

Hepatitis E Virus

Disease Category: Hepatitis

Timeframe to follow-up: Within 24 hours

Signs and Symptoms (1)	Many people with hepatitis E, especially young children, do not have any symptoms. Others may experience one or more of these symptoms: • Jaundice (yellowing of skin or eyes) • Dark urine or clay-colored stools • Feeling tired • Fever • Joint pain • Loss of appetite • Nausea, stomach pain, throwing up
Incubation (2)	Usually 26-42 days; range 15-64 days
Case Classification (2,3)	Clinical Criteria: An acute illness with sudden onset of symptoms, which may include: • Jaundice (yellowing of skin or eyes) • Dark urine • Clay-colored (pale) stools • Feeling tired • Joint pain • Loss of appetite • Nausea, Stomach pain, Vomiting • Neurologic complications (in some cases) Laboratory Confirmation: A case meets the clinical criteria AND satisfies the following laboratory requirements: • Negative tests for other hepatitis viruses: ◦ Hepatitis A, B, and C are ruled out ◦ Other hepatotropic (liver-affecting) viruses are ruled out • Positive test for Hepatitis E (HEV): ◦ IgM anti-HEV detected in a blood/serum sample, OR ◦ HEV RNA detected in a blood/serum or stool sample
Differential Diagnosis(2,4)	Differential diagnoses include other viral hepatitis (hepatitis A, B, C, D), systemic viral infections (EBV, CMV), bacterial and parasitic infections (leptospirosis, typhoid, liver flukes), autoimmune hepatitis, drug-induced liver injury (DILI), alcohol and other toxins, and metabolic disorders such as Wilson disease.
Treatment (1,3)	Supportive care including symptom management.
Duration(2,5)	Symptoms usually persist for 1-4 weeks

Exposure (1)	• Drinking water contaminated with infected human feces; or • Eating raw or under-cooked: pork, wild boar, deer, or shellfish
Laboratory Testing	Testing for HEV is not available at Nevada State Public Health Laboratory (NSPHL). Testing is available through the following commercial laboratories ARUP (IgG/IgM & PCR); Labcorp (IgG/IgM); and Quest (IgG/IgM). Work with Office of State Epidemiology if outbreak is suspected.
Control of Contacts (2,6)	Sensitive Occupations: Food handlers, healthcare workers, and childcare providers should be excluded from work until 14 days after the onset of jaundice or, if jaundice is absent, 14 days after the onset of clinical symptoms. Clearance Criteria: Laboratory "test-out" (stool clearance) is not required for HEV. Clearance is strictly time- and symptom-based, as viral RNA can remain detectable in stool for up to 4–6 weeks even after clinical recovery. Infection Control: In healthcare settings, Standard Precautions are sufficient for most patients. Contact Precautions are recommended for diapered or incontinent patients to mitigate the risk of fecal-oral transmission.
Key areas of focus during investigation	Travel history to endemic countries, history of high-risk food consumption, exposure to untreated water.
Public Health Actions	Reports of Hepatitis E cases must be made to the Local Health Authority within 24 hours 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 • HEV infected workers (food, childcare, healthcare) and students (including daycare) must be excluded until symptoms resolve 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	• Local Health Authorities (CCHHS, CNHD, NNPH, SNHD)

