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Lessons from Leptospirosis Deaths in Sri Lanka, 2025: Findings from a National Secondary Data Analysis

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ABSTRACT
Background: Leptospirosis is a globally important zoonotic disease and a leading cause of preventable mortality in Sri Lanka, with deaths driven by occupational and environmental exposure, delayed care-seeking, late clinical recognition and severe complications.
Methods: A descriptive secondary data analysis was conducted using the national leptospirosis death review database of the Epidemiology Unit, Ministry of Health, Sri Lanka. The analysis included 206 valid death records reported during 2025 through institutional death review forms.
Results: The median age was 53 years (IQR 41.5–61.5; range 16–84). Males accounted for 168/205 deaths (82.0%). The largest age group was 45–59 years (79/205, 38.5%). The highest numbers of deaths were reported from Kurunegala (34/206, 16.5%), Gampaha (19/206, 9.2%) and Rathnapura (16/206, 7.8%). Fever (155/198, 78.3%), headache (121/198, 61.1%), myalgia (115/198, 58.1%) and anuria/oliguria (93/198, 47.0%) were the most commonly documented features. Paddy field exposure was recorded in 68/206 (33.0%) of deaths. The median time from symptom onset to admission was 3 days, and the median time from symptom onset to death was 7 days. Among death review findings, late presentation or delayed treatment-seeking was the most frequent theme (75/87, 86.2%).
Conclusions: These findings highlight opportunities to reduce leptospirosis deaths in Sri Lanka through earlier detection, prompt evidence-based treatment supported by regular clinician training, targeted risk communication for high-risk populations, improved chemoprophylaxis uptake, timely referral, and strengthened access to critical care and renal support services.

KEYWORDS: Leptospirosis, death audit, Sri Lanka, mortality, surveillance, secondary data analysis, Epidemiology Unit.

1. BACKGROUND

Leptospirosis is a globally significant zoonotic bacterial infection caused by pathogenic *Leptospira* species, and remains one of the most under-recognised causes of febrile illness and death in the tropics [1,7,8]. A 2015 global systematic review estimated that leptospirosis causes approximately 1.03 million clinical cases and 58,900 deaths annually worldwide, with the highest burden concentrated in South and Southeast Asia and other resource-limited tropical settings [8,9], corresponding to roughly 2.9 million disability-adjusted life years lost each year [9]. Humans are typically infected through direct or indirect contact with the urine of infected animals — most often rodents, livestock and domestic animals — or through contact with environments contaminated by animal urine, with entry occurring through skin abrasions, mucous membranes or the conjunctiva; person-to-person transmission is extremely rare [1,7]. The clinical spectrum ranges from a mild, self-limiting febrile illness to severe, potentially fatal disease characterised by jaundice, acute kidney injury, pulmonary haemorrhage, myocarditis and multi-organ dysfunction, a constellation historically known as Weil's disease [7].

In Sri Lanka, leptospirosis has long been recognised as an important public health problem, and the country is considered to have one of the highest reported incidences of human leptospirosis in the world [11,12]. The country's climate, agricultural practices and high level of human-animal-environment interaction create ideal conditions for transmission [11]. Paddy cultivation is the most consistently identified risk factor, as transplanting and harvesting rice requires prolonged wading in flooded fields that may be contaminated with rodent or animal urine [2,13]; a national case-control study confirmed a significantly higher risk of leptospirosis among paddy workers compared with non-paddy workers, while also identifying cattle and household animal contact as important exposures, particularly among non-paddy occupational groups [13]. Other important exposures include muddy and marshy terrain, drainage and sanitation work, floodwater exposure during seasonal flooding and monsoons, animal husbandry, and manual labour

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in construction or plantation settings [2,11]. A recent 16-year district-level analysis further demonstrates that leptospirosis incidence in Sri Lanka is significantly associated with rainfall, humidity and temperature, with clustering in southwestern wet-zone districts [14], reinforcing the seasonal and geographic predictability of risk. The disease is notifiable in Sri Lanka and is monitored through the national surveillance system coordinated by the Epidemiology Unit, Ministry of Health [3,4,6].

