



SURVEILLANCE ON COMMUNICABLE DISEASE –INFLUENZA

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ABSTRACT

For better control of communicable diseases, National Communicable Disease Surveillance Systems must be strengthened. Communicable diseases have always been as one of the main threats for human health. Influenza, or flu, is a respiratory illness caused by a virus. Flu is highly contagious and is normally spread by the coughs and sneezes of an infected person. This disease often spreads quickly and results in high mortalities. CDC's are working actively in all states and territories in the and are tasked with leading and managing communicable diseases at these levels.

KEYWORDS: Communicable diseases, surveillance, Influenza.

INTRODUCTION

Surveillance, when applied to a disease, means the continued watchfulness over the distribution and trends of incidence through the systematic collection, consolidation and evaluation of morbidity and mortality reports and other relevant data. A.D. Langmuir, 1963

Communicable diseases have always been as one of the main threats for human health. These diseases often spread quickly and resulted in high mortalities. Between 2011 and 2014 respiratory infectious diseases, diarrhoea, AIDS and malaria have constantly been on the top 10 causes of death worldwide.

One of the most important Emerging and Reemerging infectious disease which causes high morbidity and mortality in communities (epidemic) and worldwide (pandemic) is Influenza.

Influenza commonly known as Flu, a viral respiratory disease, can cause high morbidity and mortality in humans and some animal species. Influenza pandemics (outbreaks that affect a large proportion of the world due to a novel virus) are unpredictable, recurring events that can have considerable health, economic and social consequences worldwide. An influenza pandemic occurs when key factors converge: a novel influenza virus emerges that has the ability to cause sustained human-to-human transmission, the virus causes disease, and the human population has little to no immunity against the virus. With the growth of global trade and travel, a

localized epidemic can rapidly transform into a pandemic, with little time to prepare a public health response. Since the 16th century, influenza pandemics have been described at intervals of between 10 and 50 years, and with varying severity and impact.

Flu is highly contagious and is commonly spread by the coughs and sneezes of an infected person.

Symptoms include

Fever or feeling feverish chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, fatigue, some people may have vomiting & diarrhoea. It is important to note that everyone with flu will have a fever. When an infected person cough's or sneezes, aerosols droplets or droplet nuclei will be released in to the atmosphere. The person standing next to him inhales these droplets or droplet nuclei containing the virus, the person catches flu. Flu can also be caught by touching an infectious person, for instance shaking hands. Adults are contagious 1-2 days before getting symptoms and up to 7 days after becoming ill. This means that one can spread the influenza virus before they even known that they are infected.

Transmission

The Virus Spreads from human to human. Wild Birds are the natural hosts for Influenza Virus. Therefore Influenza Viruses will always be in our environment. Public health risk arises when these viruses are introduced in domestic animals and humans and are exposed to them.

Every human infection is one too many especially if they lead to severe diseases or fatalities. The biggest concern however is that animal viruses adapt to their new host & become capable of sustained transmission between humans. In such cases we speak of a pandemic threat the threat of a globally spreading disease.

An influenza pandemic is an epidemic of an influenza virus that spreads on a world wide scale & infects a large proportion of the world population. in contrast to the regular seasonal epidemics of influenza, these pandemics occur irregularly there have been about 9 influenza pandemics during the last 300 years pandemics can cause high levels of mortality with the 1918 spanish influenza pandemic being the worst in recorded history, this pandemic was estimated to be responsible for the deaths of approximately 50-100 million people. There have been about three influenza pandemics in each century for the last 300 years, the most one being the 2009 flu pandemic.

The primary reason for such a pandemic spread is it's antigenic variation. it is of 2 types

- 1) Antigenic shift: Sudden sequential change in antigenic structure is known as antigenic shift. as a result of antigenic shift, vaccine developed earlier becomes ineffective.
- 2) Antigenic drift: Gradual sequential change in antigenic structure previous vaccine will be of little use.

