

Measuring Indonesia H1N1 Pandemic Preparedness through Stakeholder Analysis

Wiku Adisasmito¹, Agus Suwandono² and Dewi Nur Aisyah^{1*}

¹Faculty of Public Health, Universitas Indonesia, Republic of Indonesia

²National Institute of Health Research and Development, Ministry of Health, Republic of Indonesia

Abstract

As part of Asia Flu Cap project, the stakeholder analysis of H1N1 pandemic response in Indonesia aims to identify stakeholders' capacity strengths, gaps, and constraints in response to influenza pandemic threat. Eighteen stakeholders associated with H1N1 pandemic response were interviewed between June-August 2010. Have experienced with SARS and H5N1, the availability of pandemic preparedness/response strategies, pandemic standard operational procedure and case management guidelines, preparedness of 100 referral hospitals, health center, referral laboratories, international airport border control, and other facilities were Indonesia's capacity strengths. However, there was management gap of Avian Influenza (AI) control and pandemic preparedness/response between national, province, district, and city committee. In addition, complicated procedures of budget approval and slow disbursement for pandemic preparedness and implementation were identified as constraining bureaucracy. Through experiences with H5N1, Indonesia has built a better organization governance, trained human workforce, and resources to handle H1N1 pandemic.

Keywords: H1N1; Pandemic; Preparedness; Stakeholder analysis

Introduction

Preparedness activities for the outbreak and pandemic of emerging infectious diseases in Indonesia were carried out after the 2003 SARS threat. The first confirmed human laboratory case of H5N1 was found on July 2005 in a 38-year-old man living in the outskirts of Jakarta. Cases quickly began to mount with numerous poultry dying of the virus. Indonesia quickly became the center of the H5N1 pandemic-only Vietnam reported more human cases [1].

The first case of H1N1 in Indonesia was found on 23 June 2009 in Jakarta. The patient was male, 37 years old, lives in Jakarta, and just came back from Australia and transit in Hongkong. He was then hospitalized to Referral Hospital of Sulianti Saroso Infectious Disease Hospital in Jakarta. By September 2010, there were 1097 H1N1 cases with 10 deaths in 25 provinces in Indonesia, 14,976 cases with 119 deaths in Thailand, 16 deaths in Singapore, 64 deaths in Malaysia, and 35,095 cases with 155 deaths in Australia. The distribution of H1N1 cases and mortality until September 2009 in Indonesia can be seen from Figure 1.

On 13 March 2006, President Susilo Bambang Yudoyono launched Komnas FBPI or National Commission for Avian Influenza Control and Pandemic Preparedness (NCAICPP), a ministerial-level committee headed by the Coordinating Minister for People's Welfare, Aburizal Bakrie. In 2007, Komnas FBPI began developing a nationwide set of actions called the National Pandemic Preparedness and Response Plan (NPPRP), a living document laying out detailed guidelines for both public and private sectors in pandemic situation [2]. This included comprehensive protocols to be carried out should an outbreak appeared to be a pandemic epicenter [2-4]. In addition, Komda FBPI or Provincial and District/Municipal Commission for AI Control and Pandemic Preparedness was also established in all 33 provinces and more than 490 districts/municipalities in Indonesia [4,5].

Following the WHO consecutive declarations of swine flu (H1N1) pandemic alert from phase 4 (April 2009), 5 to 6 (June 11, 2009), the Komnas FBPI activated its NPPRP and set up a 24 hour hotline. Eventually, The Ministry of Health declared the 6th phase H1N1 pandemic alert in Indonesia, mandating more rigorous airport health checks and alerting 100 referral hospitals. To curb public anxiety and

disseminate this pandemic situation, leaflets and posters were printed and distributed, radio drama series and talk shows were aired, hygiene kits were handed out to families traveling, and so forth [4,6].

Methods

Stakeholder analysis is a systematic method to collect and analyze important information from stakeholders to help develop strategic plans for promoting their cooperation in influenza pandemic preparedness/response. Stakeholders are key informants who consist of five broad groups: major international health organizations, key national/regional policy makers, health systems, major opinion leaders, and private sectors.

