WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health

231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@sltnet.lk
Epidemiologist: +94 11 2681548, E mail: chepid@sltnet.lk
Web: http://www.epid.gov.lk

Vol. 41 No. 27 **28th – 04th July 2014**

SRI LANKA - 2014

WER

Ebola Virus Disease

Introduction

Ebola virus disease (formerly known as Ebola hemorrhagic fever) is a severe and often fatal illness. The World Health Organization (WHO) has reported that the death rate of this disease can go up to 90%.

Current Status

An epidemic of Ebola virus disease is currently going on in West Africa. This 2014 Ebola outbreak is considered as one of the largest in history and the first in West Africa and some agencies describe this as the worst outbreak in the four-decade history of tracking the disease. It is currently affecting four countries in West Africa namely Guinea, Liberia, Nigeria and Sierra Leone and has affected thousands of people, killing hundreds of them in these four countries. Although the case fatality rate of Ebola virus disease is 90%, the survival rate in this Ebola outbreak has been higher than in the previous outbreaks.

Response from the International Health Organizations

Centres for Disease Control and Prevention (CDC) are working with other U.S. government agencies, the World Health Organization (WHO) and other domestic and international partners in an international response to the current Ebola outbreak in West Africa. CDC has activated its Emergency Operations Centre (EOC) to help coordinate technical assistance and control activities with partners. It has deployed several teams of public health experts to the West Africa region and plans to send additional public health experts to the affected countries to expand current response activities.

History

Ebola is not new to the world. It was formerly known as Ebola hemorrhagic fever and first appeared in 1976 in two simultaneous outbreaks in Sudan and a village near the Ebola River in the Democratic Republic of Congo hence it was named as "Ebola virus".

The illness affects both humans and nonhuman primates (monkeys, gorillas, and chimpanzees).The origin of the virus is unknown but fruit bats (Pteropodidae) are considered as the likely host of the Ebola virus. Ebola virus is said to be introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals.

Agent

The incubation period, or the time interval from infection to onset of symptoms, is from 2 to 21 days. The patient becomes contagious once they begin to show symptoms. They are not contagious during the incubation period.

Genus Ebola virus is 1 of 3 members of the Filoviridae family (filovirus), along with genus Marburg virus and genus Cuevavirus. Genus Ebola virus comprises 5 distinct species:

1. Bundibugyo ebolavirus (BDBV)
2. Zaire ebolavirus (EBOV)
3. Reston ebolavirus (RESTV)
4. Sudan ebolavirus (SUDV)
5. Taï Forest ebolavirus (TAFV)

Zaire ebolavirus (EBOV) is responsible for the current epidemic going on in West Africa. BDBV and SUDV have also been associated with large outbreaks in Africa.

Disease Transmission

Infection occurs from direct contact (through broken skin or mucous membranes) with the blood or other bodily fluids or secretions (stool, urine, saliva, semen) of infected people. Infection can also occur if broken skin or mucous membranes of a healthy person come into contact with fomites that have become contaminated with body fluids of an infected person such as soiled clothing, bed linen or used needles.

Burial ceremonies in which mourners have direct contact with the body of the deceased person can also play a role in the transmission of Ebola. People are infectious as long as their blood and secretions contain the virus. Men who have recovered from the disease can still transmit the virus through their semen up to 7 weeks after

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recovery from illness.

Signs and Symptoms

Sudden onset of fever, intense weakness, muscle pain, headache and sore throat are typical signs and symptoms. This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function and in some cases, both internal and external bleeding.

Diagnosis of the Disease

Diagnosis of the disease is based on excluding the similar conditions that can mimic Ebola virus disease such as malaria, typhoid fever, shigellosis, cholera, leptospirosis, plague, rickettsiosis, relapsing fever, meningitis, hepatitis and other viral haemorrhagic fevers.

Laboratory Investigations

Low white blood cell and platelet counts can be seen in full blood count and elevated liver enzymes can be seen.

Definitive diagnosis of Ebola virus disease can be done through following laboratory tests. Samples from patients are an extreme biohazard risk and therefore, testing has be conducted under maximum biological containment conditions.

- Antibody capture enzyme linked immunosorbent assay (ELISA)
- Antigen detection test
- Serum neutralization test
- Reverse transcriptase polymerase chain reaction (RT-PCR) assay
- Electron Microscopy
- Virus isolation by cell culture

Treatment

Although new drug therapies are being evaluated, no specific treatment is available at the moment to cure the disease. Patients who have Ebola virus disease are frequently dehydrated and need intravenous fluids or oral rehydration with solutions that contain electrolytes. Severely ill patients might require intensive supportive care. Some patients will recover with appropriate medical care.

