

# Central America and Panama (CDC-CAP)

## Highlights

- Estimated the incidence and disease burden for influenza-like illness (ILI) and severe acute respiratory infection (SARI) for El Salvador and Costa Rica.
- Estimated the prevalence, associated risk factors, and health care utilization practices for ILI and SARI in Panama and Honduras.
- Estimated the excess of SARI cases during Influenza A(H1N1)pdm09 and characterized the clinical and demographic profile of all deaths reported in Central America.
- Described the circulation of respiratory viruses and the influenza seasonality by countries in Central America.
- Based on the results of studies of surveillance, the Ministry of Health (MOH) of El Salvador increased use of influenza vaccine in 2011.
- Provided regular and updated information on the influenza situation in Central America Region.

## U.S. CDC Direct Country Support

Influenza program activities of the U.S. Centers for Disease Control and Prevention's (CDC) Regional Office for Central America provide support to eight countries: Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama and the Dominican Republic. The main focus of the program included the maintaining and increasing the capability of influenza surveillance and laboratory systems to detect and respond to influenza within the framework of preparedness and response activities and the generation of public health evidence through the analysis of monitoring data, field investigations and assessments of effectiveness of preventive interventions (influenza vaccine).

Activities and funds of the influenza program for Central America were implemented through three CDC cooperative agreements:

- Universidad del Valle de Guatemala (UVG)
  - Strengthening infectious-diseases research capacity for public health in Central America. 2009–2013.
  - Implementing public health program and strengthening public health science in Guatemala and Central America Region. 2008–2013
- The Task Force Global Health, Inc.–Training Epidemiology and Public Health Intervention Network (TEPHINET Program)
  - Development of International Surveillance System. 2008–2012.
- Council of Ministers of Health for Central America and Dominican Republic (COMISCA)
  - Improving Health Surveillance and emergency response in public health under the International Health Regulations 2005 (IHR) for Central America and Dominican Republic. 2010–2015.

## Surveillance

The influenza program supported the implementation of PAHO's *Operational Guidelines for National Intensified Surveillance of Severe Acute Respiratory Infection* in Central America's influenza sentinel surveillance network. Based on the influenza surveillance network experience the integration of routine sentinel surveillance for

various events such as influenza, other viral respiratory infections, pneumonia, meningitis, and rotavirus in El Salvador was developed. In 2010, the program implemented a population-based cohort study at an influenza sentinel unit located in Cartago, Costa Rica and San Marco, Guatemala. The first study assessing the effectiveness of seasonal influenza vaccine in El Salvador was conducted. The study found that the vaccine effectiveness might be higher in children than in adults 60% (95% CI=[-27% to 87%]) among children versus 34% (95% CI=[-21% to 89%]) among adults over 60 years of age.

### **Surveillance Activities**

- Developed the *Guidance for Respiratory Disease Surveillance in Nicaragua, Panama and El Salvador* which integrates the protocol elements needed to integrate surveillance of influenza, pneumococcus and other respiratory viruses.
- Described the circulation of respiratory viruses and the influenza seasonality by countries in Central America: the monthly average positivity rates over 15%, and the influenza circulates with different patterns throughout the region with increase circulation at the middle of the year.
- Estimated rates of severe pneumonia and SARI associated with influenza and determined the influenza attributable risk percentage for pneumonia and influenza (P&I) and respiratory and cardiac (R&C) causes related to influenza circulation in El Salvador and Costa Rica.
- Incorporated mortality surveillance into the general surveillance system through an automated data system at hospitals and other health system units in Guatemala and Costa Rica.

### **Laboratory**

In Central America there are eight national laboratory surveillance networks for influenza. Each of these networks (one per country) has a national reference laboratory capable of diagnosis of influenza based on immunofluorescence, qRT-PCR and virus isolation. In the past year, most countries have promoted the decentralization of indirect immunofluorescence assays (IFA) in order to strengthen their sentinel surveillance strategy. The influenza program has provided reagents and supplies to these laboratories to further support their influenza surveillance in the region and supported the development of web-based platform for automated data management at national laboratories and National Influenza Centers (NIC) in Guatemala, Honduras, Costa Rica and Panama.

### **Laboratory Activities**

- Provided support for the new Information System of Laboratory Surveillance in Guatemala and Honduras with new computer equipment and the design of web-based software.
- Expanded the capacity to diagnose influenza using immunofluorescence in three new sentinel unit laboratories (Guatemala, El Salvador, and Panama). These labs are fully operational and maintained according to standard operating procedures developed by the program.
- Implemented real-time multiplex technology for the diagnosis of influenza and other respiratory viruses at the National Children's Hospital in Costa Rica for research use.

### **Preparedness**

The influenza program supported the process of implementing the IHR (2005) in Central American countries, which drove the preparedness and response to pandemic influenza. The *Inventory of Core Capabilities for Preparedness and Response for Influenza Pandemic in Central America* exercise conducted in many countries provided quantifiable evidence of their progress. During 2010, participating countries scored higher on their overall pandemic preparedness than during 2008 (median=70 vs. 41, IQR 61–91) ( $p<0.0001$ ). The largest reported gains in capacity occurred in communications, outbreak response, resources for containment, health sector, and national surveillance reporting. Also, we provided support for the implementation of Phase I of the Electronic Surveillance Project in Panama, Guatemala and Costa Rica and the development of the Surveillance Web Platform.

## Preparedness Activities

- Implemented basic and intermediate levels of Field Epidemiology Training Program (FETP) capacities in Panama and Belize in collaboration with the Central America FETP Program.
- Supported the development of national risk communication plans and standards in the context of the IHR (2005) in all Central America countries.
- Supported the regional response to the cholera outbreak in the Dominican Republic in collaboration with COMISCA. All National Epidemiology and Laboratory Authorities of Central American MOHs conducted or will conduct a one week site visit to the Dominican Republic to support this initiative.
- Implemented new web based platforms for disease surveillance information systems and supported the implementation of *SAP Business Objects* software for data integration in the Ministries of Health in Panama, Costa Rica and Guatemala.

## Training

In FY 2011, the following trainings were organized in Central America:

- “Regional Workshop in Central America on Risk Communication and Standards Development”. Antigua City, Guatemala, October 2010. The workshop was held in collaboration with PAHO with 55 participants.
- “The Influenza and other Respiratory Viruses’ Laboratory Data Analysis Workshop”, Guatemala City, Guatemala, February 1–3, 2011. The workshop was held in collaboration with PAHO with 15 participants.
- “Crisis Leadership Workshop” led to the commission for support of a healthier El Salvador and Belize. June 2011. Collaboration with School of Public Health of Miami University with 105 participants.
- Thirty-five participants attended the workshop for “Early Aberration Reporting System (EARS) and EpiVigila Tool” in Guatemala and Panama, September 2011.

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*A street vendor in San Marcos, Guatemala.*