JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of the

REPUBLIC OF INDONESIA

Mission report:
20-24 November 2017

World Health Organization

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Contents

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Abbreviations

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
AHA Centre	ASEAN coordinating centre for humanitarian assistance on disaster management
AMR	Antimicrobial resistance
ARCC	Antimicrobial Resistance Control Committee (Ministry of Health)
ASEAN	Association of South East Asian Nations
BAPETEN	Nuclear Energy Control Board
Basarnas	National Search and Rescue Agency
BATAN	National Atomic Energy Agency
BIMP-EAGA	Brunei, Indonesia, Malaysia and the Philippines East Asian Growth Area
BIN	Indonesian State Intelligence Agency
BNN	National Narcotics Agency
BNPB	National Agency for Disaster Management
BNPT	National Agency for Combatting Terrorism
BSN	National Standardization Agency
CBRN-NUBIKA	Army and police nuclear, biology and chemical units
CDC	Directorate General of Disease Control and Prevention
CHC	Centre for Health Crisis
DURC	Dual use research of concern
EMT	Emergency medical teams
EQA(S)	External quality assurance (scheme)
EWARS	National Early Warning Alert and Response System
FAO	UN Food and Agriculture Organization
FETP	Field epidemiology training programme
FETPV	Field epidemiology training programme for veterinarians
GAP	Global Action Plan
GAVI	Global Alliance for Vaccines Initative
GHSA	Global Health Security Agenda
GISR	Global Influenza Surveillance and Response System
GLASS	WHO Global Antimicrobial Resistance Surveillance System
HCAI	Healthcare associated infection
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICRP	International Committee for Radiological Protection
IEC	Information, education and communication
IFBA	International Federation of Biosafety Associations
IHR	International Health Regulations
IHR NFP	National focal point for the IHR (2005)
ILI	Influenza-like illness
INFOSAN	WHO International Network of Food Safety Authorities
INRASFF	Indonesia Rapid Alert for Food and Feed
IPC	Infection prevention and control
ISIKHNAS	Indonesia animal health information system
KNPZ	National Zoonosis Control Committee

Labkesda	District Health laboratories/BLK
MDR-TB	Multidrug resistant tuberculosis
MDRO	Multidrug resistant organisms
MERS-CoV	Middle East respiratory syndrome coronavirus
MIC	Minimum inhibitory concentration
MIC	Ministry of Informatics and Communication
MOA	Ministry of Agriculture
MOEF	Ministry of Environment and Forestry
MOFA	Ministry of Foreign Affairs
MOH	Ministry of Health
MOIA	Ministry of Internal Affairs
MOMAF	Ministry of Marine Affairs and Fisheries
MOU	Memorandum of Understanding
NADFC	National Agency of Drug and Food Control
NAP	National Action Plan
OIE	World Organisation for Animal Health
OIE PVS	World Organisation for Animal Health's Performance of Veterinary Services Pathway
ORARI	Indonesia Amateur Radio Organization
OTDNN	National Nuclear Emergency Response Organization
PHC	Primary health care centre
PHEIC	Public health emergency of international concern
PHEOC	Public health emergency operations centre
PMK	Coordinating Ministry for Human Development and Culture
POC	Point of contact
PPPP	People/public/private partnerships
PPSDM	Agency of Health Human Resources Development and Empowerment
Puskesmas	Public/primary care health centre
RASFF	Rapid alert on food and feed
RDM	Radiation monitoring device
RRT	Multidisciplinary Rapid Response Team
SAICM	Strategic Approach to International Chemicals Management
SARI	Severe acute respiratory infection
SASOP	Standard operating procedures for regional standby arrangements and coordination of joint disaster relief and emergency response operations
SIAP	Integrated Risk Communications Information System
SITT	Integrated TB Information System
SIZE	Information System for Zoonotic and Emerging Infectious Disease
SJSN	National Social Security System
SKN	National Health System
SMTA	Standard Material Transfer Agreement
SOP(s)	Standard operating procedure(s)
SPS	WTO Agreement on Sanitary and Phytosanitary Measures
WHO	World Health Organization
WTO	World Trade Organization

Executive summary

The JEE team would like to express its appreciation to Indonesia for volunteering for a Joint External Evaluation. This shows a commitment, foresight and leadership from the highest levels of government which will be of critical importance for long term success in building and sustainability of Indonesia's core capacities under the International Health Regulations (2005) (IHR). The external team commends and appreciates Indonesia for its leadership in IHR implementation and global health security—leadership which is of significant importance not just regionally, but also for the global community.

As a large country spread over 17,000 islands, Indonesia's size, population, and vulnerability to natural disasters, and social, economic and administrative diversity all pose unique challenges to public health. The country has responded to these challenges in robust fashion, taking public health leadership roles both regionally and globally. Globally, Indonesia held the Global Health Security Agenda (GHSA) steering group chair in 2016, and is co-leading the GHSA Zoonotic Diseases Action Package (ZDAP) and is a member of the GHSA Steering Group. Regionally, Indonesia provides disaster assistance throughout South East Asia; is the world's largest health insurer; and took the proactive step during this JEE mission of piloting and helping evaluate two proposed new financial indicators for the JEE tool.

The JEE process is of particular importance to a nation facing a complex array of challenges, and provides an opportunity for Indonesia to identify strengths, address challenges and demonstrate further leadership. Indonesia's geographically disparate territory imposes a particular need for high level national coordination and monitoring to ensure progress in national core capacities under the IHR (2005), as demonstrated by the findings of Indonesia's JEE self-assessment exercise, and confirmed by the work of the JEE expert team and its Indonesian colleagues during the evaluation week.

Three overarching recommendations emerged from the week, intended to address challenges affecting Indonesia's capacities in a number of technical areas. These were as follows:

1. Develop and implement a fully integrated, multisectoral National Action Plan for IHR implementation, facilitated by a legal decree at the highest level.

Indonesia's outstanding efforts to address its challenges and achieve and sustain its core capacities would be supported by developing and implementing a fully integrated, multisectoral National Action Plan for IHR implementation, facilitated by a legal decree at the highest level. Such a plan with the associated regulatory base could serve to engage all ministries, agencies and institutions in a One Health approach from the district (local), through provincial and national level. Progress could be monitored and ensured by annual national or sub-national self-assessments using the JEE tool, and repetition of a joint external evaluation in approximately five years.

2. Establish a mechanism to coordinate the IHR and global health security work of all relevant ministries, agencies and institutions.

In order to ensure coordination and engagement of all relevant ministries in the development and implementation of the National Action Plan, it is recommended that Indonesia consider establishing a mechanism to coordinate the IHR and global health security work of all relevant ministries, agencies and institutions. This could take the form of a high level team that is given authority and responsibility for ensuring a multisectoral approach to IHR implementation. All involved ministries—including the ministries of agriculture, environment and forestry and defence, for a total of approximately 14 ministries and non-ministerial organizations—should be represented in this team, with designated points of contact for all sectors.

1

3. Evaluate and improve decision making structures and delegation of authority and responsibility to act, not only between the national and sub-national levels, but also at the national level.

The JEE team noted that national priorities, budgets and strategies are well aligned with the President's priorities and commitments to the people of Indonesia, and that there are budget allocations for human health, animal health and agriculture to support national implementation of IHR capacities. These are supplemented in times of need by emergency public financing mechanisms, and there are technical regulations, policies and mechanisms in existence that facilitate implementation. At the same time, the geographic complexity and inherent diversity of the world's fourth most populous country—with citizens spread over 6,000 islands and three time zones, more than 300 points of entry, and a decentralized government structure—present unique challenges to minimizing differences in capacity levels between the local, regional, and national levels, and make it difficult to ensure quick information sharing and rapid emergency response. To remedy this, decision making structures and delegation of authority and responsibility to act should be evaluated and improved, not only between the national and sub-national levels, but also at the national level. Minimizing differences in capacity should be considered in all the technical areas. As one example, over time, Indonesia could consider adding more international airports and other points of entry to their list of designated points of entry under the IHR (2005), to expand capacity.

Indonesia scores

Technical areas	Indicators	Score
National legislation, policy and financing	p.1.1 Legislation, laws, regulations, administrative requirements, policies, or other government instruments in place are sufficient for implementation of IHR (2005)	3
	P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies, and administrative arrangements to enable compliance with IHR (2005)	3
IHR coordination, communication and advocacy	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR	3
Antimicrobial resistance	P.3.1 Antimicrobial resistance detection	2
	P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens	2
	P.3.3 Health care-associated infection (HCAI) prevention and control programmes	3
	P.3.4 Antimicrobial stewardship activities	3
Zoonotic diseases	P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens	3
	P.4.2 Veterinary or animal health workforce	3
	P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases are established and functional	2
Food safety	P.5.1 Mechanisms for multisectoral collaboration are established to ensure rapid response to food safety emergencies and outbreaks of foodborne diseases	3
Biosafety and biosecurity	P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	3
	P.6.2 Biosafety and biosecurity training and practices	3
Immunization	P.7.1 Vaccine coverage (measles) as part of national programme	4
	P.7.2 National vaccine access and delivery	4
National laboratory system	D.1.1 Laboratory testing for detection of priority diseases	4
	D.1.2 Specimen referral and transport system	4
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	3
	D.1.4 Laboratory quality system	3
Real-time surveillance	D.2.1 Indicator- and event-based surveillance systems	3
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	3
	D.2.3 Integration and analysis of surveillance data	2
	D.2.4 Syndromic surveillance systems	4
Reporting	D.3.1 System for efficient reporting to FAO, OIE and WHO	3
	D.3.2 Reporting network and protocols in country	3
Workforce development	D.4.1 Human resources available to implement IHR core capacity requirements	3
	D.4.2 FETP[1] or other applied epidemiology training programme in place	4
	D.4.3 Workforce strategy	3

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1   FETP: Field epidemiology training programme

Technical areas	Indicators	Score
Preparedness	R.1.1 National multi-hazard public health emergency preparedness and response plan is developed and implemented	3
	R.1.2 Priority public health risks and resources are mapped and utilized	2
Emergency response operations	R.2.1 Capacity to activate emergency operations	3
	R.2.2 EOC operating procedures and plans	2
	R.2.3 Emergency operations programme	3
	R.2.4 Case management procedures implemented for IHR relevant hazards.	3
Linking public health and security authorities	R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event	4
Medical countermeasures and personnel deployment	R.4.1 System in place for sending and receiving medical countermeasures during a public health emergency	4
	R.4.2 System in place for sending and receiving health personnel during a public health emergency	4
Risk communication	R.5.1 Risk communication systems (plans, mechanisms, etc.)	3
	R.5.2 Internal and partner communication and coordination	3
	R.5.3 Public communication	4
	R.5.4 Communication engagement with affected communities	4
	R.5.5 Dynamic listening and rumor management	4
Points of entry	PoE.1 Routine capacities established at points of entry	4
	PoE.2 Effective public health response at points of entry	4
Chemical events	CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies	2
	CE.2 Enabling environment in place for management of chemical events	3
Radiation emergencies	RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	3
	RE.2 Enabling environment in place for management of radiation emergencies	3

Scores: 1=No capacity; 2=Limited capacity; 3=Developed capacity; 4=Demonstrated capacity; 5=Sustainable capacity.

PREVENT

National legislation, policy and financing

Introduction

The International Health Regulations (IHR) (2005) provide obligations and rights for States Parties. In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even if new or revised legislation may not be specifically required, states may still choose to revise some regulations or other instruments in order to facilitate IHR implementation and maintenance more effectively. Implementing legislation could serve to institutionalize and strengthen the role of IHR (2005) and operations within the State Party. It could also facilitate coordination among the different entities involved in their implementation. See detailed guidance on implementing IHR (2005) in national legislation at:

http://www.who.int/ihr/legal_issues/legislation/en/index.html.

In addition, it is important to have policies that identify national structures and responsibilities, and allocate adequate financial resources.

Target

States Parties to have an adequate legal framework to support and enable the implementation of all of their obligations and rights to comply with and implement the IHR (2005). In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even where new or revised legislation may not be specifically required under the State Party's legal system, states may still choose to revise legislation, regulations or other instruments in order to facilitate their implementation and maintenance in a more effective manner.

States Parties to ensure the provision of adequate funding for IHR implementation, through the national budget or another mechanism.

Indonesia level of capabilities

Public health in Indonesia is regulated by a number of legal instruments, including but not limited to national law; regulations issued by the President, ministers and heads of national agencies; and government circulars. Surveillance of, and response to, public health emergencies are regulated by Presidential Decree No. 72/2012 on the National Health System. A decentralized system (Law No. 23/2014) regulates the synchronization of central and local governments, with coordinating ministries and the national health system (SKN) functioning as inter-sectoral coordinators.

The implementation of the IHR (2005) in Indonesia started on 15 June 2007. In 2011, the National Committee for IHR (2005) Implementation was established. An independent national evaluation the same year revealed gaps in implementation, so work was done to address these. In 2014, another internal evaluation was conducted using WHO instruments developed in 2013, which concluded that Indonesia's IHR (2005) implementation status was optimal. Indonesia continues to conduct the IHR (2005) self-assessment on core capacities, and reports annually to the World Health Assembly.

Since the enactment of Law No. 22/1999 regarding Local Government (later revised by Law No. 32/ 2004), provincial governments have played a greater role in administering their areas.

Indonesia has two coordinating ministries in charge of IHR implementation; the Coordinating Ministry for Human Development and Culture[2] and the Coordinating Ministry of Political, Legal and Security Affairs[3]. Indonesia is on track to internalizing the World Bank Health Security Financing Assessment Tool (HSFAT), simultaneously putting in place a relevant strategy, timeline and task force.

National priorities are being aligned with the President's priorities and commitments to the people of Indonesia, which inform budgets and strategies. These are kept by the President's office and integrated into national planning agencies, with the President's office responsible for monitoring progress in implementing them. There are budget allocations for human health, animal health and agriculture to support the implementation of IHR capacities at national level. There are also emergency public financing mechanisms (e.g. as per Government Regulation on Disaster Funding 22/2008).

Various technical regulations and policies have been adjusted in the Ministry of Health (MOH) and across sectors to facilitate implementation of the IHR (2005). For example, the Ministry of Defence has a policy on zoonotic control; the Ministry of Transportation has issued air facilitation/quarantine regulations; there is a National Authority on Chemical Weapons; and there is a joint decree, issued by the ministries of health, home affairs, and agriculture, on rabies control. All of these have been financed accordingly.

In order to respond to public health emergencies of concern, Indonesia has established the National Disaster Management Authority (BNPB); the National Agency for Combatting Terrorism (BNPT); the Nuclear Energy Regulatory Agency (BAPETEN); the Indonesia Nuclear Energy Agency (BATAN); the National Agency of Drug and Food Control (BPOM); the National Search and Rescue Agency (Basarnas); the National Standardization Agency (BSN); the National Narcotics Agency (BNN); and a directorate in the National Armed Forces managing nuclear, biological and chemical threats.

Recommendations for priority actions

- Consider an accord across Coordinating Ministries to formalize coordination between focal points, and include all relevant IHR stakeholders.

- Conduct a policy analysis to identify and evaluate the need for new policies; review existing policies for gaps and potential conflicts; and harmonize and develop strategies for policy implementation across line ministries and administrative levels.

- Working with key line ministries and stakeholders, develop and implement an advocacy plan for laws and regulations on global health security under the IHR (2005).

- Document and publish administrative arrangements and policies from various sectors, in order to encourage cross-sectoral collaboration.

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2   This includes the ministries of health; social affairs; education and culture; research, technology, and higher education; religious affairs; female empowerment and child protection; villages, disadvantaged regions and transmigration; and youth and sports affairs.

3   This includes the ministries of home affairs, foreign affairs, defence, law and human rights, communication and informatics, and administrative and bureaucratic reform; the Attorney General's office; the national armed forces; the national police; and the state intelligence agency.

Indicators and scores

P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of International Health Regulations (IHR) (2005) - Score 3

Strengths/best practices

- Regulations for public health emergencies of international concern (PHEICs) are established and operational.

- A policy to facilitate the national IHR focal point (IHR NFP) and strengthen core capacities (MOH Regulation 300/2009) is established and operational.

- Memoranda of understanding (MOUs) have been established with neighbouring countries to regulate the mobility of people and goods[4].

- Indonesia has established regulations, policies and decrees to facilitate the IHR NFP and IHR core capacities, implement the IHR (2005), and provide appropriate financing.

- Indonesia has strong mutual cooperation agreements with neighbouring countries, which include MOUs, BIMP-EAGA (the East Asian Growth Area), BIMST (Brunei, Indonesia, Malaysia, Singapore and Thailand) agreements, and the Association of South East Asian Nations (ASEAN) Agreement on Disaster Management.

- New macro and strategic policies and laws are under development (e.g. regulation on the information system for zoonotic and emerging infectious disease, or SIZE).

Areas that need strengthening, and challenges

- Cross sectoral coordination requires strengthening.

- Managerial and technical policies should be harmonized and synchronized.

- Increased tourism poses a number of technical challenges that require attention.

P.1.2 The state can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005) - Score 3

Strengths/best practices

- Many technical regulations and guidelines have been adjusted since the IHR (2005) came into force in Indonesia in 2007, both in the MOH and across other sectors.

- The BNPB has been established.

- Coordination with the military on public health emergencies is strong, with civilian-military interoperability simulation exercises having taken place in 2016 and 2017.

- There is a one gate policy on financing coordination for disaster management.

- An information system for zoonotic and emerging infectious disease has been developed under the coordination of the Ministry for Human Development and Culture, and institutionalized into the MOH and the Ministry of Agriculture (MOA).

Areas that need strengthening, and challenges

- Old laws and regulations need to be reviewed and updated, to bring them in line with the IHR (2005).

- Cross-sectoral coordination and harmonization requires improvement.

- There is high turnover of human resources in the health sector.

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4   These include cross-border agreements with Brunei Darussalam, Malaysia and the Philippines (BIMP-EAGA, 2009); Brunei Darussalam (2015); Timor Leste (2017); and Brunei, Indonesia, Malaysia, Singapore and Thailand (BIMST).

PREVENT

IHR coordination, communication and advocacy

Introduction

The effective implementation of the IHR requires multisectoral/multidisciplinary approaches through national partnerships for efficient and alert response systems. Coordination of nationwide resources, including the designation of a national IHR focal point (which is a national centre for IHR communications), is a key requisite for IHR implementation.

Target

The national IHR focal point to be accessible at all times to communicate with the WHO regional IHR contact points and with all relevant sectors and stakeholders in the country. States Parties to provide WHO with contact details of their national IHR focal points, update them continuously, and confirm them annually.

Indonesia level of capabilities

Indonesia fully implemented the core capacities of the IHR (2005) in 2014, based on the IHR core capacities monitoring framework.

The Director General of Disease Control and Prevention in the Ministry of Health has been appointed as the IHR NFP for Indonesia.

At national level, responsibility for coordinating relevant ministries on events that may constitute a public health emergency of national or international concern is the responsibility of the Coordinating Ministry for Human Development and Culture (PMK); the BNPB; and all other related ministries.

Recommendations for priority actions

- Increase and intensify communication and close coordination among stakeholders (national, provincial, and at city level) to address the strengthening and maintenance of IHR core capacities, and the relevant necessary actions.

- Increase the number of training opportunities for provincial and national officials to support communication of cases/events between all three levels.

- Enhance the ability of the IHR NFP to communicate health risk information through national and provincial networks, ensuring that ability is supported with the necessary information technology.

Indicators and scores

P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR - Score 3

Strengths/best practices

- Laws and regulations have been established and implementation procedures are periodically updated to meet emerging challenges, needs and demands.

- During a pandemic response, procedures and guidelines are available for coordination between the Indonesia IHR NFP and other relevant sectors at national level.

- During a public health emergency event or disaster, response procedures are in place between the IHR NFP and relevant sectors, through coordination with the Disaster NFP.

- An established annual IHR assessment process is in place that evaluates domestic compliance and maintenance of IHR capacity in Indonesia.

Areas that need strengthening, and challenges

- Engagement with IHR stakeholders in all departments and agencies needs to be strengthened in order to create or refine complementary IHR policies and structures that facilitate reporting in all sectors.

- Sustainable training and planning methods need to be established in all stakeholder institutions for specific IHR implementation policies and actions.

- Procedures and guidelines for local level coordination between the Indonesia NFP and other relevant sectors need to be strengthened.

Antimicrobial resistance

Introduction

Bacteria and other microbes evolve in response to their environment and inevitably develop mechanisms to resist being killed by antimicrobial agents. For many decades, this problem was manageable, as the growth of resistance was slow and the pharmaceutical industry continued to create new antibiotics.

Over the past decade, however, this problem has become a crisis. Antimicrobial resistance is evolving at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.

