

# NIPAH Virus Infection Kerala

Basic information for training -Interim version 01.06.2018

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# References

1. WHO, 22.5.2018
2. Dr Arun Kumar, Head, Virology,MCVR Manipal
3. NPO IDSP, GoI
4. As the situation is evolving, the matter contained in this ppt is subject to modification at regular intervals
5. Detailed reference documents to be read for addl info is being emailed to all DMOs and DSOs, subject to point no 4
6. You are advised to check the DHS website or contact your DSO for updates, regularly

# Intro .....Key facts

- Cause an RNA virus (Paramyxoviridae family)--- a zoonotic pathogen ---
- Clinical presentations range --asymptomatic infection- subclinical to acute respiratory infection and fatal encephalitis.
- Transmission—from animals (**bats**, pigs) to humans , and now, here, can also be transmitted directly from human-to-human.
- Fruit bats are the natural host of Nipah virus.
- There is no definitive treatment or vaccine available for either humans or animals.
- The primary treatment for humans is **supportive care**. Ribavirin is not a specific drug for NIPAH, though some reports of its use are there. There is no place for Ribavirin in chemoprophylaxis
- Monoclonal antibodies going to be tried
- Nipah virus has caused only a few outbreaks, but it can cause severe disease and death, making it a public health concern.



# 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 where suspect/confirmed case of NIPAH were living during the outbreak period and who died 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 who has laboratory confirmation of Nipah virus infection either by:
  - PCR from respiratory secretions, urine, or cerebrospinal fluid.
  - Isolation from respiratory secretions, urine or cerebrospinal fluid.

# “Nipah Contacts”

- Close contact ---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

# Transmission

1. Contact with body secretions, contact with the tissue of an infected person or animal , and Respiratory droplets
2. Consumption of fruits or fruit products (e.g. raw toddy) contaminated with urine or saliva or fecal matter from infected fruit bats is the most likely source of infection in the present outbreak- and In the Bangladesh and west Bengal outbreaks,.
3. Limited human to human transmission of NiV -- reported among family and care givers of infected NiV patients.
4. Within a health-care setting (nosocomial), where 75% of cases occurred among hospital staff or visitors. ( Siliguri, India)



# Signs and symptoms—range

- Asymptomatic infection,
- Acute respiratory infection (mild, severe),
- influenza-like symptoms of fever, headaches, myalgia (muscle pain), vomiting and sore throat.
- → followed by dizziness, drowsiness, altered consciousness, and **neurological signs** that indicate acute encephalitis.
- Atypical pneumonia and severe respiratory problems, including acute respiratory distress.(in some)
- Encephalitis and seizures occur in severe cases, progressing to coma → 24 to 48 hours.
- Most people who survive acute encephalitis make a full recovery, but long term neurologic conditions have been reported in survivors.
- Case fatality rate is approx 40% to 75%;

**NIPAH DETAILS-2018(up to 01.06.2018)  
updated on 5.00 pm**

| <b>District</b>       | <b>Suspected Case</b> | <b>Un confirmed Death</b> | <b>Confirmed Case</b> | <b>confirmed Death</b> |
|-----------------------|-----------------------|---------------------------|-----------------------|------------------------|
| <b>Trivandrum</b>     |                       |                           |                       |                        |
| <b>Kollam</b>         |                       |                           |                       |                        |
| <b>Pathanamthitta</b> |                       |                           |                       |                        |
| <b>Idukki</b>         |                       |                           |                       |                        |
| <b>Kottayam</b>       |                       |                           |                       |                        |
| <b>Alappuzha</b>      |                       |                           |                       |                        |
| <b>Ernakulam</b>      |                       |                           |                       |                        |
| <b>Trissur</b>        |                       |                           |                       |                        |
| <b>Palakkad</b>       |                       |                           |                       |                        |
| <b>Malappauram</b>    | <b>1</b>              |                           | <b>4</b>              | <b>3</b>               |
| <b>Kozhikkode</b>     | <b>16</b>             | <b>1</b>                  | <b>14</b>             | <b>13</b>              |
| <b>Wayanad</b>        |                       |                           |                       |                        |
| <b>Kannur</b>         |                       |                           |                       |                        |
| <b>Kasaragode</b>     |                       |                           |                       |                        |
| <b>Total</b>          | <b>17</b>             | <b>1</b>                  | <b>18</b>             | <b>16</b>              |

|  |
|--|
| <p><b>Total number of sample tested for NIPAH Virus : 203</b><br/> <b>Total number of positives : 18</b><br/> <b>Total number of negatives : 185</b></p> |
|--|

# Surveillance modes

- Now going into active casefinding and testing after isolation in Kozhikode
- Active Surveillance –proactive Qs-
  - Any specific contact(as notified in papers, or relating to known case/death in specified time frame? -
    - No? → discard from surveillance...
    - Yes? → Include in surveillance
  - Any Symptoms?
    - No? → remain in full home isolation--
    - Yes? → Admit in designated secure isolation facility → Take test samples

# Diagnosis

- Initial signs and symptoms of NiV infection are non-specific
- Diagnosis is often not suspected at the time of presentation.
- Usually by HISTORY, plus tests →
  - Body fluids (RT-PCR) (real time polymerase chain reaction)
  - ELISA. (antibody detection)
  - Virus isolation ← cell culture.
- (clinical sample quality, quantity, type, timing of collection and the time necessary to transfer samples from patients to the laboratory can affect the accuracy of laboratory results).