To help control further spread of the virus, people that are suspected or confirmed to have the disease should be isolated from other patients and treated by health workers using strict infection control precautions.
No licensed vaccine for EVD is available. Several vaccines are being tested, but none so far are available for clinical use.

Patients travelling with symptoms and fellow travellers

There is a possibility that a person who has developed symptoms may board a commercial flight or other mode of transport, without informing the transport company of his status. Such patients should seek immediate medical attention upon arrival. Although the risk to fellow travellers in such a situation is very low, contact tracing is recommended in such circumstances.

Prevention and control of the Disease

In the absence of effective treatment and a human vaccine, raising awareness of the risk factors for Ebola infection and the protective measures individuals can take is the only way to reduce human infection and death.

People who are suspected or confirmed to have the disease should be hospitalized immediately to avoid spread of the disease in the community. Even in the hospital, these patients have to be isolated from other patients and treated by health workers using strict infection control precautions.
Reducing the risk of human-to-human transmission arises from direct or close contact with infected patients, particularly with their bodily fluids. Close physical contact with patients should be avoided. Gloves and appropriate personal protective equipment should be worn when taking care of ill patients. Regular hand washing is required for the carers of an ill person and visitors after visiting patients in hospital.
Public should be well educated about the disease and outbreak containment measures, including burial of the dead. People who have died from Ebola should be promptly and safely buried.
As the disease can affect certain animals, in regions where Ebola virus disease has been reported in pigs, all animal products (meat and milk) should be thoroughly cooked before consumption. The risk of disease transmission only exists with consumption of raw food items.

Ways to prevent infection and transmission

Several steps can be taken to help in preventing infection and limiting or stopping transmission.

- Educate the public on the nature of the disease, how it is transmitted and how to prevent transmission of the disease.
- If there is a patient suspected to have Ebola virus disease at the community, inform the MOH of the area and encourage the person and family to seek appropriate medical treatment in a health care facility.
- When visiting patients in the hospital or caring a patient, hand washing with soap and water is recommended after touching a patient, being in contact with their bodily fluids or touching his/her surroundings.
- People who have died from Ebola should only be handled using appropriate protective equipment and should be buried immediately.
- Do not handle animals suspected as having Ebola virus disease.
- In areas where Ebola virus disease has been reported in pigs, all animal products (meat and milk) should be thoroughly cooked before consumption.

Risk of Health workers acquiring the Disease

Health workers treating patients with suspected or confirmed illness are at higher risk of infection than other groups. However, the risk is considered to be very low if they adhere to the standard infection control procedures. If the recommended level of precaution for such settings is implemented, transmission of the disease can be prevented. Proper use of personal protective equipment (PPE-gloves, impermeable gown, boots/ closed shoes with overshoes, mask and eye protection for splashes) as well as proper disposal of PPE after use, is important.

Sources

- Ebola Haemorrhagic Fever (CDC) available from http://www.cdc.gov/vhf/ebola/
- West Africa - Ebola virus disease (WHO) available from http://www.who.int/ith/updates/20140421/en/
- Fact Sheet on Ebola virus disease (WHO) available from http://www.who.int/mediacentre/factsheets/fs103/en/
- Frequently asked questions on Ebola virus disease (WHO) available from http://www.who.int/csr/disease/ebola/faq-ebola/en/