TABLE OF CONTENTS

A. Primary authors:.....	1
B. Review Process:.....	3
TABLE OF CONTENTS	6
I. DISEASE REPORTING.....	8
A. Legal Reporting Requirements.....	8
1. Health Care Providers and Health Care Facilities.....	8
2. Laboratories.....	8
3. Local Health Authority (LHA).....	8
II. THE DISEASE AND ITS EPIDEMIOLOGY	8
A. Background	8
B. Etiologic Agent.....	8
C. Description of Illness.....	8
D. Disease Burden in Nevada	8
E. Reservoirs	9
F. Modes of Transmission	9
G. Incubation Period	9
H. Period of Communicability	9
I. Testing.....	9
J. Treatment.....	9
III. EPIDEMIOLOGIC CASE INVESTIGATION	9
A. Step 1: Review relevant information about the disease.....	9
1. Review scientific information in Control of Communicable Diseases Manual, most current edition.....	9
2. Review Hepatitis E Virus case definition (2026, NVDPBH).	9
B. Step 2: Begin investigating the case.....	9
1. Contact Reporting Source and/or Reported Case.....	9
C. Step 3: Identify potential source of infection	10
D. Step 4: Initiate control measures for case and/or for contacts (see Section IV – Section VI below).....	10
E. Step 5: Provide Education and Prevention messaging to the case and/or contacts (see Section IX below).....	10
IV. CONTROL OF CASE.....	10
1. Exclusions for Sensitive Occupations or Settings.....	10
2. Exclusion Notifications.....	10
V. CONTROL OF CONTACTS (if applicable)	10
1. Exclusions for Sensitive Occupations or Settings.....	10
2. Exclusion Notifications.....	10
VI. CONTROL OF CARRIERS (if applicable)	11
1. Exclusions for Sensitive Occupations or Settings.....	11
2. Exclusion Notifications.....	11
VII. MANAGEMENT OF SPECIAL SITUATIONS/OUTBREAK CONTROL	11
VIII. PREVENTION	11
IX. REFERENCES.....	11
X. ACKNOWLEDGEMENTS.....	12

XI. UPDATE LOG 12



HEPATITIS E VIRUS

I. DISEASE REPORTING (7-11)

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.

1. *Health Care Providers and Health Care Facilities*

Health providers and facilities must notify the health authority where provider is located within the 24 hours of identifying the case.

2. *Laboratories*

Laboratories must notify the health authority within the first working day after identifying the case. 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.

3. *Local Health Authority (LHA)*

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

II. THE DISEASE AND ITS EPIDEMIOLOGY (1, 5, 6, 12)

A. Background

Hepatitis E is a viral liver infection caused by the hepatitis E virus (HEV), which is primarily transmitted through contaminated food or water. The infection is typically acute and self-limiting. Originally identified in the 1980s as non-A and non-B hepatitis, HEV has now become a leading cause of acute hepatitis and jaundice worldwide. Approximately 12.5% of people globally are infected with HEV during their lifetime, with the highest disease rates occurring in Africa, followed by Asia, Europe, North America, and South America. The virus has different genotypes with distinct transmission patterns. Genotypes 1 and 2 are more common in Africa and East Asia, spreading from person to person through the fecal-oral route, primarily via untreated water. Notably, genotypes 1 and 2 outbreaks frequently occur in conflict zones and humanitarian emergencies such as war zones, refugee camps, or areas with displaced populations where clean water and proper sanitation are scarce. Genotypes 3 and 4 are predominate in Europe and the Americas (North and South), primarily transmitted through zoonotic infection from consuming raw or undercooked meat, including pork, venison (deer), wild boar, or shellfish. Mortality rates are generally low (around 1% in the general population) but rise dramatically to 10–25% in pregnant women, especially during the third trimester. Chronic infection can develop, particularly with HEV

genotype 3, in solid-organ transplant recipients and other immunocompromised patients, potentially leading to progressive liver disease.

B. Etiologic Agent (3)

HEV is a spherical, nonenveloped, positive-sense, single-stranded RNA virus. HEV is classified in the genus *Paslahepevirus* of the family *Hepeviridae*.

C. Description of Illness (1, 5, 6, 13)

The clinical course of Hepatitis E virus (HEV) infection is generally self-limiting and resembles that of hepatitis A, typically characterized by a low case-fatality rate. However, the disease can be significantly more severe in specific populations. In pregnant women, particularly those infected during the third trimester, the maternal mortality rate can reach approximately 25% to 30%. Infection during pregnancy is also associated with adverse obstetric and fetal outcomes, including pregnancy loss, preterm labor, and high perinatal mortality.

Furthermore, severe illness and higher mortality rates are observed in individuals with pre-existing liver damage, where acute HEV infection can trigger acute-on-chronic liver failure.

