



# WEEKLY EPIDEMIOLOGICAL REPORT

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

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

SRI LANKA 2025

NUMBER

Vol. 52 No. 02

04<sup>th</sup> Jan – 10<sup>th</sup> Jan 2025

## Investigation of Leptospirosis Outbreak in Jaffna District - I

*This is the first article of two in a series on "Investigation of Leptospirosis Outbreak in Jaffna District"*

### Background

Leptospirosis is a bacterial infection caused by spirochetes from the *Leptospira* genus. It can range from mild, self-limiting illness to severe, life-threatening conditions, depending on factors such as the infectious dose and the patient's immune status (Warnasekara, Koralegedara & Agampodi, 2019). The typical incubation period for the disease is about two weeks, though it can vary from 2 to 30 days (World Health Organization, 2003). Both domestic and wild mammals serve as reservoirs, and humans are primarily infected through direct contact with the urine of infected animals or exposure to contaminated water or soil. The bacteria thrive in warm and humid environments, which facilitates their survival in the environment (World Health Organization, 2003).

Leptospirosis often mimics diseases such as dengue, hantavirus, malaria, rickettsioses, and viral sepsis, leading to delayed diagnosis and increased mortality. The absence of point-of-care diagnostic facilities further complicates detection. Limited access to affordable laboratory resources contributes to frequent underdiagnosis and misdiagnosis. Clinically, a deeper understanding of the disease across diverse *Leptospira* species, along with improved diagnostic tools, is essential to preventing severe complications and fatalities. From a public health perspective, the lack of reliable diagnostic tests hinders accurate assessment of the disease burden both regionally and globally. Given these challenges, leptospirosis should always be considered in cases of acute febrile illness with no clear cause. Strengthening clinical recognition and identifying key distinguishing features are critical to improving early detection and reducing diagnostic uncertainty (Uribe-Restrepo et al., 2024).

Severe pulmonary hemorrhagic syndrome (SPHS) is a life-threatening complication of leptospirosis, characterized by a high fatality rate. It has been reported in several countries, including Brazil, India, and parts of South America (Herath et al., 2019). A study conducted in southern Sri Lanka found that of the 128 MAT-confirmed cases of leptospirosis, 80 (62.5%) developed SPHS. This typically occurred within the first week of illness, often around days 4 and 5. The case fatality rate for SPHS patients was 41.5%, with most deaths occurring within the first three days of hospital admission (Herath et al., 2019).

Cyclonic Storm Fengal was a devastating tropical cyclone that struck Southern India and Sri Lanka, causing severe flooding and destruction. In November 2024, it led to widespread inundation across Sri Lanka's Northern Province, with Jaffna District experiencing the most significant impact. About a month later, the Epidemiology Unit was notified of an outbreak of an unidentified fever with respiratory symptoms, including reports of six fatalities and 40 suspected cases at Teaching Hospital Jaffna (TH Jaffna) and Base Hospital Point Pedro (BH Point Pedro). In response, an investigation was promptly launched to determine whether these cases were related to leptospirosis and linked to the recent flooding.

### Methodology

Suspected leptospirosis cases were defined as individuals presenting with fever and at least one nonspecific symptom such as myalgia, headache, cough, shortness of breath, jaundice, conjunctival suffusion, or rash, and who had been exposed to floodwater since December 1, 2024.

1. Investigation of Leptospirosis Outbreak in Jaffna District - I	1
2. Summary of selected notifiable diseases reported (28 <sup>th</sup> – 03 <sup>rd</sup> Jan 2025)	3
3. Surveillance of vaccine preventable diseases & AFP (28 <sup>th</sup> – 03 <sup>rd</sup> Jan 2025)	4

From December 1 to January 10, 2025, 221 patients with symptoms compatible with leptospirosis were reported at hospitals in the flood-affected areas. After reviewing hospital records, patients who did not meet the case definition were excluded. Interviews were conducted with the remaining patients to assess floodwater exposure. Blood and urine samples were collected for leptospirosis polymerase chain reaction (PCR) testing and microscopic agglutination test (MAT) to confirm the diagnosis. All testing was conducted at the Medical Research Institute (MRI).

### Epidemiological Overview of Leptospirosis Outbreak in Jaffna District, Sri Lanka

Leptospirosis was made notifiable in 1974, and since then, the notification data indicate a steady increase in reported cases over the last two decades. Notably, Sri Lanka experienced its largest outbreak of leptospirosis at that time in 2008, with 7,423 suspected cases and 204 deaths, yielding an incidence rate of 35.7 per 100,000 population and a case fatality rate (CFR) of 2.7%. Subsequent outbreaks in 2009 and 2010 recorded 4,980 cases with 145 deaths and 4,553 cases with 121 deaths, respectively (Epidemiology Unit, 2016). These data underscore Sri Lanka's endemic status for leptospirosis, with outbreaks frequently reported from various districts. However, most cases have been clinically diagnosed, with only a limited number confirmed through laboratory investigations (Agampodi et al, 2011).

