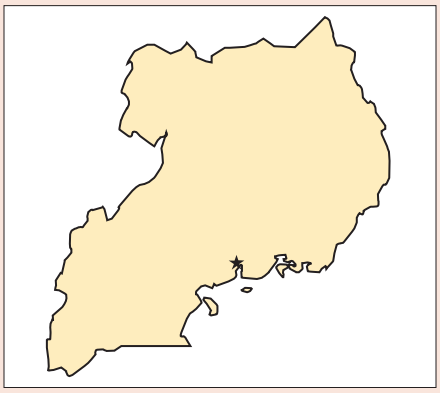
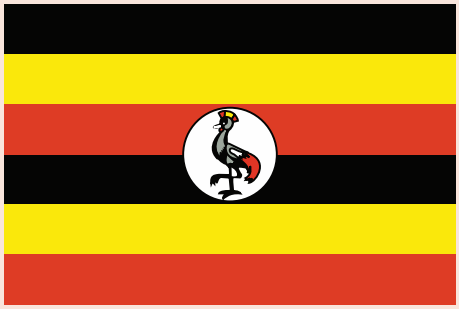
Uganda





- **Capital:** Kampala
- **Area:** 241,038 sq km
- **Population:** 35,873,253 (July 2012 est.)
- **Age Structure:** 0-14 years: 49.9% (male 8,692,239/female 8,564,571); 15-64 years: 48.1% (male 8,383,548/female 8,255,473); 65 years and over: 2.1% (male 291,602/female 424,817) (2011 est.)
- **Life Expectancy at Birth:** Total population: 53.45 years; male: 52.4 years; female: 54.54 years (2012 est.)
- **Infant Mortality Rate:** Total: 61.22 deaths/1,000 live births; male: 64.78 deaths/1,000 live births; female: 57.56 deaths/1,000 live births (2012 est.)
- **Literacy Rate:** Total population: 66.8%; male: 76.8%; female: 57.7% (2002 census)
- **GDP:** $45.9 billion (2011 est.)
- **GDP per Capita:** $1,300 (2011 est.)

Highlights

- Design and environment impact assessments have been completed and all other required permits and authorizations for building have been obtained for extensions to the influenza laboratories.
- The National Influenza Center (NIC) received a QIAcube machine to support RNA extractions for PCR diagnostic activities.
- Data collection continued for burden of diseases studies.
- Severe acute respiratory infection (SARI) surveillance in regional referral hospitals continued.

U.S. CDC Direct Country Support

U.S. Centers for Disease Control and Prevention (CDC) support of the Influenza Surveillance Program in Uganda was initiated in 2007 when *Strengthening of National Capacity for Surveillance and Containment of Avian and Pandemic Influenza in Uganda* was approved. The purpose of these funds was to help support the national avian flu preparedness plan and to establish a sustainable influenza surveillance network in Uganda. With funds provided by CDC under the influenza cooperative agreement, influenza sentinel surveillance for influenza-like illness (ILI) and severe acute respiratory infection (SARI) were initiated and are now well-established in Uganda. There are nine routine sites and three sites that provide specimens periodically. The national preparedness plan which was developed with support by this funding is also being implemented.

Surveillance

Influenza surveillance was initiated in Uganda in the 1960s. However, at the time of the cooperative agreement, no influenza surveillance activities were being undertaken. Sentinel sites were started in different parts of the country beginning in 2007. By the end of 2010, monitoring of influenza activity was

carried out routinely in nine locations: five outpatient clinics where ILI was assessed, and four hospitals where both ILI and SARI were being assessed. There were also three other sites providing specimens periodically. In 2011 more emphasis was shifted to SARI surveillance. Presently there are five sentinel sites collecting samples for SARI alone, and three sites collecting ILI samples alone. Only one site (Entebbe) collects both SARI and ILI samples. The NIC works with the Makerere University Walter Reed Project (MUWRP), which has four hospital-based sentinel sites.

Surveillance Activities

- Training on SARI surveillance was carried out in six hospitals (Mbarara Regional Referral Hospital, Tororo Regional Referral Hospital, Arua Regional Referral Hospital, Fort Portal Regional Referral, Arua Regional Referral Hospital and Koboko District Hospital).
- A revision of the case investigation forms and follow-up forms was made and these were introduced to the different sentinel sites through review meetings.
- Data collection for burden of disease information is now routinely collected. Forms for data collection were introduced and analysis is ongoing.

Laboratory

The NIC is the only laboratory carrying out human influenza diagnostic testing in the country. The MUWRP and the CDC-funded influenza program work together in the NIC laboratory.

Laboratory Activities

- The laboratory carries out RT-PCR testing to confirm diagnosis and typing, and also carries out virus culture and HAI for subtyping.
- A subset of the influenza isolates are sent to CDC for further testing and characterization. Data on resistance to adamantines is provided for the isolates and then sent to CDC.
- The laboratory participated in the World Health Organization (WHO) External Quality Assessment Project (EQAP) panels and received a 100% score for all panels.
- The laboratory also participated in the influenza Performance Evaluation Pilot RT-PCR panel.
- The laboratory is a key training facility for the Institute and the country on PCR diagnostic techniques.

Preparedness

The national preparedness plan for Uganda was finalized in 2007. Activities to implement the plan were delayed because of funding. In 2010, the World Bank provided a $10 million loan to facilitate its execution. Many related activities have been undertaken by the government of Uganda. At the Institute, we expect some of the funds to be used for extension of the laboratories and to also build a Biosafety Level 3 facility.

Preparedness Activities

- Improving laboratory capacity at the NIC.
- Training district personnel on identifying influenza patients and rapid response in case of outbreaks.
- Building isolation centers at Mulago National Referral Hospital and Entebbe Hospital.
- Building mechanisms for public awareness.
- Production of a communication strategy and production of information, education and

communication materials.

- Expanding and strengthening surveillance and reporting in the districts.
- Regularly investigating SARI upsurges with laboratory support.

Training

Uganda's NIC did not host any training for influenza activities, but the Uganda Virus Research Institute (UVRI) sent personnel to participate in training in Kenya and South Africa. Our data officer was trained and there has been a lot of improvement in our data output.

Contact

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Dr. Julius and Dr. Barnabas award a certificate to the second place winner from Entebbe Hospital. Performance awards were provided to the best performing sites.