WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health, Nutrition & Indigenous Medicine

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Vol. 44 No. 22 **27th– 02nd June 2017**

SRI LANKA 2017

WER

Influenza

Epidemiology

Influenza A and B viruses are important human respiratory pathogens transmitted mainly by droplets and aerosols originating from the respiratory secretions of infected people. Both A and B viruses cause seasonal influenza epidemics and out of season sporadic cases and outbreaks. Influenza occurs globally with an annual attack rate estimated at 5%–10% in adults and 20%–30% in children. In temperate climates, seasonal epidemics are experienced mainly during the winter while in tropical regions, influenza may occur throughout the year.

Influenza A viruses may also cause worldwide pandemics characterized by rapid dissemination of new influenza A subtypes having the capacity for human-to-human transmission and are sufficiently different antigenically from recently circulating influenza viruses. Recorded since the middle of the 18th century, major pandemics have occurred at intervals of 10–40 years. Of these pandemics, the 1918 pandemic of the "Spanish flu" was the most severe, causing an estimated 20–40 million or more deaths worldwide. Less severe pandemics occurred in 1957 ("Asian flu") and 1968 ("Hong Kong flu").

Pathogen

Influenza viruses belong to the family *Orthomyxoviridae.* The influenza viruses are classified into types A, B and C based on their nucleoprotein, whereas the subtypes of influenza A viruses are determined by envelope glycoproteins possessing either haemagglutinin (HA) or neuraminidase (NA) activity. The high mutation rates of these viruses contribute to great variability of the HA and NA antigens. Type B influenza viruses have not exhibited antigenic shifts due to the absence of viral reservoirs in animals and are not divided into subtypes. However, co-circulation of two antigenically distinct lineages of influenza B (Victoria and Yamagata) has been reported.

Influenza A viruses infects a range of mammalian and avian species, whereas type B and C infections are largely restricted to humans. Influenza A and B viruses circulate and cause outbreaks and epidemics. Influenza type C virus is detected much less frequently and usually causes mild infections.

The incubation period of influenza ranges from one to four days, with an average of two days. In infants and young children, transmission through viral shedding may start shortly before onset of symptoms and last into the second week of clinical disease, whereas in adults, viral shedding generally lasts for a few days only.

The subtypes of influenza A viruses currently circulating among humans are influenza A(H1N1) and A(H3N2) subtypes. Only influenza type A viruses are known to have caused pandemics.

Before the H1N1 pandemic in 2009, Sri Lanka has experienced outbreaks of human influenza due to following strains, 2004 - Influenza B, Hon-Kong/330/2001, Shanghai/361/2002, 2003 - Influenza A /H3N2 and 1998 - Influenza A /H3N2/Sydney strain. In 2009 H1N1 pandemic, 642 laboratory confirmed cases and 48 deaths were reported from the country while in its second wave in 2010 there were 580 laboratory confirmed cases and 29 deaths.

Signs and symptoms

Seasonal influenza is characterized by a sudden onset of fever, cough, headache, muscle and joint pain, severe malaise, sore throat and a runny nose. The cough can be severe and can last two or more weeks. Most people recover from fever and other symptoms within a week without requiring medical attention. But influenza can cause severe illness or death especially in people at high risk.

Risk groups

Yearly influenza epidemics can affect all populations, but the highest risk of complications occurs among selected risk groups. In Sri Lanka, pregnant women, children especially aged less than two years, the elderly especially above 65

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years, individuals with specific chronic medical conditions such as asthma, chronic heart or lung diseases, HIV/AIDS, and health-care workers are considered as risk groups.

Transmission

Seasonal influenza spreads easily, with rapid transmission in crowded areas including schools and nursing homes. When an infected person coughs or sneezes, droplets containing viruses are dispersed into the air and are spread to persons near who breathe these droplets in. The virus can also be spread by hands contaminated with influenza viruses.

Seasonal epidemics and disease burden

Illnesses range from mild to severe and even death. Hospitalization and death occur mainly among high-risk groups. Worldwide, these annual epidemics are estimated to result in about 3 to 5 million cases of severe illness, and about 250 000 to 500 000 deaths.

Epidemics can result in high levels of worker/school absenteeism and productivity losses. Clinics and hospitals can be overwhelmed during peak illness periods.