Target

Support work coordinated by the FAO, OIE and WHO to develop an integrated global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a One Health approach). This would include: (i) having a national comprehensive plan for each country to combat antimicrobial resistance; (ii) strengthening surveillance and laboratory capacity at national and international levels following agreed international standards developed in the framework of the Global Action Plan; and (iii) improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid, point-of-care diagnostics with systems to preserve new antibiotics.

Indonesia level of capabilities

Indonesia adopted a National Action Plan on Antimicrobial Resistance (NAP AMR) in May 2017. Human and animal health stakeholders and professionals responsible for the containment of antimicrobial resistance further expanded this into a detailed operational plan with multiple sub-activities. Technical support was provided by the WHO Country Office for Indonesia, the WHO Regional Office for South East Asia, the UN Food and Agriculture Organization (FAO), and a number of WHO Consultants. Flexibility was built into the planning process, including monitoring and reporting arrangements, to allow Indonesia to determine the priority actions needed to attain five strategic objectives, and implement actions in a step-wise manner that meets local needs and global priorities.

In preparing the NAP AMR, consideration was given to:

• Maintaining effective treatment of infection and communicable diseases

• Use of quality assured drugs

• Responsible use of medicine

• Sustainability.

The process commenced in December 2016, based on a May 2016 situational analysis commissioned by WHO in conjunction with the Antimicrobial Resistance Control Committee (ARCC), which provided an overview of the situation of antimicrobial resistance, and the gaps in the country's capacity. Technical assistance was provided by the WHO country and regional offices and independent consultants, through a series of dialogues involving key stakeholders and representatives from the Ministry of Health.

Ultimately, a strategic plan was produced that lays down strategic interventions and primary activities, and their schedule: the National Action Plan on AMR Indonesia 2017-2019. The plan is based on a One Health approach, and involves collaboration between the national agency of drug and food control and the ministries of agriculture; marine affairs and fisheries; research, technology and higher education; and defence. It has five strategic objectives:

1. Improve awareness and understanding of AMR through effective communication, education and training

2. Strengthen knowledge and evidence through surveillance and research

3. Reduce incidence of infection through sanitation, hygiene and infection prevention and control

4. Optimize the use of antimicrobial medicines in human and animal health

5. Develop an economic case for sustainable investment and increase investment in new medicines, diagnostic tools, vaccines and other interventions.

In line with these five strategic objectives, the Indonesian NAP AMR is further elaborated into strategic objectives and interventions, each with a set of key activities and an indicative list of indicators for monitoring and evaluation (M&E), and a detailed operational plan.

High-level commitment to supporting AMR containment is reflected in policy endorsement, leadership structures being developed in the human and animal health sectors, and the financial outlays for the MOH. Strategic plans and roadmaps to roll out existing regulations and guidelines, focused on rational use of antibiotics in health care facilities and communities, have been developed by the ministries of health and agriculture. In 2014, a National Antimicrobial Resistance Control Committee (ARCC) was established under the MOH. A Ministerial Decree on the AMR prevention and control programme and a Ministerial Decision on ARCC at the Ministry of Agriculture are also being finalized, and several pilot initiatives are under way related to different aspects of AMR containment. These include surveillance networks in university and other settings for the Antimicrobial Stewardship Programme.

Data related to AMR in Indonesia is based on studies conducted by laboratories or universities, because there is no nationally networked laboratory setup to provide nationally representative data. Pilot efforts on surveillance of AMR and antimicrobial use, especially in the animal health and related sectors, are yet to be developed into organized efforts. The lack of laboratory capacity in the veterinary sector—and, to a large extent, in the human health sector—is a major impediment to progress. An e-TB Manager System and SITT (Integrated TB Information System) are in place for tuberculosis. The e-TB reporting system works from service level up to provincial hospital level. An animal health information system (iSIKHNAS) is also in place.

Several monitoring systems are in place at the primary health care (puskesmas) level to support rational antibiotic use, including antibiotic usage at the household level and rational use of antibiotics related to acute upper respiratory tract infections and unspecified diarrhoea.

Sanitation, infection prevention and hygiene, including vaccination, are recognized as important public health interventions in the human health, animal health, and aquaculture sectors. Quality assurance and accreditation are in place for health facilities (hospitals and puskesmas), where accreditation assessments include an infection, prevention and control (IPC) programme and an AMR prevention and control programme. Health care personnel trained on antimicrobial usage and AMR prevention and control are available at hospitals and health offices at province and district level.

To ensure treatment of infections with appropriate use of existing antimicrobial medicines, there are regulations to control effective, safe, and affordable antimicrobials, which must be prescribed properly and accurately by doctors/veterinarians. Indonesia has a National Formulary Committee that develops reference lists for medicine in the implementation of National Health Insurance, which include restrictions on antimicrobials. Several awareness campaigns were rolled out in 2015 and 2016, aimed at the general public and selected professional groups.

The importance of AMR is yet to catch the attention of Indonesia's larger research and innovation community.

Recommendations for priority actions

- Establish an Inter-Ministerial Committee on the implementation of the Indonesia NAP on AMR, to ensure a systematic and comprehensive One Health approach. This should comprise: the Coordinating Minister of Human Development and Culture; the Coordinating Minister for Politics, Law and Security; the Ministry of Health; the Ministry of Agriculture; the Ministry of Marine Affairs and Fishery; the Ministry of Environment and Forestry; the Ministry of Defence; the National Agency of Drug and Food Control; the Ministry of Research, Technology and Higher Education; the Ministry of Finance; the Ministry of Communication and Informatics; and the Ministry of Foreign Affairs.

- Implement the WHO Global Antimicrobial Surveillance System (GLASS) on surveillance of AMR, using a One Health approach.

- Formally appoint designated laboratory surveillance on AMR in the human, animal, aquaculture, and environment sectors.

- Formally appoint designated sentinel sites on AMR in the human, animal, aquaculture, and environment sectors.

- Promote public awareness and community empowerment on AMR through human and animal healthcare providers at local level.

Indicators and scores

P.3.1 Antimicrobial resistance detection - Score 2

Strengths/best practices

- Research results are available for priority pathogens (Methicillan Resistant *Staphylococcus aureus*, extended spectrum β lactamases, Multi-drug resistant tuberculosis, and HIV).

- Type A hospital laboratories (especially national and provincial referral hospitals) have the capacity to detect AMR and report it to the Directorate General of Health Services at the Ministry of Health.

- TB and HIV laboratories and laboratory networks are in place and functioning.

- Molecular capacity for rapid detection of TB and drug resistance is in place.

- A tiered, routine, online and real-time e-TB Manager reporting system is in place.

- The Environment and Fish Diseases Test Laboratory in Serang conducts fish drug and fish feed testing, and reports to the Directorate General of Aquaculture Fisheries.

- The Veterinary Regional Laboratory and Quality Testing and Animal Product Certification Centre is in place and functioning.

Areas that need strengthening, and challenges

- Cooperation and networking across sectors, especially with the animal sector (Ministry of Agriculture (MOA) and Ministry of Marine Affairs and Fisheries (MOMAF)), needs improvement.

- Referral laboratories should be appointed for AMR detection.

- Human resource skills and laboratory capacity for AMR detection should be improved.

- A list of specific priority pathogens in Indonesia should be developed.

P.3.2 Surveillance of infections caused by resistant pathogens - Score 2

Strengths/best practices

- The AMR prevention and control programme is included in the assessment for hospital accreditation.

- National Diarrhoea research for drug use available.

- An AMR prevention and control programme guideline for hospitals is available.

- National referral hospitals are able to carry out AMR surveillance.

- National Sexually Transmitted Infection treatment guidelines are based on research and surveillance of drug resistance.

- AMR pathogen testing by the Environment and Fish Diseases Test Laboratory in Serang is in place and functioning, reporting to the Directorate General of Aquaculture Fisheries.

- Monitoring of AMR in animals is carried out by the Veterinary Regional Laboratory and Quality Testing and Animal Product Certification Centre.

- Integrated surveillance on AMR & antimicrobial use is in the pilot phase in the Ministry of Agriculture.

Areas that need strengthening, and challenges

- Cooperation and networking should be improved across sectors, especially with the animal sector (MOA and (MOMAF).

- Surveillance data from healthcare facilities should be coordinated.

- Sentinel surveillance sites for infection caused by AMR pathogens should be appointed.

- Integrated AMR prevention and control guidelines should be developed for all health care facilities, including in the animal sector.

P.3.3 Healthcare associated infection prevention and control programmes - Score 3

Strengths/best practices

- An IPC programme and an AMR prevention and control programme are available for healthcare settings, and include regulations and guidelines, IPC committees in referral (hospital) and primary (puskesmas) healthcare, and trained personnel.

- Regulations on healthcare accreditation are available for hospital and puskesmas, and include IPC programmes and antimicrobial resistance controls.

- Community handwashing programmes are in place for infection prevention and control.

- IPC/biosecurity is strong in animal health facilities, the farm to fork chain, aquaculture, and food production sectors.

Areas that need strengthening, and challenges

- Monitoring for implementation of the IPC programme should be strengthened.

- Cooperation and networking should be improved across sectors, especially with the animal sector (MOA and MOMAF).

- Increases are required in the number of health workers trained on IPC.

- Advocacy and coordination with local governments is needed, in order to support antimicrobial resistance prevention and improve control of regional programmes.

- IPC guidelines in the animal sector (MOA and MOMAF) require strengthening.

- There is a lack of understanding in health workers and the public of the importance of sanitation/hygiene in preventing the spread of infection due to antimicrobial resistance.

P.3.4 Antimicrobial stewardship activities - Score 3

Strengths/best practices

- Regulations and guidelines on antibiotic use are available; the use of antibiotics in humans and animals requires a prescription from a doctor/vet; and the use of antimicrobials as growth promoters in livestock feed is prohibited.

- The use of antimicrobials in healthcare facilities refers to the essential medicines list and the National Formulary.

- General Guidelines for Antibiotics Use were established in 2011 (and are in the process of revision).

- Some hospitals have the capacity to test and monitor AMR and the use of antimicrobials.

- An antimicrobial use monitoring programme is in place for human and animal food, and includes antibiotics used in puskesmas as indicators of rational use of medicine, fish drug monitoring, and residue testing in food products.

- A TB programme is in place that integrates planning, expansion, surveillance, web based M&E, and a drug resistance survey with the NIHRD.

- The National Agency of Drug and Food Control (NADFC) conducts pre- and post-market evaluation to ensure security, efficacy, and quality requirements. The NADFC supervises every stage of drug production, from raw material quality assurance, research implementation (clinical or bioequivalence testing) and regular drug distribution monitoring to pharmacies, including pharmacovigilance monitoring. The NADFC also has a system for prevention of counterfeit and illegal drugs.

- Awareness campaigns have been run on AMR and to promote behaviour change through public communication, education, and community empowerment programmes. These have covered human health, animal health, agriculture, husbandry, fisheries and other related sectors, at national, province and district levels.

- Education and further education, professional training, certification and development systems are in place in the human health, animal health, agriculture, husbandry, fisheries, and other related sectors. This approach is expected to foster proper understanding and awareness amongst professionals.

Areas that need strengthening, and challenges

- Further resources are required for the implementation of the antimicrobial stewardship programme.

- Cooperation and networking across sectors requires improvement, especially with the animal sector (MOA and MOMAF).

- Advocacy and coordination with local governments is needed in order to support antimicrobial stewardship programmes in their regions.

- Not all healthcare facilities report data on antimicrobial usage.

- Behaviour change is required for health workers and communities to use antimicrobials wisely.

- Sale/use of antimicrobials without prescription from a doctor/vet does take place.

- The use of antibiotics as growth promoters in the animal sector should be discouraged and reduced.

- There is a dependence on the availability of TB-2 drugs that are not yet produced in Indonesia.

Zoonotic diseases

Introduction

Zoonotic diseases are communicable diseases that can spread between animals and humans. These diseases are caused by viruses, bacteria, parasites and fungi carried by animals, insects or inanimate vectors that aid in their transmission. Approximately 75% of recently emerging infectious diseases affecting humans were of animal origin; and approximately 60% of all human pathogens are zoonotic.

Target

Adopt measured behaviours, policies and/or practices that minimize the transmission of zoonotic diseases from animals into human populations.

Indonesia level of capabilities

A large number of zoonoses are present in Indonesia, with several others presenting additional threats. Accordingly, Indonesia has determined its national priorities for zoonotic diseases. National priority diseases are stipulated in Presidential Regulation no 30/ 2011: rabies; anthrax; bird flu; brucellosis; and leptospirosis.

To prevent zoonotic diseases of public health importance, a surveillance system is in place for selected zoonoses and operates between human health, animal health and wildlife, in close coordination between the ministries of health, agriculture, and environment and forestry, at national and subnational levels.

Aside from the health and animal sectors, zoonotic disease control is overseen by the Coordinating Ministry for Human Development and Culture through the National Zoonosis Control Committee (KNPZ)[5], and involves various cross-programme and cross-sector initiatives—both government and private—as well active roles for communities.

The best way to prevent, detect and respond to zoonotic diseases is at the source. As these diseases come more and more frequently from interactions with wildlife and livestock in rural areas, allocation of resources and investment to a trained subnational One Health workforce is of great importance for Indonesia.

To achieve an integrated One Health approach it is recommended to assess which executive levels in the various relevant ministries are involved in One Health discussions—as such discussions will progress faster when held between participants of equal rank, from decision-making to technical levels.

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5 Zoonosis control is implemented through a One Health approach based on Presidential Regulation No. 30/ 2011. In December 2017 this will be replaced by Presidential Decree no 116/ 2016 to strengthen the continuation of the zoonosis control and coordination function. Coordination, synchronization and control functions will be implemented by the Coordinating Ministry for Human Development and Culture.

Recommendations for priority actions

- Surveillance of wildlife health should be included in the Information System for Zoonotic and Emerging Infectious Disease (SIZE) information system.

- Increase budgetary and human resources allocation to One Health Response teams, and to the prevention and detection of zoonotic diseases at sub-national level.

- The integrated SIZE One Health surveillance system should be implemented at district level throughout the Republic of Indonesia

- Assess the executive levels of responsible One Health executive officers in the various relevant ministries, to streamline intersectoral One Health progress through collaboration between participants of equivalent hierarchical levels.

Indicators and scores

P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens - Score 3

Strengths/best practices

- Indonesia has determined priorities for zoonotic diseases based on incidence rate, mortality rate, transmission risk, and global priorities. Priority diseases are as follows: rabies, anthrax, bird flu, brucellosis and leptospirosis.

- The Four-Way Linking system links epidemiological and laboratory surveillance outcomes from human and animal health.

- An information system is in place for surveillance reporting.

Areas that need strengthening, and challenges

- A low sense of urgency about the need to combat zoonoses, both at national and regional levels, results in insufficient budgets, specifically at sub-national level.

- Surveillance of wildlife zoonoses should be improved.

- The combined SIZE information system should be implemented at sub-national level.

P.4.2 Veterinary or animal health workforce - Score 3

Strengths/best practices

- One Health is included in the curricula of selected universities.

- There is animal health workforce capacity within the national public health system.

Areas that need strengthening, and challenges

- There is a lack of staff trained to prevent, detect and respond to zoonotic disease outbreaks at sub-national level.

- The implementation of veterinary authority at sub-national level (PP Regulation No. 3/2017) should be improved.

- Wildlife health should be included in training modules.

- Additional training on zoonotic diseases is required for human and animal health professionals, as part of continued professional education.

P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional - Score 2

Strengths/best practices

- There is multisectoral coordination, based on Presidential Regulation (Decree) 116/2016.

- A pandemic zoonosis outbreak simulation exercise was recently carried out in Bali, Makassar and South Tangerang.

Areas that need strengthening, and challenges

- There is a lack of a trained One Health workforce, and allocated budgets are insufficient.

- The mechanism for coordinated response to outbreaks is not yet fully implemented.

- There is limited capacity for outbreak investigation and response to zoonotic disease outbreaks on sub-national levels.

- There is a need for funding of zoonotic disease outbreak response as a non-natural disaster under the Disaster Management Act (24/2007).

Food safety

Introduction

Food- and water-borne diarrhoeal diseases are leading causes of illness and death, particularly in less developed countries. The rapid globalization of food production and trade has increased the potential likelihood of international incidents involving contaminated food. The identification of an outbreak's source and its subsequent containment are critical for control. Risk management capacity must be developed with regard to control throughout the food chain continuum. If epidemiological analysis identifies food as the source of an event, suitable risk management options that ensure the prevention of human cases (or further cases), based on risk assessments, must be put in place.

Target

States Parties to have surveillance and response capacity for risks or events related to food- and water-borne diseases, with effective communication and collaboration among the sectors responsible for food safety and safe water and sanitation.

Indonesia level of capabilities

Frequent foodborne disease events have underlined the importance of food safety in Indonesia. Unprecedented numbers of outbreaks of foodborne disease have been reported worldwide in recent years, causing not only increased morbidity and mortality, but also negative economic impacts.

Indonesia, however, has shown significant improvement, as shown in the decreased incidence of such outbreaks, which fell from 306 events in 2014, to 164 in 2015, to 106 in 2016. Three provinces—West Java, Central Java and East Java—showed the highest incidences of outbreaks between 2014 and 2016. MOH records show that food prepared in households is the main contributor to foodborne disease events.

The Government of Indonesia has made efforts to strengthen the surveillance and response system. Eliminating or reducing risks at source is more effective, using food safety systems based on risk analysis to achieve the desired objectives.

In 2004, the government released Regulation No. 28 on Food Safety, Quality and Nutrition. This outlines national goals, objectives, priorities and activities to ensure food safety and quality, giving precedence to consumer protection, and in particular to consumer health. In doing so, it emphasizes a preventative approach.

It is understood that food safety by nature requires multi-sectoral approaches, and all relevant competent authorities at national and sub-national levels have established decrees and strategic plans to articulate the government's policy on food safety. National policies and standards are based on OIE, CODEX and WHO/FAO standards, which use comprehensive and participatory processes among national stakeholders to ensure fit-for-purpose results.

The Sub-Directorate of Surveillance—Directorate General of Diseases Prevention and Control, part of the Ministry of Health, established the national early warning alert and response system (EWARS) to provide warning of potential diseases outbreaks in Indonesia, in accordance with the IHR (2005). They also developed an event-based system that includes risk communication and information sharing for outbreak monitoring and response, and captures infectious disease and other hazards including foodborne disease.

Upon receiving rumours of an outbreak of foodborne disease, sub-national rapid response teams—supported from central level as necessary—carry out investigations and coordinate prevention and control measures. At central level, coordination takes place among the units within the MOH and across relevant institutions such as the NADFC or the Ministry of Agriculture, depending on the nature of the outbreak. The Sub-Directorate of Food Safety—Directorate of Environmental Health plays a significant role during outbreaks, supporting local rapid response teams in identifying and confirming etiological agents and food/beverage sources of outbreaks, and implementing corrective action using an environmental health approach that applies e-monitoring and evaluation of food hygiene and sanitation (www.kesling.kesmas.kemkes.go.id).

The rapid response teams that perform the epidemiological investigation are multi-sectoral and include epidemiologists, entomologists, medical officers, sanitarians, laboratory officers and food inspectors from the local food and drug agency and/or animal health agency, according to the scope of the necessary work.

The Integrated Food Safety System in Indonesia was established and launched by the Coordinator Minister for Human Welfare on May 13, 2004.

The Organization of National Food Safety Networks was established by the Coordinating Ministry for Human Welfare in Decree No. 23/2011. Additionally, the government of Indonesia participates in international food safety platforms such as INFOSAN (International Network of Food Safety Authorities) and INRASFF (Indonesia Rapid Alert for Food and Feed). It is also a Member of the Codex Alimentarius Commission.

The national food laboratory network has been established to improve food testing capacity at laboratories related to food safety. This network is comprised of relevant stakeholders in food safety from the health, agriculture, fisheries, and industrial sectors.

While these formal networking platforms exist, there remains a need for the government to improve communication and information sharing. Environmental, food and laboratory investigations are not optimally linked, and the risk profiling of food safety problems requires further attention.

Officials responsible for surveillance and response, food safety, laboratories and agriculture work together to consider risks and interventions. Focal points—including governmental and non-governmental organizations—are identified in relevant stakeholder organizations. There is a functioning information sharing mechanism across units in the MOH, MOA and NADFC during outbreaks. Coordination mechanisms are established for rapid response teams involving animal health and Food and Drug Authroity officers during outbreak investigations. Training for these teams has been conducted at provincial level including training for foodborne disease outbreaks.

In addition to the priority actions below, it is suggested that Indonesia should strengthen cooperation mechanisms between the focal points of relevant international organisations dealing with food safety, such as WHO and INFOSAN); OIE; Codex; and the World Trade Organization (WTO) Agreement on Sanitary and Phytosanitary Measures (SPS).

In addition, the government should make efforts to take on board the results of the ongoing evaluation of the Food Control System (CODEX), and consider undertaking a follow-up evaluation under the OIEPerformance of Veterinary Services Pathway (OIE PVS pathway).

