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NISB Newsletter

National Influenza Surveillance, Bangladesh

Update on Avian Influenza in Bangladesh

Highly pathogenic avian influenza (HPAI) A/H5N1 virus usually infects birds. It is highly contagious and can be deadly, especially in poultry. Since December 2003, an Asian strain of HPAI H5N1 virus has appeared resulting high mortality in poultry and wild birds in Asia, the Middle East, Europe, and Africa. In Bangladesh, H5N1 in poultry was first identified in March, 2007. Till date, 818 confirmed poultry outbreaks of this AI occurred in Bangladesh and 27,25,238 chickens have been culled.

H5N1 strain of avian influenza is of particular concern for human health as it can cause severe illness in human with a high case fatality (53%) rate and can mutate rapidly. Till date, globally a total of 856 confirmed human cases of H5N1 are identified and 456 of them died. Bangladesh reported 8 confirmed human cases of H5N1 and of them 1 case patient died.

On January 12, 2017 IEDCR was notified about unusual death of crows at the premises of Rajshahi Medical College Hospital. An outbreak investigation team was dispatched to that area immediately. 52 (91%) were positive for Influenza A/H5 out of collected samples from 57 infected crows. Besides, 154 samples were collected from poultry of nearby live bird markets and of them 29 (54%) and 6 (11%) were positive for H5 and H9, respectively. However, no human case was detected.

During the same month, a crow mortality event in Dhaka was also investigated and 152 (97%) out of 174 samples found positive for Influenza A/H5.

A recent outbreak of A/H5N1 occurred in a commercial farm (sonali poultry) of Dhamrai upazilla, Dhaka on 16 January 2017. This outbreak resulted in deaths of 732 chickens and subsequent culling of 2,268 chickens at the single poultry unit. IEDCR responded to this outbreak and conducted an investigation on 17 January to identify any potential human cases transmitted from the avian origin. Samples were collected from 7 persons those who were working closely with the infected poultry. However, laboratory findings were negative. None of them developed Influenza Like Illness (ILI) in continuous follow up interview for 14 days from exposure.

Hygiene practice is fundamental to prevent transmission of H5N1 virus. Eating sick or dead birds/animals is prohibited. Food should be cooked properly at or above 70°C. Washing hands with soap and running water is essential.

Bangladesh developed National Avian and Pandemic Influenza Preparedness and Response Plan in 2006 for year 2006-2008. The plan was revised in 2009. IEDCR, National Influenza Centre (NIC) is currently working on the preparatory phase of updating this revised plan.

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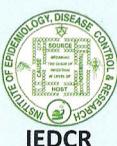
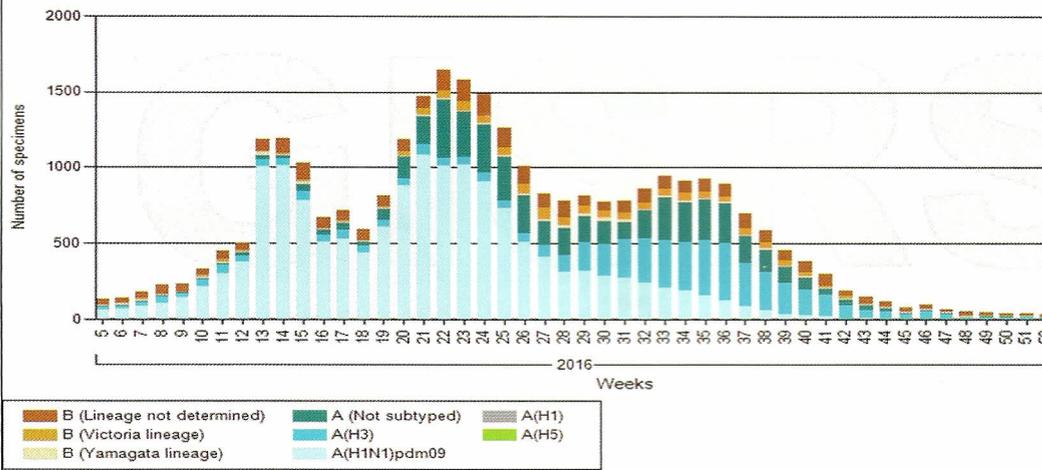
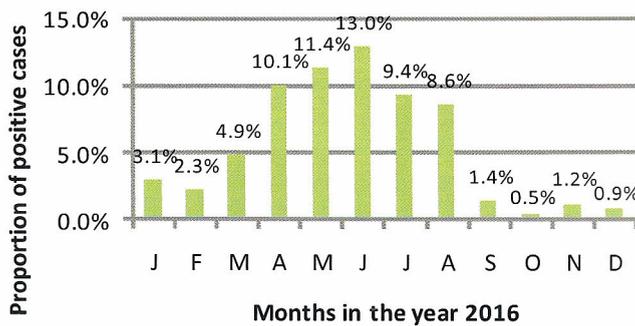


