WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health, Nutrition & Indigenous Medicine

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Leptospirosis

Introduction

Leptospirosis is a zoonosis most commonly found in the tropics caused by the spirochetes of the genus Leptospira. It is a potentially serious bacterial zoonotic disease affecting many parts of the body.
Some animal species act as natural hosts for certain types of leptospires (serovars). Reservoir host animals that carry the pathogen in their renal tubules shed pathogenic leptospires in their urine. Serovars found in rats and bandicoots are often identified as the cause of serious illness in humans.
The spectrum of human disease caused by leptospires is extremely wide, ranging from subclinical infection to a severe syndrome of multi-organ infection with high mortality.

Epidemiology

Human leptospirosis (Weil's disease) was first described in Sri Lanka in 1953. Since then the disease has been reported in many parts of the country. Leptospirosis remains endemic in Sri Lanka with outbreaks occurring every few years. The districts with high endemicity are, Ratnapura, Kegalle, Kalutara, Galle, Matara and Badulla.
People contract the disease either through broken skin and mucous membrane (eyes, nose, sinuses, mouth) that come in contact with fresh water, damp soil, or vegetation contaminated by the urine of infected animals or by ingesting contaminated food or water.
Paddy cultivation is associated with the majority of Leptospirosis infections, but there are many other sources of infection. Children playing in marshy land/paddy fields, people bathing in contaminated waters, sewer workers, people fishing in river banks, rubber tappers and gem miners are among the cases reported. With socio-economic conditions prevailing in the country currently, an increase in leptospirosis cases could be expected due to intensification in agricultural activity. Due to a shortage of fuel, the use of machinery will be limited during cultivation and harvesting and farmers will be more at risk because those activities will be done manually.

Clinical presentation

The clinical presentation of leptospirosis is bi-phasic with the initial bacteraemia phase (leptospira proliferate and disseminate throughout the body), with an acute onset of fever with chills and rigours, headache, myalgia, nausea, vomiting and conjunctival suffusion followed by immune phase (leptospira are cleared but the tissue damage continues) with fever and other constitutional symptoms. Development of oliguria, jaundice, meningism, haemorrhage, shock, pulmonary involvement and myocarditis will indicate severe disease with multi-organ involvement.

Laboratory investigations

Whenever possible, clinical suspicion of Leptospirosis should be confirmed by necessary laboratory tests. Laboratory investigations such as microscopic agglutination test (MAT) for a high titre or a rising antibody titre, ELISA test, and antigen detection by PCR are some of the confirmatory laboratory tests. Confirmatory diagnosis could be done at the Medical Research Institute (MRI) mainly by detecting antibodies (i.e. MAT). However, please note that the serological tests do not become positive with the onset of illness. Thus, the blood samples should be sent after 5 days of onset of illness and a 2nd sample 4 - 5 days later if the clinical suspicion is high but the MAT result for the 1st sample was

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equivocal or negative (i.e. to demonstrate rising litre).
The usefulness of cultures is in submitting samples of blood within the first week of illness (2 drops of blood into culture medium), which may become positive before the antibodies appear, preferably taken before starting antibiotics. Considering the cost, samples should be sent for culture when the patient presents in the early stage of the disease and clinical suspicion is very high
Moreover, investigations such as serovar and serogroup -specific MAT tests, PCR and culture are useful for epidemiological and public health reasons, as they would be helping in investigating the source of infection, potential reservoirs and planning and evaluating interventions.
Another useful sample for laboratory investigations (serology) will be post-mortem blood samples obtained within one hour of death to confirm the diagnosis in clinically suspected cases. Blood samples collected many hours later will be contaminated with the invading bowel flora and thus unsuitable.
Further information on laboratory testing could be obtained from the Bacteriology Department, Medical Research Institute.

Prevention of leptospirosis

Primary prevention activities should be continued as usual. It is the responsibility of the MOOH to carry out prevention and control activities at the divisional level. All notified cases should be investigated early. The collected information should be rationally used to plan and evaluate prevention and control activities. The MOOH should visit the hospitals in their areas and discuss the issues with the hospital authorities at least once in two weeks.

Chemoprophylaxis is recommended for well-recognized high-risk groups (eg farmers, flood victims, rescue crew). Identification of high-risk localities at the divisional level (e.g. clustering of cases in a particular area) will help to identify high-risk groups.

