

Directorate of Health Services, Kerala

Nipah Virus infection- Guidelines

(adapted from the NCDC interim guidelines, and WHO Bulletins, updated 03.06.2019)

Human Nipah virus (NiV) infection is an emerging zoonotic disease which was first recognized in a large outbreak of 276 reported cases in Malaysia and Singapore from September 1998 to May 1999.

In India, during 2001 and 2007 two outbreaks in human were reported from West Bengal, neighbouring Bangladesh. Large fruit bats of *Pteropus* genus are the natural reservoir of NiV. There is circumstantial evidence of human-to-human transmission in India in 2001.

During the outbreak in Siliguri, 33 health workers and hospital visitors became ill after exposure to patients hospitalized with Nipah virus illness, suggesting nosocomial infection. Nipah cases tend to occur in a cluster or as an outbreak.

The most recent outbreak in India was in Kerala in June 2018, where most of the transmission was hospital based

Epidemiology

- **Agent:** NiV is a highly pathogenic paramyxovirus
- **Natural Reservoir:** Large fruit bats of *Pteropus* genus are the natural reservoir of NiV. Pigs also may become infected after consumption of partially bat eaten fruits
- **Seasonality** was strongly implicated in NiV outbreaks in Bangladesh and India. All of the outbreaks occurred during the months of winter to spring (December-May).
- **Incubation period:** varies from 4-21 days.
- **Mode of Transmission:** Transmission of Nipah virus to humans may occur after direct contact with infected bats, infected pigs, or from other Nipah virus infected people. Another route of transmission of Nipah virus has also been identified from its natural reservoir to human: drinking of raw date palm sap contaminated with NiV.

Diagnosis:

Laboratory diagnosis of a patient with a clinical history of NIV can be made during the acute and convalescent phases of the disease by using a combination of tests. The designated Nipah virus testing facility for Kerala is NIV Alappuzha, (NIV Kerala unit, IInd Floor E Block, Govt. TD Medical College Vandanam, Alappuzha 688055), Dr. Balakrishnan Anukumar 9400235828 (04772970004, 2280300) email nivkeralaunit@gmail.com. For sample receiving Mobile no. 9497294954 (Security NIV ALP)

Clinical features

- Fever, altered mental status, severe weakness, headache, respiratory distress, cough, vomiting, muscle pain, convulsion, diarrhea
- In infected people, Nipah virus causes severe illness characterized by inflammation of the brain (encephalitis) or respiratory diseases.
- In general, the case–fatality rate is estimated at 40–75%; however, this rate can vary between outbreaks and can be up to 100%.

Treatment:

- Currently there is no known treatment or vaccine available for either human or animals. Intensive supportive care with treatment of symptoms is the main approach to managing the infection in people.
- There is no proven treatment recommended for Nipah virus disease. Some observational data suggests that Ribavirin may be of use in reducing mortality among patients with encephalitis caused by Nipah virus disease. There is no data/evidence of its usefulness as a prophylactic drug
- Intensive supportive care with treatment of symptoms is the main approach to managing the infection in people.

Case Definitions

Suspect Nipah Case

Person from a area/ locality affected by a Nipah virus disease outbreak who has:

- Acute Fever with new onset of altered mental status or seizure and/or
- Acute Fever with severe headache and/or
- Acute Fever with Cough or shortness of breath

Probable Nipah Case

Suspect case-patient/s who resided in the same village/ house where suspect/confirmed case of NIPAH were living during the outbreak period or such a patient who died with suggestive symptoms, before complete diagnostic specimens could be collected.

OR

Suspect case-patients who came in direct contact with confirmed case-patients in a hospital setting during the outbreak period and who died before complete diagnostic specimens could be collected.

Confirmed Nipah Case

Suspected case that has laboratory confirmation of Nipah virus infection either by:

- Nipah virus RNA identified by PCR from respiratory secretions, urine, or cerebrospinal fluid.
- Isolation of Nipah virus from respiratory secretions, urine or cerebrospinal fluid.

Definition of a Contact:

A close contact is defined as a patient or a person who came in contact with a Nipah case (confirmed or probable cases) in at least one of the following ways.

- Was admitted simultaneously in a hospital ward/ shared room with a suspect/confirmed case of Nipah virus disease
- Has had direct close contact with the suspect/confirmed case of Nipah virus disease during the illness including during transportation.
- Has had direct close contact with the (deceased) suspect/confirmed case of Nipah virus disease at a funeral or during burial preparation rituals

- Has touched the blood or body fluids (saliva, urine, vomitus etc.) of a suspect/confirmed case of Nipah virus disease during their illness
- Has touched the clothes or linens of a suspect/confirmed case of Nipah virus disease

These contacts need to be followed up for appearance of symptoms of NiV for the longest incubation period (21 days), or preferably double incubation period, of 42 days.

