

MENINGITIS AND MENINGOCOCCAL DISEASE

Disease Category: Other Diseases

Timeframe to follow-up:

See the link to the Disease Investigation Process document

Signs and Symptoms

Signs and symptoms can vary and may include (1) (2) (3) (4):

- Fever
- Headache
- Stiff neck
- Nausea
- Vomiting
- Photophobia
- Altered mental status (confusion)
- Rash

Newborn/ infants symptoms:

- Fever
- Difficulty feeding
- Irritability or lethargy (limpness or baby is hard to wake up)
- Bulging fontanelle (baby's "soft spot")
- Seizure or abnormal reflexes

Incubation

Neonates: Early-Onset (within first 72 hours); Late-Onset (3 to 89 days)

Adults: varies by etiologic agent; ranges from 1 to 10 days

Case Classification

Presenting symptoms and diagnostics may differ by etiologic agent (e.g. viral, bacterial, fungal, parasitic). Rapid identification of agent is crucial for proper diagnosis, treatment, contact control, and case reporting. Common characteristics include:

Clinical criteria (5) (6):

Adults

- Fever
- Headache
- Stiff neck
- Altered mental status (confusion)

Neonates

- Fever (rectal temperature $>38^{\circ}\text{C}$) or hypothermia (rectal temperature $<36^{\circ}\text{C}$)
- Irritability
- Lethargy
- Poor feeding or feeding intolerance
- Bulging fontanelle
- Nuchal rigidity is observed in a minority of affected infants

Confirmed:

- Cerebrospinal fluid (CSF) white blood count >15 cells/microL with a neutrophilic predominance
- Elevated CSF protein
- Decreased CSF glucose
- Identified agent on gram stain or culture

Cases resulting from reportable disease such as those below should be reported to CDC's National Notifiable Disease Surveillance System and managed according to the pathogen's Disease Investigation Protocol:

Notifiable

Viral

- [Varicella \(chickenpox\)](#) (*Human alpha herpesvirus 3*)
- [Influenza](#)
- [Mumps](#)
- Arboviruses
 - [West Nile virus \(WNV\)](#)
 - [Zika virus disease](#)
 - [Chikungunya virus disease](#)
 - [Dengue](#)
 - [Saint Louis encephalitis \(SLEV\)](#)

Bacterial

- [Streptococcal toxic shock syndrome](#) (group A *Streptococcus*)
- Group B *Streptococcus*
- [Pneumococcal Disease](#) (*Streptococcus pneumoniae*)
- [Listeriosis](#) (*Listeria monocytogenes*)
- Enterobacteriaceae, Carbapenem-resistant (CRE) (*Escherichia coli* K1)
- [Haemophilus influenzae, invasive disease](#) (*Haemophilus influenzae*)
- *Staphylococcus aureus*
- *Neisseria meningitidis*
- *Mycobacterium Tuberculosis*

Fungal

- *Candida* (*Candida Auris*)
- [Coccidioidomycosis](#) (*Coccidioides*)

Other potential non-notifiable agents include:

Viral

- B Virus (Herpes B)
- Epstein-Barr virus
- human herpesvirus

	• Adenovirus • Lymphocytic choriomeningitis virus (LCMV) • Powassan • Eastern equine encephalitis virus. • LaCrosse • Parainfluenza Bacterial • Klebsiella • Pseudomonas aeruginosa • Staphylococcus albus • Gram-negative bacilli Fungal • Blastomyces • Cryptococcus • Histoplasma Parasitic • Angiostrongylus cantonensis (neuroangiostrongyliasis) • Baylisascaris procyonis (baylisascariasis; neural larva migrans) • Gnathostoma spinigerum (neurognathostomiasis) • Naegleria fowleri (free-living amoebas)
Differential Diagnosis	The differential diagnoses include systemic viral, fungal, and parasitic infections, inflammatory/autoimmune conditions (central nervous system (CNS) vasculitis, noninfectious meningitis), vascular/structural impairments (hemorrhage, stroke, tumor, meningeal carcinomatosis, abscesses), and noninfectious causes of abnormal neurologic signs, such as, temperature instability, and/or cardiorespiratory instability (5). Neonatal diagnoses also include neonatal seizure disorders, central vascular thrombosis, and sepsis from non-neurologic foci (6).
<u>Treatment</u>	Treatment is dictated by the etiologic agent. Antimicrobial therapy should be rapidly provided for all cases of meningitis before agent is determined. If the agent is notifiable, follow the corresponding Disease Investigation Protocol. If the agent is not notifiable, general treatment guidelines are as follows: Viral Viral infections possess no specific treatment, however supportive care (fluid and electrolyte management and pain control) and neurological observation should be implemented (7). Bacterial

