MINISTRY OF HEALTH MALAYSIA

GUIDELINES ON THE MANAGEMENT OF NIPAH VIRUS (NiV) INFECTION IN MALAYSIA

Detection, Clinical Management, Infection Prevention and Control

Disease Control Division

January 2026

Foreword Director-General of Health

Nipah Virus (NiV) infection is a grave public health threat with a high case fatality rate, estimated between 40% and 75%. Although Malaysia has been free from this infection since 1999, the report of a new outbreak in the Asian region in early 2026 highlights the need for continuous preparedness. Therefore, early detection and case management remain the top priorities of the Ministry of Health Malaysia in safeguarding the nation.This guideline serves as a comprehensive reference to detect, manage, prevent, and control NiV infection, including case management at the International Points of Entry.

I would like to express my deepest appreciation to all parties involved in drafting this guideline. Your collective effort is the pillar of ensuring our healthcare system remains ready to face any potential re-emergence of this virus in Malaysia.

YBhg. Datuk Dr. Mahathar Bin Abd Wahab

Foreword Deputy Director-General of Health (Public Health)

The world today faces an escalating risk of infectious disease threats, encompassing both Emerging Infectious Diseases (EID) and Re-emerging Diseases. As a nation exposed to zoonotic risks, Malaysia must continuously strengthen its public health preparedness. Our primary focus is to ensure that the nation's infection prevention and control systems are maintained at the highest standards to break any chain of transmission effectively.

This protocol emphasizes the importance of updated service processes involving various agencies under the Public Health framework. Robust coordination between the Ministry of Health Malaysia and other agencies is critical, including screening at the International Points of Entry. This preparedness is not only aimed at addressing the threat of Nipah Virus (NiV) infection but serves as a holistic preparation to protect Malaysia against any future EID threats. Congratulations to the technical team for their dedication in producing this inclusive guideline.

YBrs. Dr. Ismuni bin Bohari

TABLE OF CONTENTS

LIST OF ANNEXES

1. Background

Nipah Virus infection is a zoonotic disease caused by the Nipah virus (NiV), an RNA virus of the genus *Henipavirus* within the *Paramyxoviridae* family. Flying foxes or fruit bats (*Pteropus spp.*) are the natural reservoirs, though other bat species also have the potential to carry the virus. Meanwhile, pigs often act as the primary amplifying hosts in human outbreaks, although infection can also occur through other domestic animals such as horses, goats, and sheep

Nipah Virus infection in humans can occur through:

- Direct contact with infected natural reservoirs (flying foxes/fruit bats) or intermediate hosts (pigs), including exposure to the body fluids of these animals.
- Consumption of food contaminated by the body fluids of flying foxes, particularly raw date palm sap or fruits contaminated with the saliva or urine of these animals.
- Human-to-human transmission can occur through direct contact with infected patients, especially through unprotected exposure to body fluids or respiratory droplets.

