No.F.1-8/CCHF/CDC/2022
Center for Disease Control (CDC)
National Institute of Health, Islamabad
Ministry of National Health Services, Regulations & Coordination
Phone: (92-051) 9255237 Fax: (92-051) 9255099
National Focal Point for International Health Regulations

20 June 2022

Subject: **Advisory for Prevention and Control of Crimean Congo Hemorrhagic Fever (CCHF)**

Purpose: In the wake of high disease transmission and risk due to anticipated increased human-animals interaction during upcoming Eid-ul-Azha, it is imperative to be vigilant about the situation and take necessary steps to interrupt the transmission of CCHF. The objective of this advisory is to sensitize human and animal health care authorities and other relevant stakeholders to further strengthen and improve the level of preparedness in prevention and control of CCHF.

Background:

- Crimean-Congo hemorrhagic fever (CCHF) is a widespread disease caused by a tick-borne virus (*Nairovirus*) of the Bunyaviridae family.
- Ticks, especially of the *Hyalomma* genus are both reservoir and vector for the CCHF virus.
- Numerous wild and domestic animals, such as cattle, goats, sheep and hares, serve as amplifying hosts for the virus.
- The virus causes severe viral hemorrhagic fever outbreaks, with a case fatality rate of 10–40%.
- The disease was first characterized in Crimea in 1944 and given the name Crimean hemorrhagic fever. It was then later recognized in 1969 as the cause of illness in Congo, thus resulting in the current name of the disease.
- Since the diagnosis of first human case of CCHF in 1976; sporadic cases have continued to occur in various geographical regions of the country.
- Although Balochistan remains the most affected Province, yet cases have been reported from most of geographical regions of the country every year.
- Balochistan has submitted 19 suspected cases, out of which 14 were positive including and 5 deaths occurred in 2021.
- During 2022 till date, a total of 04 confirmed cases have been reported (02 cases each from Punjab and Sindh).
- The presenting complaints, signs and symptoms of CCHF cases mimic Dengue Hemorrhagic Fever (DHF). Considering its transmission dynamics (human-to-human) and high mortality, it is imperative to exclude CCHF through a careful epidemiological history/ clinical examination of the patient while strictly observing the prescribed hospital infection control measures.

Mode of Transmission: The CCHF virus is transmitted to people either by tick bites or through contact with infected animal blood or tissues during and immediately after slaughter. Transmission to humans occurs through contact with infected ticks or animal blood. CCHF can be transmitted from infected person to another person by contact with infectious blood, secretions, or body fluids. Hospital-acquired CCHF infections can also occur due to improper sterilization of medical equipment, breach in infection comtrol practices, reuse of injection needles, and use of contaminated medical supplies.

Incubation period: Following infection by a tick bite, the incubation period is usually 1-3 days, with a maximum of 9 days. The incubation period following contact with infected blood or tissues is usually 5-6 days, with a documented maximum of 13 days.

Risk Groups: 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.

Clinical presentation: The onset of CCHF is sudden with initial signs and symptoms including headache, high-grade fever, back pain, joint pain, stomach pain, and vomiting. Red eyes, flushed face, red throat, and petechiae (red spots) on the palate with bleeding from gums are common. Symptoms may also include jaundice and in severe cases, changes in mood and altered sensorium.
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. The mortality rate from CCHF is approximately 30% with death occurring in the second week of illness. In patients who recover, improvement generally begins on the ninth or tenth day after the onset of illness.

Case Definition:

Suspected: Any person with sudden onset of fever over 38C° or more for >3days and less than10 days with hemorrhagic symptoms animal contact history from CCHF endemic area.

Probable: Suspected case with history of 10 days of febrile illness with above mentioned clinical presentation and epidemiological link to CCHF endemic areas

Confirmed: Suspected/probable case with lab confirmation of CCHF (PCR & serology)

Treatment: General supportive care with treatment of symptoms is the main approach for managing CCHF patients. The antiviral drug ribavirin has been used to treat CCHF infection with apparent benefit. Both oral and intravenous formulations seem to be effective.

Preventive measures:

Reducing the risk of infection in community:

