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NISB Newsletter

National Influenza Surveillance, Bangladesh

Inside this issue:

Avian Influenza A(H7N9): Pandemic Potentiality

The novel avian influenza A (H7N9) virus was detected in human in 2013 China. Before the it was detected in birds only. Number of people infected by this virus raised in late 2016. Since early 2013, nearly 1557 (till 07 August 2017 WHO) people have tested positive for Avian influenza A(H7N9) in China through IHR notification. Around 40 percent died of those infected [1].

Patients infected with avian influenza A (H7N9) are usually presented with fever and productive cough. The novel A (H7N9) virus can cause severe illness, including pneumonia and Acute Respiratory Distress Syndrome (ARDS) in human. Few patients may present with diarrhea or vomiting. In comparison to seasonal influenza A, A (H7N9) virus infection are more likely to have severe symptoms. A large number of A(H7N9) infected patients required hospitalization with ICU care. Severe illness and fatal outcome have been more frequently observed in pregnant women, in older persons and those with underlying chronic conditions. Asymptomatic and mild infections with A(H7N9) virus have also been detected [2].

The laboratory investigations reveal leukopenia, lymphocytopenia, thrombocytopenia, and elevated levels of aspartate aminotransferase, creatine kinase and lactate dehydrogenase in most of the cases. Radiological findings of A(H7N9) infected patients are consistent with viral pneumonia such as bilateral ground-glass opacities and consolidation.

Like previous years, human A(H7N9) cases increased suddenly during December and January. In this fifth wave, geographic spread is more compared to the earlier waves. Also like the previous waves, most reported cases have prior exposure to live poultry or potentially contaminated environments e.g. Live Bird Markets [3]. Median incubation period for A (H7N9) virus is 6 days (range of 1-10 days).

A(H7N9) virus causes little or no illness in poultry and is therefore, generally only detected through active virological surveillance. The low pathogenicity of the virus in birds adds to the difficulty in identifying its international spread through infected birds. To date, A (H7N9) virus has not been reported in poultry populations outside China. Some countries adjacent to China have intensified their surveillance, and several countries have imposed a temporary ban on importing live birds from China [4].

The virus can spread efficiently through direct contact with poultry but inefficiently through respiratory droplets. The virus can be transmitted to Bangladesh as there are frequent travelling takes place among the people for many purposes like trade, tourism etc. Bangladesh needs to be alert for A(H7N9) and be prepared for any potential pandemic. In Bangladesh, IEDCR is carrying out National Influenza Surveillance, Bangladesh (NISB) since 2010, currently the surveillance is ongoing at 10 sentinel sites for severe acute respiratory infection (SARI) and influenza-like illness (ILI). Hospital Based Influenza Surveillance (HBIS) is going on 08 sites conducted by icddrb in collaboration with IEDCR. In addition to strengthening of the current surveillance sites event-based respiratory surveillance also started for detection of novel respiratory pathogens including A(H7N9) .

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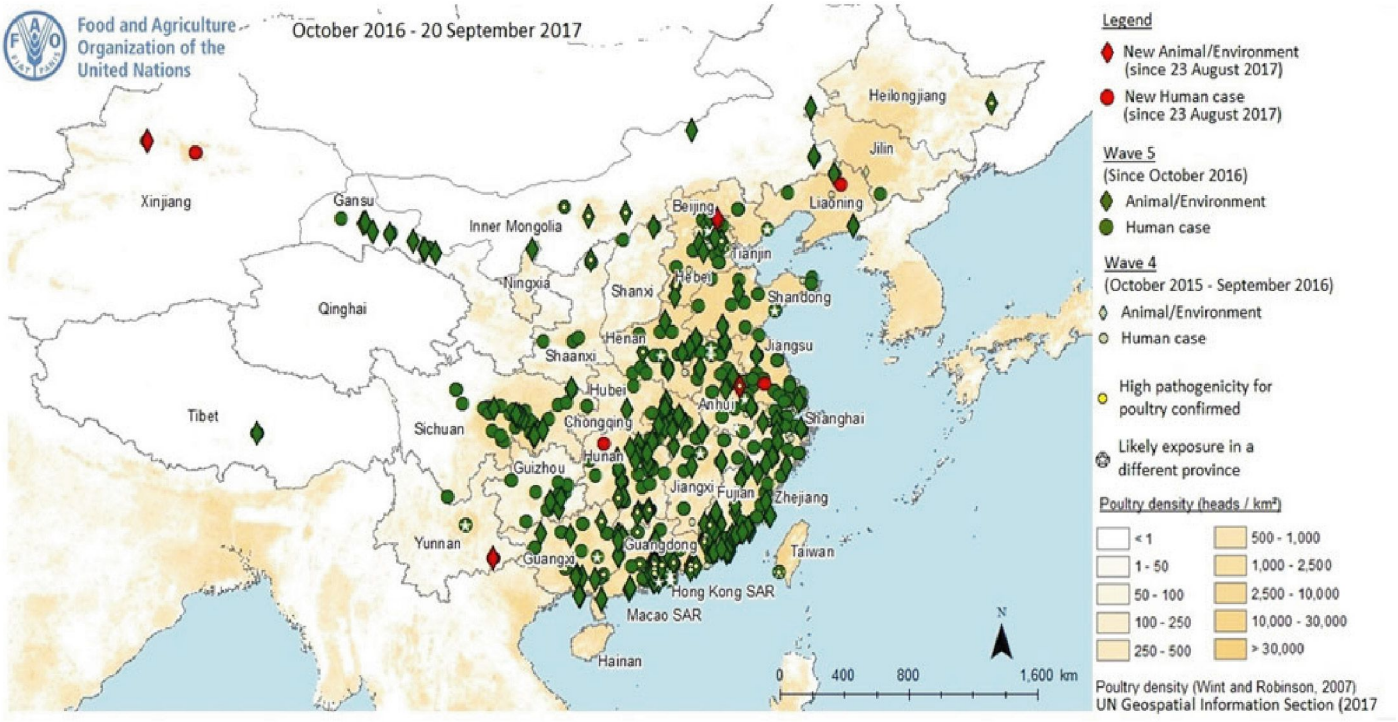
Fig. 01: Geographic distribution of influenza A(H7N9) human cases in China



