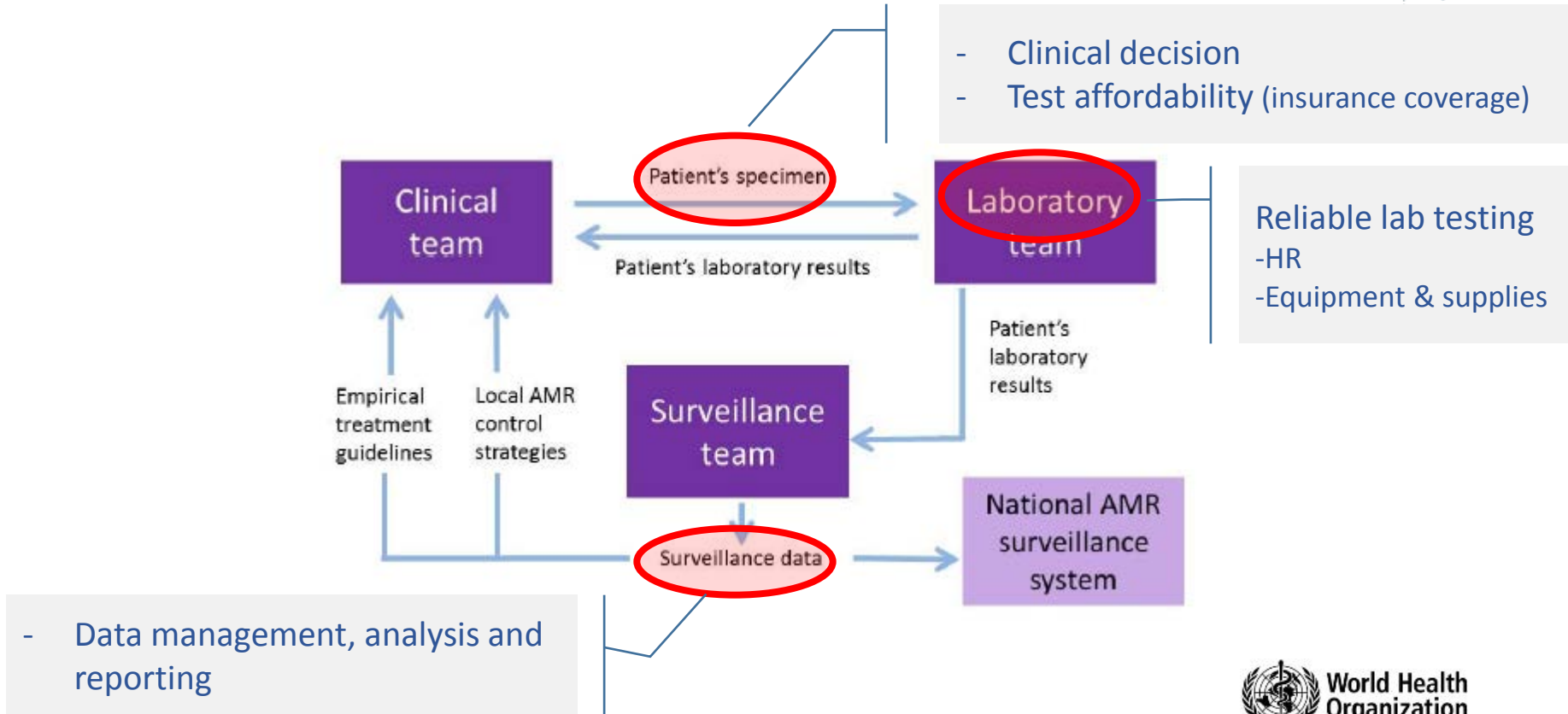
collects basic demographic, clinical, epidemiological and microbiological information from patients

* usually a hospital, clinic or out-patient community health facility with access to relevant epidemiological and laboratory support

Data generation & Data quality

- ➔ What defines patient sampling?
- ➔ How the samples are treated?
- ➔ How results are managed

Data generation & potential weak links



Investment needs

Costs???
How much is saved?



