WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health & Mass Media

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WER SRI LANKA 2026

Vol. 53 No. 11 09th – 15th Mar 2026

HANTAVIRUS INFECTION - II
An Emerging Zoonotic Threat in Epidemiology and Public Health Implications for Sri Lanka

This is the second article of two in a series on "Hanta Virus Infection: An Emerging Zoonotic Threat in Epidemiology and Public Health Implications for Sri Lanka"

4.2 Hantavirus Pulmonary Syndrome (HPS)

HPS, predominantly caused by New World hantaviruses, presents as a biphasic illness. The prodromal phase (3–5 days) features fever, myalgia, and gastrointestinal symptoms. The cardiopulmonary phase involves rapid onset non-cardiogenic pulmonary oedema, severe hypoxaemia, and cardiogenic shock due to myocardial depression, with mortality exceeding 35% in some series (CDC, 2023). HPS caused by Andes virus is unique in its documented person-to-person transmission capacity, unlike other hantavirus species (Martinez et al., 2005).

Pathogenesis is primarily driven by immunopathological mechanisms: hantaviruses infect endothelial cells without causing direct cytopathic effect; instead, a robust CD8+ T-cell immune response and proinflammatory cytokine cascade (including TNF-α, IL-6, and IL-8) result in increased vascular permeability, tissue oedema, and organ injury (Mackow & Gavrilovskaya, 2009; Kruger et al., 2015).

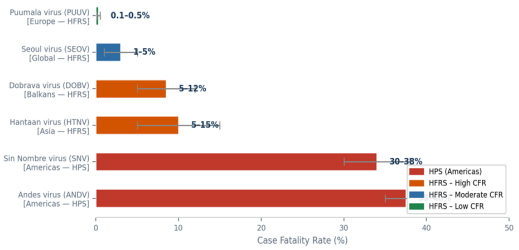

Figure 4. Case Fatality Rates (%) by Hantavirus Species
Source; Jonsson et al., 2010; Vahedi et al., 2013; CDC, 2023

6. CLINICAL MANAGEMENT

No specific antiviral therapy is currently approved globally for hantavirus infection. Management is primarily supportive and must be initiated early in an intensive care setting. Key therapeutic principles include: careful fluid management to avoid pulmonary oedema (particularly important in HFRS); renal replacement therapy for severe acute kidney injury; and extracorporeal membrane oxygenation (ECMO) for refractory respiratory failure in HPS. Intravenous ribavirin has demonstrated efficacy in reducing mortality in HFRS when administered within the first five days of illness onset (Huggins et al., 1991), but evidence for HPS remains inconclusive (Mertz et al., 2004). Early ICU admission, avoidance of excessive fluid

Feature	HFRS	HPS
Geographic distribution	Asia, Europe, globally (SEOV)	Americas
Primary reservoir	Murinae, Arvicolinae rodents	Sigmodontinae rodents
Major virus species	HTNV, SEOV, PUUV, DOBV	SNV, ANDV
Main organ affected	Kidneys	Lungs
Case fatality rate	0.1%–15%	Up to 35%–40%
Person-to-person spread	Not documented	ANDV only

Table 1. Comparison of Key Hantavirus Clinical Syndromes

HTNV = Hantaan virus; SEOV = Seoul virus; PUUV = Puumala virus; DOBV = Dobrava virus; SNV = Sin Nombre virus; ANDV = Andes

resuscitation, and close monitoring of haemodynamic and renal parameters are the cornerstones of care (WHO, 2022).

7. PREVENTION AND CONTROL IN SRI LANKA

Prevention of hantavirus infection centres on reducing human exposure to infected rodents and their excreta. A comprehensive prevention strategy for Sri Lanka should incorporate the following measures:

- Rodent control: Integrated rodent management in agricultural, peri-domestic, and food storage settings through environmental sanitation, building rodent-proofing, and targeted rodenticide application in consultation with the Vector Control Unit (Kruger et al., 2015).
- Safe handling practices: Health workers, farmers, and laboratory personnel should use personal protective equipment (PPE), including N95 respirators, gloves, and eye protection when working in potentially contaminated environments (WHO, 2022).
- Public health education: Community-level awareness programmes targeting agricultural workers in high-risk districts should disseminate guidance on safe food storage, waste disposal, and recognition of early symptoms.
- Surveillance enhancement: The Epidemiology Unit should incorporate hantavirus into the list of notifiable diseases and establish sentinel surveillance in occupationally exposed populations and rodent reservoirs, particularly following flood events.
- Vaccine considerations: Inactivated bivalent vaccines against HTNV and SEOV are in use in China and South Korea (Jonsson et al., 2010); their potential deployment in Sri Lanka should be evaluated pending formal risk stratification studies.