Recommendations for priority actions

- Provide a 'train the trainers' programme for inspectors on official controls to ensure food operators' compliance with legislation.

- Ensure the implementation of Food Safety Management Systems in processing plants of food of animal origin.

- Following food safety risk analysis, strengthen research in foodborne disease epidemiology and outbreak investigations.

Indicators and scores

P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination - Score 3

Strengths/best practices

- There is a complex legal and regulatory framework addressing food safety and foodborne diseases, covering the roles of the authorities involved and detection, prevention and control measures.

- Dedicated staff in the relevant ministries and services evaluate information and outbreak investigations reported by the district or provincial health offices.

- Several databases are in place for collecting information related to food safety. In addition to the platforms for multi-sectorial coordination (INRASFF and Public health emergency operations centre (PHEOC)), outbreak and response reporting systems for communicable (notifiable) diseases are run by several different authorities.

- The SIZE system, still in the pilot phase, integrates the MOA's iSHIKNAS surveillance system with the MOH's EWARS system, helping ensure prompt responses to outbreaks of foodborne disease in relation to animal disease.

- There are training programmes for investigation of food poisoning, with resources available.

- Food safety information is shared regularly on export and import food products.

- Coordination among stakeholders on foodborne disease and food safety issues has improved.

Areas that need strengthening, and challenges

- The geographical outlay of Indonesia makes referral of specimens difficult and expensive.

- Regular reorganization and rotation of national and local staff can present challenges.

- Foodborne disease is not yet a priority health programme at sub-national level.

- Central government regulations are not always properly implemented at sub-national level.

- Laboratory results for clinical and/or food samples from hospitals and private and government laboratories are not linked with existing surveillance systems, and thus do not contribute to risk profiling of food safety problems.

- Confirmation of etiological agents responsible for foodborne diseases in clinical and food samples is not always properly linked with the relevant sources of raw food.

Biosafety and biosecurity

Introduction

It is vital to work with pathogens in the laboratory to ensure that the global community possesses a robust set of tools – such as drugs, diagnostics, and vaccines – to counter the ever-evolving threat of infectious diseases.

Research with infectious agents is critical for the development and availability of public health and medical tools that are needed to detect, diagnose, recognize and respond to outbreaks of infectious diseases of both natural and deliberate origin. At the same time, the expansion of infrastructure and resources dedicated to work with infectious agents has raised concerns about the need to ensure proper biosafety and biosecurity to protect researchers and the community. Biosecurity is important in order to secure infectious agents against those who would deliberately misuse them to harm people, animals, plants or the environment.

Target

A whole-of-government national biosafety and biosecurity system is in place, to ensure that: especially dangerous pathogens are identified, held, secured and monitored in a minimal number of facilities according to best practices; biological risk management training and educational outreach are conducted to promote a shared culture of responsibility, reduce dual use risks, mitigate biological proliferation and deliberate use threats, and ensure safe transfer of biological agents; and country-specific biosafety and biosecurity legislation, laboratory licensing and pathogen control measures are in place as appropriate.

Indonesia level of capabilities

Indonesia has come a long way in terms of structured and strategic implementation of biosafety and biosecurity. The work was initiated 10 years ago and has been strengthened since the establishment of the NIHRD laboratory facilities, including the BSL-3 Laboratory in 2009.

Resources of the highest competency are available in the country, but the challenges to creating and implementing an overarching, sustainable, multisectoral system have to be seen in the context of the country's vast size and the different levels of technical development in different parts of the nation.

There are more than 13,000 clinical human, veterinary and research laboratories in the country. National electronic systems need to be in place, but are sometimes hampered by infrastructural issues in remote areas.

Countering this are dedication and a clear vision of where the country wants to be in five years time in order to mitigate risks both for laboratory staff and—in terms of biosecurity—society generally.

Overall scoring in this area should be viewed as strong given the conditions. The clearly defined and ongoing priority actions should effectively take the country into a sustainable system for biosafety/security within the five years following this JEE.

Recommendations for priority actions

- Complete ongoing work to finalize a broader National Strategic Plan for biosafety and biosecurity in laboratories in Indonesia, bringing together laboratory functions in different ministries to address IHR (2005) technical areas such as zoonotic disease, laboratory systems, workforce development, food safety, real time surveillance and AMR in a single overarching plan.

- Develop a continuously updated and monitored nationwide inventory of high consequence agents in storage.

- Educate and deploy a nationwide function for maintenance and control of laboratory safety facilities and equipment.

- Develop a master training and certification scheme for biosafety and biorisk officers in both the human and animal sectors, accredited and certified by relevant international bodies such as WHO, FAO, OIE, and/or the International Federation of Biosafety Associations/IFBA.

Indicators and scores

P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities - Score 3

Strengths/best practices

- The existing system has a legislative foundation.

- Technical and procedural support is available from certified professionals.

- Proper containment is available, overseen by the National Authority for Containment (NAC).

- A central, certified biosafety level three (BSL3) laboratory is available both for the human and the animal sectors.

- Local institutional guidelines for biosafety are in place.

Areas that need strengthening, and challenges

- National guidelines for biosafety and biosecurity need to be finalized and enforced.

- A national strategic biorisk plan should be established.

- There is inadequate awareness and commitment among some stakeholders.

- Biosafety and biosecurity are low priority subjects for some stakeholders, because of a lack of knowledge of incidents.

- The sector is affected by high staff turnover.

- Active assessment of all laboratories is difficult due to geographical conditions.

P.6.2 Biosafety and biosecurity training and practices - Score 3

Strengths/best practices

- A biosafety online training module is available in Bahasa Indonesia.

- There is an ongoing "train the trainers" programme in biosafety and biosecurity.

- Advanced biosafety certified training is already available for human laboratories.

- Nine IFBA-certified management professionals are available.

- Five IFBA-certified biosecurity professionals are available.

- One NSF-certified biosecurity professional is available.

- Continuous training occurs in institutions around the country.

- Biosafety and biosecurity is incorporated into university curricula.

Areas that need strengthening, and challenges

- National guidelines need to be finalized, enforced and adapted to the national language.

- More certified trainers are required, especially in the animal sector.

- Stakeholders should be encouraged and stimulated to maintain regular biosafety training.

Immunization

Introduction

Immunizations are estimated to prevent more than two million deaths a year globally. Immunization is one of the most successful global health interventions, and one of the most cost-effective ways of saving lives and preventing disease.

Target

A functioning national vaccine delivery system – with nationwide reach, effective distribution, easy access for marginalized populations, adequate cold chain and ongoing quality control – that is able to respond to new disease threats.

Indonesia level of capabilities

Immunization is a high priority programme for the government of Indonesia, with the Ministry of National Development Planning integrating immunization programmes into national long-term, medium-term, and annual plans. Law No. 36 / 2009 stipulates that each child has the right to basic vaccines for protection against vaccine-preventable diseases, and that the government is responsible for ensuring that each child is fully immunized. Since its graduation from GAVI (Global Alliance for Vaccines Initiative) support, Indonesia funds more than 90% of the national immunization cost. A globally recognized vaccine manufacturer, BioFarma, is situated in Bandung city. In 2017, around 92.2% of health centres were equipped with WHO-standard cold chain capacity.

Indonesia has robust systems for monitoring immunization coverage; centralized vaccine and logistics procurement; and centralized reporting and recording of adverse effects following immunization. According to administrative reports, the trend of MCV1 coverage from 2010 to 2016 ranges from 92.3% to 99.3%.

Currently, the national immunization programme provides: Hepatitis B birth dose; BCG tuberculosis vaccine; Pentavalent vaccine (DPT-HepB-Hib) for diphtheria, pertussis, tetanus, hepatitis B and Haemophilus influenzae type b; OPral polio vaccine (OPV), inactivated polio vaccine (IPV) and measles/measles rubella for infants; DPT-Hep B-Hib & measles/measles rubella for children at 18 months old; Booster doses of measles/measles rubella, DT (diphtheria, tetanus, and pertussis); and Td (diphtheria, tetanus, and pertussis) for school-aged children, through a school-based immunization programme.

Td vaccine for women of child-bearing age, including pregnant women, is included in the national routine immunization schedule under the National Health Insurance scheme. This scheme also covers the cost of routine immunization delivery for children under five and tetanus immunization for women of child bearing age at primary health facilities. The Government of Indonesia supports local governments in budgeting for immunization activities.

Recommendations for priority actions

- Develop a national coverage improvement plan focused on equity, which addresses dropouts and intensifies community awareness of the benefits of vaccination.

- Conduct an EPI coverage survey to validate the reported administrative data.

- Strengthen EPI data quality. Specifically, integrate private sector EPI coverage reporting, and strengthen web based reporting and recording mechanisms.

- Optimize the use of the Stock Management System (SMS) tool to ensure the availability of vaccines in both public and private sectors.

- Conduct the vaccine investment case study for Health Care Security.

Indicators and scores

P.7.1 Vaccine coverage (measles) as part of national programme - Score 4

Strengths/best practices

- The immunization programme is a high priority programme, with strong government commitment and secure funding.

- Routine immunization services are provided at various points of contact in the health system, i.e. puskesmas; polindes (village maternity huts); posyandu (integrated service posts); public hospitals; and private health providers.

- Immunization for elementary school students is an integral part of a well-established school-based national health programme.

- The immunization programme has a legislative foundation (including the basic Act, laws, and a MOH decree), as well as technical guidelines and SOPs for immunization.

- There is widespread and strong community empowerment around vaccination (through the Indonesian Council of Ulama, community service organizations, and religious and community leaders).

- There is strong coordination with other programmes and sectors.

Areas that need strengthening, and challenges

- Immunization coverage needs to be improved in hard to reach areas with low populations and lower levels of vaccine coverage as compared to national average (including second dose measles coverage).

- Community awareness-raising is required around the importance of immunization, and particularly booster immunization.

- Reporting and recording capacity is limited, and private sector reporting is insufficiently integrated.

- Local government commitment to support immunization should be increased, especially through budget allocation.

- Advocacy is required to improve local commitment, including demand promotion and work against people who obstruct immunization.

- High prices of new vaccines are a challenge.

P.7.2 National vaccine access and delivery - Score 4

Strengths/best practices

- All vaccines and other immunization logistics are procured by central government, through one gate policy, under the e-catalogue mechanism.

- As of 2017, 92.2% of health centres have been equipped with WHO-standard cold chain capacity.

- The government maintains a stockpile (25% buffer stock) of all routine immunization commodities that can be used to mitigate vaccine supply shortages and outbreaks.

- SOPs are in place for cold chain and vaccine management.

- A Sustainable Outreach Services (SOS) strategy is implemented 3-4 times/year in remote areas, integrated with maternal and child health and malaria programmes.

Areas that need strengthening, and challenges

- Discrepancies between administrative data and coverage surveys should be reduced.

- Negative perceptions regarding vaccinations (issues of halal and haram) must be countered.

- A monitoring information system should be developed, and should integrate private health sector reporting on immunization.

- Improvements are required in the monitoring plan for effective vaccine management

- Regular updating of cold chain inventory is required

- There is rapid turnover of immunization officers, and operational costs of work in remote areas are high.

DETECT

National laboratory system

Introduction

Public health laboratories provide essential services including disease surveillance; disease and outbreak detection; emergency response; and environmental monitoring. State and local public health laboratories can serve as focal points for a national system, through their core functions for human, veterinary and food safety. These include disease prevention, control and surveillance; integrated data management; reference and specialized testing; provision of laboratory oversight; emergency response; public health research; training and education; and partnerships and communication.

Target

Real-time biosurveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.

Indonesia level of capabilities

Indonesia has a complex national laboratory system building on many different entities, sometimes working in parallel. A tropical country with more than 255 million inhabitants living in an archipelago of over 17,000 islands, stretching over 5,000km, requires thousands of healthcare institutions for both humans and animals.

Reliance on referral to a single reference laboratory (for the human sector, the Balitpanges laboratory, and for the animal sector, BPMSPH Jakarta—both of which have BSL3 facilities) causes delays in diagnosis. A number of peripheral reference laboratories have therefore been instituted to cover the needs of more complicated investigations. Currently there are 13 human peripheral referral laboratoriess and eight veterinary referral laboratories, with Papua due to open its own veterinary referral laboratory in 2018.

Indonesia's 9,930 primary health centres together form the basis of healthcare in the country. A hierarchy of more specialized referral hospitals is scattered over the country, with 2,750 hospitals equipped with their own laboratories. In the animal sector, there are 962 primary veterinary centres. In addition, there are 1,205 public health laboratories.

There are 13,000 laboratories at the lowest level, meaning the most common diseases (dengue, HIV and malaria) can be diagnosed at the puskemas. 70 per cent of these laboratories can also diagnose TB, and by 2020 this figure is set to be 100%.

The human regional referral laboratories can detect agents or syndromes that are included in the EWARS, including: acute diarrhoea; malaria confirmation; dengue; pneumonia; dysentery; typhoid fever; acute jaundice syndrome; Chikungunya; avian flu; measles; diphtheria; pertussis; acute flaccid paralysis; rabies; anthrax; leptospirosis; cholera; meningitis/encephalitis; tetanus neonatorum/tetanus; influenza-like illness; and hand, foot and mouth disease (including EV71). MERS-CoV and BSL4 agents are restricted to analysis at the central referral laboratory.

Referral transport is done by car or by air, with cold chains maintained using dry ice. Correct packing for category B agents is in place with SOPs. Samples are often divided, in case there is later need for confirmation at the central referral laboratory.

The eight veterinary referral labatories have the capacity to detect 25 relevant infectious diseases in animals.

Since MOH Decree No. HK. 02.02/MENKES/400/2016 was issued in 2016, the cost of implementing external quality assurance (EQA) has been met by laboratories themselves. There are 704 laboratories that have implemented EQA in cycle 1 of 2017 (July 2017). These break down as follows: 41 local government health laboratories (5.82%); 14 district health laboratories (1.99 %); 395 hospital laboratories (56%); 117 puskesmas laboratories (17.24%); 93 private laboratories (13.21%); seven clinic laboratories (1%); 29 Red Cross laboratories (PMI) (4.1%); and eight others (1.13%).

In the animal sector the self-assessment of veterinary laboratories' readiness for emerging infectious disease has been conducted with OIE guidance, using Laboratory Mapping Tools.

There is also a network of national referral laboratory research centres for veterinary science (Bbalitvets), and further networking with regional and international laboratories such as the Australian Animal Health Laboratory (AAHL).

Recommendations for priority actions

- All Puskesmas should be accredited according to plan, and have point of care TB diagnostics by 2020.

- Increase the number of accredited health laboratories every year to reach 100% coverage.

- Increase the number of national reference laboratories for Medical Device Evaluation IEC 60601, stability testing and performance evaluation.

- Strengthen the availability of peripheral animal referral laboratories and their accreditation to ISO 9001.

- Increase the number of core tests that can be done at point of care, at primary health care centres for humans and at animal health centres for animals.

- Work on decreasing the time from referral to result, as this may affect treatment.

Indicators and scores

D.1.1 Laboratory testing for detection of priority diseases - Score 4

Strengths/best practices

- Diagnostic testing is available for 23 diseases in peripheral reference laboratories and further capacity is available in the central referral laboratory, well beyond the required ten diseases stipulated by IHR.

- As Indonesia is a WHO Member State, the MOH can send samples for validation testing or specialized testing not available in the country.

- Diagnostic testing is available for 25 strategic animal diseases according to the OIE manual.

- As Indonesia is a member of OIE, the MOA can send samples for validation testing or specialized testing not available in the country.

Areas that need strengthening, and challenges

- Local government budget allocations for health equipment and human resources in district health laboratories should be increased.

- A high turnover of human resources at local level necessitates continuous training.

- Relevant medical specialists display a general lack of interest in public health laboratory postings.

- There is a lack of positive controls and laboratory standard SOPs for detection of new emerging pathogens.

- Further work is required on the development of the veterinary centre in Papua Province

- Further work is required to develop a Field Epidemiology Training Programme for Veterinarians (FETPV)

- There is a lack of veterinarians in all regions.

D.1.2 Specimen referral and transport system - Score 4

Strengths/best practices

- Algorithms and SOPs are in place for specimen collection, packaging and transport to peripheral referral laboratories for 23 diseases in EWARS, along with TB and HIV.

- The MOH has the capacity to send specimens—especially avian influenza—to WHO Collaborating Centres, using the Standard Material Transfer Agreement (SMTA) 1 documents.

- Balitbangkes is a member of the Global Influenza Surveillance and Response System (GISRS), and has an agreement in place for sending specimens of avian flu and seasonal influenza.

- The laboratory referral system is in place and functioning.

- The MOH sends measles and influenza virus specimens to WHO using airlines that meet IATA standards (e.g. Garuda).

- District health offices send TB specimens to peripheral referral laboratories for confirmation using couriers, in accordance with existing SOPs.

- SOPs are in place for specimen collection, packaging and transport to peripheral veterinary referral laboratories for 25 diseases.

- The MOA has the capacity to send specimens to OIE referral laboratories using the Standard Material Transfer Agreement (SMTA) 1 documents, in accordance with OIE guidelines.

- In 2008, the MOA sent avian influenza samples to the OIE referral laboratory in Australia for validation in accordance with MTAs.

- In 2017, the MOA plans to send horse disease samples to Ireland as part of preparations for the ASEAN GAMES Horse Competition in 2018.

Areas that need strengthening, and challenges

- Regular training is required on algorithms and SOPs for specimen collection, packaging and transport.

- There is a high turnover of human resources at local government level.

- There is a need to development a laboratory information system that is interconnected with the primary database in ISIKHNAS.

D.1.3 Effective modern point-of-care and laboratory-based diagnostics - Score 3

Strengths/best practices

- A tiered diagnostic testing strategy is available for specific priority diseases, the most common at puskemas and second tier peripheral referral laboratories being TB and HIV.

- Five agents can be tested at primary animal health centres, but not in all centres.

- Plans are in place to increase veterinary point-of-care laboratory capacity, starting in 2018.

Areas that need strengthening, and challenges

- Diagnostic laboratory capacity in puskesmas with 100% TB capacity should be improved.

- Limited services at point of care, coupled with diverse geographical and natural conditions, pose challenges to animal disease control in the field.

- It is difficult to link field events with laboratory confirmations, due to a need for more peripheral veterinary referral laboratories.

D.1.4 Laboratory quality system - Score 3

Strengths/best practices

- Laboratory accreditation bodies are available including: The health laboratory accreditation committee; The national accreditation committee; The commission for hospital accreditation; The primary health care facility Accreditation Commission.

- A national referral laboratory is available (Balitbangkes is internationally accredited by WHO and ISO 15189 and 17025).

- Some peripheral referral laboratories are also accredited by ISO 15189 and 17025.

- A national EQA programme is available.

- Eight animal health laboratories and one disease testing laboratory are accredited with ISO 9001.

- A standard checklist for laboratory supervision is available using the LMT (Laboratory Mapping Tools) instrument.

- A list of indicators is available for assessing laboratory examination quality.

Areas that need strengthening, and challenges

- Accredited laboratory capacity should be increased. Regulation for mandatory laboratory accreditation has been in place since 2010, but not all laboratories comply.

- EQA for animal health laboratories is still voluntary.

DETECT

Real-time surveillance

Introduction

The purpose of real-time surveillance is to advance the safety, security and resilience of the nation by leading an integrated biosurveillance effort that facilitates early warning and situational awareness of biological events.

Target

Strengthened foundational indicators, and event-based surveillance systems that are able to detect events of significance for public health, animal health and health security; improved communication and collaboration across sectors and between subnational, national and international levels of authority regarding surveillance of events of public health significance; and improved country and regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, incorporating interoperable, interconnected electronic reporting systems. Epidemiologic, clinical, laboratory, environmental testing, product safety and quality, and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with IHR and OIE standards.

Indonesia level of capabilities

Indonesia has established a national health surveillance system that is capable of detecting, preventing and responding to critical risks as required under the IHR (2005). This is not, however, made up of one, single coordinated system, but rather of different elements at different levels, composed of active and passive surveillance, indicator- and event-based, laboratory-confirmed and syndromic, and local, national and subnational systems.

All 34 provinces have trained MOH staff of varying technical capability. The MOA has systems in place and has trained staff in 27 provinces. The Ministry of Environment and Forestry (MEF) has similar capacity in three provinces.

In accordance with the One Health framework, integrated training has been conducted several times among staff from the human, animal and wildlife sectors. There are ongoing efforts to strengthen public laboratories, principally by training state and local laboratories to perform laboratory confirmation on diseases under surveillance and those with the potential to pose public health emergencies. A mechanism for sharing surveillance data between the human and animal sectors at national and subnational levels is also being implemented.

An interoperable and interconnected reporting system was introduced in 2015, but is not yet fully implemented. A common platform called SIZE (Sistem Informasi Zoonoses dan Emerging Infectious Diseases) has been established to access animal and human health systems.