Eighteen qualitative interviews have been conducted to collect stakeholders' viewpoints and opinions through open-ended and discovery-oriented questions designed to make them fit with our analysis purposes. Adjusting to different characteristics of stakeholders, two sets of slightly modified questions were composed. Prior to the interviews, stakeholder analysis toolkit which specially designed for ensuring effective interviews was developed. During interviews, stakeholders had to reflect on their perspectives, personal experiences, or undocumented local knowledge. The result is first-hand information focusing on stakeholders' own capacity strengths, gaps, and constraints regarding influenza pandemic control.

In addition to interviews, we also gathered and examined secondary information, including newspapers, published/unpublished reports, and conference papers. These were utilized to provide broader

***Corresponding author:** Dewi Nur Aisyah, Center for Epidemiological Research and Surveillance, Faculty of Public Health, Universitas Indonesia, Kampus Baru UI Depok, West Java 16424, Indonesia, Tel: +6289613869780; E-mail: dewi.aisyah.ui@gmail.com

Received December 04, 2013; **Accepted** January 31, 2014; **Published** February 02, 2014

Citation: Adisasmito W, Suwandono A, Aisyah DN (2014) Measuring Indonesia H1N1 Pandemic Preparedness through Stakeholder Analysis. Health Care Current Reviews 2: 119. doi: [10.4172/2375-4273.1000119](https://doi.org/10.4172/2375-4273.1000119)

Copyright: © 2014 Adisasmito W, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

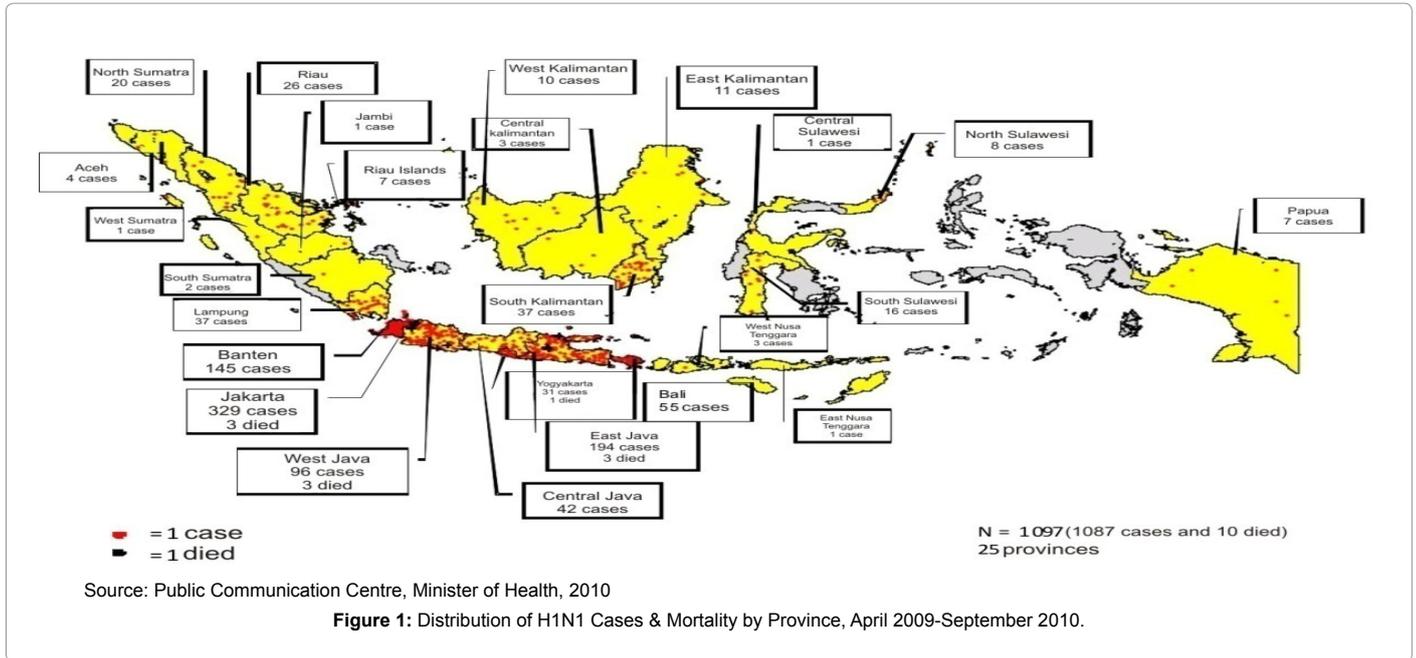


Figure 1: Distribution of H1N1 Cases & Mortality by Province, April 2009-September 2010.