Nipah virus disease -- Guidelines for laboratory sample collection and diagnosis

Laboratory Diagnosis:

Laboratory confirmation of a suspect/probable case can be made during the acute and convalescent phases of the disease by using a combination of tests. The designated Nipah virus testing facility for Kerala is NIV Alappuzha.

Sample Collection and Transport Guidelines:

Universal, standard droplet and bio-containment precautions should be followed during contact with excretions, secretions and body fluids of suspected patient for Nipah virus. Adequate bio-safety precautions should be adopted during collection/transport/ storage/ processing of suspected sample.

Sample collection:

The samples should be collected as early as possible (preferably within 4 days) with all bio-safety precautions and accompanied with detailed history of patients on the proforma which can be obtained from the testing laboratory

Sample collection should be done only AFTER ADMISSION in an appropriately secure isolation facility, and ensuring that the staff member doing the collection is using adequate PPE

During sample collection wear complete disposable Personal Protective Equipments (N 95 mask, double surgical gloves, gowns, goggles foot cover, etc). Wash hands with soap and water at least for 30 seconds and then clean hand using 1-2 ml alcohol based hand sanitizer before and after collection of samples. **Exercise special carefulness while taking off PPE components** after doing a sample collection/nursing procedure

The recommended samples are

- Throat swab in viral transport medium
 - Urine 5 ml in universal sterile container
 - Blood in red vacutainer (5ml)
 - CSF (1-2 ml) in sterile container
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- *Samples to be dispatched to NIV Alappuzha*
 - *Any general doubts can be clarified from DSO of the district (numbers can be obtained from DISHA NHM Health dept helpline, 0471-255 2056)*
 - *For the districts, DSO is the final authority to advise on need of sample testing, despatch to NIV, etc*

Transportation and Storage of samples:

Samples should be safely packed in triple container packing and should be transported securely under cold chain (2-8°C) to the testing laboratory with prior intimation.

Sample containing vials, tightly closed, should be kept in good quality zip-lock bags wrapped with sufficient absorbent cotton padding so that inside material should not come out of bag if it leaks. The plastic bag should be kept in another Zip-lock bag similarly, which should be sealed with adhesive tape. This carrier should be placed in a hard container sealed with impermeable tape or plaster and placed in thermocol box /vaccine carrier containing ice packs. The case sheets with complete information should be placed in plastic bag and should be pasted **outside the container**.

Samples should be transported at 2-8°C to the designated lab within 24 hours.

Nipah Virus Disease- Advisory for health care personnel

1. Wash hands thoroughly with soap and water for 20 seconds after contact with a sick patient
2. Use appropriate mask and gloves during history- taking, physical examination, sample collection and other care-giving to suspected Nipah cases
3. Follow Standard precautions for infection control at hospital settings:
 - Hand Hygiene

- Use of PPE, especially special carefulness while taking off PPE components.
 - Use disposable items (NG tube, ET tube, oxygen mask) while handling the patient
 - Safe waste disposal for potentially infected material including used PPE, linen, clothing of patient
4. All suspect cases should be admitted to the designated isolation ward/ facility in the hospital prior to any sample taking. Once the case is suspected of Nipah, bystanders should not be permitted in the ward. Movements of even personnel of the hospital to and from isolation areas to be minimized and should follow a 'restriction for essential purposes' protocol
 5. Segregate all suspect cases of Nipah from all patients in the isolation ward/ facility.
 6. Avoid unnecessary contact with suspected Nipah cases or use barrier nursing
Maintain bed spacing of 2 metres at least
 7. Any spillage of body fluids in the OP/Ward should be managed as per infection control guidelines of the Directorate of Health Services .(see website)
 8. Immediately report admission of a suspected Nipah case to State Surveillance Officer and CSU (IDSP) in the prescribed daily reporting formats
 9. Mortuary staff should wear PPE while handling a dead body. Designated sealed bag should be used for transportation of the dead body

Draft /interim guidelines document prepared by Nipah Advisory Group , Kerala Health Services and approved for issue by Addl Director of Health Services(Public Health Division,) , Kerala, dt 03.06..2019

This version takes precedence over all earlier versions of the State Guidelines wef 03.6.2019

- *As the situation is still evolving, the matter contained in this guideline is subject to modification at regular intervals*
- *Detailed reference documents to be read for addl information will be emailed to all DMOs and DSOs regularly*
- *All are advised to check DHS website or contact your DSO for updates, regularly*
- ***For assistance, or to speak to an appropriate health expert or official, please call 24 x7 Health Dept NHM help line DISHA on 0471 255 2056 , or 1056 (toll free) at any time***