

Hansen's Disease (Leprosy)

Disease Category: Other

Timeframe to follow-up: 1 week

Signs and Symptoms¹

- Skin changes (such as discolored or lighter patches, nodules, thick or dry skin, painless ulcers, facial swelling or lumps, and loss of eyebrows or eyelashes), nerve-related problems (including numbness, muscle weakness or paralysis, enlarged nerves, and eye issues), nasal symptoms (like stuffiness and nosebleeds).
- If left untreated, complications such as paralysis, deformities of hands and feet, chronic ulcers, blindness, and disfigurement.

Incubation²

Usually 3-5 years; can range from 1-20 years.

Case Classification³

Clinical criteria:

Any of the following skin lesions:

- an ill-defined hypopigmented or erythematous macule or patch
- a few well-demarcated, hypopigmented, or erythematous skin lesions with reduced sensation
- multiple diffuse erythematous papules and nodules on arms and legs, sparing the torso
- an infiltration of skin, progressing to thickened skin, possibly with reduced sensation
- diffuse infiltration of the skin and neuropathy (e.g., "glove and stocking") (representing diffuse leprosy)

OR

- The absence of skin lesions and thickening of a peripheral nerve trunk with pain or tenderness of the nerve (representing primary neural leprosy).

Confirmed:

- Meets clinical criteria AND confirmatory laboratory evidence.

Probable:

- Meets clinical criteria for primary neural leprosy AND meets epidemiologic linkage criteria.

Suspect

- Meets clinical criteria for a clinically compatible illness with skin lesions AND meets epidemiologic linkage criteria,
OR
- Meets clinical criteria for a clinically compatible illness with skin lesions AND meets supportive laboratory evidence.

Differential Diagnosis ⁴	Allergic contact dermatitis, dermatologic manifestations of sarcoidosis, drug eruptions, granuloma annulare, insect bites, irritant contact dermatitis, leishmaniasis, onchocerciasis (river blindness), Pinta, psoriasis, scabies, syphilis, tinea versicolor, vitiligo, superficial mycoses (tinea versicolor), birthmarks and scars, granuloma multiforme, lupus erythematosus, pityriasis rosacea, diabetes mellitus (neuropathy).
<u>Treatment</u> ⁴	Up to 2 years of multidrug therapy of 2-3 antibiotics: dapsone, rifampicin, and clofazimine.
Duration ²	Symptoms usually persist for 1-2 years. If untreated, symptoms can persist forever.
<u>Exposure</u> ⁵	Person-to-person by direct contact for very long periods of time, spread through respiratory droplets
<u>Laboratory Testing</u>	Arrange diagnostic testing through the National Hansen's Disease Program. Phone 1-800-642-2477 (weekdays 9am to 5:30pm ET). Biopsies can definitively diagnosis and classify Hansen's disease. See protocol for submitting specimens for evaluation https://www.hrsa.gov/hansens-disease/diagnosis/biopsy. Local Health Authority can arrange testing if an outbreak is suspected OR for contacts.
<u>Control of Contacts</u> ²	Leprosy can spread through person-to-person contact, but transmission generally requires prolonged, close exposure to an untreated case. Spouses of individuals with leprosy rarely develop the disease, while biological parents, children, and siblings who live with an untreated patient face a higher risk. All household contacts should be screened initially; however, routine long-term monitoring of contacts who show no symptoms is not needed.
Key areas of focus during investigation	• Armadillo contact • Household contacts • Residence in the US and other countries
Public Health Actions	Reports of Hansen's Disease (Leprosy) cases must be made to the Local Health Authority during the regular business hours of the health authority on the first working day following the identification of the case. Local Health Authority to notify Office of State Epidemiology (dpbhepi@health.nv.gov) or call 775-684-5911/775-400-0333 (after hours) if outbreak suspected. For individual confirmed or probable cases: • Confirm diagnosis, if possible • Identify potential exposures • Prepare a case report and submit to the Chief Medical Officer (through OSE) within 7 days after completing the case investigation • Identify potential outbreaks from common sources • Provide education about how to prevent transmission To the best of the local health authority's ability, each step of the investigation should be completed within one working day or in alignment with NAC 441A.