Despite being treatable with antibiotics — particularly when initiated early [7,15] — leptospirosis continues to cause deaths in Sri Lanka. A systematic review of untreated leptospirosis found that mortality rises substantially in the absence of timely antimicrobial therapy, underscoring the time-critical nature of clinical suspicion and management [10]. Mortality in Sri Lanka is driven by a convergence of factors: delayed presentation to health services [12], failure to elicit an exposure history and maintain clinical suspicion in the outpatient setting, late initiation of antibiotics, insufficient preparedness for complications such as acute kidney injury and pulmonary haemorrhage [5], and constraints in access to critical care services including dialysis and intensive care [17]. High-risk groups — particularly adult male agricultural workers — may present late because they underestimate fever as work-related tiredness, prefer to seek care from informal providers first, or face barriers such as distance from facilities and work obligations [11,12]; similar delay patterns have been documented for other acute febrile and vector-borne illnesses in Sri Lanka, including dengue, where diagnostic overlap with leptospirosis further complicates early recognition [18,19].

Death reviews provide a structured mechanism for examining individual mortality events to identify avoidable factors and generate actionable learning. In Sri Lanka, leptospirosis deaths are subject to a national death review process coordinated by the Epidemiology Unit [3,6]. Reviewing completed death forms in aggregate offers an important opportunity to identify population-level patterns in care-seeking, clinical presentation, health system response and contributory factors to prevent deaths. The present analysis was undertaken to describe the epidemiological, clinical and health-system characteristics of leptospirosis deaths reported in Sri Lanka during 2025 and to identify programme lessons for reducing preventable leptospirosis mortality.

2. METHODS

This was a descriptive secondary data analysis of leptospirosis deaths reported through the national death review process in Sri Lanka. The data source was the leptospirosis death review database maintained by the Epidemiology Unit, Ministry of Health, Sri Lanka, which compiles institutionally completed death review forms submitted from hospitals and Medical Officer of Health (MOH) areas across all Regional Director of Health Services (RDHS) jurisdictions. The database contained 206 valid death records for the year 2025.

The study population included all valid leptospirosis death records available in the 2025 death review dataset. Each record represents a death for which a leptospirosis death review form had been completed and entered into the database. Variables analysed included: sociodemographic characteristics (age, sex, ethnicity, occupation); geographic identifiers (RDHS area, MOH area); clinical timeline (date of symptom onset, date of first medical contact, date of hospital admission, date of death); health-system pathway (first place of medical advice, transfer history); clinical features (symptoms and signs at presentation); investigations (serology, other laboratory results); exposure history (source of contamination, skin injury, animal or environmental contact); prophylaxis status; presence of chronic underlying conditions; complications (pulmonary haemorrhage, plasmapheresis or therapeutic plasma exchange); cause of death; and death review status and review committee findings.

Categorical variables were summarised as frequencies and percentages. Continuous variables, including age and time intervals, were summarised using the median, interquartile range (IQR) and range to account for skewed distributions. Percentages were calculated using available denominators; variables with substantial missing data were described as such and the number of valid records used as a denominator was stated explicitly. Missing and incomplete data were reported but excluded from denominator-specific analyses where appropriate. Time intervals (onset to admission, onset to death, admission to death) were calculated only when both dates were available and produced a non-negative plausible result. Death review finding categories were derived from free-text entries and a single record could contribute to more than one thematic category; therefore, percentages do not sum to 100%.

This analysis used routinely collected national programme data maintained by the Epidemiology Unit, Ministry of Health, Sri Lanka, for the purposes of disease surveillance and mortality prevention planning. Results are presented exclusively in aggregate form and no personal identifiers are included in this report. The analysis did not involve direct human subjects research and was conducted for public health programme improvement purposes.