Recommendations for priority actions

- Advocate and encourage local government units to honour existing commitments to sustainable implementation and adequate funding of surveillance programmes.

- Train human and animal health staff at provincial and district levels (including training of trainers), and provide refresher training courses, to strengthen surveillance in areas with existing surveillance systems, and to establish them in those without systems yet (especially for the wildlife sector).

- Establish a mechanism for sharing surveillance data between the human and animal sectors at national level. This mechanism can then be adopted at provincial and district levels.

Indicators and scores

D.2.1 Indicator- and event-based surveillance systems - Score 3

Strengths/best practices

- Regulations are in place covering the implementation of MOH, MOA, and MEF surveillance activities at all levels of the health system.

- There is strong national government commitment to ensuring funding for surveillance.

- There is strong community participation in community-based surveillance, with village reporters informing on disease or syndromes in animals.

- Guidelines, SOPs, and technical guidance are available from disease programmes.

- Staff are trained to collect and verify information and share it with partners and stakeholders.

- There is a weekly routine reporting system collecting data from community health sub-centres and village midwives.

- Notifiable animal disease syndromes are reported in real time.

- EWARS and ISIKHNAS are implemented.

- Verified disease information is accessible to the public through www.infopenyakit.org, www.skdr.surveillance.org and www.sehatsatli.menhlk.go.id

- Active surveillance proved that H7N9 identified in China in 2013 was not found in traditional markets in the cities of Jabodetabek, Surabaya, and Medan.

- Acute flaccid paralysis surveillance in hospitals is done in cooperation with private clinicians.

Areas that need strengthening, and challenges

- Established regulations need to be updated to include emerging diseases and address identified gaps.

- Refresher training courses to maintain and increase knowledge and skills are needed to strengthen the implementation of real time surveillance.

- There is a need to sensitize health workers at local level.

- Commitment to submitting complete and timely surveillance reports could be increased.

- Guidelines and regulations on wildlife surveillance are required.

- SehatSatli, the wildlife health information system, is implemented in a few provinces, and should be expanded to cover all of them.

- Local governments can be reluctant to report and declare outbreaks because of the possible political and economic repercussions.

- There is a high turnover of staff who are rotated to province/district postings.
- Human resource capability and capacity could be improved (e.g. to improve multi-tasking, address inequality in staff capabilities, and increase variety of education and background in the health workforce).

D.2.2 Interoperable, interconnected, electronic real-time reporting system - Score 3

Strengths/best practices

- Surveillance data is routinely analysed, interpreted and fed back to provinces via the EWARS weekly bulletin, vaccine preventable disease bulletin, and the iSIKHNAS monthly bulletin.
- EBS and iSIKHNAS data are analysed daily and fed back to the provinces across programmes and sectors.
- SehatSatli is available online.
- Surveillance staff at all levels can analyse surveillance data.
- There is quick communication regarding zoonotic diseases for all sectors involved, via a WhatsApp One Health group.
- Analysed data from EWARS, EBS, and SehatSatli are available online and accessible to the public.

Areas that need strengthening, and challenges

- An electronic mechanism is required for sharing data between the MOH, MOA, and MEF, from local to national levels.
- The SIZE MOU between relevant ministries is still in progress.
- Communication and coordination should be enhanced among relevant sectors, through interoperable and interconnected systems to share data.
- The electronic real time reporting system is not interoperable and interconnected between sectors.
- Work in remote areas is hampered by poor or absent internet and telecommunication services.

D.2.3 Analysis of surveillance data - Score 2

Strengths/best practices

- A four-way linking system is in place that shares epidemiological and laboratory results between the human and animal health sectors.
- Indonesia is capable of analysing specific diseases using laboratory- and epidemiology-based surveillance, in order to identify whether diseases are indigenous or imported.
- Laboratory diagnostic sequencing capacity for animal diseases is in place, equipped with separate information systems.
- An integrated system for laboratory based surveillance for vaccine preventable diseases is in place (there are four designated national laboratories).
- Several specific disease surveillance systems have been integrated with laboratories (Japanese encephalitis, malaria, dengue, hepatitis, MERS-CoV and avian influenza).
- Expert teams are available for clinical assessments of special cases without adequate specimens, as in some acute flaccid paralysis cases.

Areas that need strengthening, and challenges

- Other priority zoonotic diseases should be included in the Four-Way Linking system (rabies, anthrax, brucellosis, leptospirosis, etc.).

- Regular scientific studies/research involving human and animal stakeholders, including universities, should be increased.

- There is a need to improve the analytical skills of subnational officers.

- Communication between laboratories and surveillance should be improved at local level.

- Staff capabilities vary widely at subnational level, due to a variety of educational backgrounds.

- There are administrative constraints on the procurement of laboratory supplies and other logistical needs.

D.2.4 Syndromic surveillance systems - Score 4

Strengths/best practices

- Five core syndromes are included in EWARS and EBS.

DETECT

Reporting

Introduction

Health threats at the human–animal–ecosystem interface have increased over the past decades, as pathogens evolve and adapt to new hosts and environments, imposing a burden on human and animal health systems. Collaborative multidisciplinary reporting on the health of humans, animals and ecosystems reduces the risk of disease.

Target

Timely and accurate disease reporting according to WHO requirements, and consistent coordination with FAO and OIE.

Indonesia level of capabilities

Indonesia is able efficiently to report PHEICs to WHO and OIE. The ability to identify a potential PHEIC, and report and document the event, has been proven through two actual events—although the need remains to improve accuracy and timeliness.

Reporting networking and protocols from local level comply with national and international standards—for example, for reporting to WHO during PHEIC simulations and actual event reports, and to OIE for zoonoses. Information is shared through these reports or during meetings of the concerned agencies, and includes:

- Immediate reports: if there are cases, weekly follow up reports are made until cases are resolved

- Bi-annual (six-monthly) reporting through WAHIS (World Animal Health Information System)

- An annual report, which provides a summary of the two bi-annual reports.

Compared to the MOH, the MOA and the MEF have less reach at provincial level. There are fewer provinces in which they have established surveillance systems, strengthened laboratory capacity and trained personnel. The availability of animal and wildlife personnel to be trained at local level remains a big challenge, because even if training opportunities are available, there are no local staff to be trained.

Other challenges include the low commitment level of health workers and health care providers to provide data for surveillance purposes; geography; poor internet connections that affect the completeness and timeliness of reports; and high turnover of trained NFP contact persons.

Recommendations for priority actions

- Increase the reach of the wildlife information system (SehatSatli) to all provinces in Indonesia; strengthen interoperability between information systems for data sharing between animal and human health at national level; then adopt these systems at provincial and district levels.

- Activate and encourage local government and communities, in line with the "One Data" policy, to enhance their commitment to provide and share PHEIC information and data, including through timely acknowledgement of outbreaks and emergencies.

- Strengthen the information infrastructure for PHEIC management at all levels, especially in the 112 priority districts (Presidential Decree No. 131/2015)—including through retraining the IHR NFP and OIE focal point, and providing continuous capacity building/training for staff at province and district levels.

- Strengthen risk assessment capacity at national level to facilitate reporting to WHO, OIE and FAO.

Indicators and scores

D.3.1 System for efficient reporting to WHO, FAO and, OIE - Score 3

Strengths/best practices

- A mechanism for reporting to WHO and OIE is in place, implemented, and operational. The MOA reports to OIE, and the MOH reports to WHO.

- The IHR NFP and OIE focal points have been trained.

- Domestic and international reporting infrastructure is in place.

- Indonesia has notified for avian influenza (2015, 2017); Koi herpes virus (2002); and infectious myo necrosis virus (2006).

Areas that need strengthening, and challenges

- The cross-sectoral coordination system for reporting to the IHR NFP should be strengthened.

- Systems for retraining the IHR NFP and OIE contact person should be strengthened.

- There is a need to sensitize and inform staff across sectors on the topic of IHR reporting.

- PHEIC-related data exchange between countries is not yet optimal, because of sensitivity around information sharing.

- High turnover of trained NFP contact persons may affect the quality of reporting.

- The commitment of puskesmas health officers to reporting surveillance data is still not optimal.

D.3.2 Reporting network and protocols in country - Score 3

Strengths/best practices

- A tiered reporting system is in place, reporting up from service to central level (iSIKHNAS, EWARS, Software System Monitoring Penyakit Ikan, and SehatSatli).

- Collaboration and coordination guidelines are available for specific pandemic simulations (e.g. pandemic influenza).

- Communities are empowered to report extraordinary incidents.

- Routine surveillance reports are accessible to the general public.

- Online systems for reporting include that of the (MOMAF); (www.impikan.kkp.go.id); SehatSatli (www.sehatsatli.menlhk.go.id), and the MOH EWARS (www.skdr.surveilans.org).

Areas that need strengthening, and challenges

- The three ministries' joint decree for five priority zoonotic diseases requires revision.

- The food poisoning outbreak reporting system requires further development.

- SIZE needs to be completed and implemented. By 2017, SehatSatli was established in only three provinces.

- Indonesia has a limited number of veterinarians to work with wildlife, so there is an unmet need for greater collaboration with the MOA through One Health.

- Continuous capacity building and training is required for human resources at local level (especially in reporting/surveillance).

- Geographical conditions and information technology infrastructure both pose challenges to timely reporting.

- There is suboptimal commitment across sectors and programmes to reporting potential PHEICs to the IHR NFP.

- Local government is reluctant to declare outbreaks, due to possible political and economic repercussions.

- There could be better variety of human resources and infrastructure capacity at provincial and district levels for reporting outbreaks.

- The MOMAF provides limited laboratory support.

Workforce development

Introduction

Workforce development is important in order to develop a sustainable public health system over time. A highly qualified public health workforce should be developed and maintained with appropriate technical training, scientific skills and subject matter expertise.

Target

State Parties to have skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system, and the effective implementation of the IHR (2005). Workforce should include physicians, veterinarians, biostatisticians, laboratory scientists and farming/livestock professionals, with an optimal target of one trained field epidemiologist (or equivalent) per 200 000 population. This workforce should cooperate systematically to meet relevant IHR and Performance of Veterinary Services core competencies.

Indonesia level of capabilities

Indonesia has a multidisciplinary public health workforce in place to prevent, detect and respond to public health events. This workforce includes physicians, nurses, veterinarians or veterinary workers, biostatisticians, laboratory scientists, social scientists, and agricultural/livestock professionals, and is generally available at each administrative level of the public health system. Human resources development is conducted at central, provincial and district/city levels, including through cross-programme and cross-sectoral training with standardized curricula and modules.

The Indonesian health system is decentralized: at national level, it is under the authority of the respective governmental agency; and at subnational level, implementation of workforce development—including allocating funds for staff development— is the responsibility of local government units. Capacities are, however, limited at regional level. Strategies to improve the retention of physicians, epidemiologists and other public health staff need to be developed to address relatively high staff turnover, in particular at regional and local levels.

Multidisciplinary Rapid Response Teams (RRTs) have been established, comprising epidemiologists, entomologists and microbiologists. Veterinarians and food and drug safety specialists are included in the RRTs based on the respective characteristics of potential outbreaks. The nature of collaboration between the agricultural and veterinary sectors and the human health sector is laid down in a specific MOH regulation. Rapid Response Team training is conducted by the Agency of Health Human Resources Development and Empowerment (PPSDM), in collaboration with the Directorate General of Disease Control and Prevention (CDC). These specialized trainings were established in 2016 and had been conducted in six provinces as of October 2017. In addition, there is specific training for MOH staff to address the needs of pilgrims performing the Hajj (monitoring of health risks/events during Hajj, etc.).

The veterinary workforce should be further strengthened at field level, especially in order to perform ante- and post-mortem inspections at slaughterhouses, and animal health surveillance and control activities.

Basic, intermediate and advanced field epidemiology training has been established to strengthen field epidemiology capacity at all levels of the public health system. This includes a two-year field epidemiology master's programme, which is implemented by the MOH in collaboration with five Indonesian universities. The programme is open to staff from the agricultural and academic sectors, with costs met by their institutions.

DETECT

Some MOA veterinarians also participate in the advanced field epidemiology training, and there are plans to establish a specific veterinarian field epidemiology training programme (FETP). Epidemiology and public health topics are included in medical and nursing school curricula. In addition, Indonesian universities offer several public health bachelors and masters programmes (including epidemiology and biostatistics). The MOH aims to have at least one advanced or intermediate field epidemiologist in each district within the next five years. However, availability of appropriately trained health professionals is a challenge, particularly at subnational level and in remote areas. In addition, accessibility of sustainable funding for continuous epidemiological education seems to be a challenge.

The Indonesian health workforce strategy is laid down in the PPSDM Action Plan and other documents such as MOH regulation No. 54/2013 on the Implementation of Human Resources Education.

In summary, strengthening health workforce capacities and capabilities is a high priority for the Indonesian government, which provides funds to run a number of programmes, including a career development programme. A range of other stakeholders are also involved in public health (emergency) workforce development, including the ministries of health, agriculture and internal affairs; the BNPB; province and district health offices; universities; and public and private hospitals.

Recommendations for priority actions

- Ensure that functional positions are filled with qualified personnel who have been appropriately trained.
- Ensure that the veterinary workforce at field level is sufficient to perform ante- and post-mortem inspections at slaughterhouses, and animal health surveillance and control activities, in line with international standards.
- Provide appropriate incentives for human and animal health workers to be assigned to local level posts and to remote areas.
- Strengthen linkages with academia and international partners, in order to ensure that the quality of applied epidemiology training meets global standards.

Indicators and scores

D.4.1 Human resources are available to implement IHR core capacity requirements - Score 3

Strengths/best practices
- The PPSDM has facilitated the development of 30 types of functional health positions, including with regulations for competency tests.
- Public health training curricula are standardized.
- Indonesia has a multidisciplinary workforce available at national and regional levels, and partially at local level.
- Rapid Response Teams (RRTs) have been established; specific training has been introduced.

Areas that need strengthening, and challenges
- Capacity is unevenly distributed across the country, with qualified capacities particularly lacking at local level and in remote areas.
- The veterinary workforce needs strengthening at field level, particularly to perform ante- and post-mortem inspections at slaughterhouses, and animal health surveillance and control activities.
- Monitoring of human resource capacities and capabilities could be intensified to allow prioritization of human resource and training needs.
- There is high turnover of public health staff at both national and subnational levels.

D.4.2 Field epidemiology training programme or other applied epidemiology training programme in place - Score 4

Strengths/best practices

- Indonesia conducts basic, intermediate and advanced epidemiology training.

- Epidemiology training is available for staff from sectors beyond the health sector.

- An advanced FETP has been in place since 1982; by October 2017, more than 500 FETP alumni were working across the country (except in North Kalimantan).

- The Indonesian FETP is contributing to international partnerships through TEPHINET and ASEAN +3 FETN.

- According to 2016 data, a total of 1,572 epidemiologically-trained public health staff are performing their duties at all levels of the country.

Areas that need strengthening, and challenges

- There is limited, partial collaboration across programmes in applied epidemiology.

- The veterinarians' FETP programme is still in the development phase.

D.4.3 Workforce strategy - Score 3

Strengths/best practices

- A human resource development strategy has been developed, including long, medium and short-term planning. A related action plan is in place (Action Plan for Human Resources Development and Empowerment Programme 2015-2019).

- The workforce strategy includes different public health professions.

- The strategy is reviewed regularly.

- A human resources development programme is in place, aimed at leveraging career development, establishing functional positions and building capacities in the regions.

Areas that need strengthening, and challenges

- Coordination and collaboration across sectors and programmes should be improved.

- Local governments have limited ability (and funding) to elevate human resources to appropriate career paths, and to implement trainings and staff development measures.

RESPOND

Preparedness

Introduction

The effective implementation of the IHR (2005) requires multisectoral/multidisciplinary approaches through national partnerships for effective alert and response systems. It requires coordination of nationwide resources, including the sustainable functioning of a national IHR focal point that is accessible at all times to communicate with WHO IHR regional contact points and all relevant sectors and stakeholders in the country. (The IHR focal point is a national centre for IHR (2005) communications, and a key requisite for implementing the IHR (2005)). States Parties should provide WHO with contact details for their national IHR focal points, update them continuously, and confirm them annually.

Target

Preparedness includes the development and maintenance of national, intermediate and local or primary response level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. These will cover mapping of potential hazards, identification and maintenance of available resources—including national stockpiles—and the capacity to support operations at intermediate and local or primary response levels during a public health emergency.

Indonesia level of capabilities

Indonesia is at high risk of a number of hazards, including infectious diseases, natural disasters (e.g. earthquakes), and chemical and radionuclear emergencies.

Indonesia has undertaken a lot of preparedness work and established a cross-sector coordinated system of preparedness and response, including an overarching emergency management (disaster) framework and levels of plans that sit under this in various agencies throughout—for example—the health, agriculture, and environmental sectors. Plans include mechanisms for emergency funding. Many—especially pandemic/avian influenza and natural disaster plans—have been extensively tested, both through real events and simulation exercises.

Risk analyses have been conducted separately for a number of hazards. A plan for management and distribution of some national stockpiles is in place (e.g. for pandemic influenza), but stockpiles for some other IHR-related hazards are not yet in place.

Given the strong existing capabilities, Indonesia is well placed to increase its level of preparedness, building on and extending the planning, risk assessment and resource mapping that already exists – in particular to strengthen CBRN planning; to bring together risk analyses from across sectors into an integrated national risk profile; and to map and locate response resources for those risks.

Recommendations for priority actions

- Review and update national disaster plans, particularly with regard to CBRN hazards, surge capacity, resource mobilization (including treatment facilities and laboratories), and stockpiles.

- Increase understanding and capacity to prevent, verify and respond to multiple hazards among relevant stakeholders (e.g. points of entry, laboratories, local government, etc.). Include regular stakeholder planning meetings and simulation exercises.

- Increase local disaster planning, including by expanding contingency plans for multiple hazards from 300 districts/municipalities to a further 174 districts by 2020, and by increasing local government planning and budget allocations for disasters.

- Review national disaster risk assessments (including risk indexes) in the context of all IHR-related hazards, and compile into a national risk profile.

Indicators and scores

R.1.1 Multi-hazard national public health emergency preparedness and response plan is developed and implemented - Score 3

Strengths/best practices

- The BNPB has a multi-hazard national health emergency plan (National Plan of Disaster Management).

- This plan acts as an overarching framework for preparedness and response, under which sit strategic plans, more detailed operational plans, and hazard-specific response plans across various agencies (e.g. for the health, agriculture, environmental and radionuclear sectors).

- Sub-national preparedness and response plans are in place in most provinces and districts, supported by the Centre for Health Crisis (CHC) in the MOH. Multi-hazard contingency plans are in place in 300 districts/municipalities, with the CHC planning to expand this to another 174 districts by 2020.

- Plans include:
    - Funding. Funds are available, depending on the level of natural and non-natural disasters.
        - If status is considered an outbreak, funds are available in the related programme or across sectors
        - If status is an emergency at local level, an on-call fund is available at BPBD at regional level
        - If status is raised to national emergency or epicentre, the fund is available at BNPB at central level (BNPB Regulation No. 6a for "On Call Fund" During Emergency).
    - Allocation and mobilization of resources (see indicator R.1.2 below).
    - Surge capacity: integrated district/municipality rapid response teams are in place and have responded to outbreak events, such as an Avian Flu case in Bali 2017
    - Training and exercises.
        - Simulation exercises are conducted regularly—e.g. for pandemics, nuclear emergencies, CBRN response, etc.
        - Every year SARI (severe acute respiratory infection) and ILI (influenza like illness) sentinel surveillance officers are trained for sampling and packing review training.
    - Contingency plans for points of entry (POE)
        - In total about 63 POEs (including 14 designated POEs under the IHR (2005)) have contingency plans in place. Simulation exercises are carried out regularly at designated POEs.

RESPOND

Areas that need strengthening, and challenges

- Some further planning for non-biological hazards is needed, especially related to CBRN and how resources and personnel will be mobilised for CBRN events.

- Plans for surge capacity and resource mobilisation should be reviewed and kept up-to-date.

- There is a need to increase the number of provinces that have multi-hazard contingency plans.

- Increased capacity to prevent, verify and respond to multiple hazards among relevant stakeholders is needed. This includes CBRN capability and laboratory capacity to define the aetiology of diseases through genetic sequencing.

- There is an identified need to improve local government commitment and funding for the control of hazards of a biological, radionuclear (Banten-Yogyakarta-Bandung) and chemical (Java, Sumatera, Kalimantan and Sulawesi) nature.

- High mobility and traffic of people, animals, and materials (including hazardous material such as chemical and radionuclear substances), coupled with a large number of points of entry, pose a number of challenges.

- High turnover of staff at local level and high turnover of local government leaders cause problems, and mean policy and support must be advocated continuously.

- A changing climate and environment influence the emergence of new diseases.

