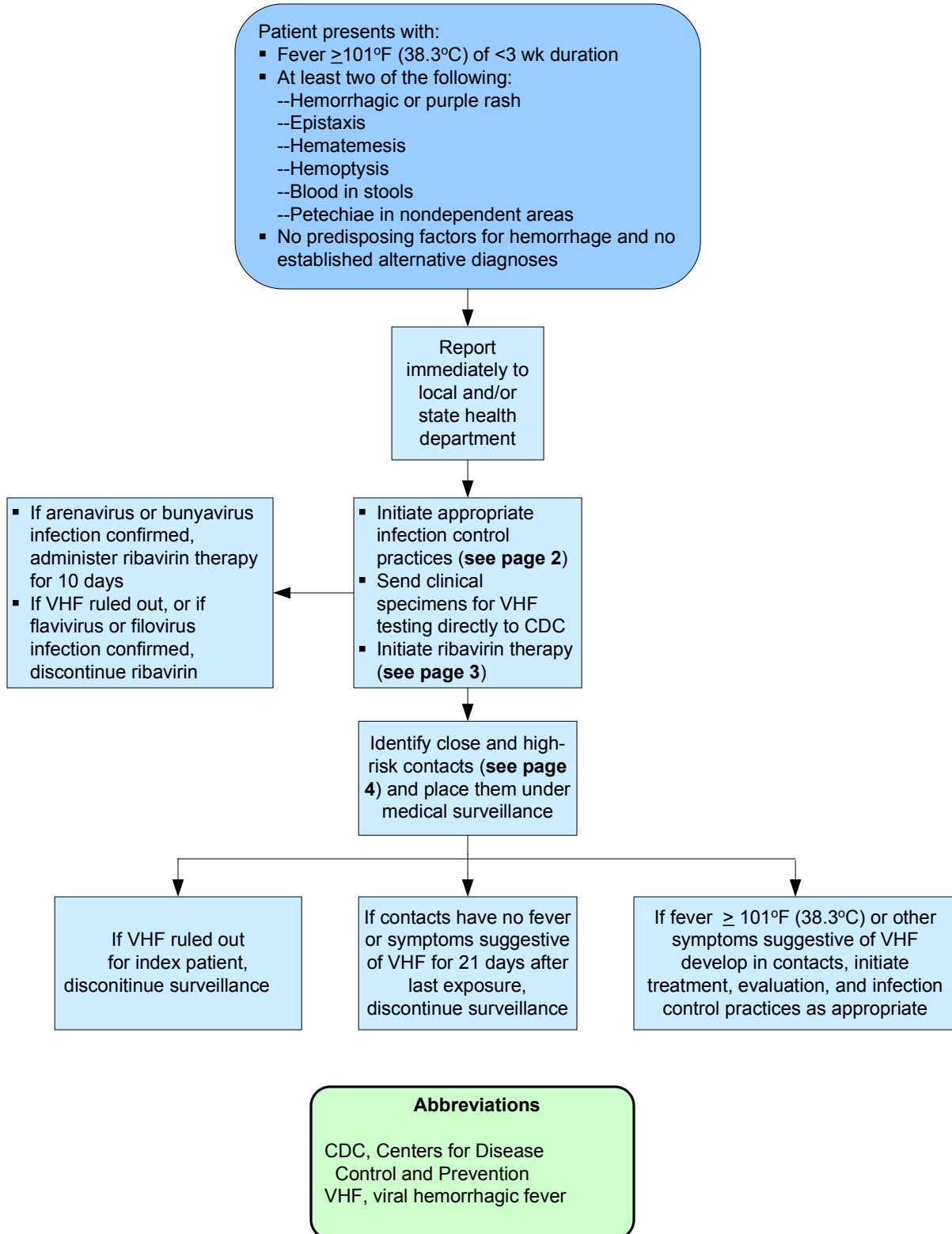


Clinical Pathway: Viral Hemorrhagic Fever



Isolation Precautions for Patients with Suspected Viral Hemorrhagic Fever	
Type of Precaution	Procedures
Airborne Precautions	Place the patient in a private room with: <ul style="list-style-type: none"> • Negative air pressure • 6 to 12 air changes per hour • Restricted access of nonessential staff and visitors
VHF-specific personal protective equipment*	Provide the following PPE for healthcare providers: <ul style="list-style-type: none"> • N-95 respirator or powered air-purifying respirator • Double gloves • Impermeable gowns • Face shields • Goggles for eye protection • Leg and shoe coverings
Hand hygiene	All healthcare providers should adhere to the following practices: <ul style="list-style-type: none"> • Clean hands prior to donning PPE for patient contact • After patient care, remove gloves, gown, and leg and shoe coverings, and immediately clean hands • Clean hands prior to the removal of facial protective equipment to minimize exposure of mucous membranes with potentially contaminated hands • Clean hands again after all PPE is removed
Handling of medical equipment	Dedicate medical equipment such as: <ul style="list-style-type: none"> • Stethoscopes • Blood pressure cuffs • Glucose monitors • Point-of-care analyzers (if available)
Environmental decontamination	<ul style="list-style-type: none"> • Environmental surfaces, inanimate contaminated objects, or contaminated equipment should be disinfected with an EPA-registered hospital disinfectant or a 1:100 dilution of household bleach using standard procedures • Contaminated linens should be incinerated, autoclaved, or placed in double (ie, leak-proof bags) bags at the site of use and washed without sorting in a normal hot water cycle with bleach • Hospital housekeeping staff and linen handlers should wear appropriate PPE when handling or cleaning potential contaminated material or surfaces
Patient cohorting	If multiple patients with suspected VHF are admitted to one healthcare facility: <ul style="list-style-type: none"> • Cohort them in the same part of the hospital to minimize exposure to other patients and healthcare workers • Dedicate staff trained in appropriate infection control practices to care for them • If large number of patients must be cared for in 1 facility, then recommendations to place all patients under Airborne Precautions (see above) may need to be modified
<i>Abbreviations:</i> EPA, Environmental Protection Agency; PPE, personal protective equipment; VHF, viral hemorrhagic fever.	
*The most common forms of exposure involve accidental parenteral inoculation; therefore, particular attention should be paid to handling of needles and sharp instruments.	

Ribavirin Therapy Recommendations for Patients with Viral Hemorrhagic Fever of Unknown Cause or Known to Be Caused by an Arenavirus or Bunyavirus*		
Patient Group	Contained-Casualty Setting	Mass-Casualty Setting†