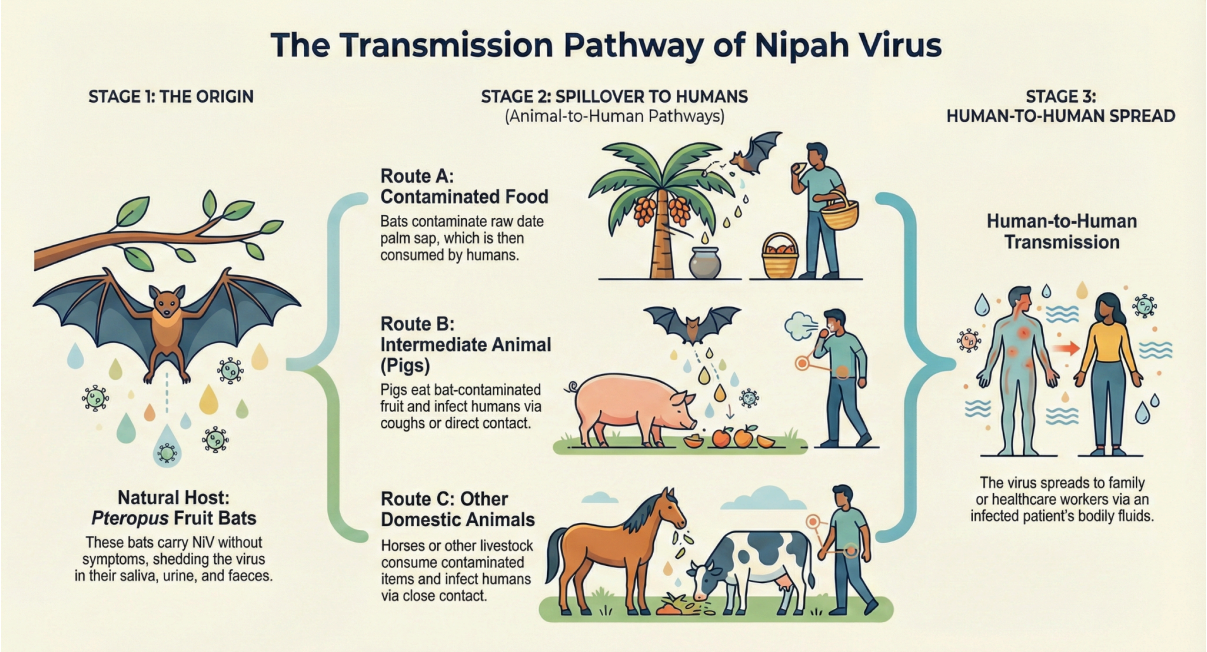


Figure 1: Modes of transmission of Nipah virus infection to humans

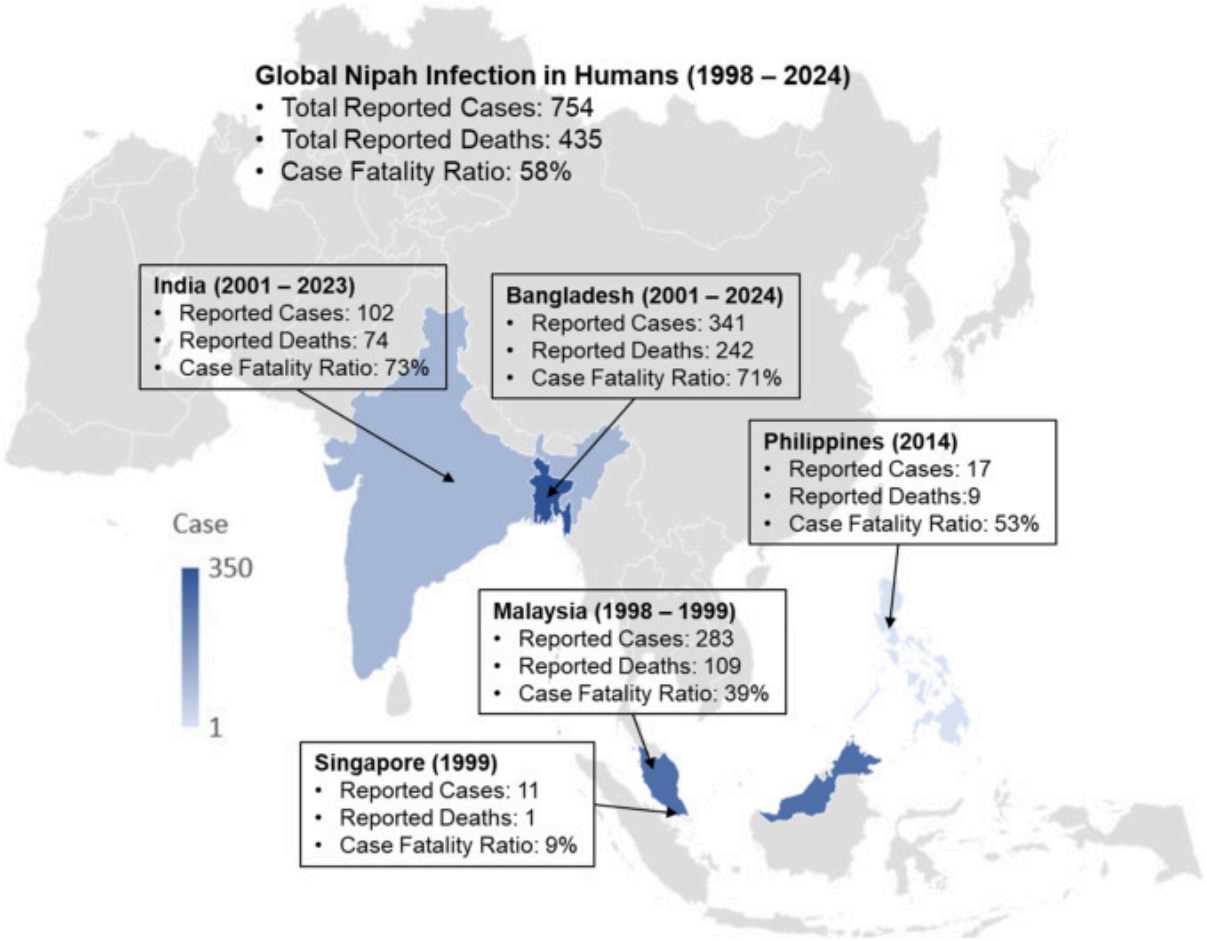
2. Current Situation of NiV infection

Nipah virus infection was first reported in Malaysia in September 1998, with the last case recorded in September 1999. During that period, there were 265 confirmed human cases with 105 deaths (Case Fatality Rate: 39.6%) involving three (3) states