Key Partner Agencies

- Hospitals and medical providers
- Local health authorities

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HANSEN'S DISEASE (LEPROSY)

I. DISEASE REPORTING

A. Legal Reporting Requirements

A report to the health authority may be made by telephone; telecopy (in the form prescribed by the health authority); or any form of electronic communication identified by the health authority, following the specified format and procedure.⁶

1. *Health Care Providers and Health Care Facilities*

Health providers and facilities must notify the health authority where provider is located within the first working day after identifying the case.⁶⁻⁸

2. *Laboratories*

Laboratories must notify the health authority within the first working day after identifying the case.⁶ If the lab is located outside of Nevada, notify the Nevada Chief Medical Officer through the Office of State Epidemiology (OSE) within the same timeframe.^{6,9}

3. *Local Health Authority (LHA)*

LHA's must notify the Office of State Epidemiology (OSE) within 7 days after completing the case investigation.¹⁰

II. THE DISEASE AND ITS EPIDEMIOLOGY

A. Background

Hansen's disease, also known as leprosy, is a chronic infectious illness caused by the slow-growing bacteria *Mycobacterium leprae* and *Mycobacterium lepromatosis*. It mainly affects the skin, peripheral nerves, eyes, and nasal lining, sometimes leading to loss of sensation and injury. The disease is now rare in the United States but remains more common in parts of Asia, Africa, and South America, with countries like India, Brazil, and Indonesia reporting the highest numbers of new cases. Risk factors include living in or traveling to areas where the disease is widespread and having prolonged close contact with an untreated person. Most people (around 95%) are naturally immune, so the risk of infection is low. Mortality is rare today with effective treatment, though untreated cases can cause severe disability and long-term complications.¹¹

Forms of Hansen's Disease¹²

Tuberculoid (TT)	Few, well-defined light or dark patches on the skin with marked loss of sensation. Caused by damage to the peripheral nerves supplying the area. Nerves may become swollen. Lesions enlarge very slowly and may sometimes heal on their own without treatment.
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Borderline Tuberculoid (BT)	Immune response is strong but not as high as in TT. Lesions resemble those in TT but are more numerous (usually more than six). Very few bacteria are present.
Mid-Borderline (BB)	Lesions have a mixed appearance: clear, well-defined areas of healing in the center with less distinct borders on the outer edges. Represents an unstable midpoint in the spectrum.
Borderline Lepromatous (BL)	Weaker cellular immunity. Lesions resemble those in lepromatous leprosy but are more sharply defined. They are asymmetrical, with patches of normal skin between affected areas.
Lepromatous (LL)	Represents the most severe form. Almost no cell-mediated immunity, allowing bacteria to multiply extensively. Numerous lesions with poorly defined edges. Early lesions often have little or no sensory loss. Skin becomes diffusely thickened, especially in cooler body areas (hands, feet, face, eyebrows).

B. Etiologic Agent

Hansen's disease is caused by infection with either of two very slow-growing bacteria, *Mycobacterium leprae* and *Mycobacterium lepromatosis*, which only divide about once every two weeks.¹²

C. Description of Illness

Hansen's disease, also known as leprosy, presents in three main forms: borderline (dimorphous), paucibacillary (PB or tuberculoid), and multibacillary (MB or lepromatous), each with distinct clinical features. It is important to note that it may take a person 20 years to show symptoms. Borderline Hansen's disease is the most common, involving numerous skin lesions and peripheral nerve damage that causes weakness and loss of sensation. PB Hansen's disease typically presents hypopigmented or hyperpigmented skin macules and loss of sensation due to nerve infection, sometimes accompanied by visible swelling or tenderness of nerves such as the ulnar, median, or great auricular. MB Hansen's disease is the most severe, marked by widespread, symmetrically distributed skin lesions, nodules, plaques, thickened dermis, and nerve involvement, with potential spread to the eyes, nose, testes, and bones.¹²

D. Disease Burden in Nevada

Hansen's disease is very rare, with only 225 cases reported in the United States every year. Nevada has had no reported cases on Hansen's disease to date.¹³

E. Reservoirs

Humans and armadillos are the only established reservoirs, but red squirrels in the United Kingdom have been found with lesions like those seen in leprosy.¹⁴

F. Modes of Transmission

Mycobacterium leprae spreads through close contact, from nasal mucosa or respiratory secretions, but the exact mode of transmission is not clear. Indirect transmission is unlikely, even though the bacteria can live up to 7 days in dried nasal mucus.¹⁴

G. Incubation Period

The incubation period can range from a few weeks to as long as 30 years, with an average duration of 3 to 10 years.¹⁴

H. Period of Communicability

If treated, the case is no longer considered infectious. However, if untreated, it can last for many years.

I. Testing

The National Hansen's Disease Program (NHDP) provides diagnostic support for suspected leprosy cases in the U.S. Clinicians should contact NHDP at 18006422477 (or 18087339831 in Hawaii) for consultation.

