WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Healthcare and Nutrition

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Leptospirosis prevention and control

It is observed that leptospirosis cases have been increasing over the years despite implementation of a set of strategies for its control and prevention. In 2007 a total of 2195 cases had been reported to the Epidemiology Unit and in 2008 7421 cases with 207 deaths had been reported. This year to date there are 4126 cases with 120 deaths. Unusually high case fatality rate and increased reporting from high risk districts are some of the notable features observed during the recent years.

To prevent and control leptospirosis in the country, guidelines were developed following a series of consultative meetings with Public health staff, Medical Administrators, Consultant Physicians and Microbiologists in 2008. Briefed below are the recommendations formulated at these meetings.

1. Admission Criteria

It is suggested that the patients presenting with following signs / symptoms and history should be admitted for inward management:

Fever patients with the history of exposure to leptospira contaminated environment (e.g. local agricultural practices, gem mining, cleaning canals & drains and swimming/ playing in contaminated/ flood water etc.) and symptoms/ signs such as conjunctival suffusion and muscular pain/ tenderness.

Fever patients even without proper history of exposure, but highly suspicious presenting with conjunctival suffusion and muscular pain / tenderness (notable in calf and lumbar areas).

If facilities are available and it is feasible, a special area can be allocated for proper fever screening at the out-patient division of the hospitals.

2. Notification

Routine notification process should be continued as being practised. Early notification and investigation are essential particularly to forecast outbreaks and take early interventions.

3. Inward Management

Once admitted to the ward as suspected cases of leptospirosis, following procedure should be adopted:

- Treatment with IV penicillin (6 hourly) should be initiated without delay.
- Maintenance of adequate hydration & IV fluids can be given, if indicated.
- Maintenance of fluid balance chart.
- Carrying out basic investigations such as Full Blood Count, Urine Full Report, and Blood Urea & Electrolytes.
- If the results of above investigations (e.g. polymorpholeucocytosis & albuminuria) are not in favour of a diagnosis of ieptospirosis, treatment with IV penicillin could be stopped.
- If the duration of fever is more than 3 - 4 days be vigilant of signs and symptoms suggestive of possible complications such as renal failure, heart failure and widespread haemorrhage.

4. Transferring patients to higher level institutions

Despite adequate hydralion, if there is concern about urine output i.e. inadequate urine output. Symptoms suggestive of cardiac involvement such as hypotension and tachycardia. Always explore the possibility of doing peritoneal dialysis at the institution itself without transferring patients only for the indication of dialysis.

5. Laboratory investigations

Whenever possible clinical suspicion of Ieptospirosis should be confirmed by necessary laboratory tests.

Laboratory investigations such as microscopic agglutination test (MAT) for a high litre or a rising antibody litre, ELISA test, and antigen delection 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,

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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 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 starling 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 sero-group specific MAT test, PCR and culture are useful for epidemiological and public health reasons, as they would be helping in investigating the source of infection, potential reservoir and planning and evaluating interventions.

Another useful sample for laboratory investigations (serology) will be post-mortem blood samples obtained wiihin 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, Colombo 8. Telephone: (+ 94 - 11-)2691350 or on Extension 344 (+ 94 - 11-)2693532, 2693533, 2693534.

6. Sentinel surveillance

Sentinel surveillance is carried out only in selected hospitals in the high risk areas. The Infection Control Nurses (ICN) attached to these institutions will carry out investigation while the patients are in the wards. If there are designated medical officers to coordinate public health activities at hospital level, it is their responsibility to liaise with the infection control nurses to carry out surveillance activities more efficiently and effectively.

7. Death Investigation

Since the case fatality is unusually high, there is a need to investigate all deaths due to leptospirosis/ suspected leptospirosis. Therefore please make arrangements for the MO/ Public Health or ICN (or any other responsible officer in the absence of above two categories) attached to your hospitals to inform the deaths due to leptospirosis immediately over the phone to the Epidemiology Unit and the relevant Regional Epidemiologist. In addition, a death investigation form should be filled 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 contributed to the deaths and to take remedial action at both field and institutional levels. This is to identify the shortcomings in the system and certainly not to find fault with any individuals. Regional Epidemiologist 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 conduct investigation at 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.

8. 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: As there is no concrete evidence to show the effectiveness of prophylaxis, it is not advocated as a routine and leading preventive strategy. It is recommended only for well recognized high risk groups. 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 occupation 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. It is the responsibility of the relevant MOOH to identify the risk period. In this regard, they can seek advice from the Regional Epidemiologist and/ or the Epidemiology Unit.

Doxycycline is a tetracycline antibiotic. It should not be given to children younger than 12 years old, pregnant and lactating mothers. Some may develop allergy and it should be avoided for them. Generally, it is not prescribed to 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. Please remember that the prophylaxis is not a substitute for primary prevention activities and these activities should not be neglected and they should be continued as usual.

Awareness: Raise awareness about the disease among risk groups, health care providers and genera! population, 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.

9. Others

Consultant Physicians to conduct clinical management training/ awareness programmes for General Practitioners and MOO of smaller hospitals in their areas to emphasize the local epidemiology and clinical manifestations of leptospirosis, and the need to start specific treatment without delay and early referral if indicated. The Regional Epidemiologists of the respective areas will organize these programmes.

It is the responsibility of the Regional Epidemiologists to monitor and evaluate leptospirosis prevention and control activities at district and divisional levels. They should visit all larger hospitals in the district at least once in two weeks.