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3. RESULTS

A. 3.1 Demographic Profile

A total of 206 valid leptospirosis death records reported during 2025 were included in the analysis. Age was available for 205 deaths. The median age was 53 years (IQR 41.5–61.5; range 16–84), indicating that the majority of deaths occurred in the productive middle-aged and older adult population. Among 205 records with sex recorded, 168 (82.0%) were male and 37 (18.0%) were female, reflecting a marked male predominance consistent with occupationally driven transmission. The largest number of deaths occurred in the 45–59-year age group (79/205, 38.5%), followed by the 60–74-year group (58/205, 28.3%). The 30–44-year group accounted for 45/205 (22.0%) of deaths.

Table 1. Demographic characteristics of leptospirosis deaths, Sri Lanka, 2025.

Gender (n= 205)	**Number**	**Percentage (%)**
Male	168	82
Female	37	18
Age (n= 205)		
15–29 years	18	8.8
30–44 years	45	22
45–59 years	79	38.5
60–74 years	58	28.3
75 years and above	5	2.4

B. 3.2 Geographic and Monthly Distribution

Deaths were reported from multiple RDHS areas across the country, confirming a wide geographic distribution of fatal leptospirosis in 2025, consistent with the nationally endemic pattern of the disease [11,14]. The highest number of deaths was reported from Kurunegala (34/206, 16.5%), followed by Gampaha (19/206, 9.2%) and Rathnapura (16/206, 7.8%). The geographic concentration in these districts, which include major agricultural zones, paddy cultivation areas and peri-urban settlements, underscores the need for district-specific risk communication and clinical preparedness.

Deaths occurred throughout the year, demonstrating that leptospirosis mortality is not confined to a single season. The highest number was recorded in May (27/206, 13.1%), coinciding with the Yala cultivation season and associated periods of increased paddy field exposure and flooding. A secondary peak was recorded in December (25/206, 12.1%), overlapping with the Maha cultivation season. This bimodal pattern mirrors district-level modelling showing that leptospirosis incidence in Sri Lanka rises with monsoon rainfall and associated humidity [14], and suggests that agricultural calendar events and monsoon-associated environmental exposures drive seasonal fluctuations in mortality, and that pre-season clinical preparedness and community risk communication must be activated before these predictable high-risk periods.

Table 2. Monthly distribution of leptospirosis deaths, Sri Lanka, 2025.

Month	**Deaths**	**Percentage (%)**
January	18	8.7
February	16	7.8
March	16	7.8
April	18	8.7
May	27	13.1
June	14	6.8
July	17	8.3
August	16	7.8
September	10	4.9
October	14	6.8

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November	15	7.3
December	25	12.1

C. 3.3 Occupation and Exposure History

Occupation data were frequently missing, not recorded, or classified as no occupation or housewife (77/206, 37.4%). Among those with recorded occupations, labourer or manual worker (59/206, 28.6%) and farmer or agricultural worker (38/206, 18.4%) were the most frequently identified categories. The high proportion of missing or unclear occupational data is a limitation of the death review form completion, but the recorded occupational profile is consistent with leptospirosis as an occupational disease of agricultural and manual labourers, as has been repeatedly demonstrated in Sri Lankan case-control and cross-sectional studies [2,13].

Among exposure sources recorded, paddy field exposure was the most frequent (68/206, 33.0%), followed by marshy or muddy land contact (32/206, 15.5%), other water-related exposures (19/206, 9.2%), and other agricultural or garden exposures (18/206, 8.7%). Animal or rodent exposure was recorded in only 4 records (1.9%), which likely reflects under-documentation rather than true low prevalence. Skin injury — which may facilitate leptospiral entry — was variably recorded. These findings reinforce that paddy cultivation and wet environmental contact are the dominant exposure pathways for fatal leptospirosis in Sri Lanka.

Table 3. Reported source of contamination or exposure, leptospirosis deaths, 2025.

