

Uganda



Capital: *Kampala*
Infant Mortality Rate: *62.47/1,000 live births*
Population: *34,758,809 (July 2013 est.)*



Overview

Influenza surveillance activities in Uganda began in the 1960's, but work stopped in the late 1990's due to lack of funding. Financial and technical assistance to the Ministry of Health (MOH) through the Uganda Virus Research Institute (UVRI) was initiated in 2006 to help support the national avian flu preparedness plan and to establish a sustainable influenza surveillance network. The program established a sentinel-site surveillance system in four geographically distinct regions among clinic and hospital outpatients. The sentinel-site system includes: 10 sentinel sites (four outpatient clinics where influenza-like illness (ILI) is assessed and five hospitals where severe acute respiratory infection (SARI) is assessed and one hospital where both ILI and SARI are assessed). All sentinel clinics and hospitals are public facilities. In 2006, UVRI was recognized as a National Influenza Center (NIC) by the World Health Organization (WHO), and began collecting national surveillance for influenza. Standardized data collection instruments and case definitions are consistent with global standards. Data for burden of disease estimates is now routinely collected.

Highlights

- Awarded Vaccine Policy Cooperative Agreement.
- Commenced the expansion of the influenza laboratories and work is on course to be completed in December.
- Trained NIC staff, sentinel site staff and health workers on Seasonal Influenza Vaccination in March 2013.
- Initiated SARI surveillance activity in three hospitals in the capital city, Kampala.

Surveillance

In our sentinel system, surveillance for SARI is now the priority. Presently Arua Regional Referral Hospital, Mbarara Regional Referral Hospital, Tororo District Referral Hospital, and Fort Portal Regional Referral Hospital, all do SARI Surveillance alone. Kawaala Health Centre IV, Kitebi and Kisenyi Health Center III do ILI surveillance alone. Entebbe General Hospital does both ILI and SARI Surveillance for comparison of data. The capacity for a better routine influenza surveillance system in Uganda that collects, analyzes, and reports quality SARI and/or ILI virological and epidemiologic data on both children and adults is continually being enhanced. We standardized protocols for SARI and ILI surveillance. Training on use of these new forms was carried out in each sentinel site and use of these forms is now implemented at each sentinel site. We have continued to monitor the use of the new forms to ensure their completeness and timely reporting.

Surveillance Activities

- Collected samples more regularly and posted data to the MOH Weekly Epidemiology Newsletter, FluNet and WHO AFRO's system weekly.
- Upgraded the epidemiology and virology database.
- Reviewed and upgraded the surveillance system based on recommendations so that the system can be sustained by the MOH and Ugandan government.
- Continued SARI surveillance in regional referral hospitals.
- Continued data collection and data analysis for burden of disease studies.

Laboratory

The laboratory received good quality samples from the various ILI and SARI sentinel sites. 2,387 samples were received. Of these 2,347 samples were tested and only 40 were discarded due to failure to meet our testing criteria. 1,432 were ILI samples and 955 were SARI samples. All samples were diagnosed by PCR and were subtyped. A total of 357 samples were positive for influenza. Of the SARI samples, 91 were positive [Influenza A(H3N2) = 64; A(H1N1)2009 = 5; influenza B = 22]. Of the ILI samples, 266 were positive [Influenza A(H3N2) = 151; A(H1N1)2009 = 34; influenza B = 81]. Virus isolation was carried out on the positive samples. The laboratory sent two shipments of positive samples and isolates to the WHO Collaborating Centre (CC) in Atlanta. Training on sample collection was conducted for new sentinel site staff. The laboratory participated in the WHO External Quality Assessment Project (EQAP) 13 and improved the laboratory database.

Laboratory Activities

- Tested all samples from sentinel sites for influenza.
- Maintained and cleaned data in the virological laboratory database.
- Shipped isolates to WHO CC— 114 PCR +ve specimens and 24 virus isolates shipped.
- Participated in the WHO EQAP with 100% positive score for the 13th time.
- Continued to respond to outbreaks in communities. NIC staff responded to two outbreaks in a school and orphanage this year.
- Maintained cold chain in sentinel sites which have limited electricity supply (was achieved by supplying LN2 to the sites on a regular basis).
- Automated nucleic acid extractions; this enables staff to attend to other urgent tasks within the lab.
- Reduced the number of rejected specimens.

Preparedness

The NIC is part of the National Task Force for Pandemic Preparedness in the country. We report our data to the Surveillance and Response Committee of the National Task Force. The committee meets quarterly and the National Task Force meets twice a year.

The National Influenza Center laboratory was assessed by a WHO Regional Team for emergency preparedness.

We were requested by the Minister of Health to prepare a document summarizing seasonal influenza in Uganda, and capacities for diagnosis and information on the different Influenza outbreaks in the world (H5N1, H1N1 pandemic, and H7N9 also including MERS-CoV). The document was to be used as part of support for preparedness activities.

Preparedness Activities

- Presented influenza surveillance data to National Task Force on Pandemic Preparedness.
- Participated in quarterly and semi-annual meetings of the National Task Force.
- Completed an emergency preparedness assessment (National Influenza Center Laboratories, MOH) by a WHO AFRO Regional Team.
- Prepared a document on influenza in Uganda and the different influenza outbreaks in the world for the Minister of Health.
- Responded to two clusters of influenza disease in schools.

Training

- Attended the Data Management and Basic Epidemiologic Analysis for Influenza Training Course in Johannesburg, South Africa, November 2011.
- Attended the 3rd Annual African Network for Influenza Surveillance and Epidemiology (ANISE) Meeting in Nairobi, Kenya, February 2012.

Publications

Balinandi S, Bakamutumaho B, Kayiwa JT, et al. Viral etiology of influenza-like illnesses in Kampala and Entebbe, Uganda, 2008. *Afr J Lab Med*. 2013;2(10): doi:10.4102/ajlm.v2i1.65.

Lutwama JJ, Bakamutumaho B, Kayiwa JT et al. Clinic- and Hospital-based Sentinel Influenza Surveillance, Uganda 2007–2010. *J Infect Dis*. 2012 Dec 15;206 Suppl 1:S87–93. doi: 10.1093/infdis/jis578.

Radin JM, Katz MA, Tempia S et al. Influenza surveillance in 15 countries in Africa, 2006–2010. *J Infect Dis*. 2012 Dec 15;206 Suppl 1:S14–21. doi: 10.1093/infdis/jis606.