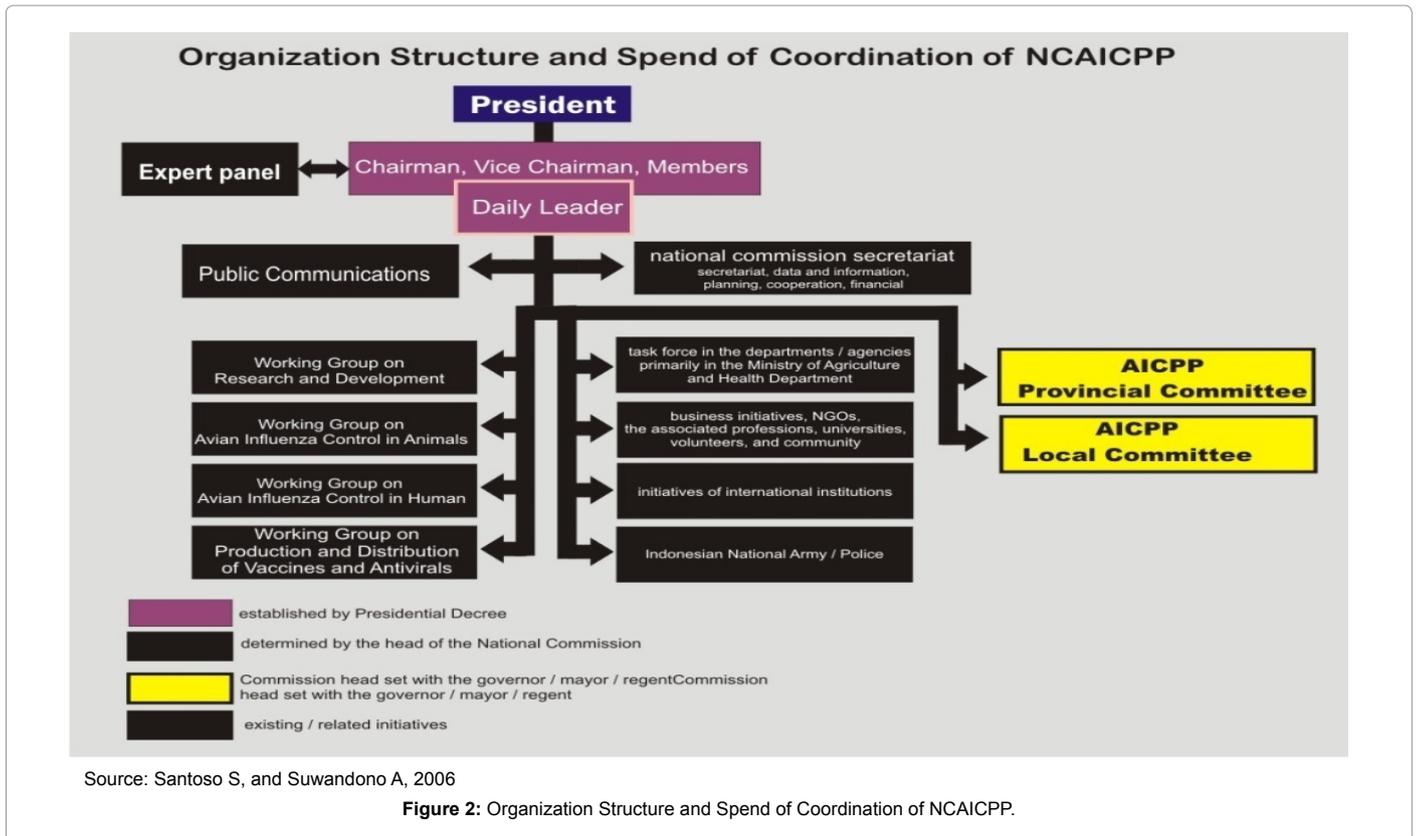


Figure 2: Organization Structure and Spend of Coordination of NCAICPP.

insights and background knowledge on H1N1 pandemic preparedness/ response, particularly in Indonesia.

