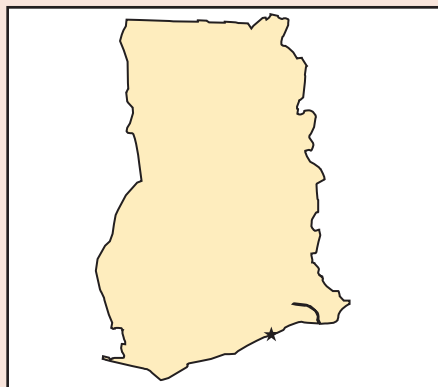


Ghana



- **Capital:** Accra
- **Area:** 238,533 sq km
- **Population:** 25,241,998 (July 2012 est.)
- **Age Structure:** 0-14 years: 36.5% (male 4,568,273/female 4,468,939); 15-64 years: 60% (male 7,435,449/female 7,436,204); 65 years and over: 3.6% (male 399,737/female 482,471) (2011 est.)
- **Life Expectancy at Birth:** Total population: 61.45 years; male: 60.22 years; female: 62.73 years (2012 est.)
- **Infant Mortality Rate:** Total: 47.26 deaths/1,000 live births; male: 50.64 deaths/1,000 live births; female: 43.79 deaths/1,000 live births (2012 est.)
- **Literacy Rate:** Total population: 57.9%; male: 66.4%; female: 49.8% (2000 census)
- **GDP:** \$74.77 billion (2011 est.)
- **GDP per Capita:** \$3,100 (2011 est.)

Highlights

A number of manuscripts presenting influenza data in Ghana have been prepared for publication:

- Influenza Virus Strains among Young Children in Accra, Ghana.
- Building Military Influenza Surveillance Capacity in West Africa.
- Troop Education and Avian Influenza Surveillance in Military Barracks in Ghana.

U.S. CDC Direct Country Support

Influenza surveillance in Ghana is carried out through collaboration between the U.S. Centers for Disease Control and Prevention (CDC), the U.S. Naval Medical Research Unit No. 3 (NAMRU-3) based in Egypt, the Ghana Health Service (GHS), and the Noguchi Memorial Institute for Medical Research (NMIMR). This partnership has been in place since 2007. Influenza surveillance in Ghana is conducted through sentinel sites located in all regions of the country. In addition, Ghana serves as a platform to assist regional neighbors in developing influenza surveillance systems. Countries benefiting from this partnership are Togo, Burkina-Faso, Mali, Angola, Mauritania and Sierra Leone.

Surveillance

Seasonal influenza surveillance began at sentinel sites in Ghana in September 2007. Between October 1, 2010, and September 30, 2011, NMIMR, the country's National Influenza Center (NIC), processed more than 2,000 influenza specimens and cultured 189 isolates. Samples were collected from a total of 24 sentinel sites (civilian and military) located nationwide in all 10 regions of Ghana.

In addition to the human samples, the country's NIC also processed over 600 avian samples.

Surveillance Activities

- Sentinel surveillance sites for ILI were established and expanded in all ten regions in Ghana, including military sites.
- New surveillance staff were trained on sample collection, storage and transportation.
- Refresher trainings were organized at already existing sites in the 10 regions of the country.
- Fourteen demographic surveillance sites were identified in the Dangme-West District of Ghana toward the implementation of a population-based surveillance study.
- Identified surveillance staff from these 14 sites were trained on human ethics
- Avian influenza surveillance was conducted within military barracks in Ghana.
- Monitoring was conducted for circulating influenza strains.

Laboratory

The NIC, which is located at NMIMR at the University of Ghana campus, Legon, has been continuously provided with influenza reagents through the Influenza Reagent Resource (IRR) established by CDC. This provision enabled the NIC to process 2,115 human specimens and 680 avian specimens during FY 2011.

Laboratory Activities

- Ensured availability of sample collection kits at all sentinel sites and also coordinated transportation of specimens from all sites within 48 hours.
- Worked closely with NAMRU-3 and the WHO Collaborating Center in London to maintain high quality-control standards as well as influenza genotyping technology transfer.
- Submitted weekly and timely reports to the World Health Organization (WHO) African Regional Office (AFRO) and to FluNet.
- Enabled staff to participate in international meetings and training workshops where they shared their work with other colleagues on the continent and worldwide.



Sampling from domestic poultry for influenza viruses, Ghana.

Preparedness

With the occurrence of influenza A (H1N1)pdm09 flu in April 2009, GHS, in collaboration with key influenza partners including NMIMR, CDC, NAMRU-3, U.S. Agency for International Development (USAID), WHO, United Nations Children's Fund (UNICEF), Red Cross, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the National Disaster Management Organization (NADMO), took specific measures to mitigate the health, social and economic impacts of the pandemic in the country.

Preparedness Activities

- Conducted an annual review meeting at NMIMR to deliberate on surveillance issues within the year and come up with innovative ideas to improve surveillance activities.
- Continued surveillance and management of cases by regional and district teams.
- Collected and transported specimens from sentinel sites to NIC.

Training

Training activities in FY 2011:

- A member of the NIC attended a training on shipment of biological substances in November 2010, in Dar es Salaam, Tanzania.
- The Second Annual African Network for Influenza Surveillance and Epidemiology (ANISE) Meeting organized by CDC was hosted by GHS, NAMRU-3, and NMIMR in Accra, Ghana, January 2011.
- Two laboratory staff (one from the NIC and the other from NAMRU-3 in Ghana) attended a training course on influenza laboratory management in Johannesburg, South Africa in March 2011.
- The second annual “Military-to-Military Influenza Surveillance Review and Training Workshop” was held by NAMRU-3 and the NIC in May 2011 at Accra. Participants were from Ghana and Togo.
- A regional influenza training workshop for West African countries was hosted by NMIMR in June 2011 in Accra.
- NMIMR organized a influenza data writing workshop in June 2011 at Prampram, Ghana.
- The NIC successfully provided technical assistance to the National Influenza Laboratory Bobo Dioulasso in Burkina Faso to troubleshoot RT-PCR for influenza working protocols in July 2011.
- Three staff from GHS and NMIMR attended an international course in applied epidemiology at the Rollins School of Public Health, Emory University in Atlanta, Georgia in September and October 2011 with support from NAMRU-3 and CDC.

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