While HEV is traditionally considered an acute infection, chronic infections can occur in immunocompromised individuals. This is most notably seen in solid-organ transplant recipients, where persistent infection can lead to rapid development of liver fibrosis and cirrhosis, as well as in patients with HIV infection or hematological malignancies.

Extrahepatic complications are also well-documented. Neurologic manifestations, such as Guillain-Barré syndrome, neuralgic amyotrophy (Parsonage-Turner syndrome), and encephalitis, can occur in both acute and chronic cases. Other complications may include renal injury, such as glomerulonephritis, or acute pancreatitis.

D. Disease Burden in Nevada

Hepatitis E is not endemic to Nevada, and there are currently no active cases reported within the state. Any future occurrences are expected to be sporadic and primarily linked to international travel.

See the [Nevada Office of State Epidemiology Communicable Disease Dashboard](#) for Nevada specific data on Hepatitis E Virus (under the Hepatitis Section).

E. Reservoirs (1, 5, 6)

The reservoirs for Hepatitis E virus (HEV) vary significantly by genotype. For genotypes 1 and 2, humans are the only known natural reservoir, and these strains are primarily associated with waterborne transmission in endemic regions (Orosz et al., 2024). Conversely, genotypes 3 and 4 are highly zoonotic, with domestic pigs and wild boars serving as the primary global reservoirs (Lhomme et al., 2024; Williman et al., 2026). Other confirmed animal reservoirs for genotype 3 include deer and rabbits, while camels serve as the reservoir for genotype 7, which has also demonstrated zoonotic potential in humans (Di Bartolomeo et al., 2025; Orosz et al., 2024).

Viral Hepatitis E

June 2026

6



F. Modes of Transmission (1, 5, 6)

Fecal-Oral Route (Waterborne):

The most common mode of transmission for HEV genotypes 1 and 2 is the ingestion of water contaminated with human feces. This is the primary driver of large-scale outbreaks in regions with inadequate sanitation and limited access to clean drinking water.

Zoonotic Foodborne Transmission:

In non-endemic regions, including the United States and Europe, HEV (genotypes 3 and 4) is primarily a foodborne zoonosis. Infection occurs through the consumption of raw or undercooked meat or offal from infected animal reservoirs, particularly domestic pigs, wild boar, and deer. Products like traditional pork sausages or liver-based dishes are frequently implicated in these sporadic cases.

Other Routes of Transmission:

While less frequent, HEV can be transmitted via:

- Blood-borne: Transmission through blood transfusions or organ transplantation has been documented, particularly in areas where the virus is prevalent in the donor pool.
- Vertical Transmission: Mother-to-child transmission can occur during pregnancy, often resulting in high rates of fetal loss or neonatal mortality.
- Person-to-Person: Unlike Hepatitis A, direct person-to-person transmission is considered rare and is not a major driver of HEV outbreaks.

G. Incubation Period (2)

Usually 26-42 days with a range of 15-64 days.

H. Period of Communicability (5)

A Person infected with HEV is usually infectious while they are symptomatic. In uncomplicated acute HEV cases, this is usually for 1–4 weeks.

I. Testing

Testing for HEV is not available at Nevada State Public Health Laboratory (NSPHL). Testing is available through the following commercial laboratories ARUP ([IgG/IgM](#) & [PCR](#)); Labcorp ([IgG/IgM](#)); and Quest ([IgG/IgM](#)). Work with Office of State Epidemiology if outbreak is suspected.

J. Treatment (3)

Management is supportive. Some case reports and case series have indicated that reduction of immunosuppression and/or use of antiviral drugs, such as ribavirin, with or without interferon-alpha, may result in viral clearance in immunocompromised patients with chronic hepatitis E, but no randomized controlled clinical trials have been performed.

III. EPIDEMIOLOGIC CASE INVESTIGATION

The public health authority should begin investigating the case of hepatitis E virus, 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 Hepatitis E virus most recent case classification (2026, NV DPBH).*

B. Step 2: Begin investigating the case. (11)

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.