Result (Table 1)

Governance and organization

Komnas FBPI (NCAICPP) was established by the 2006 Decree of

President Republic of Indonesia, consisting of 14 members headed by a chief executive (Dr. Bayu Krisnamurti, the Deputy for Agriculture and Fisheries to Coordinating Minister for Economic Affairs) and two deputies. A panel of Indonesian experts and key animal and human health professional associations served as its advisors. The commissarial secretariat's role was to facilitate communication flow between government agencies and to disseminate latest information

	Ca capacity Strength	Ca capacity Gaps	Ca capacity Constraints
1. Organization and governance	<ul style="list-style-type: none"> a. Applicable emergency laws and regulations. b. Establishment of "Komnas FBPI", a national commission specifically dealing with Avian Influenza pandemic in Indonesia. c. Experiences in SARS and H5N1 have provided Indonesia with: <ul style="list-style-type: none"> • Standard operational procedure (SOP) and Case Management Guidelines during pandemic. • Trained workforces and sufficient facilities in 100 referral hospitals and health centers. • Advanced border control in international airport health offices. • Referral laboratories in NIHRD, Schools of Medicine, Provincial Health Laboratories, etc. d. Guidelines for Integrated Pandemic Team for responding to pandemic situation. e. Field and desk simulation of MoH programs and pandemic SOP in regional health office. f. Tangerang pilot project for AI control and pandemic preparedness/ response. 	<ul style="list-style-type: none"> a. Management gap between national, province, district and city committees on AI control and pandemic preparedness/response. b. Capacity gap between good strategies, guidelines, and policies and their implementation in pandemic preparedness/response. 	<ul style="list-style-type: none"> a. The NCAICPP does not have direct access and capacity to carry out the action due to decentralized policy. b. Inflexible bureaucracy even in pandemic situation. c. Lack of strong leadership and skills in related healthcare programs. d. Heavy influence of political parties in decision making process, especially when announcing laboratory results.
2. Resource mobilization	<ul style="list-style-type: none"> a. Annual emergency budget. b. Workforce: physicians, medical specialists, nurses, public health providers, epidemiologists, laboratory analysts, health educators, and teams related to influenza pandemic. c. Adequate national Tamiflu/oseltamivir stock pile. d. Sufficient facilities and equipment in referral hospitals and international airport/seaport health offices. 	<ul style="list-style-type: none"> a. Inequitable capacity building, training, and simulation of pandemic preparedness among healthcare providers. b. Insufficient physicians at the international airport health offices and district/city hospitals. c. Unqualified health facilities and services in international airport health offices. d. Insufficient Tamiflu stockpile to cover the specified number of population. e. Unequal distribution of referral laboratories and hospitals. f. Great dependency on CDC Atlanta or WHO for laboratory test support. 	<ul style="list-style-type: none"> a. Insufficient capacity building program. b. Inflexible procedures of budget approval and disbursement during pandemic. c. Short expiration date and high stockpiling cost of Tamiflu/ oseltamivir. d. Imprecise vaccination policy. e. Indonesia's geographic condition.
3. Communication	<ul style="list-style-type: none"> a. Various IEC materials on pandemic preparedness/response. b. Appropriate means of IEC to disseminate messages. c. Concerted efforts to empower the society and health-related sectors. d. H1N1 alert system hotline. e. Well-trained journalist conducting routine interactions with the MOH & "Komnas FBPI". 	<ul style="list-style-type: none"> a. Journalist interests are more on controversial news. b. Not all IEC programs are integrated. 	<ul style="list-style-type: none"> a. Pandemic preparedness campaign through mass media is limited and insufficient. b. Health promotion and disease prevention are not prioritized.
4. Pandemic preparedness exercise	<ul style="list-style-type: none"> a. High commitment to carrying out the pandemic SOP even in the gravest circumstances. b. Simulations must be set up to the severest pandemic scenario. 	<ul style="list-style-type: none"> a. Difficulties in predicting the severity of future pandemics (if any). b. Insufficient surveillance data to be analyzed for early pandemic detection. 	<ul style="list-style-type: none"> a. Inadequate resources for severe pandemic.
5. Others	<ul style="list-style-type: none"> a. Concerted efforts of the government and donor agencies to empower the community, private sectors, and NGOs in terms of pandemic preparedness/response. b. Supports from NGOs, UN Organizations, and other donor agencies to promote good governance and management during pandemic situations. c. Provision of ILI and SARI surveillance. 	<ul style="list-style-type: none"> a. Inadequate efforts to maintain the community empowerment. b. ILI and SARI surveillances are conducted in few Primary Health Centers and hospitals. 	<ul style="list-style-type: none"> a. Lack of community empowerment. b. Limited budget and manpower capacities to carry out ILI and SARI surveillance in health centers and hospitals.