R.1.2 Priority public health risks and resources are mapped and utilized - Score 2

NB Note that there is a strong rationale for considering a higher score on this indicator, as many assessments and mappings of resources have been conducted, and Indonesia has strong capability in this area. However, existing gaps (see below)—which can be filled—result in the current score of 2. Assessing and mapping all risks and resources for the many disasters that Indonesia faces, and across a large geographic area, is a challenging task.

Strengths/best practices

- Risk analyses have been conducted separately for a number of hazards, including the establishment of national risk disaster indexes by the National Disaster Management Authority.

- Risk analysis and mapping skill is available at national and provincial levels—for example, avian flu mapping is used to assist priority provinces in developing contingency plans.

- A plan for management and distribution of some national stockpiles is in place:

  ○ For acute respiratory infections (ARI), stockpiles of antivirals, pandemic vaccines and personal protective equipment are available at national level.

  ○ Some factories in Indonesia can produce pandemic vaccine.

  ○ There are special regulations on procurement of medicine during emergencies/pandemics.

- Stockpiles for some other IHR-related hazards are not fully established (e.g. for CBRN).

Areas that need strengthening, and challenges

- An integrated national public health risk assessment is needed to identify and prioritize public health threats, including by compiling the risk information that already exists.

- Some further resource mapping work is needed, particularly for CBRN hazards. This requires creating an accurate inventory of emergency resources, details on health personnel and the capacities and capabilities of health facilities, and a process for funding and maintaining resources.

- There is a need to increase the number of personnel trained on risk analysis and mapping

- There is high turnover of staff at local level.

Emergency response operations

Introduction

A public health emergency operations centre (PHEOC) is a central location for coordinating operational information and resources for strategic management of public health emergencies and emergency exercises. Emergency operations centres provide communication and information tools and services, and a management system during responses to emergencies, or during emergency exercises. They also provide other essential functions to support decision-making and implementation, coordination and collaboration.

Target

Country has capacity for: a public health emergency operations centre functioning according to minimum common standards and maintaining trained, functioning, multisectoral rapid response teams; real-time biosurveillance laboratory networks; information systems; and trained PHEOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.

Indonesia level of capabilities

Indonesia is vulnerable to natural, non-natural and social disasters of a range of different kinds. Hazards include those associated with geographical and geological conditions; the high mobility of people and animals leaving, entering and re-entering the country (Indonesia has more than 300 points of entry, with 14 designated POE under the IHR (2005) including seaports, airports and one ground crossing at Entikong); and the existence of three nuclear reactors and thousands of industries using chemicals. Other potential non-natural disasters include IHR relevant hazards related to nuclear, chemical, zoonotic and food safety issues.

Based on Law No. 24/ 2007 on Disaster Management, the government of Indonesia established the National Disaster Management Authority (BNPB) as the coordinator for national disaster management. The BNPB is directly responsible to the President. At regional level, sub-national Disaster Management Agencies (BPBDs) are directly responsible to the relevant local authorities. To strengthen collaboration, coordination and cooperation of all resources further, since 2014 disaster management has been implemented using a cluster system, with the Minister of Health as the National Health Cluster Coordinator.

In principle, the first party responsible for emergency response is the district/municipality government. Provincial governments provide assistance when needed, or when disaster levels are raised to provincial level. The central government provides assistance to large cases that local governments cannot handle, or when disaster levels are raised to national level. During a disaster, the coordinator can involve the army/ police as needed. There is also a fund for emergencies, with a special process to release it. Coordination during emergency responses uses the Incident Command System.

To accelerate the process and bring health care functions from the Ministry of Health (MOH) closer to local governments in emergency responses, the MOH has established nine Regional Crisis Centres and two sub-regional Centres for Health Crises (CHC). The regional CHC serves to provide an emergency supplies depot, emergency operational units, emergency shelters, and training centres. The regional CHC organization consists of the health department, hospitals and universities.

The information system for public health emergencies is website-based and governs the flow of information during the different phases of a disaster.

RESPOND

The Emergency Operations Centre (EOC) at the MOH is coordinated by the Centre for Health Crisis (the EOC Crisis Centre), with the support of two EOC sub-clusters: the Public Health Emergency Operations Centre (PHEOC) and the National Command Centre (NCC). Key systems include an Early Warning and Response System (EWARS). The public can access its data at www.infopenyakit.org and skdr.surveilans.org.

Overall, Indonesia can be considered a leader in emergency operations, operating multiple EOCs that include state-of-the-art emergency response mechanisms along with novel approaches such as mobile applications to notify the population of disasters.

Coordinating emergency response across all the sectors at national and subnational levels is a key challenge.

Recommendations for priority actions

- Implement comprehensive training in case management and infection prevention and control for all health personnel, based on an all-hazards approach, and including the IHR (2005).

- Develop a national health sector contingency plan for IHR-relevant hazards and integrate it with the National Disaster Management Authority contingency plan.

- Improve public health emergency management capacities—specifically on IHR (2005)—for designated referral hospitals, including through training, infrastructure development, and standard operating procedures (SOPs).

- Improve coordination and collaboration for emergency response between the operations centres within the Ministry of Health and between the MOH and other related sectors.

- Strengthen information exchange systems between the Ministry of Health and other agencies by holding regular meetings, conducting joint exercises, and establishing memoranda of understanding (MOU) with other operations centres.

Indicators and scores

R.2.1 Capacity to activate emergency operations - Score 3

Strengths/best practices
- The EOC staff team is trained on public health emergency management and EOC SOPs. They can activate a response within two hours, especially for natural disasters.

- Guidelines and SOPs for emergency response mechanisms are available and can be accessed easily.

- Emergency operations capacity runs 24/7, and is supported by information technology.

- There is a wide emergency operations network across programmes and sectors, including other countries.

- A database of officers trained on health crisis management (in government, universities or NGOs) is available.

Areas that need strengthening, and challenges
- Health cluster coordination, collaboration and cooperation needs to be enhanced.

- National and subnational capacity in IHR-related hazard crisis management should be improved.

- The integrated information system should be improved.

- The mechanism of health crisis review/research in collaboration with experts and academics requires optimization.

R.2.2 Emergency operations centre operating procedures and plans - Score 2

Strengths/best practices

- There are procedures and plans for emergency response management, including staff roles that support PHEOC functions in the operational, planning, logistics and administration/finance sections; public communication; and partner liaison.

- Teams of experts are available.

- An information system is available during emergency situations.

Areas that need strengthening, and challenges

- Procedures should be regularly updated and reviewed.

- Specific procedures for IHR hazards are not available. Only the basic all hazards procedure is currently available.

R.2.3 Emergency operations programme - Score 3

Strengths/best practices

- Functional exercises/simulations have been conducted.

- Every year usually sees at least one or two large disasters that require national EOC activation.

- Cluster and stakeholder coordination meetings take place regularly.

- A coordinated emergency response can be activated within 120 minutes, especially for natural disasters.

Areas that need strengthening, and challenges

- Coordination, collaboration and cooperation in the health cluster should be strengthened.

- More regular training is required at national and subnational levels.

- The mechanism of health crisis review/research in collaboration with experts and academics requires optimization.

R.2.4 Case management procedures are implemented for IHR relevant hazards - Score 3

Strengths/best practices

- Case management guidelines for each priority disease and IHR-relevant hazards are available at all levels of the health system.

- SOPs for the management and transportation of potentially infectious patients according to their illness are available at local and POE level.

- Patient referral and transport mechanisms are in place, with adequate resources allocated.

- Appropriate staff are available and trained in case management of IHR emergencies.

Areas that need strengthening, and challenges

- Resource capacity (including for hospitals and health facilities) should be improved.

- Budget commitments from local government should be improved.

- PSCs should be established in all districts, cities and provinces.

- Maintenance of the referral hospital for emerging infectious diseases is a challenge.

RESPOND

Linking public health and security authorities

Introduction

Public health emergencies pose special challenges for law enforcement, whether the threat is manmade (e.g. anthrax terrorist attacks) or naturally occurring (e.g. flu pandemics). In a public health emergency, law enforcement must coordinate its response quickly with public health and medical officials.

Target

In the case of a biological event of suspected or confirmed deliberate origin, a country should be able to conduct a rapid, multisectoral response, with the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance (for example, to investigate instances of alleged use).

Indonesia level of capabilities

Indonesia has a challenging security profile. The largest archipelago country in the world, it lies in a strategic location between the Indian and the Pacific oceans and the Asian and Australian continents. Four of its more than 17,000 islands are shared with other countries. More than 300 points of entry exist, with considerable movement of humans, animals, and goods across the borders. These factors increase the risk of emerging infectious disease introduction, both accidental and intentional.

Numerous regulations exist to address the threat of terrorism. In 2003, the Government of Indonesia upgraded government Regulation No. 1/2002 to Law No. 15/2003 on Combatting Terrorism. The National Agency for Combatting Terrorism (BNPT) was established under Presidential Regulation No. 46/2010 on the National Agency for Combatting Terrorism (https://www.bnpt.go.id). One of the BNPT's responsibilities is to coordinate related government agencies in implementing counterterrorism policy.

Key agencies involved in combatting terrorism using chemicals, biology, radioactive, nuclear and explosives (CBRN) include:

- BNPT: coordinates terrorism countermeasures, including for bioterrorism

- State Intelligence Agency (BIN): focuses on early detection to prevent terrorism

- Coordinating Ministry of Human Development and Culture: coordinates in cases of human and animal disease detection

- Coordinating Ministry for Political, Legal and Security Affairs: coordinates ministries/agencies with duties and functions in the security sector to counter terrorism

- Ministry of Health: has roles in prevention at the points of entry and responses to bioterrorism

- The Ministry of Justice and Human Rights and Immigration: together with the Ministry of Health, coordinates monitoring of the traffic of conveyances, people and goods entering the territory of Indonesia

- Ministry of Research and Technology and Higher Education Eijkman Institute: role in researching and detecting materials used in bioterrorism

- The Indonesian Police and the Indonesian National Armed Forces: leading anti-bioterrorism institutions that help maintain security in Indonesia

- Ministry of Foreign Affairs: represents the government in foreign relations and foreign policy for bilateral/multilateral cooperation related to security.

In support of linking public health and security sectors, Indonesia has conducted a number of multisectoral simulation exercises including:

- 2008 simulation of pandemic influenza in Jembrana District, Bali

- 2009 simulation of pandemic influenza in Makassar City

- 2014 simulation of MERS-CoV import case handling

- 2015 simulation epicentre H5N1 in Purwakarta

- Simulation of terrorism countermeasures using CBRN

- Civil military interoperability - 2016 simulation of pandemic influenza at RSPAD Jakarta

- 2017 pandemic influenza epicentre countermeasures simulation in South Tangerang.

There is exchange of information related to public health emergencies at the national and subnational levels, including at POEs. However, not all provinces/districts have been trained or have conducted emergency response simulation exercises. Counterterrorism measures are also coordinated with the International Police (Interpol) through the Division of International Relations under the Indonesian National Police. The coordination is to facilitate and accelerate the exchange of data or information through the use of the Interpol Global Communication System network (better known as "I-24/7"), which is available 24 hours a day, 7 days a week.

A number of SOPs have been developed related to countermeasures for terrorism attacks using CBRN. These include the following:

- Standard Operational Procedures of Government Administration (SOP AP) for CBRN terrorism countermeasures

- Airport emergency plans at every airport

- Point of entry regulations and SOPs to support coordination between public health authorities and security authorities

- Air facilitation

- SOPs at the Port Health Office on the control of human remains/corpse traffic.

A number of relevant trainings have also been implemented, including the following:

- International investigative training (Jakarta Centre for Law Enforcement Cooperation)

- Training on CBRN terrorism countermeasures in 11 provinces

- Joint Investigations between the BIN and foreign security authorities

- Training on vector borne infectious diseases and zoonosis through One Health outbreak investigation training in three provinces.

Recommendations for priority actions

- Completely revise infectious disease outbreak and health quarantine laws to ensure the inclusion of land quarantine measures and clear mandates for collaboration.

- Review MOUs with veterinary authorities. Identify points of contact and the triggers for notification and information sharing between relevant authorities.

- Review regulations to strengthen IHR capacity including counter terrorism measures, including at points of entry.

- Finalize the MOU and SOPs on developing and implementing an electronic zoonosis and emerging infectious disease information system that is linked to other human and animal health databases. The MOU and SOPs should be effective between the Coordinating Ministry for Human Development and Culture; the Ministry of Health; the Ministry of Agriculture; the Ministry of Environment and Forestry; and the National Disaster Management Authority.

- Increase the number of provinces that have received training on biological defence and public health emergencies of international concern (PHEIC) countermeasures from 11 to all provinces.

Indicators and scores

R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event - Score 4

Strengths/best practices

- Numerous regulations and guidelines related to the prevention of public health emergencies are in place.

- There is coordination between multiple sectors at national level, and between central and local government.

- SOPs for countermeasures to CBRN terrorism exist between the BNPT, the armed forces and the MOH.

- Indonesia has an international investigative training centre (Jakarta Centre for Law Enforcement Cooperation).

- Training on countermeasures to CBRN terrorism has been completed in 11 provinces.

- There is cooperation between human and animal health laboratories, and the national laboratory system is capable of detecting pathogens that cause epidemic disease and forensic disease.

- Formal and informal information exchanges take place between security and public health authorities (for example, there is a weekly epidemiology report).

- Findings or research conducted by the Eijkman Institute on infectious disease viruses, biological materials or potential biological weapons are always reported to the MOH. For example, in 2015 the Eijkman Institute discovered Zika virus in Indonesia; findings were reported to the Ministry of Research and Technology and Higher Education as the Institute's direct regulating ministry, and forwarded to the MOH.

- All CBRN terrorism incidents are reported to the BNPT.

- A number of simulations of public health emergency countermeasures have been completed, the most recent of which was the 2017 simulation of epicentre pandemic influenza countermeasures in South Tangerang.

- The BNPT has coordinated training and simulation of countermeasures to CBRN terrorism.

- One Health Training has been completed in three provinces.

Areas that need strengthening, and challenges

- Chemical wholesalers need to increase their participation in, and assume more responsibility for, CBRN security.

- Capacity and training for CBRN countermeasures and responses need to be expanded to all provinces.

- Cooperation between health and security authorities on handling CBRN terrorism threats needs to be strengthened.

- The ease of access to online information on how to produce CBRN/weapons is a problem.

- Health authorities have limited access to foreign warships at points of entry.

- Control of the dangerous chemicals trading system needs to be tightened.

- Monitoring and sharing of information is required among stakeholders in biological agents that may potentially lead to public health emergencies.

Medical countermeasures and personnel deployment

Introduction

Medical countermeasures are vital to national security. They protect nations from potentially catastrophic infectious disease threats. Investments in medical countermeasures create opportunities to improve overall public health. It is also important to have trained personnel who can be deployed in case of a public health emergency for response.

Target

A national framework for transferring (sending and receiving) medical countermeasures and public health and medical personnel between international partners during public health emergencies.

Indonesia level of capabilities

Indonesia is a disaster-prone country, and has suffered several major disasters in recent years, including the 2004 tsunami. Indonesia is therefore well aware of the challenges related to sending and receiving medical countermeasures and personnel, and has developed plans and procedures for sending and receiving international medical countermeasures and personnel during a public health emergency. For example, the BNPB has developed guidelines on the role of international organizations and foreign NGOs during emergency response. There are also procedures in place that include administrative and logistical measures related to the handling of national and international medical countermeasures.

In general, international assistance is accepted through the Ministry of Foreign Affairs (MOFA) and channelled further via the BNPB to the MOH. Dedicated staff are available in the MOH to process donated countermeasures. This processing includes quality control, distribution and tracking of donated goods. During the Aceh Tsunami in 2004 and the Yogyakarta Earthquake in 2006, tons of inappropriate medical donations had to be disposed of. Based on this experience, a "one-stop-shop" post concept was established. In the port of arrival, donated goods and equipment are checked against national standards and needs.

Training for international health personnel coming to Indonesia to support emergency responses is available and conducted by competent Indonesian counterparts. In the field, international health personnel must be accompanied by an Indonesian medical professional and a local translator. Sending and receiving personnel in interventions involving security and the armed forces is done under the authority of the Indonesian Armed Forces, as overseen by the relevant BNPB regulations.

The MOH is currently developing regulations related to the deployment of health personnel to support international public health emergency response operations. At the moment, Indonesia applies existing Ministry of Finance procedures, which regulate the general international deployment of civil servants.

Indonesia has become a partner in the WHO Global Alert and Response Network (GOARN).

In practice, the country demonstrated its ability to deploy public health personnel during the Ebola Virus Disease outbreak response in West Africa in 2014 and the Nepal earthquake in 2015. The government of Indonesia also sent medical assistance, consumable goods and household equipment to Myanmar and Bangladesh in 2017.

RESPOND

ASEAN Member States, including Indonesia, have signed the ASEAN Agreement on Disaster Management and Emergency Response (AADMER). This agreement seeks to provide effective mechanisms for achieving substantial reduction of social, economic, and environmental losses related to disasters, and to respond jointly to disaster emergencies through concerted national efforts and intensified regional and international cooperation. Standard operating procedures for regional standby arrangements and coordination of joint disaster relief and emergency response operations have been developed (SASOP), and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) has been established. Indonesia applies the standards set out in the East Asia Summit Rapid Disaster Response Toolkit.

Indonesia has also participated in a simulation exercise that included the deployment of emergency medical teams (EMTs). The exercise was conducted in Bangkok and Phuket in 2017, under the framework of the ASEAN Regional Capacity on Disaster Health Management project; Indonesia provides a Type 3 EMT Type to the AADMER mechanism. In 2016 a simulation exercise for sending and receiving health personnel was conducted in Yogyakarta.

In general, Indonesia has the capacity to increase the production of medical countermeasures. An existing Presidential Regulation includes special procurement (e.g. without a tendering process) for medical countermeasures during a public health emergency. However, Indonesia has no formal agreement with manufacturers or distributors in place to procure medical countermeasures during such emergencies.

Recommendations for priority actions

- Review and update legislation and standards for international deployment of health personnel according to international standards, in order to encourage further deployments.

- Develop regulations for sending medical countermeasures, based on international standards.

- Develop SOPs on how to monitor and evaluate the work of national and international response teams during emergencies.

- Map available response teams and health care facilities (including those run by NGOs, government, and other actors) capable of integrating foreign personnel during emergencies.

- Advocate and encourage activity and greater involvement of the health sector in international/regional coordination platforms such as ASEAN's AHA Centre.

Indicators and scores

R.4.1 System is in place for sending and receiving medical countermeasures during a public health emergency - Score 4

Strengths/best practices

- General procedures are in place for receiving international medical countermeasures.

- Dedicated resources for acceptance, distribution and tracking of international medical countermeasures are in place.

- There is a stockpile for public health emergencies in each MOH technical unit.

- Indonesia has in-country production capacities for vaccines, antibiotics and laboratory supplies.

- Indonesia is an active member of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER).

- Indonesia has practiced sending and receiving of medical countermeasures since 2013 (e.g. Nepal, Myanmar), based on AADMER and WHO standards.

RESPOND

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Areas that need strengthening, and challenges

- Regulations, standards and processes for sending medical countermeasures should be more specific and technically detailed.

- Local governments' knowledge around receiving foreign medical countermeasures should be strengthened.

R.4.2 System is in place for sending and receiving health personnel during a public health emergency - Score 4

Strengths/best practices

- Regulations and procedures for receiving international medical personnel exist and have been tested in simulation exercises.

- A cooperation agreement with ASEAN countries is in place (AADMER).

- Indonesia is a member of the GOARN Network.

- Medical personnel have been deployed to support emergency operations (West Africa, Nepal).

- Indonesia participates in multilateral (ASEAN) simulation exercises.

Areas that need strengthening, and challenges

- Application of international standards to national EMTs should be strengthened.

- Regulations and procedures are required for personnel deployment.

- A database (roster) of health personnel for rapid deployment is required.

Risk communication

Introduction

Risk communication should be a multilevel, multifaceted process that helps stakeholders define risks, identify hazards, assess vulnerabilities and promote community resilience—thereby promoting the capacity to cope with an unfolding public health emergency. An essential part of risk communication is disseminating information to the public about health risks and events, such as disease outbreaks. For communication about risk to be effective, the social, religious, cultural, political and economic effects of the event should be taken into account—including the voice of the affected population.

Communications of this kind promote appropriate prevention and control action through community-based interventions at individual, family and community levels. Disseminating information through appropriate channels is essential. Communication partners and stakeholders need to be identified, and functional coordination and communication mechanisms should be established. In addition, the timely release of information and transparency in decision-making are essential for building trust between authorities, populations and partners. Emergency communications plans should be tested and updated as needed.

Target

States Parties should have risk communication capacity that includes multilevel, multifaceted real-time exchange of information, advice and opinion between experts and officials and people who face a threat or hazard to their survival, health or economic or social wellbeing. This information should enable them to take informed decisions to mitigate the effects of the threat or hazard, and to take protective and preventive action). It should consist of a mix of communication and engagement strategies such as media and social media communication, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement, and community engagement.