Avian influenza A(H7N9) human cases are depicted in the geographic location where they were reported; for some cases, exposure may have occurred in a different geographic location.

EDITORIAL

Novel A(H7N9) viruses continue to circulate in poultry in China. The country has been experiencing epidemic of novel A(H7N9) human infections since 2013. Currently, the fifth epidemic wave is demonstrating in China with high range of geographic expansion as well as a large number of human cases.

Most concerning factor is the pandemic potentiality of this virus. Several statistical and geographical modeling have estimated and predicted the spread of A(H7N9) virus in humans. Some studies have identified potential risk factors associated with disease transmission. Limited person-to-person spread of this virus have been reported. Some human cases were identified outside China but they had epidemiological link.

China, a large country with huge number of population, is a prominent area for world economy. Travelers of this country are remaining under threat and neighboring countries are at risk of epidemic. For these reasons, A(H7N9) is raising burning issue whether we are going to have a new pandemic of influenza A in near future.

As frequent travels take place between China and Bangladesh, there is a probability of transmitting A(H7N9) to Bangladesh. Due to the pandemic potentiality of A(H7N9) virus, any person coming from China within 10 days and having simtoms of ILI and SARI or having fever should report to IEDCR for virus screening.

CASE DEFINITIONS of Influenza-Like Illness (ILI) and Severe Acute Respiratory Infections (SARI).

ILI

An acute respiratory infection with
- measured fever of ≥ 38°C and
- cough;

with onset within the last 10 days.

SARI

An acute respiratory infection with
- history of fever or measured fever of ≥ 38°C and
- cough

with onset within the last 10 days and
- requires hospitalization.

Complications of Influenza

Complications can include bacterial pneumonia, ear infections, sinus infections, and worsening of chronic medical conditions, such as congestive heart failure, asthma, or diabetes.