Specimens:

- Skin smears from earlobes, elbows, knees
- Skin biopsies from active lesion edges
- Nerve biopsies from thickened nerves

Testing:

- Skin and nerve biopsies are required for definitive diagnosis and classification.
- Slit skin smears aid in diagnosing multibacillary (MB) disease, which often shows characteristic foam cells filled with *M. leprae*.
- Acidfast staining (Ziehl-Neelsen with 5% sulfuric acid) confirms the presence of acidfast bacilli.
- PCR can detect *M. leprae* or *M. lepromatosis* DNA and is useful when findings are unclear, though it does not replace standard diagnostic methods.¹¹

J. Treatment

Hansen's disease is treated with multidrug therapy based on the disease type: PB cases receive daily dapsone and monthly rifampicin, while MB cases also include daily clofazimine. Treatment usually lasts one to two years, after which patients are no longer infectious and can be cured if the full course is completed, often at specialized U.S. clinics.⁴

Provide most current treatment guidelines from [Red Book](#) to the healthcare provider or refer case to physician for proper treatment for Hansen's Disease (Leprosy).

III. EPIDEMIOLOGIC CASE INVESTIGATION

The public health authority should begin investigating the case of Hansen's Disease (Leprosy) step by step, within one working day of notification or in alignment with [NAC 441A](#).

A. Step 1: Review relevant information about the disease.

1. *Review scientific information in [Control of Communicable Diseases Manual](#), most recent edition.*
2. *Review Hansen's Disease (Leprosy) most recent case definition ([2025 CDC](#)).*

B. Step 2: Begin investigating the case.

1. *Contact Reporting Source and/or Reported Case*

Upon receiving an initial case report, review lab test results and available clinical details and epidemiologic factors. Please make three attempts to contact the case (text and phone calls) on separate days, at different times of the day (morning, afternoon, late afternoon). Document all attempts to contact a reporting source and/or reported case, preferably in the "Encounters" tab of EpiTrax. Please use case report forms (CRF) to gather accurate information about the case. Focus on the key data elements listed above. Filling out an electronic version of the CRF in EpiTrax (called a Confidential Morbidity Report (CMR) in EpiTrax) is preferred. If used, the completed PDF version should be attached to the CMR in EpiTrax. The CRF should be completed within 7 days of completing the investigation of the case.¹⁰

C. Step 3: Identify potential sources of infection

The investigation focuses on lifetime exposure before onset. Ask about any travel, exposures to armadillos, red squirrels in the UK, or close contact with someone who has/had Leprosy. Use the [Leprosy Case Report Form](#) during investigation.

D. Step 4: Initiate control measures for case and/or for contacts (see Section IV – Section VI below).

E. Step 5: Provide Education and Prevention messaging to the case and/or contacts (see Section IX below).

IV. CONTROL OF CASE

Transmission from person-to-person is rare and isolation is unnecessary. Once treatment begins, case is no longer considered infectious (<http://cdc.gov/leprosy/hcp/clinical-overview/index.html>). Provide health education and counseling of patients and close contacts.¹⁴ Stress that effective multidrug therapy is available. If case is in a healthcare setting, standard precautions are indicated; isolation is not required.²

V. CONTROL OF CONTACTS

All household contacts should receive an initial screening; however, ongoing routine monitoring is unnecessary for contacts who remain symptom-free. A contact residing in the same household as a case having Hansen's disease (leprosy) shall obtain an examination by a physician for signs of the disease as soon as possible after diagnosis of the index case, and at 6- to 12-month intervals for not less than 5 years after his or her last contact with the case while infectious. Spouses of individuals with leprosy rarely develop the illness, whereas biological parents, children, and siblings living with an untreated patient have a higher risk. Investigate symptomatic contacts in the same manner as a case.

VI. CONTROL OF CARRIERS

A carrier state has not been documented for Hansen's Disease (Leprosy) and thus no carrier-specific control measures are needed

VII. MANAGEMENT OF SPECIAL SITUATIONS/OUTBREAK CONTROL

Coordinate with senior epidemiology staff to determine if an outbreak is occurring. If so, notify DPBH Environmental Health, local health authorities, or infection control, as appropriate.

VIII. PREVENTION

The investigator should reference the most recent disease specific public educational materials from the CDC. The [Nevada OSE website](#) also provides information about Hansen's Disease (Leprosy). Some prevention tips include:

- Quickly spotting cases and starting them on multidrug therapy (MDT) right away.
- Checking and treating infected people in the same household: those with clear signs of leprosy get MDT, while others get a single dose of rifampin or rifapentine once active leprosy is ruled out.

IX. REFERENCES

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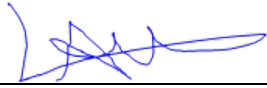
X. ACKNOWLEDGEMENTS

This document was developed based on the content and format of the disease investigation guidelines of several state and local health jurisdictions:

- Washington State Department of Health Reporting and Surveillance Guidelines
- Northern Nevada Public Health Epidemiology and Communicable Disease Program Investigation of Communicable Disease Manual

The Nevada Office of State Epidemiology would like to acknowledge the work of these great partners.

XI. UPDATE LOG



Ihsan Azzam, Ph.D., M.D.
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7/8/26

Chief Medical Officer Approval Date