To strengthen the intersectoral coordination for prevention and control of leptospirosis, establishment of district coordination committees is recommended. All stakeholders including local government authorities and officials from agriculture, irrigation, veterinary fields etc. need to be involved in this forum. It is the responsibility of the RDDHS and REE to ensure the functioning of these committees.

Source : circular no.01-31/2008 Prevention and Control of Leptospirosis

Table 1: Vaccine-preventable Diseases & AFP

19th-25th September 2009 (39thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2009	Number of cases during same week in 2008	Total number of cases to date in 2009	Total number of cases to date in 2008	Difference between the number of cases to date in 2009 & 2008
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	00	00	00	00	00	00	00	03	49	76	-35.5%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	-
Measles	00	00	00	00	00	00	00	00	00	00	01	143	95	+50.5%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	20	28	-18.2%
Whooping Cough	00	01	00	00	00	00	00	00	01	02	00	53	24	+120.8%
Tuberculosis	128	34	50	00	04	38	03	12	13	175	130	7829	6508	20.3%

Table 2: Newly Introduced Notifiable Disease

19th-25th September 2009 (39thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2009	Number of cases during same week in 2008	Total number of cases to date in 2009	Total number of cases to date in 2008	Difference between the number of cases to date in 2009 & 2008
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	11	16	09	330	07	06	03	05	11	398	96	13335	4119	+223.7%
Meningitis	07 GM=1 CB=1 KL=5	02 ML=2	03 GL=3	00	00	03 KR=1 PU=2	00	00	04 RP=4	19	16	928	1012	-8.1%
Mumps	04	02	02	09	04	00	01	02	01	25	48	1461	2275	-35.8%
Leishmaniasis	00	00	03 HB=3	00	00	00	06 AP=6	00	00	09	Not available*	553	Not available*	-

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.

DPDHS 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, Whooping Cough, Chickenpox, Meningitis, Mumps.

Table 4: Surveillance of Communicable diseases among IDP's

19th-25th Sept 2009(39thWeek)

Area / Disease	Dysentery	Enteric fever	Viral Hepatitis	Chicken Pox	Watery Diar-rhoea
Vavunia	5	8	3	11	-
Chendikulam	27	16	9	315	581
Total	**32**	**24**	**12**	**326**	**581**

Table 4: Selected notifiable diseases reported by Medical Officers of Health

19th-25th September 2009 (39thWeek)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Received Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	53	3485	7	177	0	11	3	177	1	48	76	861	0	5	5	106	0	4	**100**
Gampaha	29	3394	4	126	0	22	1	37	5	21	11	296	0	8	4	179	0	3	**60**
Kalutara	10	1345	7	298	0	11	0	49	0	44	27	362	0	1	4	72	0	2	**92**
Kandy	28	3659	3	230	0	6	1	24	2	58	2	173	2	144	4	72	0	0	**80**
Matale	34	1480	6	105	0	2	0	26	7	13	2	298	0	5	4	80	0	2	**83**
Nuwara Eliya	1	223	4	363	0	2	6	160	0	786	0	35	0	62	2	73	0	0	**100**
Galle	8	514	5	210	0	10	0	3	0	43	9	159	1	12	0	28	0	4	**95**
Hambantota	8	819	1	79	0	8	0	6	1	15	1	62	1	76	1	40	0	0	**100**
Matara	14	1050	3	228	0	4	0	6	0	16	10	150	2	123	1	53	0	1	**100**
Jaffna	0	18	5	99	0	3	4	221	0	30	0	0	0	124	0	166	0	2	**25**
Kilinochchi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Mannar	0	5	3	82	0	1	2	99	0	4	0	0	0	0	0	55	0	0	**75**
Vavuniya	16	66	32	1584	0	25	10	602	0	2	0	6	0	5	13	3753	0	0	**75**
Mullaitivu	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**0**
Batticaloa	9	524	8	242	0	12	0	15	0	50	0	9	0	4	0	18	0	4	**82**
Ampara	1	212	3	56	0	0	0	12	0	8	0	11	0	2	0	29	0	0	**100**
Trincomalee	1	322	0	113	1	4	0	9	0	1	0	17	0	19	2	49	0	1	**50**
Kurunegala	31	2538	1	188	0	10	3	61	0	15	3	99	3	72	4	134	0	4	**85**
Puttalam	2	549	1	129	0	7	0	64	0	2	1	76	0	31	1	38	0	1	**56**
Anuradhapur	2	509	3	100	0	5	0	7	0	38	1	82	0	28	1	170	0	3	**74**
Polonnaruwa	2	154	4	73	0	4	0	21	0	9	0	58	0	9	3	68	0	0	**100**
Badulla	7	285	6	255	0	5	1	39	0	27	3	86	3	110	4	278	0	1	**87**
Monaragala	1	144	10	103	0	1	0	23	0	15	0	13	1	62	0	81	0	1	**91**
Ratnapura	12	1913	0	426	0	19	0	47	1	16	9	244	1	33	2	153	0	1	**72**
Kegalle	24	3522	3	157	1	9	2	41	1	7	12	212	2	29	6	209	0	1	**91**
Kalmunai	13	193	3	91	0	1	0	14	0	3	0	4	0	3	2	19	0	0	**77**
SRI LANKA	**306**	**26923**	**122**	**5516**	**02**	**182**	**33**	**1764**	**18**	**1271**	**167**	**3313**	**16**	**967**	**63**	**5958**	**00**	**35**	**80**

Source: Weekly Returns of Communicable Diseases WRCD).
*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.
**Timely refers to returns received on or before 25th September, 2009 Total number of reporting units =311. Number of reporting units data provided for the current week: 250
A = Cases reported during the current week. B = Cumulative cases for the year.

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