

# Indonesia



- **Capital:** Jakarta
- **Area:** 1,904,569 sq km
- **Population:** 248,216,193 (July 2012 est.)
- **Age Structure:** 0-14 years: 27.3% (male 34,165,213/female 32,978,841); 15-64 years: 66.5% (male 82,104,636/female 81,263,055); 65 years and over: 6.1% (male 6,654,695/female 8,446,603) (2011 est.)
- **Life Expectancy at Birth:** Total population: 71.62 years; male: 69.07 years; female: 74.29 years (2012 est.)
- **Infant Mortality Rate:** Total: 26.99 deaths/1,000 live births; male: 31.54 deaths/1,000 live births; female: 22.21 deaths/1,000 live births (2012 est.)
- **Literacy Rate:** Total population: 90.4%; male: 94%; female: 86.8% (2004 est.)
- **GDP:** \$1.121 trillion (2011 est.)
- **GDP per Capita:** \$4,700 (2011 est.)

## Highlights

- The East Jakarta Project that provides a model for harmonization of virologic and epidemiologic surveillance and intensification of influenza surveillance in one district in Indonesia was set up and started.
- Influenza surveillance systems conducted by various technical units at the Ministry of Health were more closely harmonized.
- Influenza-like illness (ILI) and severe acute respiratory infection (SARI) virological surveillance expanded to 24 ILI sentinel sites and 10 SARI sentinel sites.
- The national early warning alert and response system in two provinces was strengthened through trainings and monitoring missions.
- Technical support was provided to help establish a laboratory logistics management system that should increase laboratory efficiency.
- Lessons learned from the 2009 influenza pandemic were compiled.

## U.S. CDC Direct Country Support

There are two cooperative agreements between the Indonesian Ministry of Health (MOH) and the U.S. Centers for Disease Control and Prevention (CDC). The agreement *Developing Influenza Surveillance Networks with the National Institute of Health Research and Development* (NIHRD) began in September 2004 and is in its second year of a sustainability cooperative agreement. The cooperative agreement with the Directorate General of Disease Control and Environmental Health (DG DC-EH) began in September 2006 and is in its final year. Partners for all activities under the two agreements include the World Health Organization (WHO) and the U.S. Agency for International Development (USAID).

Through the two cooperative agreements, technical support is provided by CDC staff to enhance surveillance capacity, laboratory support function, pandemic preparedness and National Influenza Center (NIC) activities. For surveillance, a number of routine systems were supported through the four CDC technical staff in-country. The supported systems included the sentinel influenza-like illness (ILI) and severe acute respiratory infections (SARI) surveillance systems administered by NIHRD, as well as the Early Warning Alert and Response System (EWARS) that is administered by the Subdirector of Surveillance and Outbreak Response in the DG DC-EH. With regard to the East Jakarta Project, to initiate surveillance CDC staff provided technical assistance for protocol development and establishment of standard operating procedures (SOP) for the project, including establishing laboratory support and diagnostic testing capacity.

## **Surveillance**

For ILI surveillance, the systems continued to operate in 24 health care centers in 24 provinces over the last year. SARI surveillance also continued in 10 hospitals throughout the country. The systems provided important information about the virus subtypes circulating in different parts of the country.

The East Jakarta Project commenced in August 2011 and rapidly provided information about the epidemiology, clinical presentation and virus subtypes circulating in an urban area in one province in Indonesia.

EWARS is the national surveillance system for 22 epidemic-prone diseases. As part of strengthening this routine system, upgrades were implemented to the data collection, collation and reporting tools in two provinces (West Nusa Tenggara and Yogyakarta) in the last year. The improved system is now implemented in 10 provinces, and there are plans to further evaluate performance and present the upgrades to another 13 provinces in the next two years.

### **Surveillance Activities**

#### **ILI/SARI Surveillance**

- The systems tested 3,378 specimens in 2010 and 3,754 specimens in 2011. Through the ILI surveillance, two cases of human influenza A (H5N1) infection were identified. One was in the East Java province and the other was in the Jakarta province. Both cases recovered.
- Analysis at NIHRD found that influenza B and influenza A(H1N1)pdm09 were the dominant viruses circulating in the latter part of 2010, and there was increased circulation of influenza A(H3) in 2011. This was aligned with findings from other South-East Asian countries.