	Identified bacteria determines antibiotic selection. Empiric treatment with ceftriaxone, dexamethasone, and vancomycin should strongly be considered if diagnosis is delayed (8). Fungal High-dose antifungal medicine is given directly via IV before transitioning to by mouth. Length of treatment varies by person, potentially extending to lifelong care (9). Parasitic Steroids are often required to reduce the body's reactivity. Treatment with antiparasitic medications may be needed (10).
Duration	Duration varies by cause and agent: • Viral: typically resolves within 7-10 days. More severe infections may persist longer (11). • Bacterial: typically persists for 7-14 days after antibiotics are given. Full recovery may take months (3). • Fungal: varies by individual immune system and fungal agent (9). • Parasitic: varies widely by specific parasitic agent.
<u>Exposure</u>	Specific exposure pathways are determined by the etiologic agent. Refer to Disease Investigation Protocol if available. If a protocol is unavailable, potential pathways include: • Viral: oral-fecal route and close contact; vector-borne and respiratory droplet are also possible (11) (12). • Bacterial: respiratory droplet, close contact, and sexual transmission (12). • Fungal: inhalation of fungal spores and resulting from medical procedures; transmission from person-to-person does not occur (9). • Parasitic: ingestion of infected or contaminated foods and water; transmission from person-to-person does not occur (10).
<u>Laboratory Testing</u>	Local Health Authority can arrange testing if an outbreak is suspected OR for contacts: • The State Public Health Laboratory Directory can be found here. • Sample collection instructions can be downloaded here.
<u>Control of Contacts</u>	Contact Control is determined by the etiologic agent; however, caution should be shown until the agent or agent type is identified as non-contagious. Refer to Disease Investigation Protocol if available. If a protocol is unavailable, recommended measures include: • Viral: Enteric precautions, avoidance of contact with infected person, good personal hygiene, and disinfection of environmental surfaces for the 7 days after onset of symptoms (12).

	- Bacterial (including suspected): Close contacts (within 3 feet of patients for more than 8 hours during previous 7 days or 24 hours post treatment) should be treated prophylactically until bacterial strain is determined as non-contagious (8). Children - A child experiencing meningitis must be excluded from attendance at childcare facilities and schools until 7 days after the onset of symptoms (13).
Key areas of focus during investigation	Dependent on specific etiologic agent or agent type, the resulting disease, and its relevant risk factors.
Public Health Actions	Reports of meningitis 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. A Notable exception includes meningitis resulting from <i>Haemophilus influenzae</i> type b which requires a report within 24 hours of identification (14). - Case of invasive meningococcal disease caused by <i>Neisseria meningitidis</i> - Cases of Tuberculosis meningitis caused by <i>Mycobacterium tuberculosis</i> Are both considered immediate reportable conditions (no later than 24 hours after identification (suspected or confirmed). A report of a case having meningitis must include the specific viral, bacterial, fungal or parasitic cause of the disease, if known (13). The health authority shall investigate each report of a case having meningitis to obtain sufficient information for the case report (13). If an association is suspected among two or more cases, the health authority shall conduct an investigation to determine the existence of a common source of infection (13). 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

	Cases resulting from <i>Haemophilus influenzae</i> type b and <i>Neisseria meningitidis</i> (meningococcal disease) must be managed according to procedures specified in NAC 441A.550 and NAC 441A.620, respectively. 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	- Northern Nevada Public Health (NNPH) - Southern Nevada Health District (SNHD) - Central Nevada Health District (CNHD) - Carson City Health and Human Services (CCHHS) - Office of State Epidemiology (OSE) - Nevada State Public Health Lab (NSPHL)

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MENINGITIS

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. (14)

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. (14) (15) (16)

2. *Laboratories*

Laboratories must notify the health authority within the first working day after identifying the case. (14) 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. (14) (17) A notable exception includes meningitis resulting from *Haemophilus influenzae* type b which requires a report within 24 hours of identification. (13)

3. *Local Health Authority (LHA)*

LHA's must notify the Office of State Epidemiology (OSE) within 7 days after completing the case investigation. (18)