Global investment

- World Bank: 3,4 billion/year investment in AMR containing capacities in LMIC*

Examples of country cost estimates

- Kenya: lab network w/ 8 labs: ~ USD 160,000 /yr*
- South Korea: national system: ~USD 1,028,854 /yr**

* World Bank, March 2017. Drug-Resistant Infections: A threat to our economic future.

** Lee et al. Establishment of the South Korean National AMR Surveillance System, KOR-GLASS *Eurosurveillance*. Oct 2018

GLASS technical support to countries



- ➔ Manuals
- ➔ IT tools
- ➔ Help desk
- ➔ Webinars
- ➔ Country missions
- ➔ Training workshops



Case study

National AMR surveillance capacity building in 4 LMIC

Support by the Korea International Cooperation Agency (KOICA)

AMR surveillance capacity building

Case study in 4 countries



- Start of activities: December 2017
- Project end date: December 2021

Country	World Bank classification*	Human development index**
A	Low income country	0.427 (low development index)
B	Lower middle income country	0.601 (medium development index)
C	Upper middle income country	0.735 (high development index)
D	Upper middle income country	0.750 (high development index)

* World Bank, June 2018, assessed on 7 November 2018

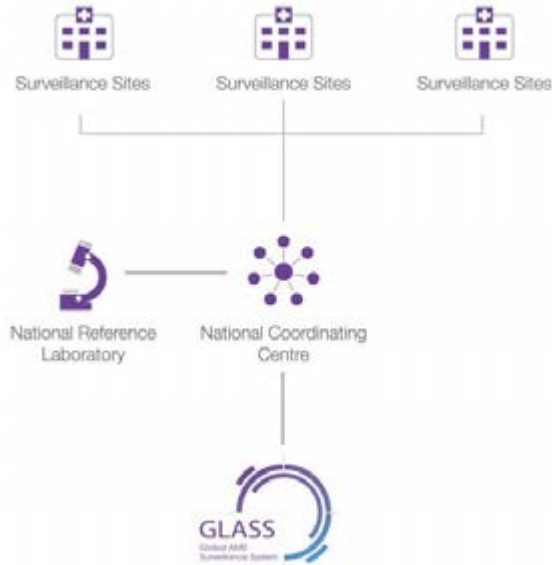
** UNDP, 2018, assessed on 7 November 2018

AMR surveillance capacity building

Case study in 4 countries – Objectives



- National AMR Surveillance System Strategy Defined
- Coordination of the National AMR Surveillance System Established
- National Reference Laboratory strengthened
- AMR surveillance sites established (at least 3)
- AMR data representative of the country produced and shared at National level and with GLASS
- National AMR surveillance system monitored and evaluated



AMR surveillance capacity building

Case study in 4 countries – Steps



1. Assessments - Situation analysis

- Public health concerns
- Existing surveillance structures, stakeholders, strengths, opportunities

AMR surveillance capacity building

Case study in 4 countries – Steps



1. Assessments - Situation analysis
2. **Planning: Definition of surveillance strategy**
 - Target indicators and metrics for the local (hospital) and national levels
 - INITIAL surveillance sites and future expansion towards representativeness
 - Definition of monitoring and evaluation plan

AMR surveillance capacity building

Case study in 4 countries – Steps



1. Assessments - Situation analysis
2. Planning: Definition of surveillance strategy
3. **Governance**
 - Defining coordinating bodies for each group of data (AMR, AM consumption)
 - Links with animal health and agriculture sectors: One Health surveillance

Governance: the Korean experience



PERSPECTIVE

Establishment of the South Korean national antimicrobial resistance surveillance system, Kor-GLASS, in 2016

