



African Network for Influenza Surveillance and Epidemiology (ANISE)

VOLUME 3, ISSUE 1

MARCH, 2013

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The Journal of Infectious Diseases: Influenza in Africa

An 'Influenza in Africa' *Journal of Infectious Diseases* supplement published on December 15, 2012, gives new data on the burden and epidemiology of seasonal flu in Africa and sheds light on the impact of the 2009 H1N1 pandemic, which tested many countries' relatively new preparedness plans, laboratory networks and surveillance systems.

The 27 papers reflect the work of nearly 300 authors from more than 50 institutions, based primarily in 16 African countries. Authors were invited to participate in the supplement in January 2011, at the Second Annual Meeting for the African Network for Influenza Surveillance and Epidemiology (ANISE) in Ghana. The supplement was funded by CDC's Influenza Division as part of the ongoing objective of supporting countries in increasing the reporting and dissemination of influenza data. The data give countries heightened ability to pursue prevention measures such as vaccination.

"These papers reflect the vast amount of work being done by African countries, in collaboration with CDC, the World Health Organization, Institut Pasteur and many other partners to better understand the impact of influenza on the continent," said Dr. Mark Katz, Medical Epidemiologist with CDC, who worked with many of the authors along the way. Katz is the former Influenza Lead for the CDC office in Kenya and is now Advisor for Surveillance and Epidemic-Prone Diseases in CDC's Haiti office.

"The recent large-scale improvements in influenza surveillance and response systems in many African countries made it possible to generate the data described in these articles," said Dr. Marc-Alain Widdowson, Team Lead for the International Epidemiology and Research in CDC's Influenza Division. "The findings from this supplement can be used to inform important policy decisions about seasonal and pandemic influenza prevention and control policies at the national and regional level."

As more data are collected, ministries of health will see with increasing clarity who is most impacted by flu, if a vaccine policy would be beneficial, and when during a calendar year flu vaccine should be administered to prevent as much flu-related illness and death as possible.

Please use the following link to log into HINARI and gain free access to the JID supplement on Influenza in Africa:

http://extranet.who.int/hinari/en/login_warning.php?jid=15491



Country Highlight: Rwanda

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Rwanda is a land-locked developing country with an area of 26,338km², situated in East Africa immediately south of the equator. It has an equatorial climate with moderate temperatures and two rainy seasons, from March through June and from October through December. The 2012 estimated population is ~10.5 million and the population density (416 persons/km²) is among the highest in Sub-Saharan Africa.

Rwanda's influenza surveillance program started in 2006 with funding from the US Centers for Disease Control and Prevention (CDC) through Columbia University/ International Center for AIDS Care and Treatment Programs. During the first year of the program, the national influenza contingency plan was developed and an inter-ministerial task force was established. Starting in 2007, the National Reference Laboratory (NRL) and the National Veterinary Laboratory were equipped and laboratory and surveillance staff trained.

In July 2008, the Ministry of Health (MoH) in collaboration with CDC established an influenza sentinel surveillance (ISS) network to describe the epidemiology and seasonality of influenza, to monitor for the emergence of novel influenza viruses, to describe the circulating influenza types and subtypes, and to enable early detection of influenza outbreaks in the country. The influenza surveillance network in Rwanda is currently composed of six (6) sentinel surveillance sites (i.e. 2 referral hospitals and 4 district hospitals), the NRL as the national influenza testing center and the Rwanda Biomedical Center/Institute of HIV AIDs, Disease Prevention and Control/Other Epidemic and Infectious Diseases (RBC/IHDPC/EID) as the support/coordination center.

Each site has a full-time surveillance officer who conducts most of the influenza work at the site. The surveillance officer is assisted by a clinician. The clinician provides oversight and helps engage other clinicians and nurses in the hospital to identify cases with symptoms that fit the Standard WHO case definitions for Influenza-like Illness (ILI) and Severe Acute Respiratory Illness (SARI). With the exception of the two referral hospitals that implement only SARI surveillance, the rest of the sites conduct both ILI and SARI surveillance. Each sentinel site has in-patient pediatric, adult, maternity, and emergency wards and outpatient services that participate in the ISS.