II. THE DISEASE AND ITS EPIDEMIOLOGY

A. Background

Meningitis is an inflammatory disease of the leptomeninges, the membranes surrounding the brain and spinal cord, caused by a broad range of etiologic agents, including viral, bacterial, fungal, and parasitic pathogens. (19) Viral meningitis is the most frequently reported form in the United States (11). Although meningitis occurs nationwide, common fungi that cause fungal meningitis are endemic to the Eastern and Southwestern United States. (9) Risk factors differ by agent, however common factors include immunocompromising conditions (e.g., HIV infection, chemotherapy, recent surgery), age-related susceptibility (infants/children and older adults), close or prolonged contact with infected individuals, and residence in or travel to regions where meningitis-causing pathogens are endemic (e.g., Southeast Asia, sub-Saharan Africa, or U.S. regions with high fungal prevalence). (3) (9) (10) (11) Meningitis-associated mortality varies substantially by etiologic agent and is strongly influenced by the timeliness of diagnosis and treatment. Rapid pathogen identification and initiation of appropriate treatment are critical to reducing severe illness and mortality.

Etiologic Agent

Meningitis can result from a myriad of etiologic agents typically viruses, bacteria, fungi, and parasites. Most common viruses include Arboviruses, Herpesviruses, Influenza virus, Lymphocytic choriomeningitis virus, Measles virus, Mumps virus, and Non-polio enteroviruses (most prevalent). (11) Bacteria include Group A & B Streptococcus, E. coli, S. pneumoniae, H. influenzae, N. meningitidis, and L. monocytogenes. (3) Common fungal agents include Blastomyces, Cryptococcus, and Histoplasma. (9) Parasites include Baylisascaris, procyonis (baylisascariasis; neural larva migrans), and Gnathostoma spinigerum (neurognathostomiasis). (10)

B. Description of Illness

Meningitis is an inflammatory disease of the leptomeninges, the tissues surrounding the brain and spinal cord, and is characterized by an abnormal number of white blood (WBCs) in the cerebrospinal fluid (CSF) in the majority of patients. (19) Meningitis can result from a myriad of causes including certain drugs, cancer, injuries, Ameba, other parasites, as well as fungal, viral, and bacterial infections. (20) The cause or agent determines factors such as potential severity, speed of disease progression, type and duration of treatment, communicability, prevention, and recovery. Common meningitis symptoms include fever, headache, stiff neck, nausea, vomiting, photophobia, and altered mental state. (20) However, these symptoms may be absent or difficult to notice in neonates, who are more likely to exhibit symptoms including being slow or inactive, irritable, vomiting, feeding poorly, bulging fontanelle, and abnormal reflexes. (20) Anyone with symptoms of meningitis should seek medical attention immediately to determine the associated cause and receive appropriate treatment. If left untreated, symptoms can worsen, particularly for bacterial meningitis which can rapidly progress resulting in seizures, coma, sepsis, and death. (3)

C. Disease Burden in Nevada

Meningitis, “other bacterial meningitis,” has historically been endemic in Nevada, with relatively low annual case counts ranging from 7 to 33 cases between 2012 and 2022, affecting a mix of neonates and older adults. (21) However, case counts declined beginning in 2023, with zero cases reported that year, and remained minimal with only two cases reported in 2024 and one case reported in 2025. (21) Similarly, “meningitis, aseptic”, was historically endemic in Nevada, with annual case counts ranging from 20 to 80 cases (with a peak of approximately 100 cases in 2019) between 2012 and 2022. (21) However, a decline was observed beginning in 2023, with fewer than five cases reported in both 2023 and 2025, and zero cases reported in 2024. (21)

See the [Nevada Office of State Epidemiology Communicable Disease Dashboard](#) for Nevada specific data on Meningitis, Other Bacterial and Meningitis, Aseptic (Viral) [other diseases].

D. Reservoirs

The reservoir for meningitis varies by etiologic agent. For most viral and bacterial pathogens that cause meningitis, humans serve as the primary reservoir; however, animal reservoirs are possible. (3) (11) In contrast, several fungal and parasitic agents originate from non-human reservoirs. Environmental reservoirs include soil, dust, and organic material containing fungal spores, while animal reservoirs contribute to certain parasitic and

zoonotic infections through exposure to saliva, bites, or ingestion of contaminated or undercooked animal products. (9) (10) Because reservoirs differ by pathogen class, accurate identification of the likely reservoir is essential for informing prevention strategies and guiding control of cases or contacts.