The effects of seasonal influenza epidemics in developing countries are not fully known, but research estimates indicate that 99% of deaths in children under 5 years of age with influenza related lower respiratory tract infections are found in developing countries.

Prevention

Standard Precautions

* Hand hygiene
* Respiratory hygiene and cough etiquette
* Use of appropriate personal protective equipment (PPE)
* Prevention of needle sticks/sharps injuries
* Cleaning and disinfection of the environment and equipment

Hand hygiene

* To be applied before and after any direct contact with a patient or inanimate objects in the immediate vicinity of the patient,after applying PPE, before handling an invasive device, after touching blood or body secretions or contaminated items
* Wash hands with soap and water
* Wash hands with soap and **running** water when hands are visibly dirty
* Use alcohol-based hand rubs if available and if hands are not visibly dirty

Respiratory hygiene and cough etiquette

* Covering mouth and nose when coughing or sneezing with tissue or handkerchief
* Or covering mouth and nose when coughing or sneezing by lifting arm up and covering the nose and mouth with the inner surface of the arm or forearm
* Disposal of the tissues and masks in no-touch receptacles
* Hand hygiene after contact with respiratory secretions

Droplet Precautions

In addition to Standard Precautions

* Encourage patient to wear a face mask
* Use a face mask during examination and direct patient care (when within <1m distance)
* Place patient in isolation or cohort with similar patients

The most effective way to prevent the disease is vaccination. Safe and effective vaccines are available and have been used for more than 60 years. Vaccination is especially important for people at higher risk of serious influenza complications, and for people who live with, or care for, high risk individuals.

Treatment

Antiviral drugs for influenza are available which reduce severe complications and deaths. Ideally they need to be administered early in the disease. There are 2 classes of such medicines:

1. inhibitors of the influenza neuraminidase protein (oseltamivir and zanamivir; as well as peramivir and laninamivir which are licensed in several countries).
2. M2 proton channel blockers adamantanes (amantadine and rimantadine).

WHO monitors antiviral susceptibility among circulating influenza viruses to provide timely guidance for antiviral use in clinical management and potential chemoprophylaxis.

References

WHO, (2012). Vaccines against influenza, WHO position paper, Weekly epidemiological record, No. 47, 23 November 2012

WHO, (2014). Influenza virus infections in humans (February 2014) available at, http://www.who.int/influenza/human_animal_interface/virology_laboratories_and_vaccines/influenza_virus_infections_humans_feb14.pdf?ua=1

Revised Summery Guidelines for Clinical Management and Laboratory Investigation of Patients with Seasonal Influenza Virus Infection

Complied by : Dr. Manjula Kariyawasam, Senior Registrar in Community Medicine, Epidemiology Unit, Ministry of Health

