

# Crimean-Congo Hemorrhagic Fever

**Crimean-Congo Hemorrhagic Fever** (CCHF) is a tick-borne viral hemorrhagic fever (VHF) caused by the Nairovirus in the family *Bunyaviridae*. The virus that causes CCHF is transmitted by bites from infected Ixodid (hard) ticks or contact with infected animal blood or tissues during and immediately after slaughter. The majority of cases have occurred in people involved in the livestock industry, such as agricultural workers, slaughterhouse workers, and veterinarians.

CCHF is endemic to Eastern Europe, the Mediterranean, northwestern China, central Asia, southern Europe, Africa, the Middle East, and the Indian subcontinent. **Animal herders, livestock workers, and slaughterhouse workers in endemic areas are at risk of CCHF.** Healthcare workers in endemic areas are at risk of infection through unprotected contact with infectious blood and body fluids. Individuals and international travelers with contact to livestock in endemic regions may also be exposed.

Other infections can mimic CCHF, including other viral hemorrhagic fevers, malaria, typhoid, influenza, and leptospirosis.

## Disease Summary

- **Transmission:** Bites from infected ticks or contact with blood from infected animals (i.e., cattle, sheep, rabbits, etc.); person-to-person transmission via direct contact with infectious blood or bodily fluids.
- **Incubation Period:** 7-13 days.
- **Symptoms:** High fever, headache, back pain, joint pain, stomach pain, vomiting, conjunctival injection, flushed face, and oropharyngeal erythema. Other symptoms may include jaundice, and in severe cases, changes in mood and sensory perception. As the illness progresses, large areas of severe bruising, severe nosebleeds, and uncontrolled bleeding at injection sites can be seen, beginning on about the fourth day of illness and lasting for about two weeks.
- **Case Fatality:** 10-40%

## Case Definition

- **Suspected Case**
  - Clinical and Epidemiological Criteria:
    - One or more symptoms of CCHF (listed above) AND one or more of the following exposures within the 3 weeks before onset of symptoms:
      - Residence in or history of travel to endemic regions (Eastern Europe, the Mediterranean, northwestern China, central Asia, southern Europe, Africa, the Middle East, and the Indian subcontinent)
      - Contact with blood or other body fluids from a patient with VHF or infected animals
      - Work in a laboratory that handles VHF specimens
      - Work in a laboratory that handles bats, rodents, or primates from endemic areas or area with active transmission
      - Sexual exposure to semen from a confirmed acute or clinically recovered case of VHF
- **Confirmed Case**
  - Laboratory confirmed.

## Key Screening Steps

1. **Identify:** Assess the patient for signs and symptoms, travel history, and epidemiological criteria. For assistance, contact facility Infection Prevention and Control.
2. **Isolate:** Give the patient a mask and initiate prompt triage and isolation.
3. **Inform:** Notify department and facility leadership and infection prevention and control. Call NYC DOHMH Provider Access Line to ascertain risk: 866-692-3641. If determined to be a Person Under Investigation per NYC DOHMH, call Central Office Special Pathogens Program/Emergency Management: 646-864-5442.

## Infection Prevention

### Hand Hygiene

Perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves. Use soap and water for at least 20 seconds or use alcohol-based hand rubs. If hands are visibly soiled, use soap and water.

### Patient Placement

Place patient in a single patient **Airborne Infection Isolation Room (AIIR)**. If an AIIR is not available, isolate patient in a private examination room. Keep door closed, minimize entry and exit, and avoid entry without appropriate PPE.

Limit transport and movement of the patient outside of the room. When outside of the AIIR, patients should wear a facemask to contain secretions.

Keep a log of all persons who care for or enter the rooms or care area of these patients.

### Transmission-based Precautions and PPE

Adhere to **Standard + Airborne + Contact Precautions**. Use a respirator, 2 pairs of extended cuff gloves, coverall or gown, apron, face shield, hood, knee high boot covers and/or ankle high shoe covers. Follow the **SP Level 2 PPE Donning and Doffing Checklist**.

Ensure a trained observer is present and donned in SP Level 1 PPE when assistance is needed.

### Environmental Infection Control

Nairovirus is classified as a **Category A infectious substance**: capable of causing permanent disability or life-threatening/fatal disease in healthy humans if exposure occurs. Keep all waste, supplies, or medical equipment in the patient room until Nairovirus is ruled out.

If CCHF is ruled out, clean and disinfect the patient's care area in accordance with routine procedures. Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.

If CCHF is ruled in, all cleaning, disinfection, and transport of waste will **be escalated to facility EVS and managed by vendors with expertise in handling Category A waste**. Once the patient vacates a room, all unprotected individuals, including HCP, should not be allowed in that room until sufficient time has elapsed for enough air changes to remove potentially infectious particles and the room has been cleaned and disinfected by designated vendor.

Further information regarding waste and transport can be found here: <https://www.cdc.gov/vhf/ebola/clinicians/cleaning/hospitals.html>

## Diagnostic Testing

**Consultation and approval from NYC DOHMH is required if specimen collection is warranted.** Further information regarding specimen collection can be found here:

[https://www.who.int/images/default-source/health-topics/crimean-congo-haemorrhagic-fever/how-to-safely-collect-blood-samples-crimean-congo.png?sfvrsn=eab373fe\\_1](https://www.who.int/images/default-source/health-topics/crimean-congo-haemorrhagic-fever/how-to-safely-collect-blood-samples-crimean-congo.png?sfvrsn=eab373fe_1)

## Treatment

Treatment for CCHF is primarily supportive. Care should include careful attention to fluid balance and correction of electrolyte abnormalities, oxygenation and hemodynamic support, and appropriate treatment of secondary infections. The virus is sensitive in vitro to the antiviral drug ribavirin. It has been used in the treatment of CCHF patients reportedly with some benefit. There is no vaccine available for CCHF.

### Additional Information

Aug 2022

- CDC CCHF Website: <https://www.cdc.gov/vhf/crimean-congo/index.html>
- WHO CCHF: <https://www.who.int/news-room/fact-sheets/detail/crimean-congo-haemorrhagic-fever>
- CDC Case Definition: [Viral Hemorrhagic Fever \(VHF\) 2022 Case Definition | CDC](#)