Indonesia level of capabilities

With more than 1,300 ethnic groups and over 17,000 islands, Indonesia is a challenging context for risk communication. Nevertheless, the country benefits from strong government commitment in this area, and aims to achieve coherent, fast and credible communication for public health risks and emergencies.

Current capabilities include cross-ministry/agency/sector mechanisms for informing (and listening to) the public and international agencies through various channels including social media; regular briefings with media; and engagement with communities to understand and incorporate local perspectives. These capabilities are supported by various laws and regulations that specify legal risk communication requirements—in particular Law No.14/2008, which requires public authorities promptly to announce information which may threaten the livelihood of the public and public order.

For the health sector, the MOH is the leading sector in responding to public health emergencies, and takes a coordination role for communicating health risks. The lead unit for risk communication in the MOH is the Bureau of Communications and Public Service, Directorate of Health Promotion and Community Empowerment, Centre for Health Crisis. This Bureau contains functions for health promotion and community engagement during emergencies. There is also a dedicated communication team for media relations and social media outreach based on MOH Regulation No. 64/2015 on the Organization and Working Procedures of the MOH. The MOH reaches communities through networks at provincial and district levels.

Across sectors, many stakeholders are involved in the implementation of multi-hazard emergency risk communications, including: Multiple ministries, including those of health, agriculture, informatics and communication (MIC), and others; security agencies (e.g. the police); the army ; donors and partners (WHO, FAO, etc.); professional organizations such as the Indonesian Medical Association, the Indonesian Hospital Association; the Indonesia Amateur Radio Organization; and civil society (the Red Cross/Red Crescent, Scouts, NGOs).

Mechanisms to scale up community capacity exist and are operational, and include the use of NGOs and community-based volunteers (e.g. Tagana/Youth Disaster Preparedness and Quick Response).

Mechanisms for feedback and listening are in place, including: Public opinion studies by the MOH Bureau of Communications and Public Service, which conducts target audience analyses to improve understanding of audience perspectives, trusted information resources and preferred communication channels; modules for creating IEC media, including materials testing with targeted audiences; a national contact centre and hotline.

Regular training is provided, with national level funding in place to support local capability, including by providing training opportunities between experienced community engagement experts and volunteers, and by providing potential surge capacity to be used during emergencies.

Recommendations for priority actions

- Further integrate and align the cross-agency risk communication system.

- Increase risk communication skills in local government, particularly for non-natural disasters.

- Further develop and regularly update risk communication guidelines and SOPs for the health sector.

- Update communication strategies, including messaging and media strategy.

- Increase the number of disaster alert villages, and increase disaster education in schools and the community, especially in disaster-prone areas.

Indicators and scores

R.5.1 Risk communication systems (plans, mechanisms, etc.) - Score 3

Strengths/best practices

- The BNPB has a multi-hazard national health emergency plan (National Plan of Disaster Management), which acts as an overarching national emergency response framework across all sectors and agencies. This framework and related SOPs include plans and protocols for risk communication, along with systems for financial support.

- Various laws and regulations for emergency response are in place, with risk communication provisions (see list of relevant documentation).

- Each ministry/agency has a department to handle communication (risk and public communication), and skilled and trained personnel and spokespeople for risk and crisis communication at national level.

- Multi-hazard emergency risk communication capacity building of organizations and personnel has been supported with various tabletop exercises[6,7] and funding[8] provided by relevant ministries/agencies.

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6 http://penanggulangankrisis.kemkes.go.id/table-top-exercise-ttx-penanggulangan-krisis-kesehatan-di-kab-ende-nusa-ten

7 http://penanggulangankrisis.kemkes.go.id/modul-pelatihan-penanggulangan-krisis-kesehatan

8 https://www.kemenkeu.go.id/apbn2017

- The Bureau of Communication and Public Service regularly organizes media coaching for high-level officials (ministers and other high level staff) on media handling, public speaking, and personal branding.

- Sharing of communication plans, agreements and/or SOPs among stakeholders are described in the Guideline on Influenza Pandemic Epicentre Countermeasures (2009) and Head of BNPB Regulation No. 3/2016 on Command Systems in Emergency Disaster Management.

Areas that need strengthening, and challenges

- Dissemination of public information needs to be further synchronized and aligned across agencies—something that is in progress at time of writing in November 2017.

- Updated risk communications guidelines are required for the health sector.

- Local government awareness of non-natural disaster hazards needs to be increased.

R.5.2 Internal and partner communication and coordination - Score 3

Strengths/best practices

- A cross-agency communication system is in place for all hazards, across relevant sectors and stakeholders, coordinated by the BNPB. Coordination mechanisms are both formal and informal, and include:

  ○ SOPs

  ○ A national coordination forum at the BNPB

  ○ An annual meeting for communication and coordination, involving all stakeholders in disaster risk prevention

  ○ Government public relations networking.

- Law No. 23/2014 regulates the involvement of local governments (provinces/districts), as does government Regulation No. 18/2016 on Regional Devices to Coordinate with the Central Government in Handling Emergency Risk Communication.

- If communication activities need to be scaled up, the Ministry of Communications and Information Technology (Kemenkominfo) will support the BNPB and MOH in doing so. When necessary, under coordinating ministries, multiple government ministries and agencies are involved in disseminating information, using agreed, harmonized messages.

- Multi-sectoral coordination to support risk communication has been tested through simulation exercises and real events, including: Simulations of influenza pandemic epicentre management using a whole-society approach, in Jembrana (Bali) in 2008, in Makassar (South Sulawesi) in 2009 and in Tangerang Selatan (Banten) in September 2017; April 2017 simulations of fire and earthquake disasters, run by the BNPB.

Areas that need strengthening, and challenges

- Cross-agency communication systems need to be integrated further and aligned across agencies; for the most part, early warning and information systems are currently managed separately by each agency.

- Coordination with local government is weak due to decentralization and the fact that the data exchange system is not yet interoperable.

RESPOND

R.5.3 Public communication - Score 4

Strengths/best practices

- Communications units have strong relationships with national media.

- The MOH Bureau of Communications and Public Service holds a regular weekly media briefing.

- There are regular health behaviour campaigns, including pre-emergency preparedness messaging.

- Multiple modes of communication are used, including mainstream media and social media (Facebook, Twitter, Instagram, YouTube etc.).

- Relevant local languages are used (largely Bahasa Indonesia, which is spoken nationally), as is English (especially in tourist areas).

Areas that need strengthening, and challenges

- There is a high turnover of skilled communications staff at all levels, resulting in a need for regular improvements in human resource capability, including media training for appointed spokespersons.

- An integrated communications centre should be established at the MOH.

R.5.4 Communication engagement with affected communities - Score 4

Strengths/best practices

- Community engagement is managed by communications departments in the BNPB, the MOH, and other agencies.

- There are MOUs in place with several community organizations, NGOs, corporations, community leaders, and religious leaders, to support community empowerment and health development. This also assists with disseminating messages and helps with the incorporation of local perspectives/input into developing and refining public messages and materials.

- People/public/private partnerships (PPPP) play an important role in supporting the dissemination of information, education and communication (IEC) materials to the community

- Communities are also supported through programmes of funding and awards, including the following:

  ❍ The Kader Lestari Award is for those in Indonesia who have devoted themselves to Posyandu cadres for more than ten years.

  ❍ "Disaster Alert Villages" (Kampung Siaga Bencana) are community areas prepared to manage all aspects and processes of community-based disaster management. This includes planning, implementation and control related to the reduction of threats, risks and impacts of disasters. These villages can respond independently, on a limited scale, especially when disaster first occurs. As of 2017, there were 535 Disaster Alert Villages.

  ❍ Disaster Resilient Villages (Tangguh Awards).

Areas that need strengthening, and challenges

- There is a need to increase the number of Disaster Alert Villages.

- There is a need to increase disaster education in schools and communities, especially in disaster-prone areas.

- There is a need to increase the number of cadres trained for health and emergency conditions.

- Local governments have small budgets for community empowerment and social mobilization.

R.5.5 Dynamic listening and rumour management - Score 4

Strengths/best practices

- The MOH has specific staff (the Public Opinion Team) dedicated to ongoing daily monitoring of mass media, public opinion and social media. This team analyses media and provides recommendations to decision-makers.

- SOPs are in place to guide actions for addressing rumours and misinformation.

- The public can convey information and complaints to the government through an integrated contact centre reachable through various channels: telephone, email, SMS, social media and the SIAP Kemenkes mobile app. All this constitutes the Saluran Informasi, Aspirasi, dan Pengaduan (SIAP) integrated information system.

- The Ministry of Informatics and Communications (https://kominfo.go.id) also acts to counter hoaxes on social media through a digital literacy campaign programme and community initiative that provides search tools to check hoaxes: the TURNBACKHOAX.ID website; the TURNBACKHOAX mobile application; and the jpp.go.id website (@IndonesiaBaikId).

- Communications channels that accommodate public information, suggestions and complaints are mandated by Law No. 14/2008 on Public Information Transparency.

Areas that need strengthening, and challenges

- There is an ongoing need to improve skills in rumour analysis and reporting.

- There is an ongoing need to inform the public to be wise in use of social media (hence the Turn Back Hoax programme).

OTHER IHR-RELATED HAZARDS AND POINTS OF ENTRY

Points of entry

Introduction

All core capacities and potential hazards apply to points of entry, and thus enable the effective application of health measures to prevent the international spread of diseases. States Parties are required to maintain core capacities at designated international airports and ports (and, where justified for public health reasons, a State Party may also designate ground crossings as points of entry). These should implement specific public health measures to manage a variety of public health risks.

Target

States Parties designate and maintain core capacities at international airports and ports (and, where justified for public health reasons, designated ground crossings), which implement specific public health measures to manage a variety of public health risks.

Indonesia level of capabilities

Indonesia is often referred to as the world's largest archipelago; as previously mentioned, the country consists of approximately 17,000 islands that together span more than 5,000 km from Sabang in northern Sumatra in the east to Merauke in Papua in the west. Indonesia has 304 Points of Entry (POE), spread all over the archipelago.

Fourteen of these are designated POEs under the IHR (2005); of these 14, six are airports, seven are ports, and one is a ground crossing. The main international airport, Soekharno-Hatta Airport in Jakarta, can have about 300 commercial flights arriving in a day.

There is an effective system of communication, coordination and collaboration among all relevant POE stakeholders, through which information is shared on traveller health, medical services, and disease reporting.

Indonesia has a system to detect, assess, report and respond to potential threats and public health events at designated POE. This involves coordination and collaboration among port health, law enforcement, emergency medical services, conveyance operators and port operators. The port health staff provides public health consultations and investigations, medical examinations and immediate treatment, and facilitates the transfer of ill travellers to identified health facilities.

A sanitation and conveyance inspection training programme is available on an annual basis, but only for one batch of 30 personnel each year.

There are specific public health emergency and contingency plans at the 14 designated POE; nine of these have been tested.

There are insufficient trained staff to man the 14 designated POEs.

OTHER

Recommendations for priority actions

- Conduct a human resources needs assessment at designated POEs that systematically identifies gaps in performance, redundancies and future performance needs (e.g. for training, staff recruitment).

- Review national policy on information sharing and simultaneous communication of public health events between IHR National Focal Points and other competent authorities at neighbouring country POEs, especially at ground crossings.

- Evaluate effectiveness in responding to public health events at POEs and publish the results.

- Review additional POEs that could be designated for IHR implementation, considering geography and the number and distribution of existing POEs.

Indicators and scores

PoE.1 Routine capacities are established at points of entry - Score 4

Strengths/best practices

- Indonesia has adequate regulations to prevent, detect and respond to public health events.

- Guidelines for health quarantine and management of health events at the POE exist and are implemented at all designated airports, ports and ground crossings.

- There are strong communication and coordination capacities among POE stakeholders to prevent, detect and respond to events that may constitute PHEICs at the POE.

- Routine inspections are carried out for vectors, water, air quality and food management at POE.

- For control of vectors and their reservoirs at POE, there is implementation of the Container Index approach within the POE perimeter, and House Index, Container Index and Breteau Index approaches within a buffer area of 400 metres outside the POE perimeter.

- Monitoring of goods and human remains for possible contamination by CBRN agents is coordinated with relevant parties.

- For food, food ingredients and medical products, the Port Health Office collaborates with the NADFC, the MOA Animal and Plant Quarantine Agency, the Fish Quarantine Agency, and Customs. These agencies have specific authorities to detain, test, or confiscate material in order to prevent hazardous or contaminated material from entering Indonesia via POE.

- Monitoring and inspection efforts are recorded and reported in real time online at www.kespel.depkes.go.id

Areas that need strengthening, and challenges

- Increases in staff capacity are required: the designated POEs need more trained staff in order to ensure their ability to implement the IHR (2005).

- Improvements in cross-border collaboration are required: current mechanisms for sharing public health event information across borders are weak.

OTHER

PoE.2 Effective public health response at points of entry - Score 4

Strengths/best practices

- Public health emergency contingency plans are in place for all 14 Designated POEs.

- Exercises have been conducted to simulate responses to public health emergencies with key stakeholders at ports, airports and ground crossings.

- Response structures are in place, including availability of transport to convey ill travellers to referral hospitals or designated health facilities.

- Arriving travellers are generally screened using a thermal scanner.

- In the event of PHEICs in other countries, promotive and preventive efforts are made to increase awareness of the PHEIC among stakeholders working at the POE. Information is provided to travellers, and health alert cards are issued if necessary.

Areas that need strengthening, and challenges

- There are not enough adequately trained personnel to respond to public health events at all designated POEs.

- There is a need for an increased number of regular or periodic simulation exercises.

- There is a need to train POE staff in the use of indicator- or event-based approaches to detecting public health events.

- There is a need to provide quick access to referral or designated health facilities, thereby ensuring prompt assessment and care of ill travellers.

Chemical events

Introduction

States Parties should have surveillance and response capacity for chemical risks or events. This requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.

Target

States Parties should have surveillance and response capacity for chemical risks or events, with effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.

Indonesia level of capabilities

Indonesia is a country vulnerable to disasters. These disasters can cause technology failure and trigger chemical events, especially in areas that have a large chemical industry. Accordingly, many prevention and response capabilities, including contingency plans and simulation exercises, are focussed on these areas.

Indonesia has ratified international conventions on chemical hazards, and has a number of laws and regulations across various agencies to help meet the obligations imposed by these conventions. Indonesia has also identified the need for more comprehensive, streamlined legislation that covers all chemical hazards and agencies.

Several national committees on chemical safety have been established, but these are specific to certain chemical substances. These committees are the Commission on Pesticides; the Hazardous and Toxic Substances Commission; and National Authority on Chemical Weapons. Assessment of chemical safety is conducted by relevant national ministries and agencies, and some information on incidents is collected (e.g. through the national poison information centre). However, Indonesia's national chemical emergency preparedness and response plan does not yet include the necessary systematic, coordinated surveillance system for public health events caused by chemicals.

The National Disaster Management Authority (BNPB), working with local government, has developed contingency plans for technological failures and industrial disasters in the high-risk areas of Banten province and Cilegon District. This activity involved related stakeholders in the industrial, human resources and health sectors, and will be tested/practiced among ASEAN countries in 2018.

Recommendations for priority actions

- Finalize the updated legislation on chemical hazards that will apply to all relevant agencies and which will serve as a basis for the national chemical emergency preparedness and response plan; provincial/district contingency plans for chemical events; technical guidelines; and protocols for response actions.

- Develop a national systematic surveillance system for chemical events, supported by appropriate infrastructure (i.e. poison centres), laboratory and clinical toxicology capacities, and relevant technical expertise on risk assessment and case management.

- Develop national programmes and services for ensuring a sustainable available workforce/surge capacity for preparedness and response to chemical emergencies.

- Strengthen information exchange and coordination among relevant sectors and stakeholders at all levels (local, national and international), across prevention, preparedness, response and recovery.

Indicators and scores

CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies - Score 2

Strengths/best practices

- Environmental and public health risk assessment of chemical safety is conducted by several ministries/agencies, including the ministries of the environment and forestry, industry, agriculture, and manpower.

- A national poisons information centre has been established. This provides information on the composition and risks of chemicals, and gathers some surveillance information on poisoning cases; but there is a need to strengthen Indonesia's capacity to provide toxicological advice and response.

- Information is available and accessible to the public through the following channels and resources:

  ○ The National Industry Information System (https://siinas.kemenperin.go.id/)

  ○ The Information System of Hazardous and Toxic Substances and Pesticide Data Centre (www.pestisida.id/)

  ○ The Indonesia National Single Window (www.insw.go.id/).

- SOPs and patient exposure/treatment guidelines are available in hospitals.

Areas that need strengthening, and challenges

- A national integrated surveillance system for chemical events is not yet established.

- There are significant limitations to the ability of laboratories to identify and analyse chemicals.

- There is insufficient appropriate toxicological expertise, and there is a need to strengthen Indonesia's capacity to provide toxicological advice and response.

- Risk assessment and chemical hazard mapping is not available for the whole country.

- A national referral system for chemical intoxication and poisoning is not yet established.

- Cross-sector coordination and information exchange on chemical events is limited.

CE.2 Enabling environment is in place for management of chemical events - Score 3

Strengths/best practices

- Indonesia has ratified several key international chemical conventions.

- The Ministry of Environment and Forestry has established cooperation with relevant international organizations— United Nations Industrial Development Organization, United Nations Institute for Training and Research, and United Nations Environment Programme —to accommodate the implementation of the ratified international conventions.

- Legislation and policies are in place that define the responsibilities of various ministries/agencies as they relate to chemical events.

- A strategic plan on chemical safety has been initiated through legislation, in preparation for the implementation of the Strategic Approach to International Chemicals Management (SAICM) in 2020.

- Indonesia has an industry association that works on chemical safety (Responsible Care Indonesia).

- Contingency funding for chemical events is available through both national and local agencies for disaster management.

Areas that need strengthening, and challenges

- Indonesia has identified the need for more comprehensive, streamlined legislation that covers all chemical hazards and agencies. The draft bill on chemicals is in progress but not yet finalized. It is to be applied as part of SAICM by 2020.

- Coordination and clear knowledge of stakeholders' various roles/responsibilities need strengthening, especially at province/district levels. Various sectors perform chemical activities in accordance with their own policies and functions. An integrated cross-sector system is not yet established for managing chemical events.

- An overarching national emergency response plan for chemical events has not yet been developed, nor has a national inventory of major hazard sites and facilities. Some regions prone to chemical emergencies still do not have contingency plans, nor have they conducted simulation exercises.

- Local government displays low awareness of chemical events, a lack of related technical expertise, and a lack of commitment to addressing the issue.

- Cooperation with international chemical and toxicological networks has not yet been established.

Radiation emergencies

Introduction

State Parties should have surveillance and response capacity for radionuclear hazards/events/emergencies. This requires effective communication and collaboration among the sectors responsible for radionuclear management.

Target

State Parties should have surveillance and response capacity for radionuclear hazards/events/emergencies, with effective communication and collaboration among the sectors responsible for radionuclear management.

Indonesia level of capabilities

Indonesia has decades of experience of international cooperation around the use of nuclear technology, and plans to launch its own nuclear energy production by 2022. A well-developed regulatory framework is in place, and national competent authorities are established: BAPETEN, the Nuclear Energy Control Board; and BATAN, the National Atomic Energy Agency.

Indonesia uses radioactive materials for various purposes, including in industry, medicine and research. Use of radioactive materials has been coordinated by BATAN since 1964. BATAN is in charge of conducting nuclear research and overseeing the use of nuclear power in Indonesia.

Major nuclear reactor and reprocessing facilities in Indonesia include:

- The Kartini Reactor in Yogyakarta
- The Triga Mark II Reactor in Bandung
- The GA Siwabessy Multipurpose Reactor (RSG-GAS) in Serpong
- A Radioactive Waste Treatment Installation (IPLR)
- Radioisotope and Radiopharmaceutical production installations
- Various other medium and small industry and medical facilities scattered throughout Indonesia.

As of December 2016 Indonesia had issued: 3,718 licenses for the use of radioactive materials in medical contexts, including radiology diagnostics, radiotherapy and nuclear medicine; 7,113 licenses for the use of radioactive materials in industrial contexts, including nuclear gauges, industrial radiography, well logging analysis, irradiators and gamma scanners; and 59 licenses for the use of radioactive materials in industrial contexts, including for tracers and standardization. These are spread throughout the country.

Law No. 10 of 1997 on Nuclear Energy authorizes BAPETEN to exercise a supervisory function on the use of nuclear power, which includes licensing, inspection and enforcement.

For national radiation emergencies, Indonesia has a National Nuclear Emergency Response Organization (OTDNN) coordinated by the BNPB. Other institutions and users of radioactive materials should have emergency response plans at facility level supported by personnel and SOPs that are regularly evaluated and updated according to need.

