

Hansen's Disease

Leprosy

DISEASE REPORTABLE WITHIN 24 HOURS OF DIAGNOSIS

Per NJAC 8:57, healthcare providers and administrators shall report by mail or by electronic reporting within 24 hours of diagnosis, confirmed cases of Hansen's disease to the health officer of the jurisdiction where the ill or infected person lives, or if unknown, wherein the diagnosis is made. A directory of local health departments in New Jersey is available at <http://localhealth.nj.gov>

If the health officer is unavailable, the healthcare provider or administrator shall make the report to the Department by telephone to 609.826.5964, between 8:00 A.M. and 5:00 P.M. on non-holiday weekdays or to 609.392.2020 during all other days and hours.



Hansen's Disease (Leprosy)

1 THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Hansen's disease (also called leprosy) is a chronic infectious disease caused by the bacterium *Mycobacterium leprae*.

B. Clinical Description

Hansen's disease is a chronic bacterial disease of the skin, peripheral nerves, mucous membranes and in lepromatous patients, the upper airway. The disease manifests in a clinical spectrum between two forms: lepromatous and tuberculoid leprosy. Indeterminate leprosy is characterized by hypopigmented maculae with ill-defined borders; if untreated, it may progress to tuberculoid, borderline, or lepromatous disease, the early form that may later develop into any of the other forms. The lepromatous form of leprosy usually exhibits symmetrical and bilateral nodules, papules, macules, and diffuse infiltrates, usually numerous and extensive. Nasal mucosa and ocular involvement may lead to obstructed breathing and eye inflammation. In the tuberculoid form of leprosy, scarce but well-demarcated skin lesions with spreading edges and a clearing center are seen. The lesions are anesthetic or hyperesthetic (have absent or reduced sensation), and involvement of peripheral nerves tends to be severe, causing a neuritis. The loss of sensation resulting from nerve involvement can lead to serious complications including ulcerations, fractures, and bone resorption. Clinical diagnosis is based on complete skin examination. A laboratory criterion includes the presence of acid-fast bacilli in skin smears or biopsy.

C. Reservoirs

Humans are the only reservoir of proven significance for leprosy. There have been reports suggesting that leprosy in armadillos may be naturally transmitted to humans.

D. Modes of Transmission

Although not highly infectious, leprosy is transmitted via droplets, from the nose and mouth, during close and frequent contacts with untreated cases. Indirect transmission is unlikely.

E. Incubation Period

The incubation period ranges from nine months to 20 years. The average is four years for tuberculoid leprosy and eight years for lepromatous leprosy.

F. Period of Communicability or Infectious Period

Patients with Hansen's disease become noninfectious shortly after beginning appropriate antibiotic treatment. Treatment of leprosy includes a multi-drug therapy (MDT) regimen that ranges from six to 12 months and is prescribed according to the classification of the leprosy. The treatment is highly effective and has few side effects and low relapse rates. There is no known drug resistance.

G. Epidemiology

As a result of its leprosy elimination campaign, the World Health Organization (WHO) reports a 20% annual decrease in new cases detected globally since 2001. Leprosy is still considered a public health problem in nine countries of Africa, and five countries in Asia and Latin America. These countries account for about 75% of global disease burden. WHO reports that intensive efforts are still needed to reach the leprosy elimination target in Brazil, India, Madagascar, Mozambique, and Nepal, where 90% of leprosy cases occur.

Prevalence has remained relatively stable in the United States with >90% of the reported cases occurring among certain immigrant or refugee populations. According to the Health Resources and Services Administration (HRSA), 175 new cases of leprosy were reported in the United States in 2014 (the most recent year for which data are available).. In New Jersey, 20 cases of leprosy were reported from 2005 through 2015; most cases occurred among foreign-born or immigrant residents. Although leprosy affects people of all ages and gender, reported cases in children younger than five years are rare.

2 CASE DEFINITION

A. New Jersey Department of Health (NJDOH) Case Definition

1. Clinical Description

A chronic bacterial disease characterized by the involvement primarily of skin as well as peripheral nerves and the mucosa of the upper airway. Clinical forms of Hansen's disease represent a spectrum reflecting the cellular immune response to *Mycobacterium leprae*. The following characteristics are typical of the major forms of the disease:

- *Tuberculoid*: one or a few well-demarcated, hypopigmented, and anesthetic skin lesions, frequently with active, spreading edges and a clearing center; peripheral nerve swelling or thickening also may occur.

