Leprosy

Last updated: 25 January 2013

Public Health Priority:
Routine
PHU response time:
Respond to confirmed cases within one working day of notification
Enter confirmed cases on NCIMS within one working day
Case management:
Managed by a specialist physician
Case may be restricted under the Public Health Act
Contact management:
Managed with advice from a specialist physician
Contacts who have extended household like contact with a case should be counselled and assessed for risk of disease

1. Reason for surveillance

- To minimise the transmission of leprosy
- To monitor the epidemiology of leprosy in NSW so as to inform the development of better prevention strategies
- To prevent or minimise disability by facilitating prompt assessment and treatment.

2. Case definition

Only a confirmed case should be notified.

A confirmed case requires

- Laboratory definitive evidence OR
- Laboratory suggestive evidence AND
- Clinical evidence

Laboratory definitive evidence

- Detection of *Mycobacterium leprae* by nucleic acid testing from the ear lobe or other relevant specimens

Laboratory suggestive evidence

- Demonstration of characteristic acid fast bacilli in split skin smears and biopsies prepared from the ear lobe or other relevant sites, OR
- Histopathological report from skin or nerve biopsy compatible with leprosy (Hansen's disease) examined by an anatomical pathologist or specialist microbiologist experienced in leprosy diagnosis.

Clinical evidence

- Compatible nerve conduction studies, OR

- Peripheral nerve enlargement, OR
- Loss of neurological function not attributable to trauma or other disease process, OR
- Hypopigmented or reddish skin lesions with definite loss of sensation

Note: International reporting to WHO is based on the WHO working definition:

A person showing one or more of the following features, and who as yet has to complete a full course of treatment:

- Hypopigmented or reddish skin lesions with definite loss of sensation
- Involvement of the peripheral nerves, as demonstrated by definite thickening with loss of sensation
- Skin smear positive for acid-fast bacilli definition.

The difference should be noted to the WHO when reported.

Epidemiological evidence
Not applicable

3. Notification criteria and procedure

Leprosy is to be notified by:

- Medical practitioners and hospital CEOs on diagnosis
- Laboratories on microbiological diagnosis.

Only confirmed cases should be entered onto NCIMS.

4. The disease

Infectious agents
The bacillus *Mycobacterium leprae*.

Mode of transmission
The exact mechanism of transmission is not well understood, although person to person spread via nasal droplets is believed to be the main route. Large amounts of *M leprae* DNA have been found in the nasal secretions of people with untreated lepromatous leprosy.

Timeline
The incubation period varies widely from months to 30 years, with an average of 4 years for tuberculoid leprosy and 10 years for lepromatous leprosy. *M leprae* reproduces at a very slow rate and few cases are diagnosed in children less than five years old.

Leprosy loses its infectiousness after treatment with appropriate antibiotics.

Clinical manifestations
The usual clinical presentation varies between the two polar forms, lepromatous and tuberculoid leprosy. Host immune response determines clinical features.

In lepromatous leprosy, there is a high bacillary load and more severe disseminated disease. Nodules, papules, macules and diffuse infiltrations are bilaterally symmetrical and usually numerous and extensive. The skin lesions may not be anaesthetic or Hypopigmented. The nasal mucosa may be involved, and iritis and keratitis can occur.

In tuberculoid leprosy there is a lower bacillary load, skin lesions are single or few, sharply demarcated, anaesthetic or hyperaesthetic and bilaterally asymmetrical; peripheral nerve involvement tends to be severe.

5. Managing single notifications

Response times

Investigation
Within one working day of notification begin follow-up investigation.

Data entry
Within one working day of notification enter confirmed cases on NCIMS.

The World Health Organization requires the following data:

1. Classification of the case. Options are:
a) Single-lesion paucibacillary leprosy (SLPB). This includes:

- Only one skin lesion (i)
- No nerve trunk involvement (ii)

b) Paucibacillary leprosy (PB) this includes:

- 2 to 5 skin lesions (i), that are asymmetrically distributed, and definite loss of sensation
- Only one nerve trunk damaged (ii)

c) Multibacillary leprosy (MB)

- More than 5 skin lesions (i), distributed more symmetrically, and a loss of sensation
- Many nerve trunks damaged (ii)

2. Gender (data is collected on proportion of female cases)

3. Age (data is collected on proportion of children aged less than 15)

4. Whether the case is new or a relapsed case previously treated with multidrug therapy.

5. Whether the case had a grade 2 disability at first presentation.
A grade 2 disability in leprosy is visible deformity or damage (including ulceration, shortening, disorganisation, stiffness, loss of part) to hands or feet and/or severe visual impairment (visual activity less than 6/60) or lagopthalmus (inability to shut the eyes completely) or iridocyelitis (inflammation of the iris and muscles and tissues involved in focusing the eye) or corneal opacity.

Notes:
(i) Skin lesions include macules (flat lesions), papules (raised lesions) and nodules.
(ii) Resulting in loss of sensation or weakness of muscles supplied by the affected nerve.
Enter these data on NCIMS under "Clinical Notes".

Response procedure
The response to a notification will normally be carried out in collaboration with a specialist physician and if necessary, the local chest clinic staff. Regardless of who does the follow-up, PHU staff should ensure that action has been taken to:

- Confirm the onset date and symptoms of the illness
- Confirm results of relevant pathology tests, or recommend these tests be done
- Find out if the case or relevant care-giver has been told what the diagnosis is before beginning the interview
- Seek the doctor's permission to contact the case or relevant care-giver
- Review case and contact management
- Ensure infection control professionals are notified where appropriate.

Case management

Investigation and treatment
Medication should be administered under the supervision of a specialist physician. Chest Clinic staff can assist if necessary. Current treatment regimens consist of 6 months of daily dapsone and monthly rifampicin for paucibacillary leprosy, and 12-24 months of daily dapsone and clofazamine and monthly rifampicin for multibacillary leprosy for a 24 month period to reduce the risk of relapse. Specialist advice should be sought for detailed treatment regimens.

Education
The case or relevant care-giver should be informed about the nature of the infection and the mode of transmission. In particular, emphasis should be placed on foot care and prevention of injury.

Misconceptions about leprosy are common and it is important to inform the patient and relatives that leprosy is curable, and the risk of transmission to contacts is low.

Exposure investigation
None routinely

Isolation and restriction
If hospitalisation is indicated for medical or other reasons, including management of immunological reactions, a patient with untreated lepromatous leprosy should be isolated with contact precautions for at least 72 hours after treatment is commenced. Consultation with a specialist physician is recommended to determine the length of isolation. The risk of transmission in this context is low.

No restriction is placed on attendance at work or school if the case is regarded as non-infectious.

Environmental evaluation
None

Contact management

Identification of contacts
Household, family and close social contacts should be identified. Anyone who has lived in a household-like setting with the case for more than one-month period is defined as a contact.

Treatment
Contacts should be referred to a specialist medical practitioner for investigation and treatment. In non-endemic countries the risk of disease is rare and the role for chemoprophylaxis is uncertain. Given the extremely low risk to non household contacts, prophylaxis is not recommended for health care workers.

BCG vaccination is recommended for neonates born to cases.

Education
Advise contacts (or parents/guardians) of the mode of transmission and the low risk of infection. Close household contacts should be advised to report any new skin lesions promptly and to tell their doctor if they have had contact with a known case of leprosy.

Isolation and restriction
None