

Influenza Sentinel Surveillance in Lagos State Nigeria, 2009 – 2011

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Objective

To analyze the Lagos site of the National Influenza Sentinel Surveillance (NISS) system and to determine the viruses responsible for Influenza-like illnesses (ILI) and Severe Acute Respiratory Infection (SARI).

Introduction

Outbreaks of Avian influenza (AI) in poultry were first reported in Nigeria in 2006 (1). The only human case was reported in 2007 (1). The epizootics of AI among poultry and wild birds and subsequent risk to human health highlighted the need to detect influenza viruses with pandemic potential and for establishment of Influenza Sentinel Surveillance (ISS) System. This is to aid the description of the epidemiology and burden of seasonal human influenza, to provide information for public health decision making, for program planning and preparedness and to serve as an early warning for outbreaks of Avian or pandemic flu. Also, to characterize and monitor trends in illnesses and deaths attributable to SARI (2). Lagos State University Teaching Hospital (LASUTH) is one of the 4 sites for ISS in Nigeria and started functioning in 2009.

Methods

Detailed information was obtained weekly on all SARI cases, four eligible cases of ILI and all suspected AI and Influenza A/H1N1 as defined by WHO (4) using standardized Case Investigation Forms (CIFs). Respiratory swabs were collected from some Adults and pediatrics in out-patient department (OPD) with ILI (Fever \geq 38.0 °C fever, and cough or sore throat). Also, all hospital admissions for SARI (in \geq 5 yrs: ILI with shortness of breath, or difficulty breathing with or without clinical or radiographic findings of pneumonia or any person who died of an unexplained respiratory illness; in 2 months – 5 years: cough or difficulty in breathing and inability to drink or breastfeed, lethargic or unconscious, vomiting, convulsing, oxygen saturation < 90% or chest indrawing or stridor in a calm child). The samples were appropriately stored and sent to the reference lab for testing using Real-time Polymerase Chain Reaction assays. We did a secondary analysis of data from LASUTH site from 2009 to 2011 using Epi-info version 3.5.6*.

Results

There were a total of 167698 OPD visits and 9385 admissions of which 1012 ILI and 468 SARI were recruited and tested respectively. 52.4 % were males and 47.6% females. Mean age was 16.01 years (SD 20.3). Of all ILI, 76 (7.6%) and of the SARI 22 (4.8%) were positive for influenza. Types A (60.4%) and B (3.96%) flu were identified. Of the positive cases, the sub-types of A viruses were A/H1 (3.3%), A/H3 (57.4%), Novel AH 1/ N1 (37.7%), A/un subtyped (1.6%). Children, 0-4years, had the highest number of recruitment (53.3%) followed by adults, 18-64 years, (25.8%). The least was in >65 years (2.8%). The highest number recruited in the 3-year period was in 2011 (total 769, of which 547 were ILI and 221 SARI) while the least was in 2009 (total 244) .101 samples were positive during the period; 75.3% of these were ILI, 21.8% were SARI. Of the SARI

confirmed as influenza 15 (57.7%) were males; there were 1.21% SARI-related deaths among hospital admissions.

Conclusions

The ISS site is achieving the aim for which it was set up, which is to detect influenza viruses with pandemic potential, characterize the epidemiology of seasonal human influenza, provide information for public health decision making and to characterize and monitor trends in illnesses and deaths attributable to Severe Acute Respiratory Illness (SARI).

Keywords

Influenza; Sentinel; Surveillance; Virus; Influenza-like illness

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- Epidemiology/HER/CPHL Division, Federal Ministry of Health, Nigeria
- National Influenza Reference Laboratory, Asokoro, Nigeria
- NISS Lagos State Site

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*missing data were excluded

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