While Sri Lanka is generally considered endemic for leptospirosis, Jaffna District—previously regarded as a non-endemic area—has recently experienced an unexpected rise in cases. This emergence is attributed to several factors, including heavy rainfall, which contaminates water sources with urine from infected rodents, increased agricultural activity leading to greater exposure to contaminated water and soil, and the presence of rodents in paddy fields, facilitating disease transmission. The outbreak has been thoroughly investigated by the Epidemiology Unit in collaboration with provincial and district health authorities, the Medical Research Institute (MRI), clinical experts, and public health teams, confirming the presence of leptospirosis in the region.

As of January 10, 2025, a total of 221 patients (Figure 1) had been admitted to Base Hospital Point Pedro and Teaching Hospital Jaffna, with over 90% of cases originating from the areas of Point Pedro, Karaveddy, and Chavakachcheri. These patients exhibited classic symptoms of leptospirosis, including fever, muscle pain (myalgia), and respiratory symptoms such as cough and shortness of breath. Among them, 113 cases were clinically diagnosed with leptospirosis, while laboratory confirmation was obtained for 20 patients, with 15 testing positives via polymerase chain reaction (PCR) and five through microscopic agglutination testing (MAT). These findings underscored the severity of the outbreak and the urgent need for public health interventions to prevent further spread.

The epidemiological investigation identified a high-risk zone near the MOH regions of Point Pedro, Karaveddy, and Chavakachcheri (Figure 2), which had been severely affected by flooding. This area, characterized by unhygienic conditions, was home to unauthorized cattle and pig farms, creating an environment conducive to the spread of *Leptospira* bacteria. The floodwaters not only submerged roads and homes but also contaminated community wells—the primary source of

drinking water for many residents. This led to increased exposure to infected animal urine, which is the primary mode of leptospirosis transmission. The presence of standing water and poor sanitation further exacerbated the situation, heightening the risk of infection among the affected population.

It was recommended to conduct further investigation of animal samples from this grassland to confirm the source of the infection. A total of 384 animal serum samples, including 149 goats, 221 cattle and 14 sheep, were analyzed by veterinary officers to identify potential serovars that might correspond to human cases. Serologically positive results were found exclusively in cattle and goats. Based on these findings, it was advised that livestock management practices be enhanced, along with measures to control rodents, which are the primary hosts of leptospirosis.

#### Compiled by:

**Dr Prabha Abeykoon**

**Acting Consultant Community Physician  
Epidemiology Unit**

#### References:

1. Warnasekara, J., Koralegedara, I., & Agampodi, S. (2019). Estimating the burden of leptospirosis in Sri Lanka: A systematic review. *BMC Infectious Diseases*, 19, 1-12.
2. Terpstra, W. J. (2003). Human leptospirosis: Guidance for diagnosis, surveillance, and control. World Health Organization.
3. Epidemiology unit. (2016). National Guidelines on Management of Leptospirosis. Ministry of Health, Nutrition and Indigenous Medicine Sri Lanka.
3. Uribe-Restrepo, P., Perez-Garcia, J., Arboleda, M., Munoz-Zanzi, C., & Agudelo-Florez, P. (2024). Clinical presentation of human leptospirosis in febrile patients: Urabá, Colombia. *PLoS neglected tropical diseases*, 18(9), e0012449.
5. Herath, N., Uluwattage, W., Weliwitiya, T., Karunayake, L., Lekamwasam, S., Ratnatunga, N., ... & Agampodi, S. (2019). Sequel and therapeutic modalities of leptospirosis-associated severe pulmonary hemorrhagic syndrome (SPHS): A Sri Lankan experience. *BMC Infectious Diseases*, 19, 1-8.
6. Agampodi, S. B., Peacock, S. J., Thevanesam, V., Nugegoda, D. B., Smythe, L., Thaipadungpanit, J., ... & Vinetz, J. M. (2011). Leptospirosis outbreak in Sri Lanka in 2008: lessons for assessing the global burden of disease. *The American journal of tropical medicine and hygiene*, 85(3), 471.

Table 1: Selected notifiable diseases reported by Medical Officers of Health 28<sup>th</sup> Dec -03<sup>rd</sup> Jan 2025 (1<sup>st</sup> Week)