C. Step 3: Identify potential sources of infection (1, 5, 6)

The investigation focuses on exposures in the 15-64 days before onset. Hepatitis E is spread primarily through contaminated water or undercooked meat. In the US, it is most commonly contracted via infected pork or by traveling to endemic areas.

Ask about any risk factors for infection including but not limited to travel history to endemic regions, consumption of untreated drinking water or ice, consumption of raw or undercooked pork, venison, wild boar, or organ meats, consumption of raw or partially cooked shellfish, occupational hazards such as working as a swine farmer, veterinarian, or slaughterhouse worker with direct contact to domestic pigs or wild mammals, contact with household members or travel companions exhibiting symptoms of jaundice, history of blood transfusions or solid organ transplants, pre-existing chronic liver disease, or current pregnancy, particularly within the third trimester.

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. *Management/Exclusions for Specific Groups or Settings*

	Symptomatic	Asymptomatic
Sensitive Occupation*	Cases of HEV should be excluded from work until the health authority determines they are no longer considered to be infectious.	
Childcare/School Attendee	Cases of HEV should not attend a childcare facility until the health authority determines they are no longer considered to be infectious.	
Case in a Medical Facility	Maintain contact and enteric precautions or other appropriate disease specific precautions.	
General Population	Health authority must explicitly instruct the case on the proper method of handwashing after defecation.	

* Sensitive occupation includes, but is not limited to, employment as a food and beverage handler, employment in a health care facility, employment in a school or employment in a child care facility (14)

2. *Exclusion Notifications*

Cases should be contacted by phone to provide information about how to prevent transmission to others and to provide exclusion instructions as needed. If a case is unable to be contacted by phone, they may be contacted by email or by any other contact method that has been acquired for the case.

If the case is employed in a sensitive occupation or is a child attending a school or childcare facility, the health authority will contact the employer, childcare facility, or school to inform them of the case's mandatory exclusion. To maintain patient confidentiality, this notification will only state that the individual is restricted from the facility due to public health requirements and will not provide any details regarding the specific diagnosis or medical condition.

V. CONTROL OF CONTACTS (IF APPLICABLE)

Contacts should be identified during the case investigation process by asking the case about household members, sexual history, injection drug use or sharing needles, and medical history. The health authority must identify potential secondary cases exposed to

the case's stool during the communicable period, as well as persons exposed to the same common source as the case.

All identified contacts must be evaluated for symptoms and educated about preventing transmission, emphasizing that individuals with hepatitis E may be infectious without showing signs of illness. Because no post-exposure prophylaxis products (such as vaccines or immune globulins) are available to prevent hepatitis E infections in contacts, management must rely strictly on clinical monitoring and rigorous hygiene education.

Investigate symptomatic contacts in the same manner as a case. Newly identified suspected cases should be reported and investigated in the same manner as the index case.

1. **Management/Exclusions for Specific Groups or Settings**

	Symptomatic	Asymptomatic
Sensitive Occupation*	Anyone with symptoms related to gastrointestinal illness should be excluded from work until they have no symptoms for at least 24 hours. If a contact becomes symptomatic, they will be investigated as a suspected case of HEV and will be excluded from work until they are deemed no longer infectious	No exclusions
Childcare/School Attendee	Anyone with symptoms related to gastrointestinal illness should be excluded from a childcare setting to school until they have no symptoms for at least 24 hours. If a contact becomes symptomatic, they will be investigated as a suspected case of HEV and will be excluded from the childcare setting or school until they are deemed no longer infectious	No exclusions

Contact in a Medical Facility	Maintain contact and enteric precautions or other appropriate disease specific precautions.	No exclusions
General Population	Health authority must explicitly instruct the cases and contacts on the proper method of handwashing after defecation.	

* Sensitive occupation includes, but is not limited to, employment as a food and beverage handler, employment in a health care facility, employment in a school or employment in a child care facility (14)

2. **Exclusion Notifications**

Contact by phone to provide information about how to prevent transmission to others and to provide exclusion instructions as needed. If a case is unable to be contacted by phone, they may be contacted by email or by any other contact method that has been acquired.