In June 2008, June 2010 and March 2012, the ISS network successfully completed three (3) national inventories of core capabilities for pandemic influenza preparedness and response in partnership with CDC Influenza Division and the Association of Public Health Laboratories (APHL). These assessments demonstrated commendable achievements in terms of country planning, pandemic communication, and routine disease surveillance, laboratory capacity to test influenza, outbreak investigation and response. They also highlighted areas for improvement that include enhanced epidemiologic and laboratory capabilities to address national respiratory disease surveillance and reporting, community based interventions to prevent the spread of influenza and prompt appropriate health sector pandemic response.

During the past six years of CDC funding, the network has generated preliminary surveillance results on the epidemiology and seasonality of influenza and built laboratory capacity to test seasonal and pandemic influenza using real time RT-PCR.



From 15th July 2008 to 18th March 2013 a total of 6,650 cases were identified, 3,460 SARI cases and 3,190 ILI cases. Of these, 13.0% (n = 869) cases tested positive for influenza (6.6% SARI and 20.1% ILI). Of the total influenza positive cases 89 % (n =777) were influenza A and 11% (n = 92) influenza B. Of the total influenza A positive, 74% (n = 573) were A (H1N1)pdm09, 23% (n =182) influenza A(H3) and 3% (n=22) were Seasonal A(H1N1). The ISS has developed epidemiology capacity and infrastructure for integrated disease surveillance

and response (IDSR) that provides baseline data for outbreak detection and seasonal trends analysis. The NRL has

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participated in the WHO External Quality Assessment program for Influenza PCR assays since 2009 and reports weekly to WHO FluNet and WHO FluID.

With the current CDC sustainability funding (2011-2016), we want to achieve and maintain WHO National Influenza Center (NIC) status and enhance SARI surveillance data to inform policy. We have drafted a sustainability plan to help us achieve these objectives. The MOH is committed to establish an adequate laboratory facility (BSL-2+) to accommodate viral isolation on cell culture for identification of viral isolates and potency testing of potential vaccine strains. The NRL also intends to expand its testing capabilities beyond seasonal and pandemic influenza testing to identify other viral respiratory pathogens of public health concern in parallel with the routine ISS network. The outcome of this exercise will be to establish baseline information on the disease burden of other respiratory pathogens, their seasonality and risk groups for severe disease which will help to improve case management of respiratory illnesses. We have recently launched an enhanced SARI surveillance data collection tool to identify more at risk patients, risk factors and clinical outcomes of severe disease and to assess the possible impact of interventions like vaccination.