Table 1: List of Stakeholders' Capacity Strengths, Gaps, and Constraints.

to the public through its media and communication center. Komnda FBPI as local commissions will channel national commands to and coordinate with provincial, district, or city administrators in their respective regions to discuss policy application and make necessary adjustment to local situations. The commission structure is shown in Figure 2 [7-9]. By the middle of 2008, Komnas FBPI has carried out strategies showed in Figure 3 [3,8].

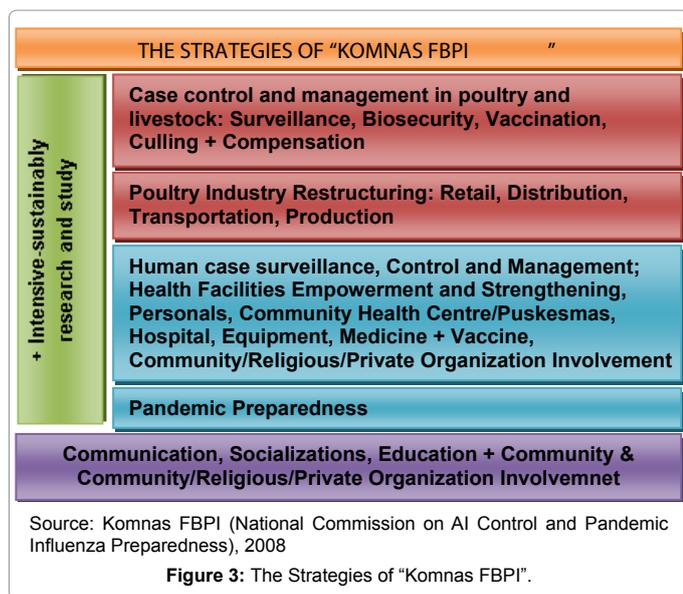
Border control

National measures were taken after WHO raised pandemic alert level to phase 4 in April 2009. The Minister of Health (MoH) ordered thermal scan to be conducted in international airports (including Banten's Soekarno-Hatta and Denpasar's Ngurah Rai) and alerted 100 referral hospitals for pandemic attack [4].

The MoH also announced initiatives to improve standard pandemic

response procedure and health alert system. All strategic international airports and seaports must conduct a more rigorous health inspection and be equipped by thermal scanner and body cleaners. Health alert cards must be provided in border posts and given to all air passengers arriving at Indonesian international airports [10]. Passengers were detected, inspected, and observed by airport doctor. If suspected, then they were given Tamiflu and sent to referral hospital for isolation. Their blood samples were then dispatched to National Institute of Health Research and Development (NIHRD) Jakarta for further laboratory testing [11].

H1N1 was found in an Australian passenger arriving at Ngurah Rai on 19 June 2009. This suspect was then referred to Sanglah Hospital, Denpasar. On 23 June 2009, the Minister of Health declared this as the first H1N1 case in Indonesia, together with another positive case in Jakarta. Furthermore, among 88 passengers referred to Sanglah



Hospital, 6 were positive H1N1 cases while the remaining was only Influenza-Like Illness (ILI) [12].