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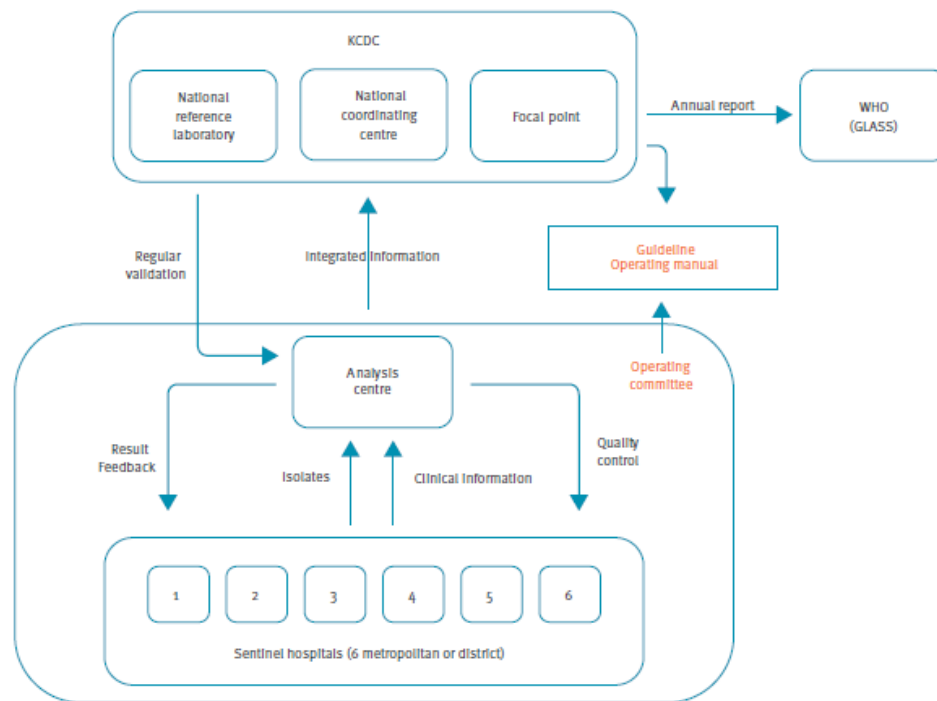
Lee Hyukmin, Yoon Eun-Jeong, Kim Dokyun, Jeong Seok Hoon, Shin Jong Hee, Shin Jeong Hwan, Shin Kyeong Seob, Kim Young Ah, Uh Young, Park Chan, Lee Kwang Jun. Establishment of the South Korean national antimicrobial resistance surveillance system, Kor-GLASS, in 2016. *Euro Surveill.* 2018;23(42):pii=17007. doi.org/10.2807/1560-7917.ES.2018.23.42.1700734

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Lee et al. *Eurosurveillance*. Oct 2018.

FIGURE 1

Structure and governance of the national antimicrobial resistance surveillance system Kor-GLASS, South Korea



AMR surveillance capacity building

Case study in 4 countries – Steps



1. Assessments - Situation analysis
2. Planning: Definition of surveillance strategy
3. Governance
4. **Capacitation of coordinating bodies and surveillance sites**
 - Re-assess the capacities
 - Plan sustainable procurement of equipment & supplies
 - Capacitate staff: lab, diagnostic stewardship, data management & reporting

AMR surveillance capacity building

Case study in 4 countries – Steps



1. Assessments - Situation analysis
2. Planning: Definition of surveillance strategy
3. Governance
4. Capacitation of coordinating bodies and surveillance sites
- 5. Start data collection & data reporting**
- 6. Translating data > information > policies**
- 7. Monitoring and evaluation**

Implementing national AMR surveillance



Situation analysis



Planning



Implementing



Monitoring



AMR surveillance capacity building

Case study in 4 countries – Progress 1st year



Step	County A (LIC)	Country B (LMIC)	Country C (UMIC)	Country D (UMIC)
1. Assessments	✓	✓	✓	ongoing
2. Planning	✓	✓	ongoing	ongoing
3. Governance	✓	✓	✓	✓
4. Capacitation	-	ongoing	ongoing	-
5. Start data collection	-	-	✓	-
6. Translation data > policies	-	-	-	-
7. M&E	-	-	-	-

Conclusions



- Need to define the purpose of the surveillance system in order to design the surveillance strategy.
- Fundamental role of governance to assure the articulation of data generation from different sources and its translation into policies.
- A stepwise approach for building AMR surveillance is important for success, despite the level of country economic development.
- Investment needs still to be determined, but will vary according to the country.
- AMR surveillance is key not only for local and national purposes, but also for global actions and should be seen as GLOBAL GOODS.



Thank you!