in Peninsular Malaysia: Perak (Ipoh), Negeri Sembilan (Sikamat and Bukit Pelanduk), and Selangor (Sepang and Sungai Buloh). This outbreak also involved 11 cases in Singapore. Since the outbreak was fully contained in 1999, no new cases of Nipah infection among humans have been reported to date. Malaysia formally declared its pig population free from Nipah virus infection to the *Office International des Epizooties* (OIE), now known as the World Organisation for Animal Health (WOAH), with the status effective since June 1, 2001. This declaration was renewed in April 2024 and subsequently reaffirmed in August 2025.

Figure 2: Map showing the initial location of the Nipah virus infection and its spread from 1998 to 1999.

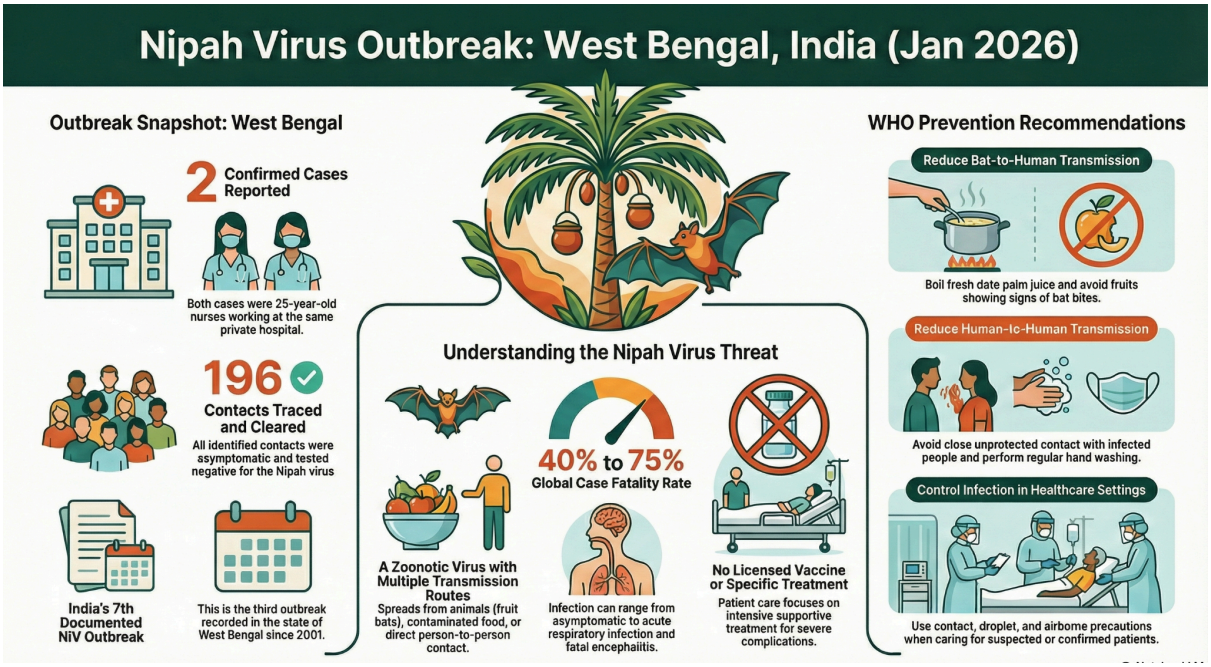
From 1998 to May 2024, a total of 754 cases were reported worldwide with 435 deaths (Case Fatality Rate: 58%). Bangladesh reported the highest number of cases with 341 cases and 242 deaths (Case Fatality Rate: 71%), while India reported 102 cases with 74 deaths (Case Fatality Rate: 73%). The Philippines reported 17 cases with 9 deaths (Case Fatality Rate: 53%) in 2014.



(Source: S. Khan et al 2024. https://doi.org/10.1016/j.ijregi.2024.100434)

Figure 3: Global situation of Nipah virus infection from 1998 to May 31, 2024.

On January 26, 2026, the World Health Organization (WHO) received an official report from India regarding two (2) confirmed positive cases of Nipah virus (NiV) in West Bengal, making this the seventh outbreak reported in India and the third in West Bengal. This outbreak involved two (2) 25-year-old nurses working at the same private hospital in the city of Barasat. On February 3, 2026, Bangladesh reported one (1) confirmed Nipah case involving a 45-year-old woman with a history of consuming raw date palm sap between January 5 and 20, 2026.