Compiled by Dr. H. A. Shanika Rasanjalee of the Epidemiology Unit

Table 1: Selected notifiable diseases reported by Medical Officers of Health 21st – 27th June 2014 (26th Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		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	491	6913	1	73	0	8	2	51	0	156	3	66	0	1	1	20	0	0	3	274	0	28	0	3	**75**	**25**
Gampaha	296	3061	2	90	0	5	1	23	0	10	0	114	1	7	7	102	0	5	2	198	1	33	0	2	**93**	**7**
Kalutara	97	1292	6	92	0	4	0	22	0	50	9	144	0	0	1	8	0	1	6	156	1	45	0	0	**85**	**15**
Kandy	39	562	1	50	0	3	1	11	1	5	0	17	1	48	3	67	0	0	1	130	0	15	0	2	**78**	**22**
Matale	14	194	2	35	0	1	0	11	2	7	0	23	0	2	0	98	0	1	0	31	2	14	0	25	**69**	**31**
NuwaraEliya	6	130	2	154	0	2	0	14	0	67	2	9	2	40	0	19	0	0	7	64	0	13	0	0	**69**	**31**
Galle	36	495	3	60	0	4	0	3	0	31	5	106	1	49	0	5	0	0	9	302	0	22	0	3	**90**	**10**
Hambantota	41	272	2	26	0	4	0	9	0	9	1	57	0	45	0	9	0	0	2	101	0	21	1	187	**67**	**33**
Matara	14	190	7	41	0	3	1	21	0	12	4	41	1	22	0	20	0	0	3	128	0	21	2	49	**100**	**0**
Jaffna	22	516	8	247	0	4	5	146	0	46	0	6	0	254	0	8	0	0	3	74	1	18	0	0	**92**	**8**
Kilinochchi	0	31	1	57	0	1	0	14	0	0	0	0	0	16	0	0	0	0	0	14	0	3	0	8	**50**	**50**
Mannar	8	26	1	26	0	10	2	28	0	9	0	4	0	20	0	1	0	0	0	8	0	6	0	1	**80**	**20**
Vavuniya	3	79	0	21	0	0	2	12	0	15	0	9	0	4	0	2	0	0	0	6	0	9	0	1	**50**	**50**
Mullaitivu	0	64	0	37	0	0	0	9	0	13	0	8	0	8	0	0	0	1	0	4	0	4	0	7	**60**	**40**
Batticaloa	11	543	13	148	0	2	0	19	0	17	0	13	0	1	0	6	0	1	2	34	0	4	0	0	**86**	**14**
Ampara	6	84	3	29	0	1	0	1	0	8	1	15	1	11	1	4	0	1	0	60	1	6	0	7	**71**	**29**
Trincomalee	7	433	1	25	0	1	0	1	0	3	1	10	1	12	1	2	0	0	5	56	0	1	0	3	**58**	**42**
Kurunegala	86	772	5	70	2	16	0	14	1	18	1	63	0	34	2	23	0	1	4	254	2	43	2	79	**81**	**19**
Puttalam	38	318	3	32	0	1	1	11	0	9	1	51	0	20	0	3	0	2	0	59	1	8	0	5	**92**	**8**
Anuradhapura	20	261	2	58	0	2	1	1	0	16	2	65	0	24	0	4	0	0	4	135	1	27	9	195	**74**	**26**
Polonnaruwa	4	139	0	14	0	1	0	2	0	0	1	13	0	1	0	1	0	0	0	71	0	4	0	35	**14**	**86**
Badulla	9	285	5	59	0	8	0	8	0	5	2	34	1	49	8	83	0	0	1	41	2	59	0	0	**71**	**29**
Monaragala	6	119	1	30	0	2	0	3	0	33	1	57	11	94	0	74	0	2	2	51	0	14	0	15	**82**	**18**
Ratnapura	136	1460	7	143	0	16	0	14	2	21	10	183	2	62	0	223	0	0	5	143	2	22	0	21	**94**	**6**
Kegalle	56	726	4	75	0	7	2	25	0	22	2	93	1	38	2	50	0	0	6	155	7	39	0	1	**73**	**27**
Kalmune	4	87	1	60	0	1	0	5	0	60	0	1	0	0	0	0	0	0	0	77	1	5	0	0	**23**	**77**
SRILANKA	**1450**	**19052**	**81**	**1752**	**2**	**107**	**18**	**478**	**6**	**642**	**46**	**1202**	**23**	**862**	**26**	**832**	**0**	**15**	**65**	**2626**	**22**	**484**	**14**	**64**	**76**	**24**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 27th June , 2014 Total number of reporting units 337 Number of reporting units data provided for the current week: 260 C**-Completeness

A = Cases reported during the current week. **B** = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

21st – 27th June 2014 (26th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2014	Number of cases during same week in 2013	Total number of cases to date in 2014	Total number of cases to date in 2013	Difference between the number of cases to date in 2013& 2014
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	01	00	00	01	00	02	01	45	43	+4.6%
Diphtheria	00	00	00	00	00	00	00	00	00	00	-	00	-	%
Mumps	01	01	03	00	00	02	01	01	00	09	12	368	815	-54.8%
Measles	08	01	06	02	03	05	09	02	01	37	104	1985	925	+114.6%
Rubella	00	00	00	00	00	00	00	00	00	00	01	13	14	-7.1%
CRS**	00	00	00	00	00	00	00	00	00	00	00	04	06	-33.3%
Tetanus	00	00	00	00	00	00	00	00	00	00	01	08	11	-27.2%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	-	18	-	%
Whooping Cough	00	00	00	00	00	00	00	00	00	00	04	26	45	-42.2%
Tuberculosis	62	14	28	08	07	02	05	04	38	168	201	5008	4110	21.9%

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

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

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

Dr. P. PALIHAWADANA
CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10