8. PUBLIC HEALTH IMPLICATIONS FOR SRI LANK

Sri Lanka's epidemiological landscape presents a convergence of risk factors that may facilitate hantavirus emergence: an estimated 3.5–5 million rat population concentrated in the dry zone agricultural belt, frequent seasonal flooding displacing rodents into human habitation, and a large proportion of the workforce engaged in subsistence farming with high rodent exposure (Sumathipala et al., 2018). The documented seropositivity of Rattus rattus and Rattus norvegicus to SEOV in studies from Colombo and Kandy districts further supports the plausibility of endemic transmission.

9. CONCLUSION

Hantavirus infection represents a significant but underappreciated emerging infectious disease threat in Sri Lanka. The global burden of disease, the proven presence of hantavirus-seropositive rodent reservoirs domestically, and the ecological conditions favoring increased human-rodent contact collectively underscore the urgency of preparedness. Proactive surveillance, diagnostic capacity building, public health education, and robust rodent control programmes are essential to mitigate the risk of hantavirus outbreaks in Sri Lanka. Clinicians should maintain hantavirus in the differential diagnosis of unexplained febrile illness with acute kidney injury or acute respiratory distress syndrome, particularly in patients with occupational or flood-related rodent exposure.

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Table 1: Distribution of Notified Diseases reported by Medical Officers of Health 02nd – 08th Mar 2026 (10th Week)

RDHS	Dengue Fever		Dysentery		Encephalitis		En. Fever		F. Poison-		Leptospirosis		Typhus		Viral Hep.		H. Rabies		Chickenpox		Meningitis		Leishman.		Tuberculosis		Leprosy		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	A	B	T*	C**
Colombo	350	4296	0	2	0	1	0	4	1	9	2	105	0	0	0	1	0	0	12	138	1	11	0	1	47	371	5	48	88	96
Gampaha	200	2429	1	13	0	8	0	0	0	8	5	144	0	2	0	2	0	0	13	173	3	60	0	4	21	214	0	18	92	93
Kalutara	63	881	0	9	0	2	0	2	0	3	6	93	0	0	0	0	0	0	25	188	0	13	0	0	1	97	0	24	79	100
Kandy	40	659	1	13	0	0	0	3	0	7	3	53	0	14	0	6	0	0	12	139	0	10	2	16	14	120	0	2	98	100
Matale	20	281	0	3	0	1	0	0	0	0	1	60	0	2	0	4	0	0	1	53	4	9	9	121	2	28	0	4	91	93
Nuwara Eliya	8	95	0	18	0	0	0	1	1	6	8	70	3	16	1	6	0	0	13	114	3	29	0	0	3	46	0	2	100	100
Galle	90	1140	1	4	0	2	0	3	0	24	9	141	0	10	1	5	0	0	19	210	5	36	0	1	8	77	0	8	82	100
Hambantota	40	535	2	21	0	0	0	0	0	1	3	48	0	7	1	4	0	0	4	73	0	10	10	58	0	27	0	5	0	100
Matara	96	1206	1	3	0	1	0	0	0	9	9	68	0	4	1	7	0	0	19	161	3	11	2	39	0	32	0	4	4	96
Jaffna	18	392	1	13	1	3	0	9	1	5	1	31	8	121	0	0	0	0	11	128	1	8	0	0	0	38	2	5	96	99
Kilinochchi	2	29	0	1	0	0	0	2	0	0	0	13	1	6	0	2	1	1	0	50	0	1	0	0	1	5	0	1	93	100
Mannar	3	24	0	0	0	1	0	0	0	0	0	17	0	1	0	0	0	0	0	25	0	2	0	2	1	9	0	1	100	100
Vavuniya	0	39	0	5	0	0	0	1	0	0	4	24	0	3	0	0	0	0	1	31	1	6	1	6	0	16	0	1	100	100
Mullaitivu	2	29	0	2	0	0	0	0	0	1	0	13	0	0	0	1	0	0	0	1	0	2	0	3	2	9	0	3	100	100
Batticaloa	58	437	5	24	1	3	1	1	0	15	6	54	0	0	1	5	0	0	10	87	2	7	0	0	4	39	2	30	31	100
Ampara	3	136	0	15	0	1	0	0	1	5	5	42	0	1	0	3	0	0	16	86	2	11	2	4	0	12	0	10	90	100
Trincomalee	8	170	0	8	0	2	0	2	0	2	4	26	0	7	0	1	0	0	6	34	3	13	0	5	4	33	0	2	100	100
Kurunegala	37	397	0	3	1	6	0	2	0	55	9	103	1	18	0	4	0	0	10	184	2	37	7	110	9	69	0	14	47	100
Puttalam	25	271	0	9	0	4	0	0	0	1	4	87	1	10	1	2	0	1	3	44	1	24	1	5	3	32	1	9	33	70
Anuradhapura	8	200	0	6	0	2	0	0	22	26	4	89	1	11	0	2	0	0	20	111	0	16	21	198	5	46	3	13	90	65
Polonnaruwa	3	112	1	5	0	1	0	0	1	17	3	71	1	1	3	9	0	0	14	119	0	7	32	141	1	18	3	14	100	100
Badulla	21	253	1	11	0	3	1	2	0	2	5	62	0	8	3	38	0	0	7	91	0	17	3	26	3	47	1	3	76	100
Monaragala	18	206	1	7	0	3	0	0	0	0	8	76	1	12	1	12	0	0	17	82	1	13	7	52	5	19	0	9	88	100
Ratnapura	67	895	0	10	0	3	1	3	0	6	17	194	0	13	0	4	0	0	9	106	1	11	11	53	10	87	0	9	100	100
Kegalle	43	436	1	11	0	2	1	2	1	14	9	81	0	5	0	3	0	0	16	148	2	19	0	4	7	67	0	2	96	100
Kalmunai	31	261	0	12	0	0	0	0	0	5	4	25	0	1	0	1	0	0	9	106	0	12	0	0	3	26	1	9	100	100
SRILANKA	**1254**	**15809**	**16**	**228**	**3**	**49**	**4**	**37**	**28**	**221**	**129**	**1790**	**17**	**273**	**13**	**122**	**1**	**2**	**267**	**2682**	**35**	**395**	**108**	**849**	**154**	**1584**	**18**	**250**	**80**	**97**