Adults (including pregnant women)‡	<ul style="list-style-type: none"> —Loading dose of 30 kg IV once (maximum dose, 2 gm) —Then 16 mg/kg IV every 6 hr for 4 days (maximum dose, 1 gm) —Then 8 mg/kg IV every 8 hr for 6 days (maximum dose, 500 mg) 	<ul style="list-style-type: none"> —Loading dose of 2,000 mg PO once —<i>Weight</i> >75 kg: 1,200 mg/day PO in 2 divided doses for 10 days§ —<i>Weight</i> ≤75 kg: 1,000 mg/day PO in divided doses (400 mg in AM and 600 mg in PM) for 10 days§
Children	<ul style="list-style-type: none"> —Loading dose: 30 kg IV once (maximum dose, 2 gm) —Then 16 mg/kg IV every 6 hr for 4 days (maximum dose, 1 gm) —Then 8 mg/kg IV every 8 hr for 6 days (maximum dose, 500 mg) 	<ul style="list-style-type: none"> —Loading dose of 30 mg/kg PO once —Then 15 mg/kg/day PO in 2 divided doses for 10 days

Abbreviations: IV, intravenously; PO, orally.

*Recommendations are from the Working Group on Civilian Biodefense; ribavirin is not approved by the US Food and Drug Administration for treatment of viral hemorrhagic fever and must be used under an Investigational New Drug (IND) protocol, although in a mass-casualty setting these requirements may need to be modified.

†The decision to use oral rather than parenteral medication will depend on available resources.

‡Generally, ribavirin is contraindicated in pregnant women; however, the Working Group indicated that the benefits appear to outweigh the fetal risk of ribavirin therapy. Also, the mortality of viral hemorrhagic fever appears to be higher in pregnancy.

§A 1,000-mg/day dosage given in 3 divided doses has been used to treat patients with Lassa fever; however, this regimen cannot be used in the United States because the current available formulation of ribavirin is 200-mg capsules, which cannot be broken open.

Adapted from Borio L, Inglesby T, Peters CJ, et al. Hemorrhagic fever viruses as biological weapons: medical and public health management. JAMA 2002 May 8;287:2391-405 (<http://jama.ama-assn.org/issues/v287n18/full/jst20006.html>).

Medical Surveillance for Contacts of Patients with Suspected Viral Hemorrhagic Fever

Initial medical surveillance:

Place all persons (including medical and laboratory personnel) who have had close or high-risk contact with patient within 21 days following onset of the patient's symptoms (and before onset of appropriate barrier precautions) under medical surveillance.

High risk is defined as:

- Mucous membrane contact
- Percutaneous injury involving contact with secretions, excretions, or blood

Close contact is defined as:

- Living with, shaking hands with, or hugging patient
- Processing laboratory specimens from patient

If filovirus or arenavirus infection is confirmed:

Continue medical surveillance for all contacts for 21 days

If Rift Valley fever or a flavivirus infection is confirmed:

Only those who process laboratory specimens from an infected patient prior to initiation of appropriate precautions need to be continued on medical surveillance (since these conditions are transmitted in the laboratory setting but not via person-to-person transmission)