Exposure Source	Number	Percentage (%)
Paddy field	68	33
Marshy / muddy land	32	15.5
Other water-related exposure	19	9.2
Other agricultural/garden exposure	18	8.7
Construction/manual work exposure	5	2.4
Animal/rodent exposure	4	1.9
Other	25	12.1
Missing / unknown	35	17
Total	**206**	**100**

D. 3.4 Clinical Presentation, Care Pathway and Delays

Symptoms and signs at presentation were documented in 198 of 206 records. Fever was the most frequent symptom (155/198, 78.3%), followed by headache (121/198, 61.1%) and myalgia (115/198, 58.1%). These three symptoms constitute the classic early leptospirosis presentation described in international clinical reviews [7], but are also common to many other acute febrile illnesses — including dengue, which is a well-documented differential diagnosis in Sri Lanka [18,19] — underscoring the challenge of clinical differentiation without an active exposure history. Renal involvement was reflected in the high frequency of anuria or oliguria (93/198, 47.0%), confirming that acute kidney injury was common in the fatal case series. Prostration (41/198, 20.7%), breathlessness (36/198, 18.2%), cough (35/198, 17.7%), jaundice (31/198, 15.7%), and conjunctival suffusion (21/198, 10.6%) were also documented. Haemoptysis, a marker of severe pulmonary involvement, was recorded in 6/198 (3.0%) of documented records, though this is likely an underestimate given that pulmonary haemorrhage status was incompletely recorded across the broader dataset, consistent with prior Sri Lankan reports identifying pulmonary haemorrhage as a leading proximate cause of leptospirosis death [5].

Table 4. Clinical features documented among fatal leptospirosis cases, Sri Lanka, 2025.

Symptom / Sign	Number	% Among Documented Records
Fever	155	78.3
Headache	121	61.1
Myalgia	115	58.1
Anuria / oliguria	93	47

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Prostration	41	20.7
Breathlessness	36	18.2
Cough	35	17.7
Jaundice	31	15.7
Conjunctival suffusion	21	10.6
Haemoptysis	6	3

The first medical contact was recorded as a government hospital in 141 records (68.4%), and a private practitioner or private hospital in 52 records (25.2%). Transfer from another facility was documented in 111 records (53.9%), indicating that more than half of patients were managed at least twice across health facilities before death. This high inter-facility transfer rate highlights the need for clear and timely referral protocols, as each transfer introduces a potential delay in escalating care.

The median interval from symptom onset to hospital admission was 3 days (IQR 2–5; range 0–17 days). Notably, 58/196 (29.6%) were admitted five or more days after symptom onset — nearly one-third of cases. The median interval from symptom onset to death was only 7 days (IQR 5–10; range 1–41 days), indicating an extremely narrow window between illness onset and fatal outcome, consistent with the accelerated mortality trajectory reported for untreated or late-treated leptospirosis internationally [10]. The median interval from admission to death was 3 days (IQR 1–6; range 0–38 days), suggesting that a significant proportion of deaths occurred shortly after hospitalisation, by which time severe complications — including acute kidney injury requiring renal replacement therapy — may have already been established [17].

Table 5. Time intervals among reported leptospirosis deaths, Sri Lanka, 2025.

Time Interval	Records Analysed	Median	IQR	Range
Onset to admission	196	3 days	2–5 days	0–17 days
Onset to death	201	7 days	5–10 days	1–41 days
Admission to death	199	3 days	1–6 days	0–38 days

E. 3.5 Laboratory Findings, Complications and Death Review Findings

Laboratory documentation was substantially incomplete across the dataset. Blood taken for leptospirosis serology was recorded as yes in 70 records (34.0%) and as no in 50 records (24.3%), with the remaining records having the field left blank, marked as not known, or otherwise incomplete. This degree of incompleteness limits meaningful interpretation of serological confirmation rates. Prophylaxis status was recorded as no in 138 records (67.0%), with a substantial proportion of records having missing or unclear entries. Only isolated records documented that prophylaxis had been taken, refused, or offered but declined — a pattern that mirrors community studies showing that many at-risk farmers do not use doxycycline chemoprophylaxis despite its demonstrated protective efficacy [15,16].