Case management

Komnas FBPI adopted WHO's H1N1 standard case management, which is nevertheless rather difficult to carry out due to its similar symptoms to influenza or ILI [12]. The scheme starts with thermal scanning of all passengers before departure or upon arrival at an airport. If detected, they would be brought to airport health office and examined by a physician. If rendered as H1N1 suspects, then they would be given Tamiflu, sent to a designated referral hospital, and put in an isolated room. Their blood specimen would be taken for laboratory examination. If the result was negative, they would be released, but if H1N1-positive, isolation would continue. The hospital would then report the case to the Directorate General Centers of Disease Control and Environmental Health (DG CDC EH) for further action [13-15].

Due to the large number of suspected people and relatively minor prevalence of H1N1, many passengers complained about these procedures. Therefore, several weeks after the number of suspects reached 1000, the procedure was eased and airport physician was given a full authority to give Tamiflu and refer suspected patients based on individual consideration. The procedures constantly changed and by the end of 2009 no confirmed H1N1 case had been found. It was also decided that persons in contact with the patient were not necessarily be given Tamiflu; maintaining distance with patients was more important [10,16].

Information, Education, and Communication (IEC)

The IEC strategy has been carried out since 2006. In terms of information, the Komnas FBPI has disseminated several different messages using flyers, pamphlets, T-shirt, key chain, travel bag, watch, and other merchandises. In terms of communication, all messages related to influenza pandemic preparedness/response were delivered through television, radio, puppet shadow performance, drama, and others. In terms of education, the channels were mostly public and private schools, women organizations, farmer groups, Islamic schools, local leaders, journalists, community groups, wet market vendors, private companies, and so forth [7]. Workshop was the most effective

forum to educate them, while simulation of pandemic preparedness/response in upcountry would give practical benefits for the community involved [5,17].

Surveillance

There are two surveillance systems: (1) routine ILI (Influenza-Like Illnesses) and SARI (Severe Acute Respiratory Infection) surveillances, and (2) continuous surveillance of human H5N1 case. ILI surveillance is carried out in health centers, started in 2005 with only 20 ILI sentinels, while SARI surveillance is conducted in 15 hospitals; both are now covering some Indonesian provinces [11,18]. However, H1N1's relatively minor symptoms make it treated differently with H5N1. The surveillance results during H1N1 pandemic in Indonesia until September 2010 showed that: [10,16].

- The number of confirmed H1N1 cases was 1097, concentrated in four Javanese provinces: Jakarta (329), East Java (194), Banten (145), and West Java (96). The mortality rate reaches 10.
- Cases were found in 25 provinces out of 33 provinces in Indonesia.
- Deaths were found in 4 provinces: Jakarta (3), West Java (3), East Java (3) and Yogyakarta (1).
- 80% of cases are adolescents (10-14 years) and productive age group (15-44 years).
- 54% of confirmed patients were male.
- 6% of cases were foreigners; 94% were Indonesians.
- 78.7% of cases had no history of visiting other countries.

Antiviral strategy

Antiviral drugs have already been part of national policy since 2006 when Indonesia was threatened by a high number of lethal H5N1 human cases. In 2006/2007 and 2008 the MoH distributed, respectively, 16.5 million and 2,950,000 capsules of Tamiflu/oseltamivir to more than 8,800 health centers, 44 referral hospitals and other public hospitals, airport health offices, and sub-section of Disease Control and Environment Improvement in all 33 provinces and 404 districts/cities throughout Indonesia. In 2008, Japan International Cooperation System (JICS) and ASEAN also bequeathed 1,962,400 stockpile of Tamiflu to Indonesia.

Actually, due to the apparent decrease of H5N1 cases in Indonesia, the MoH was reluctant to purchase more Tamiflu/oseltamivir to avoid overstock and early expiry date. However, alarmed WHO's declaration of H1N1 pandemic and its prevalence in Indonesia, the MoH finally decided to purchase 850,000 capsules of Tamiflu by using emergency budget in the very same year. WHO also assisted Tamiflu provision in Indonesia in two stages: in May and December 2009 with 2,500,000 and 1 million capsules respectively? This huge number of medicines plus the 2008 additional stockpile were then distributed in July and December 2009 to the same targets with the number of referral hospitals expanded from 44 to 100.