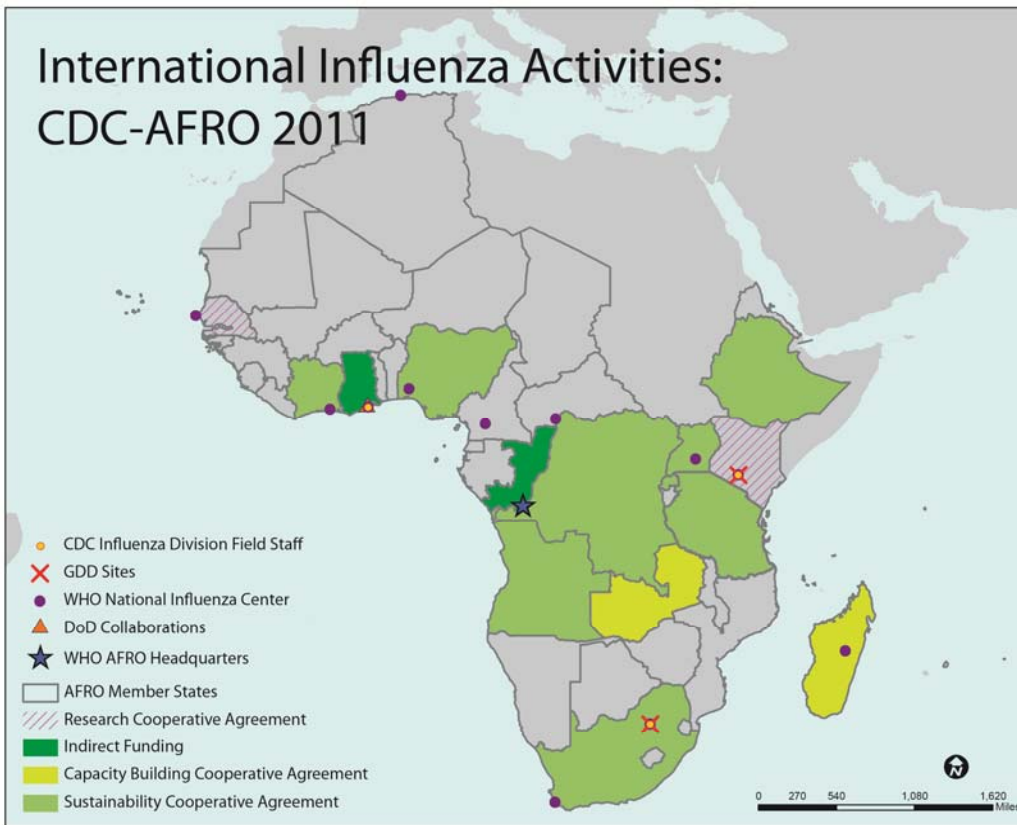


Some strengths of our surveillance system include very dedicated leadership in MoH, the commitment of Rwanda Biomedical Center (EID Division and NRL Division), very dedicated surveillance officers and good working relationships with partners. Networking with our partners at national, regional and international level is of paramount importance. Our success story of the response to the pandemic influenza A(H1N1) pdm09 relied on good inter-agency collaboration. Training of our staff, timely procurement of influenza reagents, guiding our protocol development processes and implementing external quality control would not have happened without invaluable support from CDC Atlanta, Influenza Reagents Resources (IRR), CDC Rwanda, CDC Kenya, NICD South Africa and WHO. We wish to establish an East African Influenza Surveillance Network to share influenza data with neighboring countries (Burundi, Kenya, Tanzania and Uganda) on a routine basis.

The main challenges of our surveillance system include a very high turnover of staff that requires continued training and mentorship. We also recognized that with just one surveillance officer per site, it is possible that surveillance officers could miss cases. To address this, we conducted formative site visits that paid off as many clinicians are now involved in surveillance activities and we increased the number of surveillance officers to have a dedicated officer at each hospital ward. We also face a lack of space at the National Reference Laboratory to scale up influenza testing that has triggered an urgent need to transfer the current Influenza laboratory to another laboratory facility within a referral hospital in Kigali. Relocating the lab to this facility is an advantage for procurement of laboratory reagents and supplies because the entity has a rapid internal tender mechanism. However, it will take some time to develop a Memorandum of Understanding with this facility and the National Reference Laboratory to allow the entity to be part of the national sample transportation system and benefit from already existing Material Transfer Agreements, protocols and laboratory equipment.

To further improve the quality of data collected through the ISS network we have developed a protocol that is currently in clearance with the Rwanda National Ethics Committee and the CDC. With this protocol we hope to improve the analysis and dissemination of epidemiological data to different influenza stakeholders. With improved dissemination of these data we hope to encourage maintenance of the ISS network beyond the CDC sustainability grant and ultimately to affect policy change to improve the availability of interventions to prevent and treat influenza.

Map of CDC Influenza Activities in Africa



We want to hear from you!

Have ideas for future ANISE Newsletters? We would love to highlight your program, feature a topic that's interesting to you or just hear your thoughts!

Please write us at ANISE@cdc.gov

Calendar of Upcoming Meetings

Dates:	Location:	Meeting (website):
2-3 September, 2013	Cape Town, South Africa	African Network for Influenza Surveillance and Epidemiology (ANISE)
4 September, 2013	Cape Town, South Africa	National Influenza Centers (NIC) Meeting for the AFRO Region*
5-10 September, 2013	Cape Town, South Africa	Options for the Control of Influenza VIII
17-19 September, 2013	Oxford, United Kingdom	Influenza2013: One Influenza, One World, One Health

*The ANISE and NIC Meetings are tentatively scheduled to take place in Cape Town, South Africa, prior to Options VIII. Subscribers to the ANISE listserv will receive updates regarding the ANISE Meeting. To subscribe to the listserv, please send your request to ANISE@cdc.gov

Questions or Comments?

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