E. Modes of Transmission

Modes of Transmission are determined by the etiologic pathogen, respective information and Disease Investigation Protocols should be used. Common modes of transmission for bacterial and viral meningitis agents include ingestion of contaminated food or water, contact with infected individuals, animals, or environmental sources, and exposure to respiratory droplets or aerosolized particles, including from asymptomatic carriers. (3) (11) Notable exceptions include group B Streptococcus, which can be transmitted vertically from colonized pregnant individuals to newborns (22); arboviruses, which require vector-borne transmission (11); fungal pathogens that can enter the blood stream from the gastrointestinal tract or from medical/surgical procedures (9); and parasitic that can result from accidental ingestion of raccoon feces or consumption of raw or undercooked fish or poultry. (10)

F. Incubation Period

Incubation period can vary by etiologic agent; however the typical range extends from 1 to 10 days in adults. Within neonates, early-onset meningitis symptoms typically appear within the first 72 hours after birth but can be seen through the first 7 days of life (23). For late-onset, it typically occurs in the first 4 to 5 weeks of life but has the range of 8-89 days. (24) (23)

G. Period of Communicability

Fungal and parasitic meningitis are not considered communicable; however, viral and bacterial meningitis can be transmitted from person to person. Communicability of a patient with meningitis differs depending on the etiologic agent. Specific periods and modes of transmission should be obtained once an agent is identified; refer to appropriate Disease Investigation Protocol if possible.

H. Testing

- Viral (11) (25)
 1. There is no evidence of bacterial or fungal meningitis after blood or cerebrospinal fluid (CSF) testing, with patient presenting acute onset of meningeal symptoms, fever, and cerebrospinal fluid pleocytosis.
- Bacterial (19)
 1. Initial blood tests with complete blood count with differential and platelet count along with two aerobic blood cultures before antibiotics are administered.
 - White blood cell count is usually elevated (shift towards immature forms).
 - The platelet count may be reduced.

- Blood cultures are often positive and can be useful when CSF cannot be obtained before initiation of treatment.
- 2. Head computed tomography (CT) should be performed prior to lumbar puncture (LP) for those with one or more risk factors. If no risk factors are present, proceed directly to LP. Risk factors include:
 - Immunocompromised state
 - History of central nervous system disease
 - New onset seizure
 - Papilledema
 - Abnormal level of consciousness
 - Focal Neurologic deficit
- 3. Every patient with suspected meningitis should have CSF obtained unless LP is contraindicated. CSF should be sent for:
 - Cell count and differential
 - Positive cases typically have WBC count above 1000/microL
 - Glucose concentration
 - Positive cases typically have glucose concentration <40 mg/dL
 - CSF to serum glucose ratio of ≤ 0.4
 - Protein concentration
 - Positive cases typically have protein concentration >200 mg/dL
 - Gram stain and bacterial culture
- 4. Other appropriate tests (e.g., multiplex nucleic acid testing and sequencing-based molecular tests when clinical suspicion remains)
- Fungal (26)
 1. Obtain fungal-specific serologies or antigen tests based on epidemiologic risk
 - Ex: *Coccidioides* – serum IgG/IgM, complement fixation
 2. Perform MRI (preferred) or CT if there is concern for increased intracranial pressure or central nervous system mass lesion.
 - If risk factors are not present, proceed directly to LP
 3. CSF obtained from LP should be sent to evaluate typical meningitis characteristics (e.g., cell count/differential, glucose/protein concentration, etc.) as well as fungal-specific diagnostics:
 - CSF Culture: confirmation of fungal meningitis but has low sensitivity; improves with large-volume, sediment culture. Notify the lab due to biocontainment needs for fungal species.
 - CSF antibody testing: detection of antibodies and antibody levels by immunodiffusion or by true complement fixation in CSF can bolster organism identification and evaluation sensitivity.
 - Polymerase chain reaction (PCR): can be an alternative to fungal culture; however, it is likely no more sensitive.
- Parasitic (27)
 1. Eosinophilic meningitis should be confirmed using CSF analysis from LP. PCR-based assays, serologic tests, and ELISA assays can increase sensitivity. Diagnosis requires CSF eosinophilia $\geq 10\%$; typical CSF profile includes:
 - WBC 20-5000/mm³
 - Eosinophils 20-70%
 - Elevated protein concentrated
 - Glucose concentration normal or minimally reduced

- May be cloudy, xanthochromic or bloody depending on etiology
- 2. Peripheral blood testing can be performed via a complete blood count with differential to discern peripheral eosinophilia, with >3% being common.
- 3. CT, MRI, and ultrasound bio-microscopy can aid in effective diagnosis and differentiation of organismal cause.
- 4. Exposure history and risk factors should be assessed to aid organism differentiation.