If a decision to give prophylaxis is made, it should be closely monitored by the MOH and the field public health staff. PHII could be involved in the issuance of medicines. A register should be maintained at the MOH level containing all the names, addresses and occupations of recipients and arrangements should be made to regularly distribute drugs to them for the required period.
The recommended dose is Doxycycline 200 mg weekly during the period of possible exposure.

Doxycycline is a tetracycline antibiotic. It should not be given to

- Children younger than 12 years old
- pregnant and lactating mothers
- Persons with known allergy to tetracyclines
- Patients with liver or kidney disease.

In case of any doubt, advice may be sought from the Consultant Physician of the nearest hospital. This drug can be taken with or without food, preferably with a full glass of water.

It should be noted that prophylaxis is not a substitute for primary prevention activities and these activities should not be neglected and should be continued as usual.
Raising awareness about the disease among risk groups, health care providers and the general population is very important so that the disease can be recognized early and treated as soon as possible. MOOH and PHII should take responsibility for this activity with the support of the district health education and promotion officers.
All stakeholders including local government authorities and officials from agriculture, irrigation, veterinary fields etc. need to be involved in the prevention and control of leptospirosis. District and divisional level preventive health officers must educate and advocate those non-health stakeholders regarding the prevention and control of leptospirosis. District health authorities must support the MOH and PHI to strengthen the intersectoral coordination to reduce morbidity and mortality due to leptospirosis.
Given the seriousness of the illness, secondary prevention of the disease is equally important in preventing complications and death. Therefore, early seeking of medical care, early detection of the disease, and proper management protocols are as important and should be given due priority. It should be emphasized the importance of disease surveillance as a very vital component in prevention, for carrying out effective control measures at all levels.
Disease surveillance activities are initiated by the first contact medical person who notifies the leptospirosis patient on suspicion, and this leads to a chain of preventive measures at the local level by the MOH and his or her preventive health staff as well as at the district and national levels. The significance of timely notification of suspected cases should be reemphasized to medical personnel at all levels. Lab surveillance activities are also very important, especially at the onset of an outbreak, and therefore the importance of sending the blood samples to the MRI at the correct time is highlighted.
Deaths due to Leptospirosis should be informed immediately over the phone to the Epidemiology Unit and the relevant Regional Epidemiologist. In addition, a death investigation form should be filled out by the treating Physician and sent to the Epidemiology Unit as early as possible.
All the hospitals are requested to conduct mortality reviews for leptospirosis deaths with the participation of the relevant ward doctors and MOOH. For the transferred cases, it would be beneficial to invite the medical officers of the relevant hospitals also for the reviews. The main objective of the Leptospirosis mortality review is to identify the factors that contributed to the deaths and to take remedial action at both field and institutional levels. Regional epidemiologists will assist the hospitals in this process. A final report to the Epidemiology Unit with copies of the reporting forms filled by the clinicians would be the outcome envisaged. Depending on the number of deaths, each hospital can decide on the frequency of the reviews. In addition, for all deaths notified the relevant MOH should investigate the field level. A field death investigation form should be used for this purpose and after completion, it should be sent to the Epidemiology Unit as early as possible.