Global epidemiological and geographical analyses of the Nipah Virus show a critical link between disease burden and the habitats of natural reservoirs (flying foxes and bats) (Figure 4). Based on risk mapping, there is an overlap between outbreak locations (orange-shaded areas) and the natural habitats of bats from the genus *Pteropus* (green lines), which span from Asia to Australia. The presence of bat populations in areas that have not yet reported cases (beige-shaded areas) suggests a risk of zoonotic spillover compared to the outbreak locations reported to date.

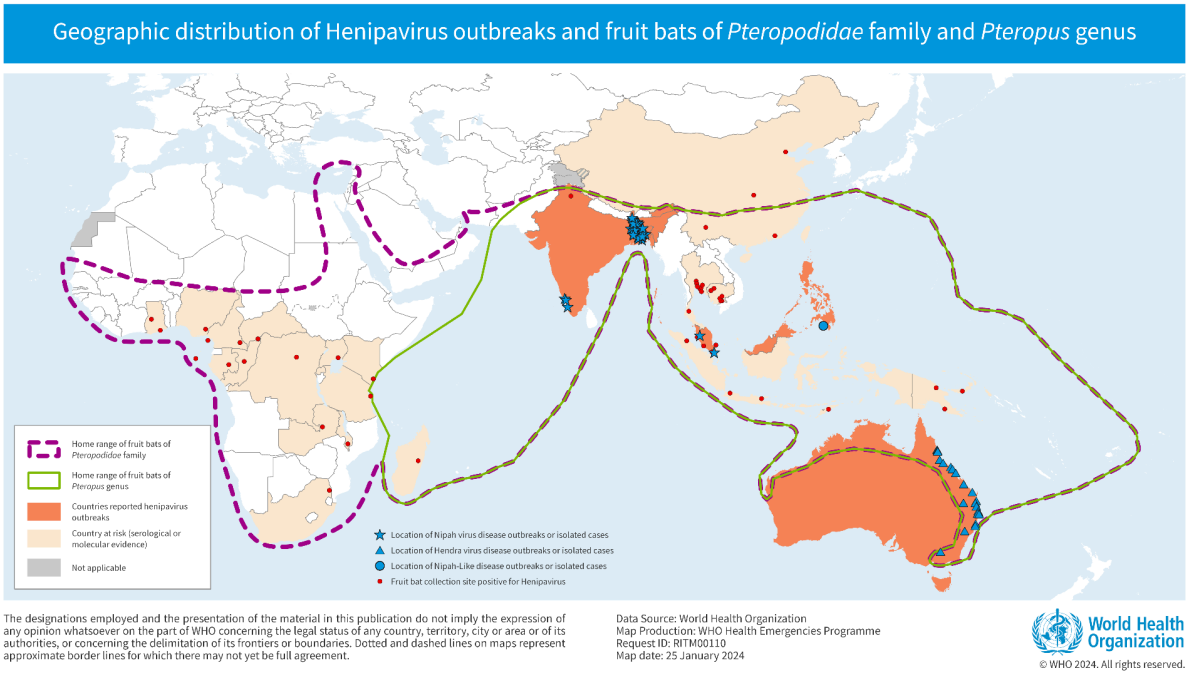


Figure 4: Distribution of Nipah virus infection cases and flying fox/bat populations.

3. Clinical symptoms

Clinical symptoms of Nipah virus infection typically begin after an incubation period of four (4) to 14 days in over 90% of cases, although this period can extend up to 45 days. Initial symptoms are non-specific and resemble other viral illnesses, such as fever, headache, vomiting, and muscle pain.

However, the disease has the potential to become severe and may present warning signs such as seizures (in 20% of patients) and altered levels of consciousness, followed by a coma within five (5) to seven (7) days after the onset of symptoms. Symptoms of cough and shortness of breath have also been reported in 69% of cases. Complications of this disease include brain inflammation (encephalitis) and respiratory problems, with a fatality rate ranging from 40% to 75%, while another 20% are at risk of experiencing relapsing encephalitis in the future.