I. Treatment

Treatment is dictated by the etiologic agent. Antimicrobial therapy should be rapidly provided for all cases of meningitis before agent is determined. If the agent is notifiable, follow the corresponding Disease Investigation Protocol. If the agent is not notifiable, general treatment guidelines are as follows:

- Viral
 - Viral infections possess no specific treatment, however supportive care (fluid and electrolyte management and pain control) and neurological observation should be implemented. (7) Most mild cases will begin to recover within 7 to 10 days; however, while severe cases may need hospitalization. (11)
 - Vaccines are the most effective protective measure against viral meningitis; vaccines can be available for some causes of viral meningitis: Chickenpox, Influenza, Measles and mumps, and Shingles.
- Bacterial
 - Once infection is suspected, antibiotics represent the primary treatment with selection determined by bacterial agent. Empiric treatment with ceftriaxone, dexamethasone, and vancomycin should strongly be considered if diagnosis is delayed and for those who were in close contact with someone with bacterial meningitis. (3) (8)
- Fungal
 - High-dose antifungal medicine is given directly via IV before transitioning to by mouth. The total length of treatment depends on each person's immune system and the type of fungus causing the infection. Treatment is often longer for people with weak immune systems and might be lifelong. (9)
- Parasitic
 - Steroids are often required to reduce the body's reactivity. Treatment with antiparasitic medications and pain medications for headaches may be needed. (10)

III. EPIDEMIOLOGIC CASE INVESTIGATION

The public health authority should begin investigating the case of Meningitis, 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 current edition.*
2. *Review corresponding case definition:*
 - a) *Meningitis, Aseptic (viral): case definition 1990 CDC*
 - b) *Meningitis, Other Bacterial: case definition 1996 CDC*
 - c) *Meningococcal Disease (*Neisseria meningitidis*): case definition 2015 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 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. (18)

C. Step 3: Identify potential source of infection

Sources of infection will differ by etiologic agent; identification of agent should be prioritized and subsequent specialized information used. Refer to appropriate Disease Investigation Protocol if possible. Potential sources of infection include:

- Viral
 - The investigation focuses on exposures in the 7-10 days before onset. (23) Ask about any risk factors such as insect bites, contact with rodents, recent travel, and weakened immune system. (11)
- Bacterial
 - The investigation focuses on exposures in the 2-10 days before onset. (23) Ask about any risk factors such as age, weakened immune system, absent spleen, close contact with other infected individuals or large groups, and traveling to endemic regions (e.g., sub-Saharan Africa). (3)
- Fungal
 - Ask about any risk such as recent medical procedures, weakened immune system, and living or traveling to an endemic region. (9)
- Parasitic
 - Ask about any risk such as consumption of raw or undercooked food, potential for accidental consumption of contaminated produce, contact with raccoon feces, or recent travel (e.g., Southeast Asia, Pacific Islands, etc.). (10)
- Prenatal
 - Prenatal infections should focus on exposures in pregnant people 36-38 weeks before delivery.

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

1. *Exclusions for Sensitive Occupations or Settings*

Additional control measures may be required depending on the etiologic agent. Refer to respective Disease Investigation Protocol or credible source. Important exceptions include management of 'Meningococcal disease' (*Neisseria meningitidis*), [NAC 441A.620](#), and *Haemophilus influenzae type b*, [NAC 441A.550](#).