# **Specimen taking decision—Guidance\*\***

- **At this point of time\*\***, testing only for
- Patient/ Suspect with Fever, plus→
- **Strong Contact history with lab confirmed cases, I e., ---**
  - Visit or stay in MCH KKD or TH Perambra, EMS hospital Perambra, Baby Memorial hospital Kkd, MIMS hosp Kkd, Instt of Chest Diseases THQ Baluserry etc etc, near such case .
- Or symptoms or signs of Encephalitis or ARDS or Myocarditis
- If at all Specimen being taken, do it only with full PPE kit
- **(\*\* This will evolve / change at a later point of time )**

# Sample collection

- **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**
- **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 MCVR etc.**

# Treatment

- There are currently no definitive drugs or vaccines specific for NiV infection
- Intensive supportive care is recommended to treat severe respiratory and neurologic complications.

# Reducing the risk of infection in people

Awareness of the risk factors

Educating people to reduce exposure to NiV.

- **Focus on ----**

- 1. Reducing the risk of bat-to-human transmission**

- decreasing bat access to date palm sap and to other fresh food products. → protective coverings (e.g., bamboo sap skirts).
- Freshly collected date palm juice should be boiled
- Fruits should be thoroughly washed and peeled before consumption.

- 2. Reducing the risk of animal-to-human transmission:**

- Gloves and other protective clothing should be worn while handling sick animals or their tissues, and during slaughtering and culling procedures. As much as possible, people should avoid being in contact with infected pigs.

- 3. Reducing the risk of human-to-human transmission:**

- Close unprotected physical contact with Nipah virus-infected people should be avoided.
- Regular hand washing (with soap and water/alcohol hand rub) should be carried out after caring for or visiting sick people.



# Controlling infection in health-care settings

- Follow standard infection control precautions for *all patients* at *all times*, including strict contact and droplet precautions
- Lab Samples should be handled by trained staff working in suitably equipped laboratories.

# NIPAH

## Sample Content for reassurance message via phone etc, for suspect case or member of public under home isolation or quarantine

1. Do not panic, all contacts do not invariably develop the infection as you fear
2. Maintain self isolation, avoid general and close contact with family members (**as you would do for chicken pox in the family** )
3. Maintain good health with frequent hot food and nutritious fluids (examples thick hot kanji water with salt and lime juice, ) and local fruits like Papaya and Gooseberry(Nellikka /Amla), green leafy vegetables etc etc
4. Do not allow your used clothes, and plates glasses other personally used materials, etc, to mix with those of your family
5. If fever or any other symptoms appear, please inform your area PHC /Govt hospital doctor (find and save number)
6. Use soap and water to wash hands often to reduce transmission. Alcohol hand sanitiser is also useful
7. Do not go for any self testing of blood urine etc at local labs
8. A health worker of your area will be designated to ensure your care, She/he will contact you daily
9. Please call DISHA , 0471 2552056 (or 1056 toll free) to speak to a medical specialist any time to clear any doubt you have
10. In Kozhikode, you can contact 0495 238 1000 for specific queries or local assistance ( additional numbers for Kozhikode will be made available as soon as possible for your service.)

• (\*\*Evolving situation...The content of this phone message is likely to be modified at any time .

• This may be used till any such modification is communicated to you from official sources )

# Natural host: The fruit bats

– Fruit bats (family *Pteropodidae*) – natural hosts – carriers, no deaths – they are larger, and live in large colonies

- Nipah virus in domestic animals
- *Present episode in Kerala probably linked to the bats*

# Nipah in animals.

- Nipah outbreaks in pigs and other domestic animals (horses, goats, sheep, cats and dogs) were first reported during the initial Malaysian outbreak in 1999.
- Pigs are infectious during the incubation period, which lasts from 4 to 14 days.
- An infected pig can be asymptomatic, but some develop acute feverish illness, labored breathing, and neurological symptoms such as trembling, twitching and muscle spasms.
- Nipah should be suspected in pigs if they have an unusual barking cough or if human cases of encephalitis are present in the area.



# Contacts and Clarifications



- For all queries about phone numbers, email etc of concerned officials of Health Services like DMO, **District Surveillance Officer (DSO)** District Programme Manager (DPM), RCH Officer (RCHO) of your district, State Officials, institutions, or to speak with any specialists, etc, please call
- **24 x 7** NHM Health Services helpline **DISHA** on
- **0471-255 2056** ( Normal call, any line)
- **1056** (toll free from BSNL Reliance, TATA, Idea, JIO Lines)
- **Nipah Kozhikode helpdesk 0495-238 1000**

# Thank you...