Compiled by
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Table 1: Selected notifiable diseases reported by Medical Officers of Health 21st– 27th May 2022 (21st Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hep-		Human		Chickenpox		Meningitis		Leishmania-		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	29	3754	0	2	0	2	0	0	0	5	5	53	0	0	0	2	0	0	0	15	0	4	1	2	13	97%
Gampaha	77	2591	0	4	0	1	0	0	0	12	6	51	0	0	0	4	0	2	1	15	0	13	0	8	**6**	**67**
Kalutara	97	1478	0	4	0	1	0	1	0	6	7	140	0	2	0	1	0	2	0	27	0	13	0	1	**4**	**99**
Kandy	11	1075	0	10	0	0	0	0	0	4	10	59	1	17	1	6	0	0	0	26	0	4	0	5	**10**	**94**
Matale	36	251	0	1	0	0	0	0	0	0	6	45	0	3	0	1	0	0	0	9	0	1	1	166	**16**	**100**
NuwaraEliya	1	80	0	13	0	0	0	0	0	0	2	22	1	10	0	0	0	0	1	13	0	2	0	0	**16**	**99**
Galle	12	1430	1	5	0	0	0	0	0	0	9	176	0	8	0	2	0	0	1	30	0	11	0	0	**10**	**99**
Hambantota	19	445	0	24	0	0	0	0	0	2	8	85	0	19	0	3	0	0	0	14	0	6	12	218	**15**	**98**
Matara	55	533	0	8	0	0	0	0	0	0	11	108	0	5	0	1	0	0	1	16	0	5	6	142	**26**	**100**
Jaffna	11	1812	2	19	0	2	2	42	1	21	0	18	8	381	0	5	0	4	0	60	2	8	0	0	**61**	**88**
Kilinochchi	2	73	0	4	0	0	0	0	2	16	1	11	0	8	0	0	0	0	0	4	0	0	0	1	**33**	**99**
Mannar	5	154	0	1	0	0	0	0	0	0	0	12	0	2	0	1	0	0	0	4	0	15	0	0	**22**	**80**
Vavuniya	0	47	0	0	0	1	0	2	0	0	0	10	0	1	0	0	0	0	0	5	0	0	1	2	**3**	**73**
Mullaitivu	1	33	0	3	0	0	0	2	0	3	0	20	0	4	0	0	0	0	0	4	0	0	0	1	**26**	**99**
Batticaloa	43	764	1	43	0	5	0	0	0	17	1	26	0	0	0	1	0	1	0	7	2	20	0	1	**35**	**100**
Ampara	3	74	0	6	0	1	0	0	0	17	3	55	0	1	0	1	0	0	1	32	0	11	0	11	**9**	**100**
Trincomalee	18	786	0	22	0	0	0	1	0	2	0	14	0	3	0	4	0	0	2	15	0	4	0	0	**18**	**88**
Kurunegala	59	1247	2	8	0	1	0	0	0	4	6	66	1	17	0	0	0	0	1	32	2	18	13	235	**8**	**99**
Puttalam	28	1010	1	3	0	0	0	0	0	0	1	10	2	5	0	0	0	0	0	5	1	15	0	4	**14**	**90**
Anuradhapur	10	182	0	8	0	0	0	1	0	5	5	98	0	14	0	2	0	1	2	23	0	21	4	202	**8**	**89**
Polonnaruwa	2	53	0	3	0	0	0	0	0	1	2	52	0	0	0	1	0	0	1	7	0	3	21	199	**16**	**86**
Badulla	21	457	0	9	0	0	0	0	0	5	3	106	0	26	4	66	0	0	1	26	0	7	1	11	**11**	**100**
Monaragala	10	163	0	5	0	0	0	4	0	2	18	176	0	14	0	23	0	0	2	35	0	20	1	73	**8**	**100**
Ratnapura	73	1097	1	22	0	5	0	2	0	18	26	386	0	11	0	13	0	0	1	36	0	19	1	109	**11**	**95**
Kegalle	36	735	0	7	0	5	0	1	0	5	11	206	1	10	0	3	0	0	4	49	2	19	0	11	**7**	**100**
Kalmune	21	467	1	22	0	0	0	0	0	4	0	12	0	1	0	0	0	0	2	26	0	14	0	0	**28**	**100**
SRILANKA	**12**	**20791**	**9**	**256**	**0**	**24**	**2**	**56**	**3**	**149**	**14**	**2017**	**14**	**562**	**5**	**14**	**0**	**10**	**21**	**535**	**9**	**253**	**62**	**1402**	**16**	**93**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 27th May , 2022 Total number of reporting units 361 Number of reporting units data provided for the current week: 298 C**-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

21st - 27th May 2022 (21st Week)

Disease	No. of Cases by Province									Number of cases during current week in 2022	Number of cases during same week in 2021	Total number of cases to date in 2022	Total number of cases to date in 2021	Difference between the number of cases to date in 2022 & 2021
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	01	00	00	01	00	00	00	00	02	01	35	21	66.6 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	01	00	01	00	04	00	00	00	00	06	01	24	42	- 42.8 %
Measles	00	00	00	01	00	00	00	00	00	01	01	12	09	33.3 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	05	02	150 %
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	00	01	00	0 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	01	00	0 %
Tuberculosis	00	17	42	14	09	15	28	11	10	146	99	2760	2580	6.9 %

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

NA = Not Available

Covid-19 Prevention & Control

For everyone's health & safety, maintain physical distance, often wash hands, wear a face mask and stay home.

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

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