	Symptomatic	Asymptomatic
Sensitive Occupation*	N/A	N/A
Childcare/School Attendee	A child having meningitis must be excluded from attendance at childcare facilities and schools until 7 days after the onset of symptoms	N/A
Case in a Medical Facility	If a case having meningitis is in a medical facility, the medical facility shall provide care to the case in accordance with the appropriate disease specific precautions.	N/A
General Population	N/A	N/A

* provide footnote about NAC for sensitive occupation

2. *Exclusion Notifications*

V. CONTROL OF CONTACTS (IF APPLICABLE)

Additional control measures may be required depending on the etiologic agent. Refer to respective Disease Investigation Protocol or credible source. Important exceptions include management of 'Meningococcal disease' (*Neisseria meningitidis*), [NAC 441A.620](#), and *Haemophilus influenzae type b*, [NAC 441A.550](#). Antimicrobial prophylaxis should be considered for those residing in the same house, sharing a quarter, childcare facility staff, or first responder giving mouth-mouth resuscitation for unknown or bacterial agents.

1. *Exclusions for Sensitive Occupations or Settings*

	Symptomatic	Asymptomatic
Sensitive Occupation*	N/A	N/A
Childcare/School Attendee	N/A	N/A
Case in a Medical Facility	N/A	N/A
General Population	N/A	N/A

*provide footnote about NAC for sensitive occupation

2. *Exclusion Notifications*

VI. CONTROL OF CARRIERS (IF APPLICABLE)

Asymptomatic carriage of meningitis can occur when the etiologic agent is meningococcal disease (*Neisseria meningitidis*). Nasopharyngeal carriage of this organism is common; however, only a small proportion of carriers progress to invasive disease. (28) Individuals who develop invasive disease may be contagious for up to 7 days prior to symptom onset, and close contact with persons with invasive disease substantially increases the risk of acquiring both carriage and infection. (28) Although a pre-symptomatic infectious period exists, transmission from carriers who do not develop invasive disease is limited; therefore, no additional public health measures are typically required for asymptomatic carriers. (28) Symptomatic individuals should be investigated and managed in the same manner as confirmed cases.

Exclusions for Sensitive Occupations or Settings

	Symptomatic	Asymptomatic
Sensitive Occupation*	N/A	N/A
Childcare/School Attendee	N/A	N/A
Case in a Medical Facility	N/A	N/A
General Population	N/A	N/A

* provide footnote about NAC for sensitive occupation

1. *Exclusion Notifications*

Although a pre-symptomatic infectious period exists, transmission from carriers who do not develop invasive disease is limited; therefore, no additional public health measures are typically required for asymptomatic carriers. (28)

VII. MANAGEMENT OF SPECIAL SITUATIONS/OUTBREAK CONTROL

A. Association is suspected among two or more cases

- Guidelines based on [NAC 441A.615](#)

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- Health authority shall conduct an investigation to determine the existence of a common source of infection.

B. Meningitis resulting from *Neisseria meningitidis* (Meningococcal disease)

- Guidelines based on [NAC 441A.620](#)
- The health authority shall investigate each report of a case having invasive disease caused by *Neisseria meningitidis* (meningococcal disease), including bacteremia, meningitis and septic arthritis to:
 - Confirm the diagnosis;
 - Determine the extent of any outbreak;
 - Identify any contacts; and
 - Determine the need for antimicrobial prophylaxis or immunization of contacts.
- The health authority shall recommend antimicrobial prophylaxis to any person who has had intimate exposure to nasopharyngeal secretions, including, but not limited to:
 - A contact residing in the same household as the case;
 - A contact sharing crowded quarters with the case, including, but not limited to, miners, prisoners and soldiers;
 - A contact who is a member of the staff of a childcare facility or a child attending a childcare facility; and
 - A first responder giving mouth-to-mouth resuscitation.
- If a case having invasive disease caused by *Neisseria meningitidis* is in a medical facility, the medical facility shall provide care to the case in accordance with respiratory isolation or other appropriate disease specific precautions until 24 hours after initiation of effective therapy.

C. Meningitis resulting from *Haemophilus influenzae* type b

- Guidelines based on [NAC 441A.550](#)
- The health authority shall investigate each report of a case having an invasive disease caused by *Haemophilus influenzae* type b, which includes bacteremia, meningitis, epiglottitis, septic arthritis, cellulitis, pericarditis, endocarditis, osteomyelitis and pneumonia, to:
 - Confirm the diagnosis;
 - Determine the extent of any outbreak;
 - Determine if the case is a child attending a childcare facility; and
 - Identify any contacts and determine the need for antimicrobial prophylaxis of any contacts.
- The health authority shall recommend to a health care provider providing services to a case having a disease caused by invasive *Haemophilus influenzae* type b that the following preventive measures be taken:
 - If the case is in a medical facility and upon discharge will return to a child care facility or a household where there will be a contact who is less than 4 years of age, the case be prescribed a course of prophylactic antimicrobial therapy before being discharged, unless medically contraindicated.