Institutional death review findings were formally documented in 87 of the 206 records (42.2%). This low completion rate itself constitutes an important finding: for more than half of deaths, the death review process had not generated a documented set of findings at the time of data extraction, limiting the scope for system-level learning. Among the 87 records with findings, late presentation or delayed treatment-seeking was the most frequently identified theme (75/87, 86.2%), making it by far the dominant modifiable factor identified through the review process. Clinical management or diagnostic issues were identified in 73/87 (83.9%) of records with findings. Service or critical care access issues — including constraints related to ICU availability, dialysis, continuous renal replacement therapy (CRRT), plasmapheresis or laboratory services — were identified in 31/87 (35.6%). Prophylaxis or awareness-related issues were identified in 22/87 (25.3%). Referral or transfer delays were explicitly recorded as a finding in 2/87 (2.3%) records, though the high inter-facility transfer rate observed in clinical pathway data suggests this may be underreported.

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Table 6. Main themes identified in leptospirosis death reviews, Sri Lanka, 2025.

Theme Identified in Death Review	Number	% Among Records with Findings
Late presentation / delayed treatment-seeking	75	86.2
Clinical management / diagnostic issue	73	83.9
Service / critical care / laboratory access issue	31	35.6
Prophylaxis or awareness-related issue	22	25.3
Referral or transfer delay	2	2.3

4. DISCUSSION

This national secondary analysis of leptospirosis death review data provides important programme lessons for reducing preventable leptospirosis mortality in Sri Lanka. The findings are drawn from 206 death records compiled during 2025 and reflect the collective experience of the national death review system. Several key themes emerge from the analysis.

Fatal cases were predominantly adult males, with a median age of 53 years and a male-to-female ratio of approximately 4.5:1. This demographic pattern is consistent with the occupational and behavioural risk profile of leptospirosis in Sri Lanka and elsewhere [8,13]. Men engaged in paddy cultivation, manual labouring, drainage work and other wet environmental activities constitute the highest-risk group for exposure [2,13], and may also be more likely to delay seeking care due to the perception that early fever and body aches are occupational fatigue rather than signs of infection [11,12]. The concentration of deaths in the 45–59-year age group further suggests that middle-aged male agricultural workers bear a disproportionate share of leptospirosis mortality, a pattern that should guide the targeting of risk communication and early-warning messages.

The geographic distribution of deaths across multiple RDHS areas, with concentrations in Kurunegala, Gampaha and Rathnapura, reflects the spatial overlap of leptospirosis risk with rice cultivation zones, peri-urban agricultural areas and flood-prone terrain, echoing recent national spatiotemporal modelling that identifies wet-zone and monsoon-exposed districts as persistent hotspots [14]. This distribution supports the use of district-specific risk mapping and the tailoring of prevention and clinical preparedness messages to the epidemiological context of individual districts, rather than reliance on a single generic national message. Districts with high reported death counts require particular attention to pre-season clinical sensitisation, community awareness campaigns and critical care readiness planning.

The monthly pattern of deaths, with peaks in May and December, aligns with the Yala and Maha agricultural cultivation seasons and associated environmental exposures during monsoon-influenced periods, consistent with climate-sensitivity analyses showing that rainfall and humidity are significant short-lag predictors of leptospirosis incidence in Sri Lanka [14]. This seasonality is predictable and should be used to activate proactive measures before peak risk periods: targeted community awareness campaigns, clinical refresher communications to primary care providers and hospital staff, review of prophylaxis distribution readiness [4], and pre-emptive assessment of critical care capacity in high-burden districts.

The clinical findings confirm that the presenting symptom complex of fever, headache and myalgia — common but non-specific [7] — constitutes the dominant early presentation. These symptoms overlap with dengue fever, influenza and other acute febrile illnesses prevalent in Sri Lanka [18,19], making differential diagnosis challenging in the outpatient and emergency setting. However, the key clinical learning is that exposure history must be actively elicited from all febrile patients, and that a history of paddy field work, mud exposure, drainage work or floodwater contact in a febrile patient should trigger clinical suspicion for leptospirosis and early antibiotic treatment without waiting for laboratory confirmation [3,7]. The high frequency of renal impairment, breathlessness and jaundice in the fatal case series reflects severe disease at the time of hospital contact, further reinforcing the importance of early recognition before complications develop.