- *Lepromatous*: a number of erythematous papules and nodules or an infiltration of the face, hands, and feet with lesions in a bilateral and symmetrical distribution that progress to thickening of the skin with reduced sensation.
- *Borderline (dimorphous)*: skin lesions characteristic of both the tuberculoid and lepromatous forms.
- *Indeterminate*: early lesions, usually hypopigmented macules, without developed tuberculoid or lepromatous features but with definite identification of acid-fast bacilli in stained sections

2. Laboratory Criteria for Diagnosis

Demonstration of acid-fast bacilli in skin or dermal nerve from a biopsy of a skin lesion using an acid-fast stain, without growth of mycobacteria on conventional media (if done)

OR

Identification of noncaseating (no necrosis noted) granulomas with peripheral nerve involvement, without growth of mycobacteria on conventional media (if done)

3. Case Classification

CONFIRMED

A clinically compatible case with confirmatory laboratory results.

PROBABLE

Not used.

POSSIBLE

Not used.

B. Differences from CDC Case Definition

The NJDOH and CDC case definitions are the same.

3 LABORATORY TESTING AVAILABLE

Skin biopsy specimens may be sent to the National Hansen's Disease Program for testing. Information on specimen collection and shipping can be found at:

<http://www.hrsa.gov/hansensdisease/diagnosis/biopsy.html>. NJDOH does not need to give approval for testing but needs to be notified only in the event of a confirmed case.

4 PURPOSE OF SURVEILLANCE AND REPORTING AND REPORTING REQUIREMENTS

A. Purpose of Surveillance and Reporting

- To identify the source of infection and possible modes of acquisition.
- To identify where leprosy occurs in New Jersey.

B. Laboratory and Healthcare Reporting Requirements

New Jersey Administrative Code (NJAC 8:57) stipulates that laboratories report all cases of Hansen's disease to the health officer having jurisdiction over the locality in which the patient lives or, if unknown, to the health officer in whose jurisdiction the healthcare provider requesting the laboratory examination is located. The report shall contain, at a minimum, the reporting laboratory's name, address, and telephone number; the age, date of birth, gender, race, ethnicity, home address, and telephone number of the person tested; the test performed; the date of testing; the test results; and the healthcare provider's name and address.

C. Healthcare Provider Reporting Requirements

NJAC 8:57 stipulates that healthcare providers report (by telephone, confidential fax, or in writing) all cases of Hansen's disease to the local health officer having jurisdiction over the locality in which the patient lives or, if unknown, to the health officer in whose jurisdiction the healthcare provider's practice is located. The report shall contain the name of the disease; date of illness onset; and name, age, date of birth, race, ethnicity, home address, and telephone number of the case being reported. The name, address, institution, and telephone number of reporting official should also be included.

D. Health Officer Reporting and Follow-Up Responsibilities

NJAC 8:57 stipulates that each local health officer must report the occurrence of any case of Hansen's disease as defined by the reporting criteria in section 2A above. Current requirements are that cases be reported to the NJDOH electronically via the confidential and secure CDRSS. Additionally, when the case is classified as confirmed, complete the National Hansen's Disease Surveillance form that can be found at <http://www.hrsa.gov/hansensdisease/pdfs/hansenssurveillance.pdf> and send to NJDOH via mail or fax (609.826.5972). The mailing address is:

NJDOH
Communicable Disease Service
PO Box 369
Trenton, NJ 08625-0369

5 CASE INVESTIGATION

A. Health Officer Responsibilities

It is the health officer's responsibility to investigate the case by interviewing the patient, healthcare provider, or others who may be able to provide pertinent information. The investigation should be completed in a timely manner, and the case reported according to the guidelines listed below.

B. Objectives of the Case Investigation

The first objective of the case investigation is to determine case classification by obtaining information from the patient and/or the healthcare provider. The second objective is to document information obtained in CDRSS and on the National Hansen's Disease Surveillance form that can be found at <http://www.hrsa.gov/hansensdisease/pdfs/hansenssurveillance.pdf>.