Fig.1 Number of specimens positive for Influenza by subtype



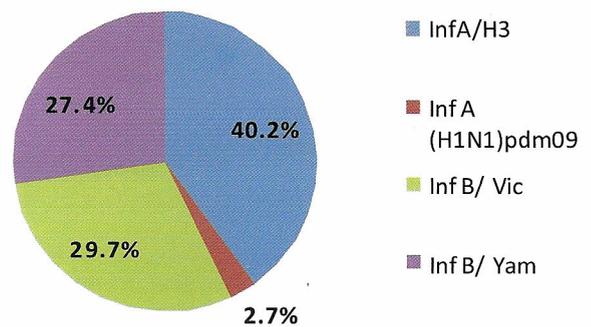
Influenza surveillance information are made available by Global Influenza Surveillance and Response System (GISRS). This graph shows number of influenza positive specimens for Southern Hemisphere in the year 2016. We can infer that influenza activity peaks in the middle quarters of the year (May to September)

Fig. 02 : Flu positivity across different months in 2016



This graph illustrates the influenza season in Bangladesh. Like Southern Hemisphere, the influenza season starts during monsoon in Bangladesh. In the year 2016, influenza activity peaked in July (13%) and showed a downward trend from September.

Fig. 03 : Positive samples by subtypes in 2016



Influenza samples are typed and subtyped by real time PCR in IEDCR laboratory. Influenza B was predominant in circulation this year in Bangladesh with almost same proportion for Victoria and Yamagata subtype. The next common strain was Inf A/H3 with 40% positivity.

EDITORIAL

Seasonal influenza is an acute respiratory infection caused by influenza viruses. Although most people recover from flu without requiring medical attention but influenza can cause severe illness or death especially in people at high risk which comprises pregnant women, children aged 6–59 months, the elderly (≥ 65 years), individuals with specific chronic medical conditions such as HIV/AIDS, asthma, cancer and chronic heart or lung diseases, and health care workers. Geographically Bangladesh is situated in the Northern hemisphere but influenza activity in this country follows Southern hemisphere season, which usually peaks and extends from June/July to September.

Vaccination is one of the effective means to prevent seasonal influenza and its complications, which eventually reduces influenza related hospitalization and death. Vaccination is especially recommended for people at high risk of serious influenza complications. The circulating seasonal influenza strains evolve constantly. In accordance with the circulating strains, the seasonal influenza vaccine composition is updated every year to enhance efficacy and protection.

WHO, through the GISRS network, in collaboration with other partners, monitors influenza activity globally, recommends seasonal influenza vaccine compositions twice a year for the Northern and Southern hemisphere influenza seasons and supports Member States' efforts to develop prevention and control strategies.

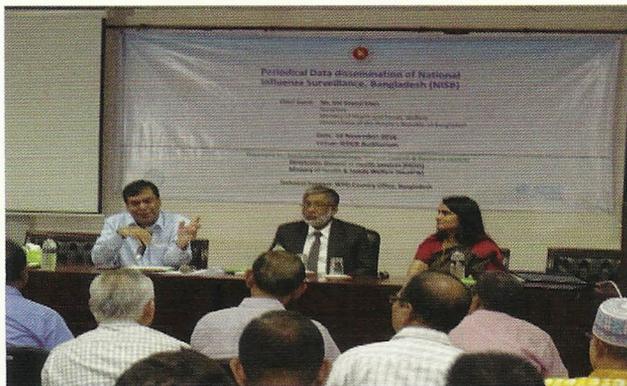


FluID : WHO

FluID is an online data collection tool of WHO to collect epidemiological data on seasonal and pandemic influenza from national, regional and global systems on a weekly basis. NIC, Bangladesh started reporting to FluID from the year 2016 with data generated from NISB platform as well as from Hospital Based Influenza Surveillance (HBIS) platform. The qualitative indicators of FluID include geographical spread, trend, intensity and impact.