The most critical quantitative finding of this analysis is that the median time from symptom onset to death was only 7 days, a timeline that is compatible with the accelerated mortality described in systematic reviews of untreated or inadequately treated leptospirosis [10]. With a median 3-day delay to admission, many patients arrived at health facilities already in an advanced stage of illness. Nearly one-third of patients with valid onset-to-admission data were admitted five or more days after onset. The median hospital survival time of 3 days after admission suggests that severe complications were either already established at admission or progressed rapidly thereafter; emerging evidence on the timing of renal replacement therapy in leptospirosis-associated acute kidney

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injury suggests that both the recognition of severe renal involvement and the timeliness of its escalation to dialysis are important determinants of outcome [17]. This compressed clinical timeline leaves only a narrow window for intervention and underscores why early care-seeking, rapid antibiotic initiation and prompt escalation for severe disease are non-negotiable clinical priorities.

The dominance of late presentation as the primary theme identified through formal death reviews — recorded in 86.2% of cases with documented findings — powerfully reinforces the message that community-level delays are the most frequent proximate contributor to preventable leptospirosis death. This mirrors patterns of delayed treatment-seeking documented for other febrile and vector-borne illnesses in Sri Lanka, where distance to facilities, cost, and the perception that early symptoms do not warrant urgent care are recurring barriers [18,19]. Individuals, families and communities need to be aware that fever following environmental exposure — particularly paddy field or muddy water contact — is a medical emergency requiring immediate presentation to a health facility, not a condition to be managed with rest or home remedies. Targeted and culturally appropriate risk communication in agricultural communities, accessible in local languages and delivered through trusted channels, is essential.

The identification of clinical management and diagnostic issues in 83.9% of reviewed records highlights an equally important health system challenge. Primary care clinicians, emergency room staff and general medical officers need consistent and updated training in recognising leptospirosis, eliciting exposure histories and initiating appropriate investigations and antibiotics promptly. Institutional clinical guidelines, supportive supervision and regular case discussion can strengthen frontline clinical competence. Service and critical care access issues were identified in over one-third of reviewed records, pointing to the need for district-level planning to ensure that severely ill leptospirosis patients can access ICU or HDU care, renal replacement therapy and specialist input without prohibitive delays.

The analysis also highlights significant gaps in the quality of death review form completion. Laboratory, prophylaxis, pulmonary haemorrhage and death review finding fields were incompletely recorded in a substantial proportion of records. Improving completeness and standardisation of death review forms — and ensuring that review committees complete the findings section for every reported death — is essential for maximising the programme value of the death review system. Incomplete data not only limit analytical capability but also indicate that institutional mortality review meetings may not be occurring as intended, or that their findings are not being recorded. This observation is consistent with broader reviews noting that under-recording and inconsistent notification have historically constrained the accuracy of leptospirosis burden estimation in Sri Lanka [11,12].

5. RECOMMENDATIONS

The findings of this death review analysis generate recommendations across five interconnected domains. In the area of **clinical care**, clinicians should strengthen early suspicion of leptospirosis in any febrile patient with a relevant exposure history, and should initiate antibiotics promptly on clinical grounds without waiting for laboratory confirmation [3,7]. Danger signs — including oliguria, breathlessness, haemoptysis, jaundice, shock, arrhythmia and altered consciousness — must be recognised early, and clear referral criteria for severe or complicated disease should be consistently applied.

With respect to **critical care and referral**, districts should establish defined referral pathways for severe leptospirosis and work to improve access to ICU and HDU care, dialysis and CRRT where available, blood products and specialist consultation, informed by emerging evidence on the timing of renal replacement therapy in leptospirosis-associated acute kidney injury [17]. Transfer delays and bed availability should be actively monitored during high-risk periods, particularly in districts with consistently high reported death counts.

