

## Influenza: An Emerging and Re-emerging Public Health Threat in Nepal

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Influenza virus type A and B are responsible for seasonal epidemics as well as pandemics in human <sup>1</sup>. Influenza A viruses are further divided into two major groups namely, low pathogenic seasonal influenza (A/H1N1, A/H1N1 pdm09, A/H3N2) and highly pathogenic influenza virus (H5N1, H5N6, H7N9) on the basis of two surface antigens: hemagglutinin (HA) and neuraminidase (NA). Mutations, including substitutions, deletions, and insertions, are one of the most important mechanisms for producing new variant of influenza viruses <sup>2</sup>. During the last 30 years; more than 50 viral threat has been evolved in South-East Asian countries<sup>3,4,5</sup> of them influenza is one of the major emerging and re-emerging infectious diseases of global concern. Similar to tropical and sub-tropical countries of Southeast Asia; circulation of A/H1N1 pdm09, A/H3N2 and influenza B has been circulating throughout the year with the peak during July-November in Nepal<sup>6</sup>. However; the rate of infection transmission reach peak during the post-rain and winter season of Nepal.

Influenza transmission occurs predominately by coughing or sneezing. Transmission also occurs through direct contact with respiratory droplets/secretions or contaminated objects followed by touching the nose, mouth or eyes. More than 100 viruses are capable of causing respiratory infections with similar symptoms of fever, chills, running nose, sore throat, headache, tiredness, dry cough and some time breathing difficulties<sup>7</sup>. Clinically, it is very hard to differentiate and confirm the etiology for empirical therapy.

In healthy individuals; viral fever may persist up to one week and usually resolved by immune system without specific medication. However; it may lead to pneumonia and acute respiratory distressed syndrome (ARDS) in children under five years of age, pregnancy, immuno-compromised hosts, patients with chronic diseases and elderly peoples<sup>8,9</sup>.

Nasal/throat swab or nasopharyngeal specimen needs to be investigated within 2-3 days of symptoms for confirmatory diagnosis by real time PCR method. Such facility is confined at National Public Health Laboratory in Kathmandu. The facility need to be expanded throughout the country who are illegible to fulfill the required laboratory criteria at medical institute, regional hospitals, stand-alone research laboratory and public private sectors.

At the time of specimen collection, packaging and shipment; gown, glove, mask and face shield must be worn. All health care provider working at outpatient/inpatient department, Operation Theater and critical care units are requested to maintain proper hand hygiene and use of personal protective equipment. Hand hygiene is the most effective and important measure in preventing the spread of influenza. The use of clean soap-water and or alcohol-based hand rub is the most effective method of hand hygiene. The knowledge of influenza and its consequences should be incorporated in different level of academia and training programs in Nepal.

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