At present we cannot predict which viruses will jump from animals to humans, and which viruses will acquire the ability to adopt to humans and spread between them. Major research projects are ongoing all over the world to identify what factors are responsible for this.

We can limit the introduction of wild bird viruses in domestic animals, because there is continued circulation

in domestic animals and humans exposure to the animal influenza viruses. Currently there are number of viruses considerable concern to public health that we are aware of it. public health authorities are monitoring these viruses carefully and are investigating options to control them. as flu is caused by a virus, antibiotics cannot help unless the flu has lead to another illness caused by bacteria. anti virals, such as oseltamivir (tamiflu) and zanamivir (relenza), may be prescribed in some circumstances. pain killers may alleviate some of the symptoms, such as headache and body pains. some pain killers, such as aspirin, should not be given to children under 12.

- Individuals with Flu should: stay at home.
- Avoid contact with other people where possible.
- Keep warm and rest.
- Consume plenty of liquids.
- Avoid alcohol.
- Stop smoking.

The world's most recent pandemic – the 2009 A(H1N1) pdm09 influenza pandemic – was characterized as being highly transmissible with rapid spread. This led to sustained human-to-human transmission worldwide, but resulted in a lower mortality than for previous known pandemics, with between 123000 and 203000 deaths attributed to the A(H1N1)pdm09 virus. In contrast, the infamous 1918 "Spanish influenza" pandemic spread more slowly but caused an estimated 20–40 million deaths. The differences in the severity of these two pandemics emphasizes that pandemics are unpredictable events. It is not easy to make assumptions about where the next influenza virus with pandemic potential will emerge, or what its characteristics will be, including its severity. This highlights the need for pandemic influenza surveillance to provide data and analyses to clarify the characteristics of the pandemic.

1889-1890 FLU PANDEMIC (ASIATIC OR RUSSIAN FLU)	1889-1890	1 MILLION	0.15%	POSSIBILITY H3N8 OR H2N2	N/A
1918 FLU PANDEMIC (SPANISH FLU)	1918-1920	20-100 MILLION	2%	H1N1	5
ASIAN FLU	1957-1958	1-1.5 MILLION	0.13%	H2N2	2
HONG KONG FLU	1968-1969	0.75-1 MILLION	<0.1%	H3N2	2
RUSSIAN FLU	1977-1978	N/A	N/A	H1N1	N/A
2009 FLU PANDEMIC (WORLD WIDE)	2009-2010	18000-2,84,500	0.03%	H1N1/09	N/A
ANNUAL FLU VIRUS DEATHS (USA ONLY)	1976-1977 TO 2006-2007	3000-46,000	N/A	N/A	N/A

Effective management of communicable diseases requires developed systems which provide timely, comprehensive and updated information.^[7] At the end of the last century, many countries implemented National Communicable Disease Surveillance Systems for the

ongoing, systematic collection, analysis and interpretation of the communicable diseases data.^[8,9] Surveillance systems should be capable of laying the foundation for effective controlling and managing of communicable diseases.^[10,11] Some of these capabilities

that have been identified by WHO are: the capability of providing key and supportive services of surveillance system, having the appropriate structure and high quality information.^[12,13,14,15]

WHO specifically emphasizes on provision of timely, comprehensive and reliable data and information by surveillance systems and notes that effective management of data and information at different levels, is related to high quality data content and timely exchange of data with related organizations.^[16] Establishing effective communication among related organizations, centres, individuals and departments during the data generation and exchange process is of particular importance for timely and quick data exchange for communicable diseases.

Several global consortia have been formed to provide additional and much needed information during a pandemic. For example, the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R) is a network that brings together research funding organizations on a global scale, to facilitate an effective research response within 48 hours of a significant outbreak of a new or re-emerging infectious disease with pandemic potential. Similarly, the International Severe Acute Respiratory and Emerging Infection Consortium (ISARIC) provides a collaborative platform through which global, patient- oriented clinical studies can be developed, executed and shared.

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