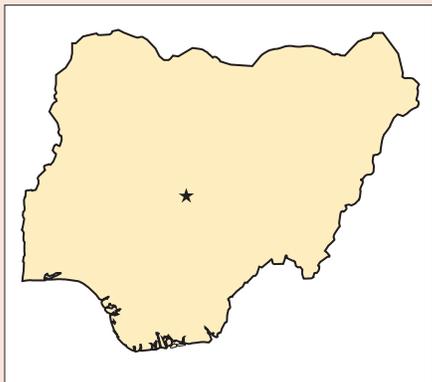


# Nigeria



- **Capital:** Abuja
- **Area:** 923,768 sq km
- **Population:** 170,123,740 (July 2012 est.)
- **Age Structure:** 0-14 years: 40.9% (male 32,476,681/female 31,064,539); 15-64 years: 55.9% (male 44,296,228/female 42,534,542); 65 years and over: 3.1% (male 2,341,228/female 2,502,355) (2011 est.)
- **Life Expectancy at Birth:** Total population: 52.05 years; male: 48.95 years; female: 55.33 years (2012 est.)
- **Infant Mortality Rate:** Total: 74.36 deaths/1,000 live births; male: 79.44 deaths/1,000 live births; female: 68.97 deaths/1,000 live births (2012 est.)
- **Literacy Rate:** Total population: 68%; male: 75.7% female: 60.6% (2003 est.)
- **GDP:** \$414.5 billion (2011 est.)
- **GDP per Capita:** \$2,600 (2011 est.)

## Highlights

- The joint U.S. Centers for Disease Control and Prevention (CDC) and Nigeria Federal Ministry of Health avian and pandemic influenza project was relocated to the National Epidemiology Division [now under the Nigeria Center for Disease Control] for better integration, coordination and sustainability.
- In a bid for the National Influenza Reference Laboratory (NIRL) to qualify for National Influenza Center (NIC) designation, a building has been renovated and necessary equipment is being put in place for viral culture activities.
- NIRL laboratory personnel has been trained on virus culture and immunofluorescence antibody testing.
- The National Influenza Sentinel Surveillance System (NISS) team has been trained on the new influenza sentinel surveillance protocol.

## U.S. CDC Direct Country Support

The Nigerian Federal Ministry of Health (FMOH) has been collaborating with CDC on influenza control since 2006. The collaboration is through the cooperative agreement *Surveillance and Response to Avian and Pandemic Influenza Project*. The support has enabled Nigeria to establish a system for early detection and effective response to avian and pandemic influenza. Fiscal Year 2011 is the fifth year of the grant and incidentally marks the end of the initial phase of the project.

In 2007 and 2008, NIRL and NISS were established. In addition, guides to avian influenza pandemic preparedness and response were also developed by FMOH.

## Surveillance

Prior to the beginning of the CDC-FMOH cooperative agreement in 2006, there was no known surveillance system to monitor influenza epidemiology in Nigeria. In 2008, the NISS was established. Currently there are four sentinel sites, located in four tertiary health institutions in four of the six geopolitical zones of the country. Each of these sites has an influenza-like illness (ILI) component in the outpatient clinic and a severe acute respiratory infection (SARI) component in the inpatient unit. The surveillance system also captures suspected cases of avian influenza and other pandemic influenza viruses, including influenza A(H1N1)pdm09. From the limited data available so far, Nigeria's peak influenza activity appears to be concurrent with the dry harmattan season, which occurs between November and March.

### Surveillance Activities

- The NISS, as part of its ongoing effort to provide the needed epidemiological and laboratory experience to higher education students, trained six public health students under the Nigeria Field Epidemiology and Laboratory Training Program (NFELTP) and two bio-medical sciences students.
- The FMOH, with assistance from CDC staff, carried out quarterly monitoring and supervision of the four sentinel sites.
- Key influenza surveillance information is published in the Weekly Epidemiological Report of the FMOH (the report includes the laboratory results of samples submitted from sites).
- Two staff members attended the Second Annual African Network for Influenza Surveillance and Epidemiology (ANISE) Meeting in Accra, Ghana in January 2011.
- All NISS officers were reviewed in March 2011.
- During June 2011, three staff members attended a regional training workshop that discussed building capacity for influenza sentinel surveillance sites in West Africa at NIC in Accra, Ghana.
- A new protocol for national influenza sentinel surveillance was developed in collaboration with the World Health Organization (WHO) in December 2011.