Radiation emergency response plans are available at facility/installation, off-site and national levels, and for national and international transport of radioactive material, samples and waste management (including those from hospitals and medical services). Hospitals and medical services use nuclear technology to produce isotopes for radiopharmaceuticals (used in nuclear medicine and radiotherapy). Relevant stakeholders and risks are mapped, and a nuclear emergency response plan is incorporated into national disaster response plans. Exercises have been conducted to test the response plans.

Depending on the level of emergency, local government leads radiation emergency responses within their respective jurisdictions. Relevant stakeholders in radiation emergency response have personnel, facilities and equipment in place.

The Government of Indonesia has issued a number of relevant laws and government and presidential regulations to provide a framework for the use of radiation sources and for radiation emergency preparedness and response. These authorities and their stakeholders have developed a national system to detect, prevent and respond to radiation emergencies. They provide technical guidelines or SOPs that are evaluated and updated for the management of radiation emergency response, and various supporting tools for emergency response management (risk assessment, reporting, investigation, event confirmation and notification).

Stakeholders coordinate, communicate and simulate nuclear emergency responses regularly at facility/installation and district levels.

Recommendations for priority actions

- Finalize national and local response plans for radiological/nuclear emergencies, supported by guides and protocols based on formally established criteria for triggering urgent protective and other response actions such as sheltering, evacuation, iodine thyroid blocking (ITB), food and drinking water restrictions, etc., as well as case-management protocols for clinicians.

- Strengthen the capabilities of designated health care facilities (i.e. hospitals and laboratories) by developing the necessary infrastructure and providing equipment and services—especially at provincial level in areas adjacent to nuclear reactor facilities.

- Develop sustainable training programmes to strengthen human resource capacities for nuclear/radiological emergency response, especially at provincial and national levels, through regular training and exercises tailored to specific target groups and areas (e.g. first response, pre-hospital response, clinical case management, internal contamination assessment and management, long-term follow-up, management of non-radiological health consequences, etc.).

- Develop advocacy (awareness raising) and risk communication materials (frequently asked questions/FAQs, fact-sheets, infographics, etc.) and provide risk communication training for emergency responders on radiation emergencies.

Indicators and scores

RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies - Score 3

Strengths/best practices
- Relevant competent authorities have been established.

- The Centre for Information and Nuclear Strategic Areas conducts real time monitoring of radiation exposure rates and levels of potential contamination (air, surface and environmental sampling) at the Serpong facility and its surrounding area.

OTHER

- A coordination mechanism has been established between nuclear facilities, local authorities and other relevant stakeholders.

- There is a programme of awareness raising and information dissemination for local communities on nuclear emergency preparedness and countermeasures.

- Early detection equipment (radiation monitoring devices) is available in Serpong, Bandung and the Yogya Nuclear Area.

- BNPT periodically conducts simulations of chemical, biological, radiological and nuclear counter terrorism measures.

- Nuclear, biology and chemical units (CBRN-NUBIKA) are established in the army and police force at national and subnational levels. These units are trained in emergency response, including triage and decontamination measures.

Areas that need strengthening, and challenges

- A comprehensive national hazard assessment should be performed to provide a basis for a graded approach to nuclear and radiological emergency preparedness and response.

- The national nuclear and radiological emergency management system should be fully integrated into the national all-hazards emergency management system.

- Roles and responsibilities for emergency preparedness and response are shared among many organizations, and there are informal cooperation arrangements that need to be formalized.

RE.2 Enabling environment is in place for management of radiation emergencies - Score 3

Strengths/best practices

- Indonesia has demonstrated significant commitment to nuclear and radiological emergency preparedness and response, and regularly conducts large-scale field exercises.

- Various regulations and decrees are available for management of radiation emergencies.

- An innovative communications strategy has been established, supporting the involvement of helpers in coordinated responses during a nuclear or radiological emergency.

- A system has been created to classify and notify emergencies at hospital level.

Areas that need strengthening, and challenges

- Sustainable training programmes need to be in place for the relevant personnel, especially at district/provincial levels.

- Funding for emergency preparedness is centralized and limited. An SOP is needed for releasing funds to local level.

- Local authorities in the vicinity of the Pasar Jumát and Bandung nuclear reactor facilities do not yet have contingency plans.

- There is low awareness at local government level of issues related to radiation emergencies, and this is reflected in local government priorities. This is a particular issue in districts/provinces that have radioactive facilities/installations.

Annex 1: JEE background

Mission place and dates

Jakarta, Indonesia, November 20-24, 2017.

Mission team members:

- Karen Sliter, United States Department of Agriculture – Animal and Plant Health Inspection Service (USDA-APHIS) - Team lead
- Henk Ormel, UN Food and Agriculture Organization (FAO) - Team co-lead
- Michael Adjabeng, Ghana Ministry of Health
- Ana Batalha, World Organisation for Animal Health
- Christophe Bayer, German Federal Ministry of Health
- Zhanat Carr, WHO Headquarters
- Darren Hunt, Consultant
- Bibek Lal, Epidemiology and Disease Control Division, Nepal Ministry of Health
- Mark Nunn, independent technical writer and editor
- Maria Consorcia Quizon, South East Asia Field Epidemiology and Technology Network
- Bardan J Rana, WHO Regional Office for South East Asia
- John Ridderhof, US Centres for Disease Control and Prevention
- Rajesh Sreedharan, WHO Headquarters
- Thomas Tolfvenstam, Public Health Sweden

Objective

To assess Indonesia's capacities and capabilities relevant to the 19 technical areas of the JEE tool for providing baseline data to support Indonesia's efforts to reform and improve their public health security.

The JEE process

The JEE process is a peer-to-peer review. The entire external evaluation, including discussions around the scores, the strengths, the areas that need strengthening, best practices, challenges and the priority actions should be collaborative, with JEE team members and host country experts seeking full agreement on all aspects of the final report findings and recommendations.

Should there be significant and irreconcilable disagreement between the external team members and the host country experts, or among the external, or among the host country experts, the JEE team lead will decide the outcome; this will be noted in the final report along with the justification for each party's position.

Preparation and implementation of the mission

- Indonesia's self-assessment documents and some additional supporting documentation were delivered to the external experts approximately two weeks prior to the JEE mission.

- Prior to the mission, the team lead hosted a teleconference with the JEE point of contact for Indonesia, the WHO JEE coordinators (Geneva), the WHO Regional Office for South East Asia (New Delhi), and the WHO Country Office for Indonesia.

- On the Sunday before the JEE meetings, the team lead and co-lead met with the JEE external team, Indonesian organizers and WHO staff in Jakarta to review the agenda and field trips, discuss the JEE process, and confirm logistical arrangements for the week.

- On the Sunday before the JEE meetings, the JEE external experts met to discuss the format and objectives for the JEE, and review the agenda.

- The WHO Country Office for Indonesia and the WHO Regional Office for South East Asia provided excellent support to the JEE team throughout the preparatory stages.

Limitations and assumptions

- The evaluation was limited to one week, which limited the amount and depth of information that could be managed.

- It is assumed that the results of this evaluation will be publically available.

- The evaluation is not just an audit. Information provided by the Republic of Indonesia will not be independently verified but will be discussed and the evaluation rating mutually agreed to by the host country and the evaluation team. This is a peer-to-peer review.

Key host country participants and institutions

Expert team

- Professor Dr. Dr. Herkutanto, Sp.F(K).

- Dr. I Nyoman Kandun, MPH.

- Dr. I Nyoman Kumara Rai, MPH.

- Diah Satyani Saminarsih, M.Sc.

- Professor Dr. Budi Sampoerna, Sp.F, SH.

- Professor Dr. Amin Soebandrio, Ph.D, Sp.MK.

- Professor Dr. Dr. Akmal Taher, Sp.U (K).

- Dr. Indriyono Tantoro, MPH.

- Dra. Artauli RMP Tobing, MA.

List of participants (as provided by country team)

- Assistant Deputy, Coordination for Health Improvement, Coordinating Ministry of Human Development and Cultural Affairs

- Assistant Deputy, Defence Intelligence Coordination, Coordinating Ministry of Politic, Legal and Security

- Assistant Deputy, Disaster Risk Reduction, Coordinating Ministry of Development and Human and Culture

- Assistant Deputy, Disease Prevention and Control, Coordinating Ministry of Development and Human and Culture

- Assistant Deputy, Health Development Coordination, Coordinating Ministry of Human Development and Cultural Affairs

- Awallokita Mayangsari

- Centre of Animal Authority and Biodiversity, Agriculture Quarantine Agency

- Centre of Biomedic and Basic Health Technology

- Chair, Indonesian Medical Association

- Chair, Abdi Dharma Jagadhita Foundation

- Chair, Association of Voluntary Health Services of Indonesia

- Chair, Indonesian Hospital Association

- Chair, Indonesian Laboratory Technician Association

- Chair, Indonesian Medical Association

- Chair, Indonesian Midwives Association

- Chair, Indonesian Nurse Association

- Chair, Indonesian Pediatrician Association

- Chair, Indonesian Public Health Expert Association

- Chair, Indonesian Quarantine Veterinarian Association

- Chair, Indonesian Technical Advisory Group on Immunization

- Chair, Indonesian Veterinarian Association

- Chair, Indonesian Epidemiologist Association

- Chair, Nahdlatul Ulama Members

- Chair, National Committee for Monitoring and Response of Adverse events following immunization

- Chief of Indonesia One Health University Network

- Coordinator, Virology Laboratory, R&D Centre for Biomedic and Basic Health Technology, National Institute of Health Research and Development

- Deputy of Coordination for Health Development, Coordinating Ministry of Development and Human and Culture

- Head, Bureau of Planning and Budgeting, Secretariat General

- Deputy, Disease Prevention and Control, Coordinating Ministry of Development and Human and Culture

- Deputy, Prevention and Preparedness, National Disaster Management Authority

- Director (chief executive officer) of PT. Biofarma

- Director, Animal Health - Ministry of Agriculture

- Director, Veterinary Public Health - Ministry of Agriculture

- Director, Air Transportation, Ministry of Transportation

- Director, Capacity Development, National Agency of Terrorism Counteraction

- Director, Communication Partnership, Ministry of Communication and Information Technology

- Director, Conservation and Biodiversity, Ministry of Environment and Forestry

- Director, Contamination Recovery and Emergency Response to Dangerous Substance Waste, Ministry of Environment and Forestry

- Director, Customs Technicalities, Directorate General of Customs and Excise, Ministry of Finance
- Director, Dangerous and Toxic Substances, Ministry of Environment and Forestry
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- Director, Eijkman Biomolecular Institute
- Director, Emergency Response National Disaster Management Authority
- Director, Engineering and Nuclear Preparedness, Nuclear Energy Regulatory Agency
- Director, Environmental Health, Ministry of Health
- Director, Evaluation of Medical Equipment and Household Health Supplies, Directorate General of Pharmaceutical and Medical Equipment
- Director, Fasilitas Health Care, Directorate General of Medical Service
- Director, Fatmawati Hospital
- Director, FETP Indonesia
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- Director, Food, Marine Products, and Fishery Industry, Ministry of Industry
- Director, Health and Community Nutrition, Ministry of National Development Planning
- Director, Health Care Facilities
- Director, Health Communication, Information, and Education, Directorate of Health Promotion and Community Empowerment
- Director, Health, Ministry of Defence
- Director, Imigration Collaboration, Directorate General of Imigration, Ministry of Law and Human Rights
- Director, Information Processing and Delivery, Ministry of Communication and Information Technology
- Director, Internasional Customs dan Intersectoral, Directorate General of Customs and Excise, Ministry of Finance
- Director, Keamanan Internasional dan Perlucutan Senjata (KIPS), Ministry of Foreign Affairs
- Director, Kesehatan Keluarga, Directorate General of Public Health Ministry of Health
- Director, Kesehatan, Directorate General of Defence Enforcement, Ministry of Defence
- Director, Land Transportation, Ministry of Transportation
- Director, Law and Political Agreement and Defence, Directorate General of Law dan International Agreement, Ministry of Foreign Affairs
- Director, Local Authority Management, Special Autonomy, and Regional Autonomy Advisory Board, Directorate General of Regional Autonomy, Ministry of Home Affairs
- Director, Logistics and Equipment, National Disaster Management Authority
- Director, Management of Disaster and Fire, Ministry of Home Affairs
- Director, Military Engineering Troops, The Indonesian Army
- Director, Monitoring of Dangerous Products and Substances, National Agency for Food and Drug Control
- Director, Monitoring of Fertilizer and Pesticide

- Director, Nuclear Engineering and Emergency, Nuclear Energy Regulatory Agency
- Director, Occupational Health and Sport, Ministry of Health
- Director, Occupational Safety and Health, Ministry of Manpower
- Director, Pembinaan Sekolah Dasar, Kementerian Pendidikan dan Kebudayaan
- Director, Penilaian Obat dan Produk Biologi, National Agency of Food and Drug Control
- Director, Permit for Radiation and Radioactive Substance Facility, Nuclear Energy Regulatory Agency
- Director, Preparedness, National Disaster Management Authority
- Director, Prevention and Control of Directly Transmitted Diseases, Ministry of Health
- Director, Prevention of Vector Borne Diseases and Zoonosis, Ministry of Health
- Director, Primary Health Care
- Director, Promosi Kesehatan, Directorate General of Public Health Ministry of Health
- Director, Quality and Accreditation of Health Care, Directorate General of Medical Service
- Director, Quarantine Compliance, Cooperation and Information, Agricultural Quarantine Agency, Ministry of Agriculture
- Director, Referral Health Care, Ministry of Health
- Director, Regions and Fish Health, Ministry of Marine Affaris and Fishery
- Director, Sea Transportation, Ministry of Transportation
- Director, Social Cultural and International Organizations of Developing Countries, Ministry of Foreign Affairs Director, Quarantine Compliance, Cooperation and Information, Ministry of Agriculture
- Director, Social Protection of Disaster Victims, Ministry of Social Affairs
- Director, Surveillance and Food Safety Education, Deputy of Food Security and Dangerous Toxic Substance Control, National Agency of Drug and Food Control
- Director, Surveillance and Health Quarantine, Ministry of Health
- Director, Surveillance dan Food Safety Education, National Agency for Food and Drug Control
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- Director, Verification of Waste Management of Dangerous Substances, Directorate General of PSLB3, Ministry of Environment and Forestry
- Director, Veterinary Public Health, Ministry of Agriculture
- Director, Veterinary Research and Development Institute
- Director, Zoonosis, Directorate General of Disease Prevention and Control, Ministry of Health
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- Director, Distribution Monitoring of Therapeutic Product and Household Health Supplies, National Agency of Drug and Food Control
- Director, Management of Public Medicine and Health Logistics
- Director, Standardization of Therapeutic and Household Health Supplies, National Agency of Drug and Food Control

- Directorate Disease Prevention and Control of Vector Borne Diseases and Zoonosis

- Directorate General of Disease Prevention and Control

- Directorate of Fish Health Control, Directorate of Regions and Fish Health, Ministry of Marine Affaris and Fishery

- Directorate of Military Engineering Troops, Indonesian Army

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- Executive Secretary, Indonesian Medical Council

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- Head, Air Quality and Basic Sanitation Management, Directorate of Environmental Health

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- Head, Animal Diseases Prevention and Elimination, Ministry of Agriculture

- Head, Animal Health Protection, Ministry of Agriculture

- Head, Arbovirosis Division

- Head, Badan Intelijen dan Keamanan, Kepolisian

- Head, Badan Intelijen Negara

- Head, Badan Nasional Penanggulangan Teroris

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- Head, Bureau Law, Information, dan Meetings, Coordinating Ministry of Development and Human and Culture

- Head, Bureau of Communication and Public Service, Ministry of Health

- Head, Bureau of International Cooperation Ministry of Health

- Head, Bureau of Planning dan Anggaran Ministry of Health

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- Head, Centre of Forestry and Environment Engineering, Ministry of Environment and Forestry

- Head, Centre of Health Crisis, Ministry of Health

- Head, Centre of Nuclear Reactor Technology and Safety, National Nuclear Energy Agency

- Head, Centre of Quality Control, Fish Quarantine Agency, Ministry of Marine Affairs and Fishery

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- Head, Division of Public Opinion, Communication Products and Coverage, Bureau of Communication and Public Service, Bureau of Communication and Public Service, Secretariat General
- Head, Division of Strategic Plan and Programme, Bureau of Planning dan Budgeting, Secretariat General, Ministry of Health
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- Head, Early Warning Unit, Surveillance Division
- Head, Emerging Infectious Diseases, Ministry of Health
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- Head, Evaluation Unit, Centre of Health Crisis
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- Head, General Affairs, Directorate of Environmental Health
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- Head, Integrated Emergency Care Division
- Head, Malaria Division
- Head, Monitoring and Control of Animal Diseases, Ministry of Agriculture
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- Head, National Nuclear Energy Agency
- Head, Outbreak and Extraordinary Occurrence Response, Surveillance Division
- Head, Port Health Authority Class I Soekarno Hatta Airport
- Head, Port Health Authority Class I Tanjung Priok Sea Port
- Head, Pre Hospitals Section

- Head, Quarantine Control and Epidemiological Surveillance Port Health Authority Class I Tanjung Priok

- Head, Quarantine Control and Epidemiological Surveillance Port Health Authority Class I Soekarno Hatta

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- Head, Supporting Services Division, Directorate of Referral Health Care

- Head, Surveillance Division, Directorate General of Disease Prevention and Control, Ministry of Health

- Head, Training Development Division, Ministry of Health

- Head, Upper Respiratory Tract Infection Division

- Head, Veterinary Laboratory Subang

- Head, Waste and Radiation Security, Directorate of Environmental Health

- Head, Work Environment Division, Directorate of Occupational Health and Sport, Ministry of Health

- Head, Zoonosis Division, Directorate General of Disease Prevention and Control, Ministry of Health

- Head, Zoonosis Unit, Coordinating Ministry of Development and Human and Culture

- Head, Zoonosis, Directorate of Vector Borne Diseases and Zoonosis, Ministry of Health

- Head, Zoonosis, Directorate Veterinary Public Health, Ministry of Agriculture

- Head, Bureau of Public Relations, Ministry of Social Affairs

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- Head, Centre of Data and Information, Ministry of Health

- Head, Centre of Data Information dan Public Relations, National Disaster Management Authority

- Head, Centre of Education for Health Human Resource, Ministry of Health

- Head, Centre of Health Crisis

- Head, Centre of Health, Indonesian Army Headquarters

- Head, Centre of Planning and Deployment of Health Human Resources, Board of Health Human Resource Development and Empowerment, Ministry of Health

- Head, Centre of Primate Study, Agricultural Institute of Bogor

- Head, Centre of Quality Improvement of Health Human Resources, Ministry of Health

- Head, Centre of R & D for Health Resources and Services

- Head, Centre of Virology and Cancer Research, Pathobiology Department, University of Indonesia

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- Head, Data Processing and Information, Ministry of Health

- Head, Division of Agriculture, Food and Health, National Centre for Standardization

- Head, Division of Hepatitis dan Gastrointestinal Infections, Directorate of Directly Transmitted Diseases, Directorate General of Disease Prevention and Control

- Head, Division of Law Regulation II, Ministry of Health

- Head, Division of Legal, Organization dan Public Relations, Ministry of Health

- Head, Division of Multilateral Health Cooperation, Bureau International Cooperation, Ministry of Health

- Head, Division of Program dan Information, Secretariat Directorate General of Disease of Prevention and Control, Ministry of Health

- Head, Division of Strategic Planning and Programmes, Bureau of Planning dan Budget, Secretariat General, Ministry of Health

- Head, Emerging Infectious Diseases Division, Directorate Surveillance and Health Quarantine

- Head, Evaluation and Information, Centre of Health Crisis, Ministry of Health

- Head, Food Hygiene and Sanitation Improvement Unit, Ministry of Health

- Head, Information Dissemination Division, Ministry of Health

- Head, Monitoring and Protection, Sub Directorate of Food Safety, Ministry of Health

- Head, Regulation, Organization and Public Relations Division, Secretariat of Director General of Health Care, Ministry of Health

- Head, Training Centre, Board of Health Human Resource Development and Empowerment, Ministry of Health

- Kabid Response Facilitation, Centre of Health Crisis, Ministry of Health

- Laboratory Coordinator, Centre of R&D Centre for Biomedic and Basic Health Technology, National Institute of Health Research and Development

- Preparedness and Response Team (EPT2 USAID)

- Secretariat, Board of Health Human Resource Development and Empowerment, Ministry of Health

- Secretary Badan Penyuluhan & Pengembangan SDM Pertanian - Ministry of Agriculture

- Secretary Directorate General of Animal Farming and Health, Ministry of Agriculture

- Secretary Directorate General of Health Care

- Secretary Directorate General of Pencegahan dan Pengendalian Penyakit

- Secretary Directorate General of Public Helath

- Secretary Directorate General of Islamic Education, Ministry of Religious Affairs

- Secretary Directorate General of Law dan International Agreements, Ministry of Foreign Affairs

- Secretary, Agriculture Research and Development, Ministry of Agriculture

- Teguh Martono, S.Sos

- UNICEF Representative to Indonesia

- Veterinary Laboratory, Ministry of Agriculture

Supporting documentation provided by host country

National legislation, policy and financing

- Memoranda of Understanding (MOUs) to regulate the mobility of human and goods (see footnote)

- National Authority for Chemical Weapons under the Ministry of Industry (Presidential Regulation No. 19/ 2017 on National Authority for Chemical Weapons)

- Biological and Toxins Weapons Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction

- Government Regulation on Revision of Government Regulation of Hazardous and Toxic Wastes (No. 85/1999).