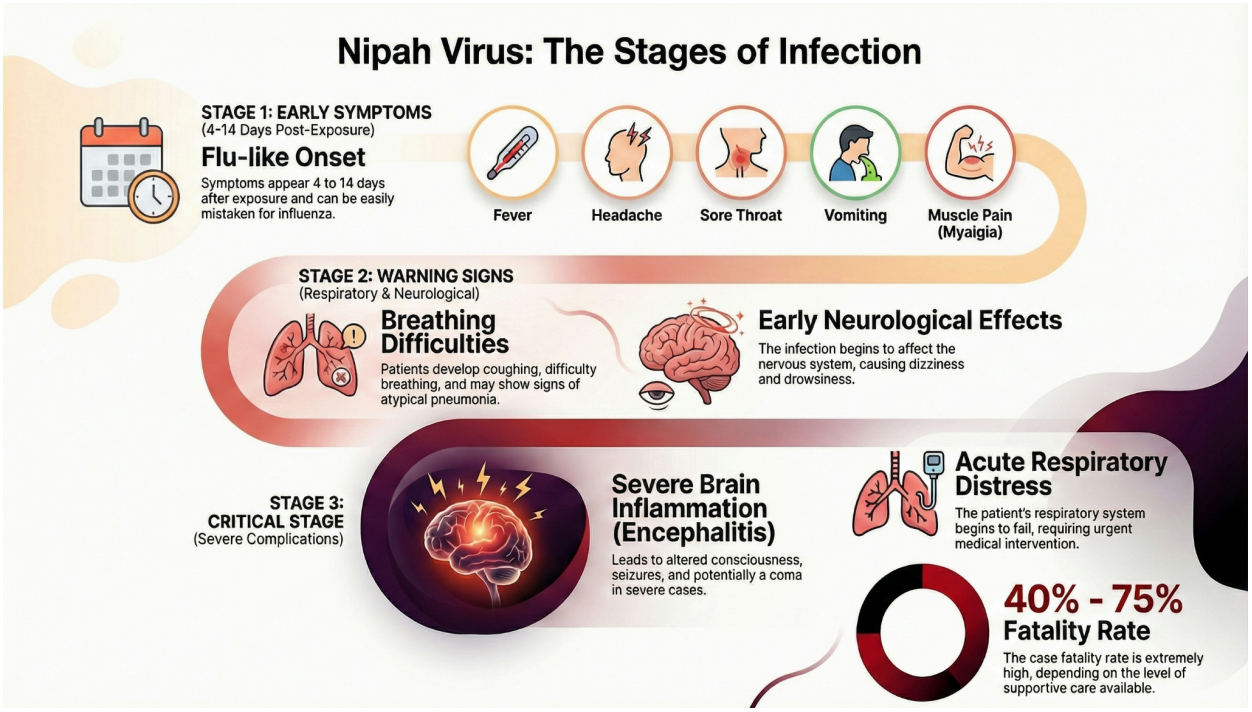


Figure 5: Symptoms and signs of Nipah virus (NiV) infection.

4. Case definition

4.1. Clinical Criteria

Nipah virus (NiV) infection should be suspected if a case presents with symptoms and signs of acute encephalitis, such as fever, headache, muscle pain, vomiting, sore throat, dizziness, altered level of consciousness, seizures, and coma, or atypical pneumonia and acute respiratory distress.

4.2. Suspected Case

Clinical Symptoms

i. **Fever:** History of fever or temperature >37.5°C**, AND**
ii. **Neurological Symptoms:** Headache, dizziness, vomiting, confusion, seizures, paralysis, coma, or behavioral changes**, OR/AND**
iii. **Respiratory Symptoms:** Cough, shortness of breath.

AND

Epidemiological Criteria (Within 14 days before onset of symptoms):

i. Travel from NiV-affected areas (such as West Bengal, India), **OR**
ii. Exposure* or epidemiological link to a confirmed NiV infection case.

*Exposure to bats, food contaminated by bats, or pigs while in affected areas, **OR**
Consumption of date palm sap or palm tree products in affected areas.

4.3. Probable Case

A suspected case of death due to Nipah virus infection where confirmatory testing could not be performed.

A suspected case with negative/inconclusive test results (All cases must still be monitored for a 14-day period) (Refer to Annex 1: Case Management Flow Chart).

4.4. Confirmed Case

A suspected case with laboratory confirmation through PCR and/or serological testing for the detection of Nipah virus.

5. Case notification

Any case suspected of being infected with the Nipah virus (NiV) must be notified under the Prevention and Control of Infectious Diseases Act 1988 (Act 342) under the First Schedule (Section 2) (Part I). Suspected, probable, or confirmed cases must be notified immediately within 24 hours to the nearest Health Office via telephone OR the e-Notification system. Further investigation must be carried out by the Health Office immediately using the Nipah (Viral Encephalitis) Case Investigation Form (Annex 2)

6. Laboratory testing

Nipah virus (NiV) infection is associated with brain inflammation or encephalitis. The incubation period for Nipah is between four (4) to 14 days. There are two (2) methods available to diagnose NiV infection, which are Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR) and serological testing. During the early stages of the disease, laboratory tests can be conducted using Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR) from cerebrospinal fluid (CSF), throat swabs, urine, and blood. Serological testing, on the other hand, serves as a supporting test to detect antibodies (IgM) during the late phase of the disease (after the 2nd week from the date of symptom onset).

NiV has been classified as a Risk Group 4 pathogen, which means specimens containing NiV must be handled using special containment measures and barrier protection (Biosafety Level 4; BSL-4). The quality of laboratory results depends on the type of specimen, type of container, volume, storage, and timely transportation. An insufficient volume of samples received will affect the choice of tests to be performed in the laboratory. Samples must be placed in designated containers as specified in Annex 3.