*The National Influenza Sentinel Surveillance Team at Nigeria's Influenza Annual Review Meeting.*

## Laboratory

In 2007, the FMOH, with the financial and technical support of CDC, established NIRL situated in Abuja, the nation's capital. It is currently the only functional laboratory with real-time RT-PCR diagnostic capacity for influenza in the country. Seven additional FMOH laboratories with RT-PCR diagnostic capacity, located in the six geopolitical zones of Nigeria, are currently being upgraded to support influenza and other viral disease diagnosis. In addition, NIRL has commenced establishing a laboratory with cell culture diagnostic capacity, with the longer goal of attaining NIC status.

## Laboratory Activities

- Tested 2,397 samples from four influenza sentinel sites.
- Participated in the WHO African Region laboratory network and FluNet by sending weekly virology reports; weekly epidemiology reports are sent via FluID.
- Submitted 60 oro- and naso-pharyngeal specimens that are unsubtypable, influenza positive or negative to the WHO Collaborating Center in Atlanta.
- Submitted influenza A(H1N1)pdm09 positive specimens to the National Institute for Communicable Diseases (NICD) in Johannesburg, South Africa.
- Participated twice in the WHO External Quality Assessment Project (EQAP) and received an excellent score (100%) for each proficiency test. In addition, the laboratory scored very high (90%) for a CDC FluPEP.
- Conducted a fire inspection and fire drill in collaboration with the Federal Fire Service for the laboratory.

## Preparedness

In 2006, Nigeria initiated the development of its avian and pandemic influenza preparedness plan following the emergence of the global threat of influenza A (H5N1). In 2010, a tabletop exercise was conducted to test the revised version of the national avian and pandemic influenza preparedness and response plan. In 2011, the staff of NIRL participated in a pandemic mock exercise organized by the Federal Airport Authority at the Nigeria Civil Aviation Authority (NCAA), Nnamdi Azikiwe International Airport in Abuja.

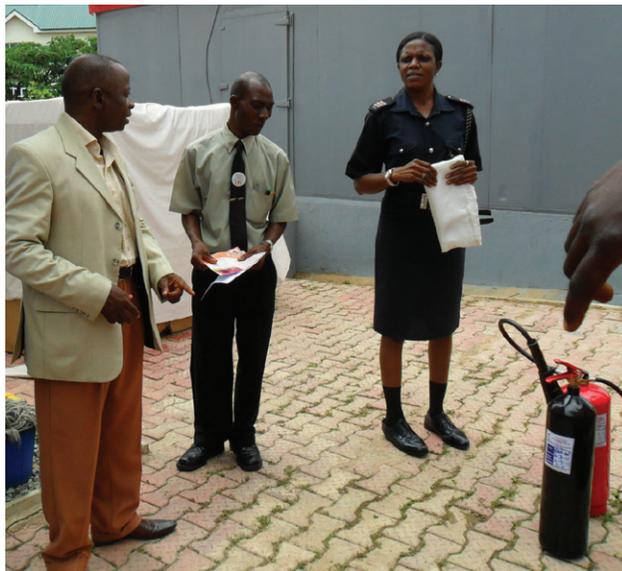
## Preparedness Activities

- Prepositioned antiviral medications at NISS sites for management of cases.

## Training

The FMOH hosted the following training activities in 2011:

- One staff member completed the first year of NFELTP, a two-year program.
- Influenza sentinel surveillance refresher training was offered to officers from all influenza sentinel sites.
- Continuing education courses were organized weekly in the laboratory and offered to staff members. Topics included influenza surveillance issues and laboratory quality management systems.
- In March 2011, two managers attended a week-long workshop on laboratory management for influenza in Johannesburg, South Africa.
- Three NIRL staff members were trained on biological safety cabinet principles in April 2011 by the Institute of Human Virology in Nigeria.



Staff at the National Influenza Reference Laboratory in Nigeria participating in a fire drill exercise.

- One staff member attended the influenza writing workshop sponsored by CDC-Kenya in April 2011.
- One staff member attended the training course “Strengthening Laboratory Biosafety and Biosecurity” in June 2011, which was organized by the African Centre for Integrated Laboratory Training.

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