On the **public health** side, targeted risk communication is needed for farmers, agricultural workers, flood-affected communities, drainage workers, construction workers and others regularly exposed to mud or contaminated water [2,13]. Messaging should emphasise early care-seeking at the onset of fever following any environmental exposure, and prevention efforts should be strengthened through intersectoral collaboration with agriculture, irrigation, local government and disaster management sectors.

Regarding **prophylaxis and prevention**, chemoprophylaxis delivery and adherence monitoring among eligible high-risk groups should be improved in line with national guidance [4], building on evidence that weekly or exposure-triggered doxycycline chemoprophylaxis can meaningfully reduce clinical attack rates in high-risk and outbreak settings [15,16], and MOH-level follow-up and community communication should specifically address the persistent issues of refusal, non-adherence and low awareness documented among Sri Lankan farmers [16].

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Finally, in the domain of **surveillance and death reviews**, suspected leptospirosis deaths should be notified promptly, and the completeness of death review forms must be improved across all districts [3,6]. Institutional and district-level mortality reviews should be conducted regularly, with findings fed back systematically to hospitals, MOH teams and provincial authorities, and used to inform both district action plans and annual national mortality reduction planning.

6. LIMITATIONS

This analysis is subject to several important limitations that should be considered in interpreting the findings. First, it was based on secondary programme data from the national death review system, and data completeness varied substantially across key variables, including laboratory confirmation, pulmonary haemorrhage, prophylaxis status, exposure details and death review findings. Second, death review forms contain significant free-text fields that required categorisation, which may have introduced some degree of misclassification. Third, the dataset represents deaths that were reported and reviewed within the national system and may not capture all leptospirosis deaths in the country, particularly those that occurred outside hospital settings or for which notification was incomplete. Fourth, denominator population data were not available from this dataset, and therefore incidence rates, mortality rates and case fatality ratios could not be calculated. Fifth, as a descriptive analysis of fatal cases only, the findings characterise leptospirosis deaths but cannot be generalised to all leptospirosis cases, nor can they support causal inference about risk factors for death versus survival. Sixth, the delay estimates depend on the accuracy of date recording in death review forms, and recording errors or estimations in recalled dates cannot be exclu__7. Conclusions

Leptospirosis deaths reported in Sri Lanka during 2025 provide important lessons for reducing preventable leptospirosis mortality. The national death review data demonstrate a clear pattern of adult male deaths predominantly among agricultural and manual workers, with paddy field and wet environmental exposures as the dominant transmission pathways. The narrow median time from symptom onset to death of 7 days, the high proportion of late presentations, the frequent identification of delayed care-seeking and clinical management issues in death reviews, and the documented constraints in critical care access collectively highlight a multi-level agenda for mortality prevention.

Reducing leptospirosis mortality in Sri Lanka requires a coordinated response spanning individual, community and health system levels. At the individual and community level, the priorities are early recognition of leptospirosis risk following exposure, prompt presentation to health services at the onset of fever, and improved uptake of chemoprophylaxis among high-risk groups. At the health system level, the priorities are strengthening early clinical suspicion and antibiotic initiation at primary care and emergency entry points, improving referral pathways for severe disease, expanding access to renal replacement therapy and intensive care in high-burden districts, and completing institutional death reviews systematically with quality findings recorded for every case.

The national leptospirosis death review process represents a valuable and underutilised public health intelligence mechanism. Sustaining, strengthening and systematically using the findings of this process for district and national action is essential to reducing the burden of preventable leptospirosis deaths in Sri Lanka.