- There is currently no safe and effective vaccine widely available for human use.
- In the absence of vaccine, the only way to reduce infection in people is by reducing risk factors and educating community on preventive measures.
- Public health advice should focus on several aspects.
  - Reducing the risk of infection transmission from **tick-to-human** while visiting high risk areas:
    - Wear protective clothing (long sleeves, long trousers);
    - Wear light colored clothing to allow easy detection of ticks on the clothes.
    - Regularly examine clothing and skin for ticks; if found, remove them safely.
    - Use approved acaricides on clothing.
    - Use approved insect repellent on the skin. Insect repellents are the most effective in warding off ticks in human populations.
    - Avoid visiting areas where ticks are abundant and seasons when they are most active.
  - Reducing the risk of infection transmission from **animal-to-human**:
    - Wear gloves and other protective clothing while handling animals or their tissues in endemic areas, notably during slaughtering, butchering and culling procedures in slaughterhouses or at home.
    - Quarantine animals (Possibly 30 days) before they enter slaughterhouses or routinely treat animals with acaricides prior to slaughter.
    - Inject Ivermectin to animals with ticks, 24-30 days before slaughtering.
  - Reducing the risk of infection transmission from **human-to-human** in community:
    - Avoid close physical contact with CCHF-infected people.
    - Wear gloves and protective equipment when taking care of ill people.
    - Wash hands with soap regularly after caring for or visiting ill people.
    - Observe safe burial practices by avoiding contact with mucus membranes & body fluids of deceased patient and use of appropriate PPEs while touching deceased person.

Controlling infection in health-care settings:

- Health-care workers caring for patients with suspected/confirmed CCHF or their specimens, should implement standard infection control precautions. These include basic hand hygiene, use of personal protective equipment, safe injection practices and safe burial practices.
- Samples of suspected CCHF cases should be collected, triple packaged and transported by a trained health staff and handled in suitably equipped labs.

Controlling vector in livestock:

- CCHF infections are usually asymptomatic in animals and no vaccines is available for use in animals
- Furthermore, tick vectors are numerous and widespread, so tick control with acaricides (chemicals intended to kill ticks) is an important option for well-managed livestock production facilities
- The bird Lalli/Mynah (important in picking and eating ticks from skin of animals is a natural method which could help control populations of ticks) must not be shot or killed and be put under endangered species
- Liquid formulation of acaricides should be sprayed to animal herds for prevention of tick infestation and can be injected in cracks and crevices of the area.
- Lime powder or acaricides can be applied on farm premises reduce the tick population and prevents to re-infect the animals.

Laboratory Diagnosis and NIH Support:

- Physicians should provide maximum clinical information especially possible contact history, date of onset of symptoms and sample collection when requesting for lab testing. Clinical summary must accompany the sample and packaged in a separate plastic zipper bag in the second layer of triple package.
- Lab tests for CCHF should be recommended to those who fulfill criteria of suspected case definition, details are also available at NIH website **(www.nih.org.pk).**
- Testing suspected patient samples present an extreme biohazard risk and should only be conducted under maximum biological containment conditions. Safe disposal of lab waste should be followed strictly.
- Sample from suspected CCHF patients should be collected by trained phlebotomist with full preventive measures using appropriate personal protective equipment (PPEs).
- Recommended samples for testing are 3-5 cc venous blood in vacutainer or serum separator vial.
- CCHF can be diagnosed by:
  - Reverse transcriptase polymerase chain reaction (RT-PCR) assay
  - Enzyme-linked immunosorbent assay (ELISA)
- Suspected human CCHF samples must immediately be transported in triple package maintaining cold chain to Department of Virology, Public Health Laboratories Division, NIH, Islamabad.
- For any further assistance in this context, the CDC (051 – 9255237 and Fax No. 051-9255099) and Virology Department of Public Health Laboratories Division (051-9255082), NIH may be contacted.

The above 'Advisory' may please be circulated widely to all concerned.

Maj.General
Prof. Dr. Aamer Ikram, HI (M)
Executive Director

Distribution:

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40. Medical Superintendent, Cantonment General Hospital, Rawalpindi
41. Medical Superintendent, District Headquarter Hospital, Rawalpindi
42. Medical Superintendent, Fauji Foundation Hospital, Rawalpindi
43. Medical Superintendent, Holy Family Teaching Hospital, Rawalpindi
44. Medical Superintendent, Benazir Bhutto Hospital, Rawalpindi
45. Medical Superintendent, WAPDA Hospital, Rawalpindi
46. Medical Superintendent, Railway Hospital, Rawalpindi
47. In-charge, Federal Disease Surveillance Unit (FDSRU), NIH Islamabad
48. Officer In-charge, Provincial Disease Surveillance Unit (PDSRU) at Provincial Health Directorates, Lahore, Hyderabad, Peshawar, Quetta, Gilgit and Muzaffarabad
49. Deputy Commissioners with the request to direct all concerned departments at district level

Copies to:

1. Chief Secretary, Govt of Punjab, Sindh, KPK, Balochistan, GB and AJK.
2. Surgeon General Pakistan Army, GHQ Rawalpindi
3. Chief Commissioner, ICT Administration Islamabad
4. WHO Country Representative, Islamabad
5. SPS to Federal Minister of Health, M/o NHSR&C, Islamabad
6. SPS to Secretary, M/o NHSR&C, Islamabad
7. PS to Director General Health, M/o NHSR&C, Islamabad