7. Case management

Case management strategies are dynamic and depend on the current transmission status at both global and domestic levels. The management of NiV infection cases is implemented based on a phased approach that is responsive to the global and national epidemiological situations.

Table 1: Management of NiV infection cases based on phases and current global and domestic situations

Phase & Situation	Case Criteria (Initial Screening)	Management & Treatment Actions
PHASE 1 Absence of imported cases reported by other countries (outside of the affected country). (Refer to Annex 1)	**Suspected Case (Mild Symptoms):** Travel history from affected countries. Mild symptoms: Fever, headache, muscle pain, vomiting, sore throat, dizziness. **NO** Warning Signs*.	**Home Surveillance:** • Distribution of **Health Alert Cards (HAC)** to travelers for self-monitoring for 14 days (equipped with emergency contact numbers). • Monitoring of symptoms at home for **14 days.** **Case Escalation:** • If symptoms worsen or warning signs* appear, the patient must immediately undergo **confirmatory testing** and be admitted to a government hospital for isolation (Annex 5).
	Suspected Case (With Warning Signs)*	**Hospital Admission:** Admission to ward (designated government/referral hospital) (Annex 5).
PHASE 2 Imported cases reported in other countries (outside the affected country).	**Suspected Case:** Travel history from affected countries. Presence of any symptoms.	**Hospital Admission:** • Home monitoring is no longer permitted for detected imported cases. • Patients are referred to the hospital (Annex 5) for admission to the **isolation ward** for further investigation and treatment.

Warning Signs: A patient is categorized as high-risk if they present with any of the following symptoms or signs:

- Prolonged fever
- Reduced level of consciousness
- Seizures
- Shortness of breath
- SPO2 <95%

8. Treatment

Treatment should be initiated as soon as a diagnosis is made while awaiting confirmatory laboratory test results. Treatment consists of supportive care to manage symptoms and reduce the complications of NiV infection.

9. Infection Prevention and Control (IPC) for Suspected and Confirmed NiV Infection Cases

9.1. Screening and triage at health facilities and International Points of Entry (PoE)

Healthcare workers are required to constantly adhere to the “Standard Precautions for Infection Prevention and Control” as the primary basis for infection prevention and control. This compliance includes the use of appropriate Personal Protective Equipment (PPE) to curb the transmission of infection via contact and droplets, as well as maintaining a safe physical distance.

Specifically, when handling symptomatic patients or suspected cases of NiV infection, particularly during history-taking procedures and physical examinations, personnel are mandatory to wear complete PPE consisting of a three-ply surgical mask, gown, and gloves.

If there is no physical contact (such as thermal scanner operators), personnel shall wear a three-ply surgical mask and constantly practice hand hygiene using alcohol-based hand rub (ABHR).

9.2. Treatment and management of suspected or confirmed cases in the hospital

Patients suspected of or confirmed to be infected with NiV must be placed in an Airborne Infection Isolation Room (AIIR).

Healthcare workers handling the cases must wear a gown, gloves, an N95 respirator, and eye protection (goggles/face shield). Visitors are not allowed.

IN-PATIENT FACILITY

SETTING: PATIENT ROOM

TARGET: HEALTHCARE WORKER

ACTIVITY	TYPE OF PPE
Providing care suspected / confirmed Nipah patients e.g. • Close contact for physical examination • Physiotherapy related activities • Changing diapers and assisting with toileting activities • Wound care • Assisting or performing oral care/ bathing / showering	1) N95 mask 2) Isolation Gown (fluid-repellent long-sleeved gown) 3) Gloves 4) Eye Protection (goggles / face shield)

4

IN-PATIENT FACILITY

SETTING: PATIENT ROOM

TARGET: HEALTHCARE WORKER

ACTIVITY	TYPE OF PPE
Performing Aerosol Generating Procedures (AGP) on suspected or confirmed Nipah patients • Intubation, extubation and related procedures • Tracheotomy/tracheostomy procedures • Manual ventilation • Suctioning • Bronchoscopy • Nebulization	1) N95 mask / PAPR 2) Isolation Gown (fluid-repellent long-sleeved gown)/ coverall 3) Gloves 4) Eye Protection (goggles / face shield)

5

9.3. Clinical procedures including sample collection and transportation

Contact, droplet, and airborne transmission precautions are mandatory for procedures involving direct contact and those that generate aerosols. This includes the use of full PPE, including N95 respirators, gloves, gowns, face shields, and eye protection, in accordance with the MOH Policies and Procedures of Infection Prevention and Control, 2019 guidelines.