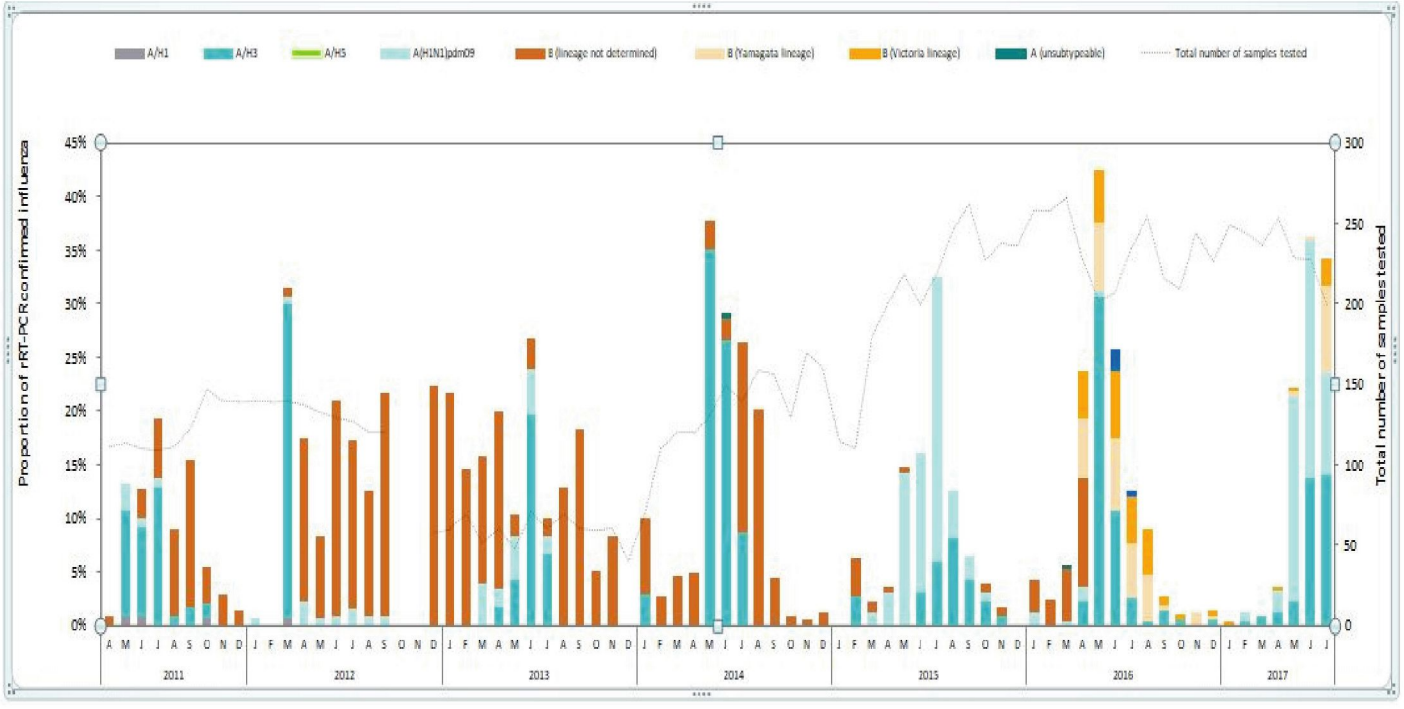
High Risk Group of Influenza

- people 65 years and older
- people of any age with certain chronic medical conditions (such as asthma, diabetes, or heart disease)
- pregnant women and young children (6-59 months) and Healthcare workers

Prevention of Influenza

- Influenza Vaccination in high risk group
- Other preventive measures:
  1. staying away from people who are sick.
  2. maintaining cough etiquette (covering mouth & nose during coughs and sneezes.)
  3. frequent handwashing.

Fig. 02: National Influenza Surveillance Bangladesh (NISB) seasonality graph



Graph showing seasonality of influenza activity in Bangladesh from NISB data. It is apparent that, influenza positivity peaked in June of this year. In Bangladesh, influenza positivity peaks in summer. This trend is continuing in this year also like previous years. Influenza A (H1N1) pdm09 is prominent subtype in this year.

IEDCR NEWS

- Honorable Minister, Ministry of Health and Family Welfare, Mr. Mohammed Nasim MP and Honorable State Minister, , Ministry of Health and Family Welfare, Mr. Zahid Maleque MP visited IEDCR in July 2017. Professor Dr. Abul Kalam Azad, Director General of Health Services and officers and staffs of, DGHS and IEDCR were present at that time. Honorable visitors monitored Chikungunya Control Room and provided their valuable advice.
- IEDCR played a vital role in response to the chikungunya outbreak in Dhaka. In June 2017, a Public health Emergency Operations Center (PHEOC) was activated. Activities during the response mode of the activation included confirmatory test for chikungunya (RT-PCR), 24/7 hotline for health advice on chikungunya, media monitoring (electronic and printing media), routine media briefing, daily online publication of chikungunya bulletin for daily updates in IEDCR website, daily online reporting from all hospitals in Dhaka city, all medical colleges and 64 district hospitals in Bangladesh etc.
- 9th One Health Bangladesh Conference was held on 17-18 September 2017 at Hotel Radisson Blu Dhaka Water Garden. Theme of the conference was "Achieving Sustainable Development Goals (SDGs) through One Health Approach". Mr. Mohammed Nasim MP, Honorable Minister, Ministry of Health and Family Welfare inaugurated the conference. Chairperson of One Health Secretariat Prof Meerjady Sabrina Flora, Director, IEDCR was present with other leading global experts, scientists and researchers of both human and animal health and environment
- IEDCR responded immediately to combat the health issues of Forcefully Displaced Myanmar Nationals (FDMNs) in Cox's Bazar Bangladesh which include rapid baseline risk and need assessment survey, orientation training on Incident Management System (IMS), integrated disease surveillance among FDMNs etc.

Honorable Minister of Health and Family Welfare, Mr. Mohammed Nasim MP and Honarable State Minister of Health and Family Welfare, Mr. Zahid Maleque MP visited Public health Emergency Operations Center (PHEOC) at IEDCR

Inauguration of 9th One Health Bangladesh Conference by Mr. Mohammed Nasim MP, Honorable Minister, Ministry of Health and Family Welfare

Several Meetings took place at IEDCR in response to Chikungunya outbreak

Technical Support

CDC Centers for Disease Control And Prevention

World Health Organization