Circular No. 01-31/2008

My No. EPID/35/12/2008
Ministry of Healthcare & Nutrition,
"*Suwasiripaya*"
385, Rev. Baddegama Wimalawansa Mw,
Colombo 10.
05 September 2008

Provincial/ Regional Directors of Health Services
Directors of Teaching Hospitals/ Specialized Campaigns
M.SS/ D.M.OO of Provincial/ Base/ District Hospitals
Heads of Decentralized Units, All Medical Officers of Health

Re: Prevention and Control of Leptospirosis

We have been observing increasing numbers of leptospirosis cases over the years despite implementation of a set of strategies for its control and prevention. Last year (i.e. in 2007), a total of 2195 cases were reported, 40% more than that of the previous year. This year up to August 22, a total of 3651 cases and 110 deaths have been reported. Unusually high case fatality rate and increased reporting from high risk districts are some of the notable features observed this year. This alarming trend emphasizes the need for revising the current strategies.

In this regard, a series of consultative meetings were recently conducted with the participation of Public Health Staff, Medical Administrators, Consultant Physicians and Microbiologists. Strengthening the primary prevention activities at district and divisional levels, importance of good clinical management practices in hospitals to prevent complications and deaths, and the need for laboratory confirmation of suspected cases were some of issues discussed at these meetings. The recommendations formulated at these meetings are briefed below:

1. Admission

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 FBC, Urine FR, and Blood Urea & Electrolytes.

- If the results of above investigations (e.g. polymorpholeucocytosis & albuminuria) are not in favour of a diagnosis of leptospirosis, **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 hydration, 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 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 equivocal or negative (i.e. to demonstrate rising titre).
- 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 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 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, 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. At present, 16 hospitals are functioning as sentinel sites. 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 this year, 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 (attached) 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 (attached) 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

8.1 Not to neglect primary prevention activities and they 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.

8.2 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.

The relevant MOOH should strengthen the disease surveillance activities in their areas especially where prophylaxis is provided. MOOH who want to provide prophylaxis should send the drug estimate through relevant RE, RDHS and PDHS to the Medical Supplies Division (MSD), Ministry of Healthcare & Nutrition, with copy to the Chief Epidemiologist.

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.

8.3 Awareness: Raise awareness about the disease among risk groups, health care providers and general 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 GPs 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.

Please bring the contents of this circular to the notice of all officers concerned in your institution/ district/ province. Any further clarification if needed could be obtained from the Epidemiology Unit.

Dr. U. A. Mendis
Director General of Health Services

CC: Secretary, Ministry of Healthcare & Nutrition
Additional Secretary (MS), Ministry of Healthcare & Nutrition
DGHS, Ministry of Healthcare & Nutrition
DDG (PHS) I & II, Ministry of Healthcare & Nutrition
DDG (MS) I & II, Ministry of Healthcare & Nutrition
Director, Medical Supplies Division
Director, Medical Research Institute
Chief Epidemiologist, Epidemiology Unit
All Regional Epidemiologists