(https://myohar.moh.gov.my/publications-human-health/)

The transportation of samples to the laboratory must utilize a "triple packaging system" in alignment with the Guidelines for the Safe Transport of Clinical Specimens and Infectious Substances in Malaysia, 2023, or the United Nations Recommendations on the Transport of Dangerous Goods, rules and regulations for Category A biological substances (UN 2814).

9.4. Clinical waste and linen management for suspected or confirmed cases

All waste must be handled as **biohazard waste**. Linen and laundry are to be treated as infectious, or disposable linen should be used.

9.5. Disinfection of spaces or rooms for suspected or confirmed cases

Rooms used by suspected or confirmed cases must undergo terminal cleaning using bleach-based disinfectants (0.1% sodium hypochlorite) or other active ingredients listed by the National Pharmaceutical Regulatory Agency (NPRA), Ministry of Health Malaysia, after the patient is discharged.

10. Contact management

10.1. Definition of Contact

A close contact refers to an individual with a history of exposure to a suspected or confirmed NiV infected case within 14 days before the onset of the index case's symptoms, which includes the following categories:

- **Household Contact:** Family members or individuals living in the same house as the case.
- **Workplace/Social Contact:** Colleagues or individuals who have had close physical interaction.
- **Healthcare Workers:** Staff who treated or handled the case (or clinical specimens) without wearing complete and correct PPE.
- **Direct Exposure:** Individuals exposed to the patient's body fluids or secretions.

10.2. Contact Monitoring Procedures

All identified close contacts must undergo health monitoring according to the following requirements:

- **Monitoring Period:** Monitoring shall be conducted for 14 days starting from the date of the last exposure to the case.
- **Health Status:** This monitoring is mandatory for all close contacts, whether symptomatic or asymptomatic.

10.3. Contact Management During Monitoring

If a close contact begins to show symptoms or signs within the 14-day monitoring period:

- The individual's status will change to a **Suspected Case** and they must be referred for immediate clinical assessment.
- **Extension of Symptom Monitoring:** Active symptom monitoring must continue for 14 days from the date of symptom onset (or based on clinical risk assessment) to observe the disease progression before any discharge or further treatment actions are taken.

11. Management of deceased confirmed cases

Handling of the deceased must be kept to a minimum. Personnel managing the body are required to wear full PPE (including an N95 respirator, gown, gloves, and eye protection (face shield/eye goggles).

All body orifices must be plugged with cotton soaked in 10,000 ppm sodium hypochlorite (concentrated bleach). The body must be placed in two layers of heavy-duty, airtight, and leak-proof body bags (double-bagged) before being removed from the isolation room. The outer surface of the body bags must be wiped with an appropriate disinfectant (e.g., bleach). The bags must be sealed and labeled with a 'BIOHAZARD' label.

To prevent the spread of aerosols or infectious body fluids, the following procedures are **PROHIBITED**:

- NO washing of the body.
- NO spraying of the body.
- NO embalming.

Should there be a need for post-mortem sampling (brain tissue), it will be managed on a case-by-case basis under strict safety measures.

12. Preparedness and response at Points of Entry (PoE)

Nipah virus (NiV) infection has a high fatality rate, ranging from 40% to 75%. To date, there is no specific vaccine or treatment available for this infection. Given that the incubation period is between four (4) to 14 days, there is a high risk that infected travelers may not exhibit any symptoms upon arrival.

Consequently, the screening approach at Malaysia's International Points of Entry (PoE) encompassing air, sea, and land domains, is shifting from single-point screening to a **risk-based layered defence** approach. The implementation of active inspection and screening will only be activated as needed, subject to:

i. Current risk assessments,
ii. Global outbreak reports,
iii. Direct instructions from the Ministry of Health (MOH) Malaysia.

These variables are known as **activation triggers** that initiate strengthening measures at entry points. This step aims to ensure that the following preparedness and response roles or objectives are achieved:

i. **Preventing** the entry of imported cases via travelers from high-risk areas,
ii. **Early detection** of symptomatic individuals or those suspected of being infected,
iii. **Activating immediate referrals** to health facilities for cases requiring further assessment,
iv. **Protecting public health** through rapid and coordinated response.

These actions must be coordinated across all three entry domains (land, sea, and air) in Malaysia, based on the respective roles of each agency. This ensures that the strengthening of PoE functions and the coordination of actions before, during, and after arrival can be implemented in an integrated manner, aligned with the roles of every agency stationed at the International Points of Entry (PoE).

Table 2: Roles of Agencies/Departments at Points of Entry (PoE) in the Prevention and Control of NiV Infection

Agency / Department at PoE	Role
1. Malaysian Border Control and Protection Agency (MCBA)	● Providing movement control and perimeter security. ● Providing isolation rooms, organizing PPE teams, and inspecting screening equipment.
2. MAHB / Port Authority/ Land CIQ	● Providing dedicated pathways and cordoning off public areas near the case route.
3. Immigration	● Providing dedicated counters for travelers from high-risk countries.
4. Referral Hospital	● Providing high-risk ambulances and negative pressure isolation rooms.