VI. CONTROL OF CARRIERS (IF APPLICABLE)

Carriers are defined as individuals who are infected with hepatitis E virus that exhibit persistent viraemia beyond 3-6 months. (8) Carriers should be investigated in the same manner as symptomatic cases.

1. **Carrier Management/Exclusions**

	Symptomatic	Asymptomatic
Sensitive Occupation*	Cases of HEV should be excluded from work until the health authority determines they are no longer considered to be infectious.	
Childcare/School Attendee	Cases of HEV should not attend a childcare facility until the health authority determines they are no longer considered to be infectious.	
Case in a Medical Facility	Maintain contact and enteric precautions or other appropriate disease specific precautions.	
General Population	Health authority must explicitly instruct the case on the proper method of handwashing after defecation.	

* Sensitive occupation includes, but is not limited to, employment as a food and beverage handler, employment in a health care facility, employment in a school or employment in a child care facility (14)

2. **Carrier Notifications**

Carriers should be contacted by phone to provide information about how to prevent transmission to others and to provide exclusion instructions as needed. If a carrier is unable to be contacted by phone, they may be contacted by email or by any other contact method that has been acquired for the case.

If the carrier is employed in a sensitive occupation or is a child attending a school or childcare facility, the health authority will contact the employer, childcare facility, or school to inform them of the carrier's mandatory exclusion. To maintain patient confidentiality, this notification will only state that the individual is restricted from the facility due to public health requirements and will not provide any details regarding the specific diagnosis or medical condition.

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

No vaccine is available in the US to protect against hepatitis E. However, you can lower your risk for HEV infection by drinking only purified water when visiting countries where hepatitis E is common and by avoiding raw or undercooked pork, venison, and wild boar meat.⁽¹⁾

IX. REFERENCES

1. CDC. Hepatitis E Basics. Available from: <https://www.cdc.gov/hepatitis-e/about/index.html>
2. Heymann D. Control of Communicable Diseases Manual. 21st ed. American Public health Association; 2023.
3. Kimberlin DW, et al., editors. Hepatitis E. In: Red Book: 2024–2027 Report of the Committee on Infectious Diseases. 33rd ed. American Academy of Pediatrics.
4. Hepatitis E: Background, Etiopathophysiology, Epidemiology. Medscape Overview. Available from: <https://emedicine.medscape.com/article/178140-overview>
5. Lhomme S, Marion O, Abravanel F, Izopet J, Kamar N. Clinical Manifestations, Pathogenesis and Treatment of Hepatitis E Virus Infections. J Clin Med. 2020 Feb;9(2):331.
6. Hepatitis E Fact Sheet. World Health Organization. Available from: <https://www.who.int/news-room/fact-sheets/detail/hepatitis-e>
7. NAC: CHAPTER 441A - INFECTIOUS DISEASES; TOXIC AGENTS SEC225.
8. NAC: CHAPTER 441A - INFECTIOUS DISEASES; TOXIC AGENTS SEC230.

9. NAC: CHAPTER 441A - INFECTIOUS DISEASES; TOXIC AGENTS SEC240.
10. NAC: CHAPTER 441A - INFECTIOUS DISEASES; TOXIC AGENTS SEC235.
11. NAC: CHAPTER 441A - INFECTIOUS DISEASES; TOXIC AGENTS SEC290.
12. Li P, Liu J, Li Y, Su J, Ma Z, Bramer WM, et al. The global epidemiology of hepatitis E virus infection: A systematic review and meta-analysis. Liver Int. 2020;40(7):1516–28.
doi:10.1111/liv.14468
13. Ma Z, Man RA de, Kamar N, Pan Q. Chronic hepatitis E: Advancing research and patient care. J Hepatol. 2022 Oct 1;77(4):1109–23.
14. NAC: CHAPTER 441A - INFECTIOUS DISEASES; TOXIC AGENTS SEC170.

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
- Washoe County Health District 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.
Chief Medical Officer

7/8/26

Chief Medical Officer Approval Date