Periodical data dissemination of NISB

In the last quarter of year 2016, all Upazila Health & Family Planning Officers (UH&FPOs) of the country were invited at IEDCR on several batches and among them NISB findings and NIC activities were disseminated. On subsequent occasions, Civil Surgeons from all districts were also invited for same purpose. The honorable Secretary of MOH&FW was present during the workshops with the Civil Surgeons.



The Secretary of MOH&FW and the Director General of Health Services along with Director, IEDCR at NISB Data Dissemination workshop



Periodical data dissemination workshop with UH&FPOs from across the country.

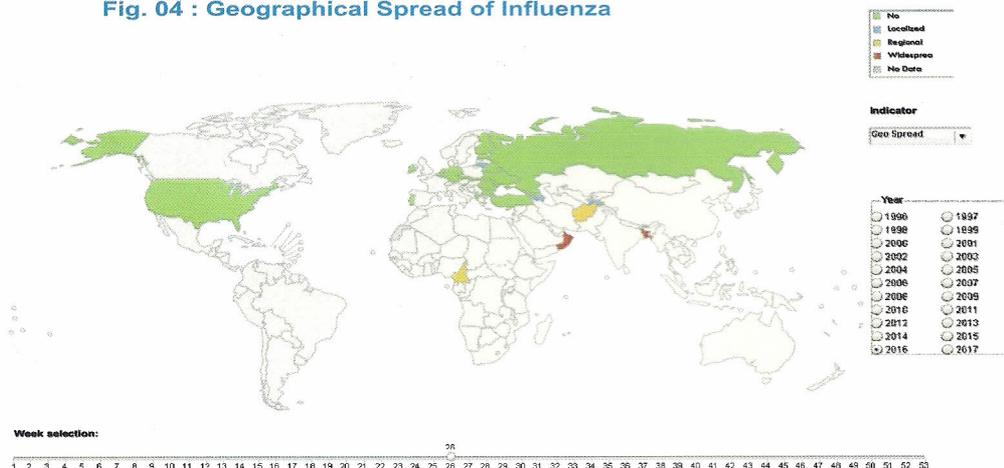
Updating epidemiological data collection tool and training of surveillance physicians

Influenza is an underappreciated contributor to global mortality and morbidity. There is a need for reliable disease burden estimates especially from low and middle-income countries. These national estimates would enable governments, nongovernmental agencies and donors to make informed evidence-based decisions when allocating resources and planning intervention strategies. NISB, therefore, modified its existing questionnaire which is used during case enrollment from the sentinel sites to gather all required data and provided training to the surveillance physicians of sentinel sites.



Few snaps of training of NISB sentinel site physicians on modified questionnaire.

Fig. 04 : Geographical Spread of Influenza



This map is generated from data of FluID platform on weekly basis. Here, it signifies geographical spread of influenza according to certain defined categories (localized, regional etc.). Bangladesh is showing widespread influenza activity on this particular week indicated by red coloured area in this map.



Utilizing NISB platform: Focus on MERS-CoV

MERS-CoV is an emerging virus that can cause severe respiratory tract infection. Infection due to this virus is now endemic in many countries of Middle East region, especially in Saudi Arabia. Each year nearly 1.5 lac pilgrims from Bangladesh visit Saudi Arabia for performing Hajj. Besides, millions of expatriates from Bangladesh reside in Arabian Peninsula. All these factors put Bangladesh in a risk of importation of this respiratory virus. NISB has trained the surveillance teams from all sentinel sites regarding identification of suspected cases, collection, storage and transportation of respiratory virus samples. Since the sites are distributed across the country, IEDCR identified them as a point of care of any suspected MERS-CoV patients in the district or sub-district level to develop a nationwide network to detect any single case of this infection.

IEDCR NEWS

- The inauguration ceremony of 3rd batch Frontline Field Epidemiology Training Program, Bangladesh (FETP,B) was held in 16th January, 2017 at IEDCR with 21 participants from Rajshahi, Rangpur and Mymensingh divisions.
- IEDCR recently responded to several outbreaks namely puffer fish poisoning in Sylhet, chikungunya outbreak in Dhaka city, outbreak of avian influenza in poultry of Dhamrai, Dhaka.
- To run the activities of Global Health Security Agenda (GHSA) smoothly, IEDCR has recruited a number of staff including officers and field staffs.



Inception day of Frontline FETP,B 3rd batch



Annual consultation of Human & Animal Influenza activities

Technical Support



World Health Organization