MINISTRY OF
HEALTH
REPUBLIC OF
INDONESIA

Containment of an Influenza Pandemic Epicenter: Indonesia's Full-Scale Simulation Exercise "BALI SIMULATION"

Background

The world is under threat from a likely influenza pandemic in the future, and many countries, including Indonesia, have developed influenza pandemic preparedness plans to mitigate the pandemic's impact. In addition, mathematical modeling experts have shown that it may be possible to contain the impending pandemic at its source – when the first cluster of human-to-human transmission caused by a new human influenza virus appears. This first cluster of cases is termed an 'epicenter'.

In preparation, Indonesia had embarked on a project to develop and test an operational plan to respond to a pandemic epicenter, with the objective of stopping (containing) the spread of the virus. From July 2007, a series of meetings to develop documents, hold tabletop exercises, and finally conduct a full-scale simulation exercise (the first of its kind in the world).

Indonesia plan's includes a set of Epicenter Containment Guidelines, Protocols, and Standard Operating Procedures (hereby referred to as the Protocols). These encompass all the required technical and operational elements in epicenter containment, and involve all relevant governmental sectors at different organizational levels, NGOs and the community. The Protocols encompasses nine technical areas:

- command and coordination,
- risk communication,
- logistics,
- surveillance,
- medical response,
- pharmaceutical intervention,
- non-pharmaceutical intervention,
- perimeter control,
- port control.

Several tabletop exercises were held to test and to continually improve on various areas of the Protocol. This culminated in a full-scale simulation exercise in April 2008 in Bali province, known as the "Bali Simulation".

Aim and Objectives

The aim of the Bali Simulation was to develop Indonesia's ability to contain an epicenter of pandemic influenza.

The objective was to test, and later revise the Protocols to promptly and effectively contain the epicenter, and to build national and local operational capacity and capabilities. These would then be developed into training programs and promulgated to all stakeholders.

Activities

The full scale field simulation exercise was carried out in Jembrana District, Bali Province from 25-27 April 2008. The simulation involved multiple ministries and agencies across the central, provincial and district levels of government, and a total of 933 participants, 176 national observers, 14 international observers, and over 70 journalists. Approximately 156 media outlets reported on the simulation through websites, print media, radio and television.

The simulation activities over the 3 days covered a scenario that spanned two months, and included rapid response to an influenza cluster, escalation of containment activities, and finally the successful containment of the epicenter.

The sites for the simulation were all in Bali Province:

1. Dangin Tukadaya Village in Jembrana District
2. Primary healthcare center and local hospital (Negara Sub-District)
3. Jembrana District local government offices
4. Avian Influenza Referral Hospitals (Tabanan and Sanglah Hospitals)
5. Ngurah Rai International Airport
6. Tabanan district, Bali provincial, and national government offices were also simulated

Multiple teams of players were required to respond to the "outbreak" during the simulation scenario, with the activities coordinated by the Simulation Command Center. Several teams ensured the smooth conduct of the exercise and to provide invaluable feedback, i.e:

- Simulation Control teams,
- Evaluation teams,
- Commentator teams,
- Observer teams

Lessons Learnt

The Bali Simulation highlighted Indonesia's intersectoral capability and capacity to mount an epicenter containment operation. Participants applied the Protocols and developed innovative solutions to problems that arose during the simulation. There was universal agreement from all international observers that the exercise was extremely well planned and conducted, and that it will have a significant contribution to local preparedness planning, as well as planning efforts at regional and global levels.

Implementing epicenter containment is a cross-cutting, intersectoral activity that necessitates clear technical guidance, clear chains of command, and clear roles and responsibilities. In general, the Bali Simulation highlighted the need to have protocols that are practical and adaptable to unfolding situations, and that can succinctly communicate the advised courses of action.

Specific lessons learnt for each of the nine areas in the protocol are shown below.

Protocol Area	Lessons Learnt
1. Command and Control	• Further detailing on the different levels of the command structure, and integration into existing disaster-response mechanisms.

2. Surveillance	• Develop specific criteria for when to escalate containment activities. • Review infection control needs of surveillance officers
3. Medical Response	• Consider establishing a field hospital within the containment zone and the criteria for when such a measure is feasible. • Provide feedback to healthcare centers about suspected cases for appropriate infection control measures to be instigated
4. Risk Communication	• Use multiple modalities to communicate messages to the public (loud speaker, flyers). • Develop messages that are both clear and acceptable
5. Antivirals	• Provision of antiviral supplies to households at the beginning of containment is more feasible than daily directly observed therapy
6. Logistics	• A rapid needs assessment should be conducted by the trained Rapid Response Team. • Resource/fund management should be included in the protocol
7. Non-Pharmaceutical Interventions	• Specific protocols are required for relatives of quarantined individuals who reside outside containment zones (eg children at boarding schools) • Measures should enhance compliance of children with quarantine
8. Perimeter Control	• Consider the needs and ratio of personnel required to enforce zone
9. Port Control	• Details for infection control and triage procedures are important

The Government of Indonesia is then revising the Protocols to incorporate the lessons learnt from the Bali Simulation. The next steps include the development of a training manual and program to inculcate the practices across the country.

For further information :

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