Vaccine strategy

No vaccine policy was instituted by the MoH except the hajj pilgrims who were required to get seasonal influenza vaccination before fulfilling their final religious duty. Some private companies in Indonesia also required their employees to get seasonal influenza vaccination. Recently the MoH collaborated with Airlangga University, Universitas

Indonesia, Eijkman Research Institute, and Biopharma Company to develop H1N1 and H5N1 vaccines by using virus strain already found in Indonesia [3,18].

Discussion

In order to deal with H1N1 pandemic, all of ASEAN countries have already developed their national pandemic plans after H5N1 outbreaks began in 2003. Massive support on technical and financial has been provided to ASEAN countries, especially those that have been severely affected by H5N1, such as Indonesia, Vietnam, Thailand, Cambodia and Lao PDR. One of the most important responses to mitigate the impact of pandemic (H1N1) 2009 is the surge capacity in the healthcare system. The lack of healthcare facilities and personnel in several South-east Asian countries could be a limiting factor for early treatment.

In Indonesia, NCAICPP in collaboration with the MoH, has made careful preparation for overcoming H5N1 pandemic. Despite of this, ILI and SARI surveillances conducted in January-July 2010 revealed that H1N1 and H5N1 threats remains prevalent with no certainty over the potential re-assortment of both viruses. This stakeholder analysis has obtained existing strengths, gaps, and constraints on important components of pandemic preparedness/response in Indonesia, including the aspects of organization and governance, resources mobilization, communication challenges, and hypothetical scenarios.

In terms of organization and governance, Indonesia already has NCAICPP with its 10 strategic plans. Nevertheless, this commission lacks of direct access and authority to carry out those programs, so its capacity cannot be optimized. Moreover, some stakeholders recognized weak leadership qualities, which may prove a hindrance to combating H1N1 pandemic in Indonesia.

Despite being handsomely charted on paper, Indonesian health system suffers from weak implementation, most likely because of unqualified human resources and inflexible budget during pandemic response. Budget allocation for health emergency is reasonably high, but inflexible bureaucracy and regulation have made disbursement slow. Health manpower is not equally distributed and few are well-trained in pandemic preparedness/response.

Facilities for pandemic response are not equitable and inefficiently utilized. For example, top referral hospitals own sufficient facilities, whereas some district hospitals lack of them. Equipment for detecting ILI in the international airport health offices is still inadequate, whilst relatively minor material like body cleaners are provided excessively. Antiviral drugs stockpile is available despite not meeting WHO's recommended level of 25% of the population, a costly standard which Indonesia is unable to reach.

Despite having no vaccination policy, Indonesia has tried to develop the vaccine by facilitating collaboration between reputable scientific institutions. Although some referral laboratories have relatively adequate resources, the smaller ones must content with limited facilities mainly supplied WHO and CDC Atlanta, especially RT-PCR test primers.

Previous experiences with H5N1 have provided Indonesia a better organization and governance system, specifically trained workforce, and comprehensive stock of equipment, drugs, and facilities to overcome H1N1 pandemic. Nevertheless, some notable constraints and gaps between plans and implementation of H1N1 pandemic preparedness/response were also reported to have decreased its strengths. For better influenza pandemic anticipation in the future, the MoH and

its commission must generate a wider coverage of intensive, regular, and integrated ILI and SARI surveillances to ensure accurate and early warning data.

Acknowledgement

We would like to give special thanks to our stakeholder respondents: Dr. I Nyoman Kandun, MD, MPH, Dr. Ari Bratasena, Dr. Vason, Dr. Sutoto, M. Kes, Sri Indawati, Apt, M. Kes, Prof. Dr. Amin Soebandrio, Sp. MK, PhD, Dr. Untung Suseno Sutarjo, M. Kes, Dr. Ida Bagus Banjar, Dr. Sardikin Giriputro, Sp.P, MARS, Arie Rukmantara, Dr. Azimal, M. Kes, Drh. Bachtiar Moerad, Dr. Trihono, Dr. I Nengah Sutedja, Dr. I Ketut Subrata, Dr. Ken Wirasandhi, MARS, Dr. I Nyoman Murtiyasa, M. Kes, Dr. Drh. Heru Setijanto and Dr. Memed Zoelkarnain. Kind support was provided by Prof. Dr. Chandra Yoga Aditama, Sp.P, DTPH, MARS and Dr. Ir. Bayu Krisnamurthi, MSc. This stakeholder analysis is a part of Asia Flu Cap project and partially funded by the International Collaboration Grant of DRPM UI.

