

Analysis of Sentinel Epidemiological Surveillance of Severe Acute Respiratory Infections in the Republic of Kazakhstan during Seasons 2014/2015 - 2015/2016

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Abstract : Sentinel epidemiological surveillance (SES) of severe acute respiratory infections (SARI) was introduced in the Republic of Kazakhstan in 2008. The purpose of this study was to analyze SES of flu among SARI patients in the Republic of Kazakhstan during last two flu seasons. Comparative analysis was conducted of SARI morbidity during 40 - 23 weeks of 2014/2015 (season 2014) and 2015/2016 (season 2015) in online base (<http://ses.dec.kz>). In the database during season 2014 were 1,398 SARI patients and 1,985 patients during season 2015. Individual data (clinical, epidemiological and laboratory) of SARI cases were collected based on the questionnaire and were put into the flu electronic system. The studied population was residents of the Republic of Kazakhstan who addressed for medical help in 24 sentinel in-patient clinics in 9 sentinel regions of the country. Swabs from nose and throat were taken for laboratory testing from SARI patients who met the standard case definition. The samples were examined in virology labs of sentinel regions using PCR and 'AmpliSens' test systems made in Russia. The first positive results for flu during season 2014 were obtained on 48 week, during season 2015 - on 46 week. The increase of the number of hospitalized SARI patients was observed during 42 week of 2015 - 01 week of 2016, and during 03 - 06 weeks of 2016, with fluctuating SARI incidence rate from 171 to 444 per 1,000 hospitalized. The highest SARI incidence rate during season 2014 were observed during 01 - 03 weeks of 2015: from 389 to 466 per 1,000 hospitalized. Patients admitted to the ICU during season 2015 were 3.0% (60) SARI patients, compared to 2.7% (38) in 2014 ($p=0.3$), obtaining oxygen therapy 1.0% (21) compared to 0.3% (5), accordingly, ($p=0.009$); with shortness of breath 74.8% (1,486) compared to 72.6% (1,015), ($p=0.07$); with impairment of consciousness 1.0% (21) compared to 0.6% (9), ($p=0.11$); with muscle pain 19.3% (384) compared to 13.6% (191), ($p < 0.001$); with joint pain 13.3% (265) compared to 9.3% (131), ($p < 0.001$). During season 2015 the prevailing subtype of flu A was A/H1N1-09, it was observed mainly in the age group 30-64: 32.5% (169/520). During season 2014 flu A/H3N2 was observed mainly in the age group 15-29: 43.6% (106/243). Among children under 14 flu A/H1N1-09 during season 2015 was 37.3% (194/520), during season 2014 flu A/H3N2 - 34.9% (85/243). Earlier beginning of the flu season was noted in 2015-2016 and a longer period of hospitalization of SARI patients, with high SARI morbidity rates, unlike season 2014-2015. Season 2015-2016 was characterized by prevailing circulation of virus of flu A/H1N1-09, mainly in the age group 30-64, and also among children under 14. During season 2014-2015 the virus circulating in the country was A/H3N2, which was observed mainly in the age group 15-29 and among children under 14.

Keywords : flu, electronic system, sentinel epidemiological surveillance, severe acute respiratory infections

Conference Title : ICEID 2017 : International Conference on Epidemiology and Infectious Diseases

Conference Location : Boston, United States

Conference Dates : April 24-25, 2017