Abstract

# Epidemiological Characteristics of Severe Acute Respiratory Illness Cases in Sentinel sites - Egypt, 2009-2017

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## Abstract

**Background:** Severe acute respiratory illness (SARI) is recognized as a leading cause of morbidity and mortality. SARI tends to be rapidly progressive illness caused by pathogens like influenza, which have pandemic potential. Egypt established SARI sentinel surveillance sites since 2007 in eight representative sites.

**Objective:** Describe epidemiology of SARI, identify influenza positivity and circulating influenza subtypes among SARI patients.

**Methods:** Patients who met standard WHO- SARI case definition (fever =38c + cough without any other cause in the last 10 days in a hospitalized patient) from 2009 to mid-2017, were enrolled. Epidemiological data were collected using standardized investigation form. Nasopharyngeal/ oropharyngeal swabs, for all patients, were tested for influenza viruses by reverse transcription polymerase chain reaction (RT-PCR). Data were extracted and analyzed by MS excel 2013.

**Results:** From January 2009 to July2017, 22419 SARI patients were enrolled. The most affected age group was below five years with “5490(24.5%) of 22419”. Median hospital stay was 5 days (IQR=3-7). During hospitalization, “159(0.7%) of 22419” were ICU admitted, out of them “65 (41%) of159” were ventilated. Of all SARI admissions, 18.3% (CI: 17.8-18.8) were positive for influenza viruses, 37.9% (CI: 36.4-39.4) were FluA/H1N1 Pdm09, 30.3% (CI: 28.9-31.7) were Flu B, 23.8% (CI: 22.5-25.1) were FluA/H3N2 and 7%(CI:6.3-7.8) were mixed influenza infections. Out of influenza-positive patients, fatalities were significantly higher ($P$<0.001) in pregnant women and those with preexisting chronic diseases, “41(5%) of 890” and “7(4.4%) of 158” respectively. Vaccination coverage was “13 (0.3%) of 4056” among influenza patients with zero fatality.

**Conclusions:** Influenza viruses are frequent cause of SARI admissions, so developing strategies to control Influenza is a key stone to reduce SARI. Improving influenza vaccination coverage for risk groups will prevent some SARI cases who are associated with fatal outcome.

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