C. Investigation Guidelines

1. Interview the patient and/or healthcare provider to determine clinical signs and symptoms. **Ask about date of illness onset** as well as onset/resolution for each clinical feature. Was the patient hospitalized? If yes, get dates. Was there underlying immunosuppression? Did any life-threatening or fatal complications occur?
2. Determine country of birth and/or recent foreign travel/residency outside of the United States. Most cases of leprosy in New Jersey are seen among the foreign-born, and there is a strong possibility that the patient was diagnosed and/or treated in his or her native country.
3. Obtain complete information about the diagnosis and current treatment plan. How was the disease confirmed? Is the patient currently in treatment? Is adequate follow-up provided?
4. Inform the patient and healthcare provider about the Regional Hansen's Disease Clinic at Bellevue Hospital, NYU Medical Center, located at First Avenue and 27th Street, New York, NY 10016, telephone: 212.562.4141. The National Hansen's Disease Program operates this site to provide free medical management including treatment, biopsy confirmation of the diagnosis, and clinical consultation by telephone.
5. Obtain and list identified household contacts or other close contacts to determine the possible source of infection as well as whether others have been exposed. Instruct contacts in prevention measures as listed below in section 6.
6. Ask if there has been any contact with armadillos because a disease identical to leprosy affects these animals. There have been reports suggesting that feral armadillos in Louisiana and Texas have transmitted disease to humans.

7. Leprosy is not highly contagious, does not cause death, and can be effectively treated with antibiotics. Nevertheless, stereotyping and misunderstanding about the disease can cause widespread anxiety among close or casual contacts. Health education and risk communication are important parts of the public health case investigation.
8. Complete the National Hansen's Disease Surveillance form. Fax to NJDOH (609.826.5972) or mail to:

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PO Box 369
Trenton, NJ 08625-0369

D. Documentation of the Investigation

1. Use CDRSS to record information obtained and actions taken during the investigation. The mandatory fields in CDRSS include: disease, last name, county, municipality, gender, race, ethnicity, case status, report status. The following table can be used as a quick reference guide to determine which CDRSS fields need to be completed for accurate and complete reporting of Hansen's disease cases.
2. Complete the National Hansen's Disease Surveillance form. Fax to NJDOH (609.826.5972) or mail to:

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PO Box 369
Trenton, NJ 08625-0369

E. Other Reporting/Investigation Issues

1. The National Hansen's Disease Surveillance form must be submitted as stated above.
2. Once LHD completes its investigation and assigns a report status of "LHD closed," NJDOH will review and approve the case by changing the report status to "DHSS approved." At this time, the case will be submitted to CDC and the case will be locked for editing. If additional information is received after a case has been placed in "DHSS approved," contact NJDOH to reopen the case.

6 CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

No restrictions in employment or school are indicated for patient or contacts.

B. Protection of Contacts of a Case

Handwashing is recommended for all household and close contacts of lepromatous cases. Periodic examination of household and other contacts may be useful to ensure there are no other cases; however, no treatment is required.

C. Managing Special Situations

Response to Community Perceptions

Community and individual perceptions about leprosy may reflect inaccurate communicability and health implications for the diagnosed that are not valid because of the nature of the disease, treatment, and prevention techniques. It is important to convey to all concerned parties the low communicability of this disease and the availability of effective treatment and prevention regimens. Likewise, strictly enforce confidentiality of patient information; release information only to appropriate agencies and individuals who need to know.

D. Preventive Measures

Health education and counseling of patients, their households and contacts is an essential part of treatment. The health department should ensure that the education provided includes the following:

- The patient has been informed of the availability and effectiveness of multi drug therapy (MDT).
- The duration of standard MDT is continuous for 12 months and treatment is completed as an outpatient and there is no need for hospitalization or isolation.
- The patient must complete the full course of MDT to ensure non-communicability and prevention of physical disability.
- The patient should keep all scheduled medical appointments during the course of treatment to ensure effectiveness and be evaluated for MDT side effects.
- Household or other close contacts should be educated about the low communicability of the disease once the case-patient has started MDT. Patients become noninfectious after taking only a few doses of medication and need not be isolated from family and friends. Contacts should be referred for medical evaluation as needed.

Additional Information

A Hansen's disease fact sheet can be accessed at <http://nj.gov/health/cd/hansen/index.shtml>

The website for the National Hansen's Disease (Leprosy) Program can be accessed at <http://www.hrsa.gov/hansensdisease/>.

The CDC's surveillance case definition can be accessed at <http://wwwn.cdc.gov/nndss/conditions/hansens-disease/case-definition/2013/>

References

American Academy of Pediatrics. *2012 Red Book: Report of the Committee on Infectious Diseases*. 29th ed. Chicago, IL: Academy of Pediatrics; 2012.

Heymann DL, ed. *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association; 2014.

World Health Organization. Leprosy Fact Sheet. Available at <http://www.who.int/mediacentre/factsheets/fs101/en/>. Accessed March 2016.