RDHS	Dengue Fever		Dysentery		Encephalitis		En. Fever		F. Poisoning		Leptospirosis		Typhus F.		Viral Hep.		H. Rabies		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	200	200	1	1	0	0	0	0	0	0	14	14	0	0	0	0	0	0	0	10	10	1	1	0	0	35	35	100	100
Gampaha	186	186	0	0	1	1	0	0	0	0	24	24	1	1	0	0	0	0	12	12	5	5	0	0	27	27	100	100	
Kalutara	65	65	2	2	0	0	0	0	0	0	30	30	0	0	0	0	0	0	7	7	1	1	0	0	3	3	71	100	
Kandy	66	66	2	2	0	0	0	0	1	1	17	17	3	3	0	0	0	0	7	7	1	1	0	0	57	57	100	100	
Matale	52	52	0	0	0	0	0	0	0	0	12	12	0	0	0	0	0	0	1	1	0	0	10	10	0	0	100	100	
Nuwara Eliya	5	5	2	2	0	0	2	2	4	4	5	5	3	3	0	0	0	0	0	0	0	0	1	1	0	0	10	92	100
Galle	30	30	5	5	2	2	0	0	3	3	26	26	2	2	0	0	0	0	3	3	1	1	0	0	18	18	95	100	
Hambantota	36	36	0	0	1	1	0	0	0	0	10	10	2	2	0	0	0	0	6	6	0	0	6	6	6	6	100	100	
Matara	28	28	0	0	1	1	0	0	0	0	17	17	0	0	1	1	0	0	8	8	2	2	2	2	11	11	94	100	
Jaffna	58	58	5	5	0	0	0	0	0	0	26	26	28	28	0	0	0	0	4	4	1	1	0	0	0	0	100	93	
Kilinochchi	5	5	0	0	0	0	0	0	1	1	10	10	2	2	0	0	0	0	0	0	0	0	0	0	4	4	100	100	
Mannar	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	100	100	
Vavuniya	4	4	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	1	1	0	0	1	100	100	
Mullaitivu	3	3	1	1	0	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100
Batticaloa	62	62	4	4	1	1	0	0	1	1	2	2	1	1	3	3	0	0	11	11	1	1	0	0	1	1	100	100	
Ampara	4	4	0	0	1	1	0	0	0	0	4	4	0	0	0	0	0	0	1	1	2	2	0	0	1	1	86	100	
Trincomalee	28	28	4	4	1	1	0	0	0	0	1	1	1	1	1	1	0	0	2	2	1	1	0	0	4	4	100	100	
Kurunegala	26	26	1	1	2	2	0	0	0	0	32	32	0	0	0	0	0	0	14	14	2	2	15	15	7	7	100	100	
Puttalam	30	30	0	0	0	0	0	0	0	0	26	26	4	4	1	1	0	0	7	7	7	7	0	0	13	13	92	100	
Anuradhapura	27	27	1	1	2	2	0	0	0	0	30	30	1	1	1	1	0	0	8	8	2	2	26	26	2	2	91	100	
Polonnaruwa	14	14	1	1	0	0	0	0	0	0	3	3	0	0	0	0	0	0	4	4	0	0	0	0	0	0	100	100	
Badulla	5	5	2	2	0	0	0	0	1	1	10	10	0	0	0	0	0	0	5	5	0	0	11	11	4	4	100	100	
Monaragala	25	25	1	1	0	0	0	0	0	0	9	9	3	3	2	2	0	0	12	12	2	2	1	1	3	3	100	100	
Ratnapura	30	30	0	0	1	1	0	0	0	0	22	22	0	0	0	0	0	0	0	0	2	2	3	3	8	8	95	100	
Kegalle	64	64	5	5	1	1	0	0	0	0	40	40	1	1	0	0	0	0	4	4	1	1	1	1	12	12	100	100	
Kalmunai	54	54	6	6	1	1	0	0	2	2	18	18	1	1	0	0	0	0	21	21	0	0	1	1	7	7	100	100	
<b>SRILANKA</b>	<b>111</b>	<b>1118</b>	<b>43</b>	<b>43</b>	<b>15</b>	<b>15</b>	<b>2</b>	<b>2</b>	<b>13</b>	<b>13</b>	<b>398</b>	<b>398</b>	<b>53</b>	<b>53</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>147</b>	<b>147</b>	<b>35</b>	<b>35</b>	<b>76</b>	<b>76</b>	<b>235</b>	<b>235</b>	<b>97</b>	<b>99</b>	

Source: Weekly Returns of Communicable Diseases (esurveillance.epid.gov.lk). T=Timeliness refers to returns received on or before 03<sup>rd</sup> Jan, 2025 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**

28<sup>th</sup> Dec – 03<sup>rd</sup> Jan 2024 (01<sup>st</sup> Week)

Disease	No. of Cases by Province									Number of cases during current week in 2025	Number of cases during same week in 2024	Total number of cases to date in 2025	Total number of cases to date in 2024	Difference between the number of cases to date in 2025& 2024
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	00	00	00	00	00	01	00	00	02	03	02	03	-33.3%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	02	01	00	00	00	00	00	01	01	05	02	05	02	150 %
Measles	02	00	01	00	00	00	00	00	00	03	06	03	06	-50 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	02	00	0%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus	00	00	01	00	00	00	00	00	00	00	00	01	00	0 %
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	02	00	00	0 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %

**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](mailto:chepid@sltnet.lk). **Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

**ON STATE SERVICE**

**Dr. H. A. Tissera**  
 Actg. CHIEF EPIDEMIOLOGIST  
 EPIDEMIOLOGY UNIT  
 231, DE SARAM PLACE  
 COLOMBO 10