WEEKLY EPIDEMIOLOGICAL REPORT

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Rift Valley Fever: A zoonotic threat linking animal and human health globally - I

This is the first article of two in a series on "Rift Valley Fever: A zoonotic threat linking animal and human health globally"

Introduction

Rift Valley fever (RVF) is an acute arthropod-borne viral zoonotic disease that can cause severe illness in domestic animals, including buffalo, camels, cattle, goats, and sheep but also can infect humans. RVF imposes a significant economic burden on affected regions, as livestock farming for milk and meat is an important source of income for many people globally.

Epidemiology

RVF is caused by the Rift Valley fever virus, a member of the *Phlebovirus* genus within the Bunyaviridae family. The virus was first identified in 1931 during an investigation into a sheep epidemic in the Rift Valley region, Kenya. Since then, the disease has spread across sub-Saharan Africa and beyond, with notable outbreaks that have significantly impacted both animal and human populations.

Initially, RVF was considered primarily an animal disease, with human cases being rare and mild. However, the disease has caused severe outbreaks in humans since 1975, including hemorrhagic fever cases and fatalities in South Africa, Egypt, and Mauritania. The East Africa outbreak in 1997–1998, triggered by extensive flooding, marked one of the most devastating episodes. RVF was first detected outside Africa in Saudi Arabia and Yemen in 2000, with China reporting its first imported case in 2016 indicating the potential for global spread. Between 2010 and 2024, 67 RVF outbreaks were documented across Uganda, Rwanda, Kenya, Tanzania, Burundi, and South Sudan, impacting both animal and human populations.

Human transmission

Human transmission of RVF primarily occurs through mosquito bites, especially from *Aedes* and *Culex* species, and possibly via blood-feeding flies. It can also spread through direct contact with infected animal blood, tissues, or products. Activities such as slaughtering, butchering, assisting with animal births, performing veterinary procedures, and disposing of carcasses or fetuses put individuals at higher risk, particularly in occupations like farming, slaughterhouse work, and veterinary practice. Consuming unpasteurized or undercooked milk from infected animals may also result in infection.

RVF outbreaks are typically linked to heavy rainfall and flooding, which create favourable conditions for mosquito breeding. The virus is transmitted from female mosquitoes to their eggs, amplifying the risk of transmission to animals and humans.

There is no documented evidence of human-to-human transmission of RVF, and no cases have been reported among healthcare workers who followed standard infection control protocols.

Symptoms in humans

The incubation period for RVF, which is the time between infection and the onset of symptoms, typically ranges from 2 to 6 days.

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In most human cases, the infection causes no symptoms or results in a mild illness characterized by a sudden onset of flu-like symptoms, including fever, , muscle and joint pain, and headache. Some individuals may also experience neck stiffness, light sensitivity, loss of appetite, and vomiting. In such cases, the disease can initially be mistaken for meningitis.

The symptoms of RVF generally last for 4 to 7 days, during which the immune system begins producing detectable antibodies, and the virus is cleared from the bloodstream. A small proportion of patients develop a more severe form of the disease, which manifests in one or more of the following syndromes:

1. Ocular form: Occurs in 0.5–2% of cases, leading to blurred vision and retinal lesions. Permanent vision loss affects 50% of those with macula lesions.

2. Meningoencephalitis: A rare form (less than 1%), causing severe neurological symptoms like headache, confusion, seizures, and coma. Long-term neurological impairments are common.

3. Haemorrhagic fever: Less than 1% of cases, marked by severe liver damage and bleeding symptoms, with a fatality rate of about 50%.

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Table 1 : Water Quality Surveillance
Number of microbiological water samples November 2024

District	MOH areas	No: Expected *	No: Received
Colombo	18	108	**40**
Gampaha	15	90	**0**
Kalutara	13	78	**88**
Kalutara NIHS	2	12	**NR**
Kandy	23	138	**NR**
Matale	13	78	**NR**
Nuwara Eliya	13	78	**19**
Galle	20	120	**121**
Matara	17	102	**156**
Hambantota	12	72	**14**
Jaffna	14	84	**NR**
Kilinochchi	4	24	**27**
Mannar	5	30	**0**
Vavuniya	4	24	**48**
Mullatvu	6	36	**15**
Batticaloa	14	84	**24**
Ampara	7	42	**11**
Trincomalee	12	72	**0**
Kurunegala	29	174	**NR**
Puttalam	13	78	**NR**
Anuradhapura	23	138	**4**
Polonnaruwa	9	54	**5**
Badulla	16	96	**168**
Moneragala	11	66	**NR**
Rathnapura	20	120	**69**
Kegalle	11	66	**10**
Kalmunai	13	78	**10**

* No of samples expected (6 / MOH area / Month)
NR = Return not received

To be continued....