- If the case resides in a household where there is a contact who is less than 4 years of age, antimicrobial prophylaxis be prescribed for all contacts in the household, unless medically contraindicated, as soon as possible after diagnosis of the case.
- A person diagnosed as having a disease caused by invasive *Haemophilus influenzae* type b shall not attend a childcare facility or a private or public school while the disease is in a communicable form.
- If a case having a disease caused by invasive *Haemophilus influenzae* type b is in a medical facility, the medical facility shall provide care to the case in accordance with respiratory isolation or other appropriate disease specific precautions.
- If a case having a disease caused by invasive *Haemophilus influenzae* type b is in a child care facility or a medical facility where there is a contact who is less than 2 years of age, the childcare facility or medical facility shall provide written notice to the parents or legal guardians of all children in the same classroom or care unit as the case, regardless of whether the children have received an immunization against *Haemophilus influenzae* type b. The notice must inform the parent:
 - That the child has been exposed to a disease caused by invasive *Haemophilus influenzae* type b;
 - To seek medical advice promptly if the child develops symptoms suggestive of a disease caused by invasive *Haemophilus influenzae* type b; and
 - That initiation of antimicrobial prophylaxis is required, unless medically contraindicated, for the child as a condition of readmission to the childcare facility or medical facility.
- If a case having a disease caused by invasive *Haemophilus influenzae* type b is in a child care facility or a medical facility where there is a contact who is less than 2 years of age, each employee of the childcare facility or medical facility shall complete a course of antimicrobial prophylaxis, unless medically contraindicated.
- If a case having a disease caused by invasive *Haemophilus influenzae* type b is in a child care facility or a medical facility where there is no contact who is less than 2 years of age, and two persons or more have been diagnosed as having a disease caused by invasive *Haemophilus influenzae* type b within 60 days, each child and member of the staff in the child care facility or medical facility shall complete a course of antimicrobial prophylaxis, unless medically contraindicated, regardless of whether the child or member of the staff has received an immunization against *Haemophilus influenzae* type b.

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 Meningitis, Other Bacterial, Meningitis, Viral, and Meningococcal disease.

Prevention tips may differ by etiologic agent; reference Disease Investigation Protocol if possible. Commonly prevention strategies include:

- Viral (11)
 - Vaccinations for specific etiologic agents:
 - Chickenpox

- Influenza
 - Measles and mumps
 - Shingles
- Frequent hand washing – [CDC Guidelines](#)
- Avoid close contact with people who are sick
- Clean and disinfect frequently touched surfaces
- Stay home when sick and keep children out of school
- Avoid bites from mosquitoes and other insects that may carry etiologic agents
- Avoid contact with wild mice and rodents
- Bacterial (3)
 - Vaccinations for specific etiologic agents:
 - Hib vaccines (*Haemophilus influenzae* serotype b)
 - Meningococcal vaccines (*N. meningitidis*)
 - Pneumococcal vaccines (*S. pneumoniae*)
 - Bacille Calmette-Guérin vaccine (*M. tuberculosis*)
 - Take preventative antibacterial medication if prescribed.
- Fungal (9)
 - Avoid exposure to dust and dirt (particularly in endemic regions):
 - Stay inside during dust storms and close windows
 - Avoid activities that involve close contact with dirt or dust
 - If unavoidable, wear an N95 respirator while in area
 - Clean skin injuries well with soap and water (especially important if wound was exposed to dirt or dust)
 - Use air filtration measures indoors
 - Take preventive antifungal medication if prescribed
- Parasitic (10)
 - Avoid contact with or consumption of:
 - Undercooked or raw slugs, snails, fish, or poultry
 - Raccoons and their feces
- Neonatal
 - Pregnancy screening and antibiotics for group B *Streptococcus* during labor

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X. ACKNOWLEDGEMENTS

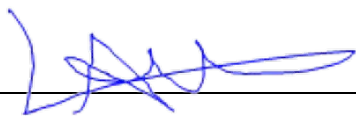
This document was developed based on the content and format of the disease investigation guidelines of several state and local health jurisdictions:

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

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XI. UPDATE LOG

-First draft submitted by Kaden Schorovsky on 05.01.2026



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Chief Medical Officer

5/22/2026

Chief Medical Officer Approval Date