REFERENCES

1. World Health Organization. Human leptospirosis: guidance for diagnosis, surveillance and control. Geneva: World Health Organization; 2003.
2. Epidemiology Unit, Ministry of Health, Sri Lanka. Leptospirosis [disease information]. Colombo: Epidemiology Unit.
3. Epidemiology Unit, Ministry of Health, Sri Lanka. National Guideline on Management of Leptospirosis. Colombo: Epidemiology Unit.
4. Epidemiology Unit, Ministry of Health, Sri Lanka. Interim Guideline on Leptospirosis for Paddy Cultivating Seasons. Colombo: Epidemiology Unit; 2024.
5. Fonseka CL, Dahanayake NJ, Mihiran DJD, Wijesinghe KM, Liyanage LN, Wickramasuriya HS, et al. Pulmonary haemorrhage as a frequent cause of death among patients with severe complicated leptospirosis in Southern Sri Lanka. PLoS Neglected Tropical Diseases. 2023;17(10):e0011352.
6. Epidemiology Unit, Ministry of Health, Sri Lanka. Weekly Epidemiological Report: Leptospirosis and early warning systems. 2025;52(15).
7. Rajapakse S, Fernando N, Dreyfus A, Smith C, Rodrigo C. Leptospirosis. Nature Reviews Disease Primers. 2025;11:32.

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8. Costa F, Hagan JE, Calcagno J, Kane M, Torgerson P, Martinez-Silveira MS, Stein C, Abela-Ridder B, Ko AI. Global morbidity and mortality of leptospirosis: a systematic review. PLoS Neglected Tropical Diseases. 2015;9(9):e0003898.
9. Torgerson PR, Hagan JE, Costa F, Calcagno J, Kane M, Martinez-Silveira MS, et al. Global burden of leptospirosis: estimated in terms of disability-adjusted life years. PLoS Neglected Tropical Diseases. 2015;9(10):e0004122.
10. Taylor AJ, Paris DH, Newton PN. A systematic review of the mortality from untreated leptospirosis. PLoS Neglected Tropical Diseases. 2015;9(6):e0003866.
11. Warnasekara JN, Agampodi S. Leptospirosis in Sri Lanka. Sri Lankan Journal of Infectious Diseases. 2017;7(2):67–75.
12. Agampodi S, Peacock SJ, Thevanesam V. The potential emergence of leptospirosis in Sri Lanka. Lancet Infectious Diseases. 2009;9(9):524–526.
13. Schønning MH, Phelps MD, Warnasekara J, Agampodi SB, Furu P. A case-control study of environmental and occupational risks of leptospirosis in Sri Lanka. EcoHealth. 2019;16(3):534–543.
14. Gunathilaka N, Jayakody D, Erathna S. Spatiotemporal patterns and climate influences on leptospirosis in Sri Lanka from 2009 to 2024. BMC Infectious Diseases. 2026;26 [epub ahead of print].
15. Takafuji ET, Kirkpatrick JW, Miller RN, Karwacki JJ, Kelley PW, Gray MR, et al. An efficacy trial of doxycycline chemoprophylaxis against leptospirosis. New England Journal of Medicine. 1984;310(8):497–500.
16. Fonseka CL, et al. Doxycycline usage for prevention of leptospirosis among farmers and reasons for failure to use chemoprophylaxis: a descriptive study from Southern Sri Lanka. Journal of Tropical Medicine. 2019;2019:2917154.
17. Julien M, Rafat C, Raffray L, Vacher-Coponat H, Allou N, Allyn J, Jabot J, Lombardi Y. Immediate or delayed initiation of renal replacement therapy in patients with leptospirosis and acute kidney injury: a target trial emulation. Annals of Intensive Care. 2025;15 [epub ahead of print].
18. Reller ME, Bodinayake C, Nagahawatte A, Devasiri V, Kodikara-Arachichi W, Strouse JJ, et al. Unsuspected dengue and acute febrile illness in rural and semi-urban southern Sri Lanka. Emerging Infectious Diseases. 2012;18(2):256–263.
19. Rajapaksha RMNU, et al. Health seeking behaviours, dengue prevention behaviours and community capacity for sustainable dengue prevention in a highly dengue endemic area, Sri Lanka. BMC Public Health. 2023;23.

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