Table 1: Selected notifiable diseases reported by Medical Officers of Health 07th – 13th Dec 2024 (50th Week)

RDHS	Dengue Fever		Dysentery		Encephalitis		En. Fever		F. Poisoning		Leptospirosis		Typhus F.		Viral Hep.		H. Rabiies		Chickenpox		Meningitis		Leishmania-		Tuberculosis		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	A	B	T*	C**
Colombo	247	11128	2	46	0	11	0	49	0	25	21	612	0	10	0	9	0	0	13	594	0	58	0	2	52	2123	89	100
Gampaha	161	5626	4	50	2	41	1	15	1	83	62	1006	2	14	0	13	0	0	19	519	5	147	4	33	28	1151	80	100
Kalutara	32	2659	0	37	0	3	0	38	0	40	51	977	2	10	1	12	0	1	20	683	3	67	0	2	53	627	80	93
Kandy	73	4448	0	43	0	7	0	10	1	75	21	292	2	40	1	15	0	3	8	413	0	15	1	66	35	591	96	100
Matale	38	990	1	20	0	4	0	8	1	32	8	131	0	6	1	11	0	0	3	152	0	24	9	377	3	127	100	100
Nuwara Eliya	1	340	0	157	0	8	1	12	2	226	2	174	3	54	0	10	0	0	8	291	0	19	1	2	3	269	100	100
Galle	34	2094	0	64	0	22	0	12	1	113	35	1024	2	128	1	12	0	2	16	883	5	108	0	5	9	443	90	100
Hambantota	12	841	0	29	0	4	0	7	0	50	8	535	0	48	0	11	0	2	2	314	2	34	5	492	8	158	92	100
Matara	11	1147	0	15	0	7	0	4	0	38	24	681	0	30	2	27	0	0	10	386	1	79	3	122	8	170	76	100
Jaffna	60	5549	4	77	0	2	1	31	0	48	37	69	33	589	0	7	0	1	7	229	0	33	0	1	7	250	79	100
Kilinochchi	8	313	1	18	0	0	0	2	0	2	3	30	2	15	0	0	0	2	1	16	1	7	0	3	4	34	100	100
Mannar	2	323	0	18	0	0	0	1	0	7	2	37	1	14	0	1	0	0	0	12	0	14	0	4	9	66	100	100
Vavuniya	4	188	0	13	0	1	0	2	0	22	2	117	0	6	0	4	0	0	0	47	0	26	0	12	1	46	100	100
Mullaitivu	5	222	1	12	0	0	0	0	6	28	4	79	0	11	0	0	1	3	1	13	0	7	1	18	2	35	100	100
Batticaloa	30	1592	4	134	0	19	0	7	1	66	3	96	0	3	0	24	0	2	4	178	2	55	0	4	4	155	100	100
Ampara	4	265	3	42	0	4	0	0	1	24	10	234	0	2	0	7	0	1	4	139	2	42	1	28	0	108	86	100
Trincomalee	20	733	2	24	0	1	0	3	2	15	5	160	0	15	0	4	0	0	3	114	0	23	0	19	13	135	83	100
Kurunegala	14	2173	2	59	0	40	0	3	0	373	39	1067	4	44	0	11	0	4	15	640	3	279	18	656	1	457	79	93
Puttalam	31	1211	5	20	0	4	0	4	0	4	12	304	2	42	0	5	0	1	3	143	1	86	1	37	0	236	62	100
Anuradhapura	18	765	1	38	0	8	0	3	4	53	27	467	0	33	0	17	0	1	7	312	4	74	21	885	5	281	61	86
Polonnaruwa	5	409	1	29	0	3	0	1	0	33	20	317	0	3	2	66	0	1	2	161	1	35	6	499	2	113	89	100
Badulla	19	865	2	43	0	11	0	9	0	58	7	484	1	55	2	56	0	0	9	407	0	41	0	45	5	242	88	100
Monaragala	22	1003	0	22	0	5	0	3	4	97	24	714	1	37	1	73	0	1	5	190	0	101	6	256	0	129	82	91
Ratnapura	44	2848	4	135	1	14	0	9	0	35	63	2136	0	35	1	33	0	4	4	378	3	145	0	180	9	376	80	100
Kegalle	14	1942	1	33	0	17	0	11	0	16	24	932	0	33	0	15	0	1	21	943	6	95	0	31	6	353	91	91
Kalmunai	6	711	1	21	0	1	0	2	0	30	6	85	0	5	0	4	0	0	2	242	3	36	0	0	3	139	100	100
SRILANKA	**915**	**50385**	**39**	**1199**	**3**	**237**	**3**	**246**	**24**	**1593**	**520**	**12760**	**55**	**1282**	**12**	**447**	**1**	**30**	**187**	**8399**	**42**	**1650**	**77**	**3779**	**270**	**8748**	**88**	**98**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 13th Dec, 2024 Total number of reporting units 358 Number of reporting units data provided for the current week: 358**C****-Completeness *

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

Table 2: Vaccine-Preventable Diseases & AFP

07th – 13th Dec 2024 (50th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2024	Number of cases during same week in 2023	Total number of cases to date in 2024	Total number of cases to date in 2023	Difference between the number of cases to date in 2024 & 2023
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	01	00	01	01	00	01	00	04	01	76	94	-19.1%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	01	02	01	00	00	03	01	00	00	08	03	290	223	30.0%
Measles	01	00	00	00	00	00	00	00	00	01	12	297	780	-61.9 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	02	09	-77.7%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	02	-100 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	05	06	-16.6 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Enceph-alitis	00	00	00	00	00	00	00	00	00	00	00	14	06	133.3 %
Whooping Cough	01	00	00	00	01	00	00	00	00	02	00	71	07	914.2 %

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

NA = Not Available

Take prophylaxis medications for leptospirosis during the paddy cultivation and harvesting seasons.

It is provided free by the MOH office / Public Health Inspectors.

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**

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