Source: WRCD module of the EPINET.
A = Cases reported during the current week;
T*=Timeliness refers to returns received on or before 08st Mar, 2026.
B = Cumulative cases for the year.
Total number of reporting units 360.
C**-Completeness;

Table 2: Selected Vaccine Preventable Diseases & AFP 02nd – 08th Mar 2026 (10th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2026	Number of cases during same week in 2025	Total number of cases to date in 2026	Total number of cases to date in 2025	Difference between the number of cases to date in 2026 & 2025
	W	C	S	N	E	NW	NC	U	Sab					
AFP[1]	01	00	01	00	00	00	00	00	00	01	01	20	13	53.8%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps[2]	00	01	01	00	01	00	00	00	00	03	06	35	28	25 %
Measles[3]	00	00	00	00	00	00	00	00	00	00	00	00	01	-100 %
Rubella[3]	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
CRS[2]	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus[2]	00	00	00	00	00	00	00	00	00	00	00	00	01	-100 %
Neonatal Tetanus[2]	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis[3]	00	00	00	00	00	00	00	00	00	00	00	00	04	-100 %
Whooping Cough[2]	00	00	00	00	00	00	00	00	00	00	00	05	10	-50 %

Key to Table 2

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

Data Sources:
Weekly Return of Communicable Diseases: Diphtheria, Mumps, Tetanus, Neonatal Tetanus, Whooping Cough.
Special Surveillance: AFP, Measles, Rubella, CRS.

AFP[1] = No Polio cases
Mumps[2], CRS[2], Tetanus[2], Neonatal Tetanus[2], Whooping Cough[2]—Clinically and/ or laboratory confirmed cases
Measles[3], Rubella[3], Japanese Encephalitis[3]— Laboratory Confirmed cases

AFP—Acute Flaccid Paralysis
CRS = Congenital Rubella Syndrome
NA = Not Available

AFP and all Vaccine Preventable Diseases except Mumps should be investigated by the MOH Personally.

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, Epidemiology Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk.** The Epidemiology Unit should be formally acknowledged in all resulting publications as the primary data source.

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