References

1. Komnas FBPI (2010a) Pengalaman Penanganan Flu Burung dan Pandemi Influenza 2006-2009. 2010 National Coordination Meeting, Jakarta.
2. Komnas FBPI (2009) Pengalaman Pengendalian Flu Burung, Jakarta.
3. Kandun N (2009) Preparing Indonesia for H1N1 Pandemic, Jakarta.
4. Komnas FBPI (2010b) Building A Plane While Flying it, Jakarta.
5. Suwandono Agus (2010) Constraints and Challenges of Health Systems in Addressing Infectious Diseases in Indonesia: A Case of H5N1 Outbreak. Conference on Strengthening Health and Non-Health Response Systems in Asia: A Sustained Approach to Global Infectious Disease Crises, 18 – 19 March 2010, RSIS Centre for Non-traditional Security Studies, Nanyang Technological University, Singapore.
6. Aditama Tjandra Yoga (2010a) Ways Forward and Policy Recommendation: H1N1 Pandemic. Conference on Strengthening Health and Non-Health Response Systems in Asia: A Sustained Approach to Global Infectious Disease Crises, 18 – 19 March 2010, RSIS Centre for Non-traditional Security Studies, Nanyang Technological University, Singapore.
7. Dyane S (2008) UNICEF IEC Programs for AI and Pandemic Influenza. Coordination and Consultation Meeting of AI Control Program. Indonesia National Commission of AI Control and Pandemic Influenza Preparedness. Jakarta.
8. Komnas FBPI (2008) Program and Achievement of "KOMNAS FBPI" 2008. Coordination and Consultation Meeting of AI Control Program. Indonesia National Commission of AI Control and Pandemic Influenza Preparedness, Jakarta.
9. Santoso S, Suwandono A (2006) The Avian Influenza Experience in Indonesia: A Case Study. Wilton Park Conference, in Pandemic Preparedness of Influenza/ AI, Winston House, East Sussex, London.
10. Santoso H (2010) H1N1 Situation in Indonesia. Report to the DG of CDC and EH, MOH Indonesia. Indonesia Ministry of Health, Jakarta.
11. Dwi Sampurno O (2010) Pengembangan Surveilans Virologi Influenza di Indonesia Kerja sama Badan Litbangkes, Ditjen P2PL & CDC Atlanta. Avian Influenza Pandemic Expert Meeting, Bandung.
12. KKP (Kantor Kesehatan Pelabuhan) Denpasar (2010) Kesiapan dan Strategi KKP Denpasar Dalam Menghadapi Pandemi H1N1.
13. Husain FW (2010) Improving the Readiness of Indonesia Medical Services for Influenza Pandemic. Preparing Indonesia for Influenza Pandemic Seminar, EU Commission, WHO and MOH Indonesia, Jakarta.
14. Aditama Tjandra Yoga (2010) Strengthening the Indonesia Surveillance System to Response to Emerging Infectious Disease. Preparing Indonesia for Influenza Pandemic Seminar, EU Commission, WHO and MOH Indonesia, Jakarta.
15. Aditama Tjandra Yoga (2010) Situasi Terkini Influenza Baru H1N1 di Indonesia. 2010 National Coordination Meeting, Jakarta.
16. Pinyowiwat V (2010) Current Global Update on Avian Influenza (H5N1) and Pandemic Influenza (H1N1). Avian Influenza Pandemic Expert Meeting, Bandung.
17. UNICEF & CANADA (2009) AI Project. Indonesia Ministry of Health, Jakarta.
18. Purwadianto A (2010) Stock Taking of Avian and Human Influenza Researches in Indonesia and Future Demands. Preparing Indonesia for Influenza Pandemic Seminar, EU Commission, WHO and MOH Indonesia, Jakarta.