#### **East Jakarta Project**

- In 2010 and 2011, a number of coordination meetings were held to prepare for the start of the surveillance activity. Protocols for data collection, reporting, specimen handling and laboratory testing were developed. Surveillance focal points in each health care center and hospital were selected and training was provided to all those involved in the project.

#### **EWARS**

- CDC staff worked with the MOH, provincial and district health staff to implement the changes, streamline activities and provide training to both surveillance officers and health care workers at the local level in two provinces.
- A number of advocacy meetings, training sessions and monitoring missions were held during the year to ensure that the changes were appropriately implemented and problems were addressed.

## **Laboratory**

Two key surveillance activities received laboratory support during FY 2011: ILI/SARI surveillance through NIHRD and the East Jakarta Project.

For ILI/SARI surveillance, a key activity conducted was the establishment of a logistics management system. This system was necessary as there was no formal inventory, training or support for field staff involved in the surveillance. The lack of a logistics management system also burdened the technical staff at NIHRD with logistics trouble-shooting.

For the East Jakarta Project, two laboratories were empowered to conduct the diagnostic testing for specimens arising from case detection. CDC-Indonesia conducted laboratory assessments in the Jakarta Provincial Laboratory and the infectious disease hospital (RSPI Sulianti Saroso) in April 2011. Equipment was provided to set up the laboratories for PCR testing and training was provided to staff to reinforce the diagnostic protocol and biosafety requirements.

## **Laboratory Activities**

### **ILI/SARI Surveillance**

- An annual meeting was held with all sentinel data collection/reporting sites and laboratories.
- All laboratories in the ILI network participated in quality control (proficiency testing).
- Virological findings were submitted to FluNet.
- Logistics training material and master trainers were prepared for the roll out of the SOPs.
- Training rolled out to five ILI laboratories and 20 ILI data collection sites.
- Quarterly field monitoring missions were held jointly by NIHRD, U.S. Agency for International Development's (USAID) DELIVER Project and CDC.

### **East Jakarta Project**

- The assessments conducted in April 2011 reviewed the laboratory layout to ensure adherence with good laboratory practice and safety for molecular work, suitability of equipment for PCR testing, and capacity and knowledge of laboratory technicians in conducting PCR testing.
- After the assessments, equipment including a PCR machine was provided to the provincial laboratory. This procurement was rapidly followed in May 2011 by training and monitoring of laboratory performance, and demonstration and training in use of real-time PCR and production of viral transport media.
- By the end of FY 2010, assistance was continually provided by CDC staff to both laboratories in PCR testing for ILI and SARI specimens, production of viral transport media, refresher trainings on laboratory SOPs and quarterly evaluation on laboratory practice.

## **Preparedness**

Pandemic planning activities continued during FY 2010 through support of the cooperative agreement to DG DC-EH. A key activity was a meeting to gather lessons learned from pandemic planning exercises and research conducted in Indonesia. The meeting was held in Batam in 2011.

### **Preparedness Activities**

- Preparations for the Batam meeting were conducted in the early half of the fiscal year. Participants included universities, provincial health offices, international partners such as WHO, and researchers.
- The meeting was held September 26–28, 2011. The meeting involved discussions about influenza pandemic planning strategies and responses, enhancing influenza surveillance, improving laboratory capacity on influenza testing, animal-human interface for influenza, reviewing influenza vaccination programs and non-pharmaceutical interventions during an influenza pandemic.
- Lessons learned were used to revise the national health influenza pandemic preparedness plan.

## Training

Reflecting the key areas of CDC collaborative work in Indonesia, a number of training activities were conducted during FY 2010 to support ILI/SARI surveillance, EWARS and the East Jakarta Project. Trainings involved both technical and operational aspects such as:

- Laboratory techniques (for East Jakarta Project).
- Logistics management (ILI/SARI surveillance and East Jakarta Project).
- Surveillance processes including application of case definition for notifiable diseases, data collection, data collation and reporting (EWARS in Yogyakarta and West Nusa Tenggara). Trainings for enhancing EWARS involved training district and provincial surveillance staff in analyzing surveillance data to generate system alerts, investigation and verification, and response to disease outbreaks. Importantly, surveillance staff were also trained in generating feedback about surveillance findings to system stakeholders.
- Integrated (human and animal) influenza A (H5N1) outbreak investigations. Training was imparted by the Food and Agriculture Organization (FAO) and CDC to the Indonesian Ministry of Health and Ministry of Agriculture.



*A sign for Avian Influenza at a sentinel site.*

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