Table 1: Selected notifiable diseases reported by Medical Officers of Health 20th – 26th May 2017 (21stWeek)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmani-asis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	939	13004	0	37	1	2	0	17	0	6	2	41	0	1	1	8	0	0	3	171	0	14	0	1	**75**	**94**
Gampaha	828	9832	0	15	0	12	0	13	0	8	0	29	0	8	0	7	0	1	1	149	0	17	0	4	**13**	**53**
Kalutara	214	3550	0	24	0	3	1	5	1	19	2	120	0	3	0	2	0	0	5	281	1	65	0	0	**36**	**79**
Kandy	261	2134	4	45	0	4	0	4	0	8	1	23	3	70	0	9	0	1	4	141	2	20	0	7	**87**	**96**
Matale	46	662	0	8	1	1	0	1	0	0	0	20	0	2	0	5	0	0	0	27	0	25	0	3	**54**	**85**
NuwaraEliya	17	218	1	14	1	4	1	14	9	9	1	18	2	93	0	10	0	0	15	156	3	25	0	0	**100**	**100**
Galle	129	2522	0	21	0	5	0	5	0	10	1	88	0	21	0	0	0	1	1	162	0	30	0	0	**35**	**60**
Hambantota	68	1470	0	15	0	5	0	7	0	15	0	20	0	26	0	6	0	1	3	111	0	10	7	170	**58**	**100**
Matara	120	1992	0	18	0	6	0	1	0	2	1	49	0	14	0	3	0	1	0	101	0	4	1	55	**35**	**82**
Jaffna	69	2766	1	113	0	9	0	20	1	39	0	22	1	346	0	4	0	0	5	155	0	24	0	0	**100**	**100**
Kilinochchi	4	241	0	8	0	0	0	4	0	1	0	3	0	9	0	2	0	0	0	2	0	4	0	3	**50**	**100**
Mannar	9	453	0	4	0	0	0	1	0	0	0	0	0	2	0	0	0	0	1	8	0	0	0	0	**100**	**100**
Vavuniya	15	425	2	10	0	0	0	15	0	2	0	18	0	6	0	1	0	0	0	18	0	0	0	8	**75**	**100**
Mullaitivu	9	133	0	6	0	1	0	3	0	1	0	8	0	4	0	1	0	1	0	8	0	5	0	2	**80**	**83**
Batticaloa	214	3561	0	59	0	8	0	11	0	10	1	13	0	0	0	4	0	1	1	103	1	20	0	1	**36**	**79**
Ampara	15	308	0	9	0	2	0	1	0	0	0	7	0	1	0	4	0	0	0	99	0	18	0	3	**29**	**86**
Trincomalee	22	4256	1	11	0	2	0	3	0	3	0	10	0	7	1	16	0	0	0	70	0	16	0	1	**38**	**85**
Kurunegala	268	3199	1	30	1	5	0	0	0	2	1	36	1	21	0	12	0	1	2	311	0	20	2	73	**59**	**93**
Puttalam	188	1470	2	23	0	2	0	2	0	0	1	7	0	10	0	1	0	0	1	91	0	18	0	3	**64**	**79**
Anuradhapu	55	1010	0	18	0	1	0	1	0	5	0	33	0	11	0	9	0	0	4	219	0	24	0	125	**32**	**79**
Polonnaruw	42	1605	0	9	0	4	0	5	0	0	1	23	0	3	0	4	0	0	2	122	0	7	5	62	**57**	**57**
Badulla	49	548	0	44	0	6	0	6	0	1	0	42	2	41	0	30	0	1	7	176	2	74	0	12	**65**	**94**
Monaragala	42	848	2	29	0	3	0	0	0	2	0	51	1	65	1	13	0	0	2	49	1	23	0	5	**100**	**100**
Ratnapura	46	596	2	82	0	56	0	4	0	4	1	239	1	18	1	36	0	0	0	186	1	100	0	9	**22**	**72**
Kegalle	334	2986	0	24	3	8	0	4	0	14	0	25	0	41	0	8	0	0	2	134	0	42	0	4	**55**	**91**
Kalmune	233	1849	0	24	0	4	0	2	2	277	0	4	0	0	0	0	0	0	0	104	0	8	0	0	**38**	**85**
SRILANKA	**4257**	**61638**	**14**	**700**	**7**	**153**	**2**	**149**	**13**	**438**	**13**	**949**	**11**	**823**	**4**	**195**	**0**	**9**	**59**	**3154**	**11**	**613**	**15**	**551**	**55**	**85**

Source: Weekly Returns of Communicable Diseases (WRCD).

•**T=**Timeliness refers to returns received on or before 26th May , 2017 Total number of reporting units 337 Number of reporting units data provided for the current week: 296**C****-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

20th – 26th May 2017 (21stWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2017	Number of cases during same week in 2016	Total number of cases to date in 2017	Total number of cases to date in 2016	Difference between the number of cases to date in 2017 & 2016
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	00	01	00	00	00	00	00	00	02	01	35	21	66.6%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	00	00	01	01	00	00	01	03	05	135	169	- 20.11%
Measles	01	00	01	01	00	01	01	00	00	05	03	162	257	- 36.9%
Rubella	00	00	00	00	00	00	00	00	00	00	00	06	06	0%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	08	03	166.6%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	21	00	0%
Whooping Cough	00	00	00	00	00	01	00	00	00	01	01	08	29	- 72.4%
Tuberculosis	13	06	09	02	19	09	05	04	00	67	184	3206	3785	- 15.3%

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS** =Congenital Rubella Syndrome

Number of Malaria Cases Up to End of May 2017,

22

All are Imported!!!

PRINTING OF THIS PUBLICATION IS FUNDED BY THE WORLD HEALTH ORGANIZATION (WHO).

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

ON STATE SERVICE

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