- Law No. 24/2007 on Disaster Management (https://www.bnpb.go.id/)

- Law on Decentralization (23/2014)

- Director General of Disease Prevention and Control Decree No. 50/2017 on Public Health Emergency Operations Centre (PHEOC)

- MOH Decree No. 1973/2011 on the National Committee for the Implementation of International Health Regulations (2005)

- MOH Decree No. 612/2010 on Guidelines for the Management of Health Quarantine on Public Health Emergencies of International Concern (PHEIC)

- MOH Regulation No. 64/2013 on Health Crisis Management

- Joint decree among three Ministries: MOH, MOA and Ministry of Internal Affairs (MOIA) No. 279 A/ Menkes/SK/VII/1978, No. 522/Kpts/Um/8/1978, No. 143/ 1978 Additional to appointing the national focal point for the health sector and establishing a PHEOC

- BNPB and Subnational Disaster Management Agency (BPBD) for natural, non-natural and social disasters.

- MOH Decree No. 300/2009 on Guidelines for Influenza Pandemic Epicentre Management

- Law no 18/2009 on animal husbandry and animal health

- Presidential Regulation No. 30/2011 on Zoonosis Control[9]

- Ministry of Defence Regulation No. 40/ 2014 on the involvement of the Ministry of Defence and the Armed Forces in Zoonosis

- https://www.kemhan.go.id/itjen/wp-content/uploads/migrasi/peraturan/Zoonosis.pdf

- Law No. 10/1977 on Nuclear Power

- Law No. 10/2014 on Ratification of the International Convention for the Suppression of Acts of Nuclear Terrorism

- Law No. 1/2012 on Ratification of the Comprehensive Nuclear Test Ban Treaty

- Presidential Regulation No. 19/2017 on the National Authority for Chemical Weapons

- Ministry of Defence Regulation No. 22/2016 on the Management of Hazardous Chemicals with Health Impacts in the Ministry of Defence and Armed Forces

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9   Presidential Regulation No. 30/ 2011 is due to expire in December 2017 and be replaced with Presidential Decree No. 116 / 2016 to strengthen the coordination function of zoonotic control, to be implemented by the Coordinating Ministry for Human Development and Culture

- MOH Decree No. 1105/2007 on Guidelines for Medical Management of Mass Victims of Chemical Disaster

- Law No. 32/2009 on Protection, Conservation and Management of the Environment

- Law No. 10/2013 on Ratification of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

- Government Regulation No. 101/2014 on Hazardous Waste Management

- Law No. 18/2012 on Food Security

- Ministry of Trade Regulation No.60/M-Dag/Per/9/2012 on Import Policy of Horticultural Products.

- Ministry of Trade Regulation No.5/M-Dag/Per/1/2016 on Export and Import of Animal and Animal Products

- Ministry of Agriculture Regulation No. 12/Permentan/OT.140/3/2015 on Animal and Plant Quarantine of Entrance/Import of Disease Carrying Media and Plant Disturbing Organism at Quarantine Examination Points

- Coordinating Ministry for Human Development and Culture Decree No. 23/2011 on Coordinating Team for National Food Security Network

- Ministry of Transportation Regulation No. 61/ 2015 on Air Facilitation

- Ministry of Agriculture Ministry Regulation on the National Committee on Pesticides (No. 642/2012).

IHR coordination, communication and advocacy

- MOH Decree No. 1973/2011 on the National Committee for the Implementation of International Health Regulations (2005)

- Presidential Regulation No. 7/2015 on Organization of the Ministries

- Presidential Regulation Number 35/2015 on Health Ministry

- Health Ministerial Regulation Number 64/2015 on Organization of Ministry of Health

- Law Number 23/2014 on Local Government

- Law Number 36/2009 on Health

- Law Number 24/2007 on Disaster

- Law No. 24/2007 on Disaster Management

- Presidential Decree No. 72/2012 on the National Health System

- Law on Decentralization (23/2014)

- Director General of Disease Prevention and Control Decree No. 50/2017 on Public Health Emergency Operation Centre (PHEOC)

- MOH Decree No. 612/2010 on Guidelines for the Management of Health Quarantine in Public Health Emergencies of International Concern (PHEIC)

- MOH Regulation No. 64/2013 on Health Crisis Management

- Joint decree among three Ministries: MOH, MOA and Ministry of Internal Affairs (MOIA) No. 279 A/ Menkes/SK/VII/1978, No. 522/Kpts/Um/8/1978, No. 143/ 1978

- Presidential Regulation of the Republic of Indonesia No. 2/2015 on Medium Term National Development Plan 2014-2019

Antimicrobial resistance

- National Action Plan on AMR Indonesia 2017-2019 (http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/)
- MoH Regulation No.56/2014 regarding Classification and Registration of Hospitals
- MoH Regulation No. 34/2017 regarding Hospital Accreditation
- MoH Regulation No.46/2015 regarding Accreditation for Primary Health Care (puskesmas, clinics, doctors practices)
- MoH Decree No. HK.02.02/MENKES/59/2015 regarding Primary Healthcare Acreditation Committee
- MoH Decree No. 27/2017 regarding Guideline on Infection Prevention and Control at Healthcare facilities
- MoH Decree No.298/Menkes/SK/III/2008 regarding Guideline on Health Laboratories
- MoH Regulation No.411/Menkes/PER/III/2010 regarding Laboratory Clinics
- Law No 419/1949 regarding Ethical Drugs
- MoH Regulation No. 2406/MENKES/PER/XII/2011 regarding Guideline on Antibiotics Use
- MoH Decree No.HK.01.07/Menkes/350/2017 regarding Hospital and Health Centres for Drug-Resistant TB (360 hospitals and health centres)
- Minister of Marine Affairs and Fisheries Regulation No. PER.04/Men/2012 regarding Fish Drugs
- Minister of Marine Affairs and Fisheries Decree No. 52/KEPMEN-KP/2014 regarding Classification of Fish Drugs
- Minister of Marine Affairs and Fisheries Regulation No. 39/PERMEN-KP/2015 regarding Control of Fish Drugs, Chemicals, and Contamination Residue at Fish Cultivation
- Report on Monitoring of Antibiotic Resistant Bacterial Pathogens in Fisheries (2016)
- Guideline on Antimicrobial Resistance Testing in Fisheries
- Law No. 18/2009 regarding Farms and Animal Health
- MOA Regulation No. 14/PERMENTAN/PK.350/5/2017 regarding Classification of Veterinary Drugs
- MoH Rgulation No.8/2015 regarding Antimicrobial Resistance Control Programme in Hospitals
- MoH Decree No HK.02.02/MENKES/523/2015 regarding National Formulary
- MoH Decree No HK.01.07/MENKES/395/2017 regarding National Essential Medicines
- Guidelines for drug resistance TB management
- Animal health information system of Indonesia (ISIKHNAS) https://www.isikhnas.com/
- Educational material for increasing public awareness and knowledge httg://binfar.kemkes.go.id/2016/05/materi-gromosi-gema-cermat-1- logo-banner-brosur-goster-dan- stiker/#.Wg6g9fmWaM8

Zoonotic diseases

- Law No. 4/1984 on Outbreaks of Infectious Diseases
- Law No. 41/2014 on Amendment to the Law No. 18/2018 on Livestock & Animal Health
- Government Regulation No. 47/2014 on Control and Prevention of Animal Disease
- Government Regulation No. 3/2017 on Implementation Plan for Veterinary Authority at Sub-National Level

- Ministry of Health Strategic Plan 2015-2019

- National Strategic Action Plan for Zoonotic Diseases (2012-2017)

- Ministry of Health Regulation No. 658/2009 on Networking of EID Laboratories and EID National Reference Laboratories

- Guideline for cross sectoral coordination for preparedness and response to pandemic threats at central and sub national level (KEMENKO PMK)

- Programmes for prevention, detection, and response to zoonosis and emerging infectious diseases (EIDs) are aligned in National Midterm Plan (RPJMN) 2014-2019

Food safety

- Law No. 18 / 2012 on Food

- Government Regulation No 28 / 2004 on Food Safety, Quality and Nutrition

- Decree No. 1096 / 2011 on Food Hygiene and Sanitation

- Decree No. 1098 on Hygiene and Sanitation for Restaurants

- Decree No. 942 on Hygiene and Sanitation for Street Vendor

- Decree No. 2 / 2013 on Foodborne Disease Outbreak

- Decree No. 43 on Drinking Water Depot Hygiene and Sanitation

- Decree No 492 on Drinking Water Quality

- Head of NADFC decree on Food Sample during FBD outbreak

- Decree No 38/2009 on Food Safety Surveillance

- Decree No 46/2014 on Quality Control and Safety of Fish Product

- Decree No 57/2013 on the Standards of Export and Import of Animal and Animal Product

- Decree No 28 /2015 on Standards for Street Food Centre

- Decision Letter SK No 23/2011 on National Network on Food Safety

Biosafety and biosecurity

- Indonesian Act No. 5 /1994 on Ratification of the United Nations Convention on Biological Diversity

- Indonesian Act no. 18 / 2009 on Livestock and Animal Health

- Government Regulation No. 47 /2014 on Control and Countermeasures of Animal Diseases

- Agricultural Ministerial Decree No. 50/PERMENTAN/OT.140/10/2006 on Guidelines for Poultry in Settlements

- Health Ministerial Decree No. 657/Menkes/Per/VIII/2009 on Transfer and Utilization of Clinical Specimens, Biological Material, and its Contained Data

- Health Ministerial Decree No. 835/MENKES/SK/IX/2009 on Guidelines for Biosafety and Biosecurity for Microbiology and Biomedical Laboratory

- Health Ministerial Decree number 411/MENKES/PER/III/2010 on Clinical Laboratories (which stipulates that laboratory licences shall be issued by the MOH after the completion of set requirements)

- Health Ministerial Decree number 56/Menkes/2014 on Laboratories In Hospitals

- Health Ministerial Decree number 75/Menkes/2014 on Laboratories in Primary Health Centre (Puskesmas)

Immunization

- Law No. 36/2009 on Health
- MOH Decree No.12/2017 on Immunization
- Comprehensive multiyear strategic plan 2015 – 2019
- Joint Reporting Form (JRF) 2016
- Immunization bulletin
- MCH book
- Public Service Announcement (PSA) on Immunization
- Effective Vaccine Management Assessment Report 2015 and Effective Vaccine Management Improvement Plan
- Website: www.infokeamananvaksin.com

National laboratory system

- MOH Regulation No 1501 / MENKES / PER / X / 2010 on Certain Infectious Diseases that Can Cause Outbreaks
- MOH Regulation no HK.02.02 / MENKES / 322/2015 on the Appointment of Polio Lab, Measles and Rubella
- MOA regulation No. 4026/ 2013 on the Establishment of Strategic Infectious Animal Diseases
- MOA regulation No. 89 of 2012 on the Appointment of Veterinary Laboratories as a Referral Laboratory for Specific Infectious Diseases
- MOH Regulation No 658 / MENKES / PER / VIII / 2009 on Diagnostic Laboratory Network of New Emerging and Re-Emerging Infectious Diseases
- MOH Regulation no 1647 / MENKES / SK / XII / 2005 on Networking Services of Health Laboratories and Referral Systems
- MOH Regulation no. 67/ 2016 on TB Prevention
- MOH Regulation no 75/ 2014 on Public Health Centre
- MOH Regulation no 37/ 2012 on Laboratory of Public Health Centre
- MOH Decree no 411 Internal Quality Controls and External Quality Assessment
- MOH Regulation No. 27/ 2017 on Guidelines for Infection Prevention and Control in Healthcare Facilities
- MOH Regulation No. 11/ 2017 on Patient Safety
- Guidelines for Safety and Security of Microbiology and Biomedical Laboratories
- Material standard transfer agreement 1 with WHO
- Evidence of MOA as OIE member
- MOH Regulation No. 54/ 2015 on Testing and Calibration of Medical Devices
- MOH Regulation Number 239 / Menkes / Sk / IV / 2006 on Appointment of National Virology MOH Regulation No. 56 of 2014 on Hospital Classification and Licensing
- MOH Regulation No. HK.02.2 / MENKES / 390/2017 on Guidelines for Determination of National Referral Hospital

- MOH Regulation No. HK.02.2 / MENKES / 391/2017 on Guidelines for the Establishment of a Regional Referral Hospital

- Decision Letter of Director General of BUK No. HK. 02.03 / I / 0363/2015 on the Establishment of Provincial and Regional Referral Hospital Laboratories.

- MOH Regulation No.835 / MENKES / SK / IX / 2009 on Safety and Security Guidelines of Microbiological and Biomedical Laboratories

- MOH Regulation no 1190/ 2010 on Circulation Permit for Health Equipment and Household Health Supplies (PKRT)

- MOH Regulation HK 02.02 / MENKES / 400/2016 of 2016 on Health Laboratory Centre (BBLK) as the Organizer of National External Quality Assurance

Reporting

- Avian Influenza notification to WHO in 2015 and 2017

- SIZE mobile application.

Workforce development

- MOH Regulation No. 36/ 2014 on Assessment of Destruction, Losses, Needs and Health HR Needs Post Disaster

- MOH Regulation No. 60/ 2016 on Development of Functional Positions of Health and Non-Functional Positions of Health in Ministry of Health

- MOH Decree No. 18/ 2017 on Implementation of Functional Health Job Competency Test

- MOH Regulation No. 78/ 2015 on Conducting Education and Training for Functional Health Positions

- MOH Regulation No. 42/ 2017 on the Appointment of Civil Servants in the position of Functional Health Through Adjustment /Inpassing

- MOH decree No. HK.02.02/Menkes/633/2016 on Coordination Team for Field Epidemiology Implementation

- MOA regulation No. 33/ 2009 on Guideline for Functional Education and Training of Agricultural Life Sciences

- MOA Regulation No. 132/ 2014 on Guideline on Competency Test for Veterinary Medical Functional Officers

- MOA Regulation No. 133/ 2014 on Guideline on Competency Test for Veterinary Paramedic Functional Officers

- MOA Regulation No. 51/kpts/OT.140/10/2006 on Guidelines for the governance of the Functional Relationship of Inspection, Observation and Treatment of Quarantine Animal Diseases

- MOH Regulation No. 54/2013 on the Implementation of Human Resources Education

- PPSDM Programme Action Plan Year 2015-2019

Preparedness

- BNPB National Plan of Disaster Management 2015-2019
- BNPB Strategic Plan 2015-2019
- BNPB Regulation No. 3/2016 Command System in Emergency Disaster Management
- BNPB Regulation No. 15/2012 Disaster Management Operation and Control Centre
- National Pandemic Influenza Guidelines
- Acute respiratory infection (ARI) contingency plan
- Health quarantine contingency plan.

Emergency response operations

- MOH Regulation No. 77/ 2014 on the Health Crisis Response Information System (SIPKK) and
- MOH Regulation No. 45/ 2015 on the Implementation of Health Surveillance.

Linking public health and security authorities

- Law No. 15/ 2003 stipulates Government Regulation in lieu of Law No. 1/ 2002 on Eradication of Criminal Terrorist Acts
- Presidential Regulation No. 46/ 2010 on the National Agency for Combatting Terrorism
- Law No. 1/ 1962 on Sea Quarantine
- Law No. 2/ 1962 on Air Quarantine
- Law No. 4/ 1984 on Infectious Disease Outbreaks
- Government Regulation No. 40/ 1991 on the Control of Infectious Disease Outbreaks
- Head of the National Agency for Combatting Terrorism Regulation No. PER-07 / K.BNPT / 11/2013 on the Implementation of Standard Operational Procedures of Government Administration (SOPAP) for Terrorism Countermeasures using Chemicals, Biology, Radioactive, Nuclear, and Explosives (CBRN).
- Ministry of Health and Ministry of Defence Joint Agreement No. HK.05.01 / Menkes / 233/2015 and MOU / 02 / M / VI / 2015 on Health Cooperation
- Memorandum of Understanding between the Ministry of Health and the Police of the Republic of Indonesia No. HK.05.01 / 681 / PB / 2016 and No. B / 72 / XII / 2016 on the Cooperation and Implementation in Health and Medicine
- Memorandum of Understanding between the Indonesian National Armed Forces and the Ministry of Health No. KERMA / 6/11/2017 and No. HK.03.01 / MENKES / 86/2017 on Health Services.

Medical countermeasures and personnel deployment

- Medical Practice Law No. 29/ 2004

- Government Regulation No. 23/ 2008, on International Assistance in Disaster Response

- Head of BNPB regulation No. 4/ 2009 on disaster logistic acceptance / mobilization

- BNPB Regulation No. 22/ 2010 on Guidelines on the Participation of International and Non-governmental Organizations

- MOH Regulation No. 59/ 2011 on Guidelines for Drug Management and Health Supplies in Disaster Management

- Ministry of Health (MOH) Regulation No. 64/ 2013 on Health Crisis Response

- MOH Regulation No. 67/ 2013 on utilization of Foreign Health Workers in Indonesia.

Risk communication

- Law No.14/2008 on Public Information Transparency

  ○ *Article 10: Information that must be announced immediately. (1) Information that can threaten the lives of many people and public order*

- Law No. 36/2009 on Health

  ○ *Article 7: Everyone has the right to balanced and responsible health information and education.*

  ○ *Article 169: Government facilitates the public to gain access to health information in an effort to improve public health status*

- Presidential Instruction No. 9/2015 on Management of Public Communication

- MOH Regulation No. 64/ 2015 on Organizational Structure

  ○ Binds the duties and functions of organizational units that must work together and coordinate in implementing risk communication

- MOH Decree No. 342/2007 on Competent Authorities to Provide Information to the Press and/or Public (includes provisions relating to spokespeople)

- National Disaster Management Authority (BNPB) National Plan of Disaster Management 2015-2019

- BNPB Strategic Plan 2015-2019

- BNPB Regulation No. 3/2016 Command System in Emergency Disaster Management

- BNPB Regulation No. 15/2012 Disaster Management Operation and Control Centre

- BNPB Regulation No. 8/2013 Media Centre of Disaster Response

- Guideline on Influenza Pandemic Epicentre Management (2009)

- Minister of Social Affairs Regulation No.128/2011 on Disaster Alert Villages

- Guideline on Community Empowerment (Disaster Alert Village/ Kampung Siaga Bencana) for disaster mitigation and preparedness.

Points of entry

- Guidelines on influenza pandemic epicenter management
- Guidelines on PHEIC management at points of entry
- Soekharno-Hatta International Airport IHR Core Capacities Self Assessment 2016
- Guidelines on developing public health emergency contingency plans at points of entry.

Chemical events

- MOH Decree No. 1105/2007 2007 on Guidelines for Mass Medical Treatment Due to Chemical Disasters .
- Contingency plan for technological failure, especially with regard to transportation accidents of B3 (Hazardous and Toxic materials) in Cilegon district .
- Presidential Regulation No. 9/ 2017 on the National Authority for Chemical Weapons.
- Ministry of Manpower and Transmigration No. 3/1998 on Procedures for Reporting and Inspection of Accidents.
- Type C and D Poison guidebook for medical doctors at emergency units
- Guidelines for management of poisons in hospitals
- Guidelines for poison ministration at puskesmas: pesticides and chemicals
- Government Regulation No. 50/ 2012 on the K3 management system

Radiation emergencies

- Government Regulation No. 58/ 2015 on Radiation Safety and Safety during Transportation of Radioactive Substances
- Government Regulation No. 61/ 2013 on Radioactive Waste Management
- Government Regulation No. 54/2012 on Safety and Security for Nuclear Installations
- BCR No. 8/ 2016 on Radioactive Waste Management (Low and Medium Level)
- Head of BATAN Regulation no 184/ 2012 on Serpong Nuclear Preparedness Programme (KNS)
- BCR no 1/ 2010 on Nuclear Preparedness and Emergency Response
- BCR no 7/ 2007 on Radioactive Resource Security
- MOH Regulation No 1427/ 2006 on Radioactive Waste Management in Hospital
- IAEA's EPReV report (2016)
- IAEA's International Safety Standards GSR Part 7 (2015).