Coordination of actions at the country's points of entry through effective communication between agencies will facilitate the process of identifying activation triggers as follows:

i. Active outbreak notification in the country of origin (received by CPRC).
ii. Aircraft/vessels arriving from high-risk areas (received by PoE).
iii. Reports of symptomatic cases by aircraft/vessel crew prior to arrival (received by PoE).

The flow of information will be activated as soon as the activation triggers are identified (Figure 6). In situations where the country faces the threat of infectious disease transmission through border points of entry, information will be channeled directly to the National CPRC for the purposes of verification, planning, and coordination of field actions. Although the control of points of entry falls under the jurisdiction of the Entry Point Health Office (AKPS), all public health responses and actions at these entry points must be coordinated through the National CPRC.

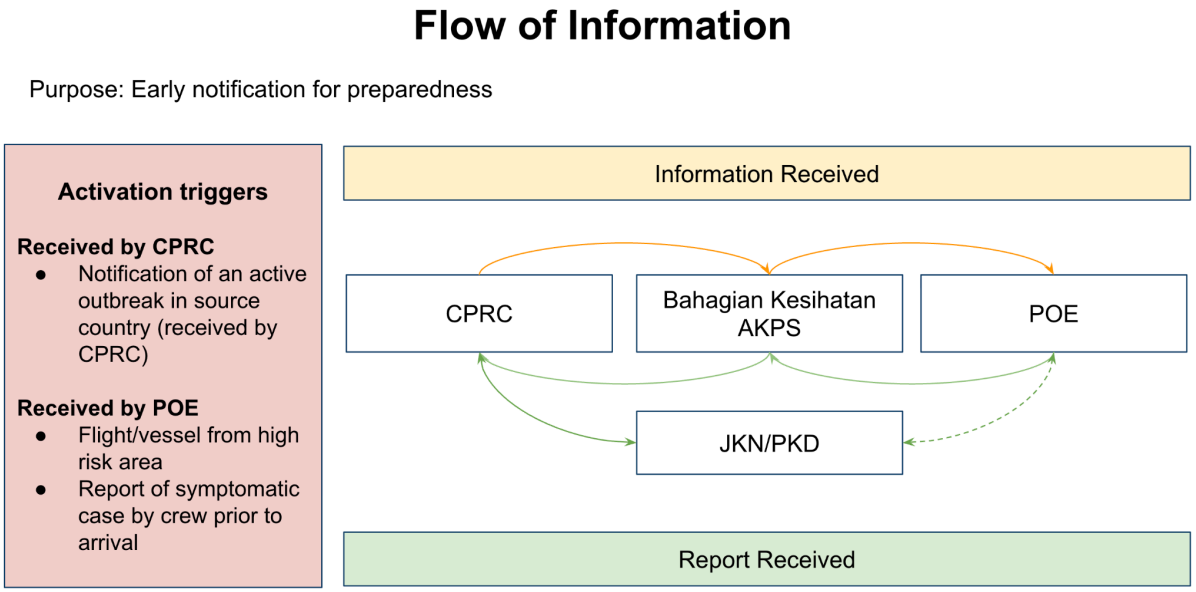


Figure 6: Flow of information at the International Point-of-Entry (POE)

12.1. Strategi Saringan Berasaskan Penilaian Risiko

The implementation of active screening at Points of Entry (PoE) will only be activated when necessary based on current risk assessments, global outbreak reports, or direct instructions from the MOH (KKM) or the National CPRC. Activation Triggers include:

i. Notification of an active outbreak in the source country (e.g., India or Bangladesh).
ii. Arrival of aircraft, vessels, or land vehicles from high-risk areas identified by the MOH.
iii. Reports of symptomatic cases by aircraft/vessel crews or vehicle drivers prior to arrival at the PoE.

12.2. Information Flow and Coordination

Rapid coordination of information is critical for the preparedness of agencies at points of entry:

- Sea PoE: Ship arrival information is coordinated through information systems such as the Malaysia Maritime Single Window (MMSW) to enable early notification of the health status of passengers and crew to the Port Health Office before the vessel berths.

- Air PoE: Airlines are responsible for the early reporting of symptomatic passengers via radio communication or electronic reporting systems before the aircraft lands.
- Land PoE: Vehicle and passenger movement information is coordinated through cooperation with the Immigration Department and the Malaysia Border Control and Protection Agency (AKPS).

12.3. Pre-Arrival Measures

- Early Notification: Activate alerts to the Terminal Authorities (Airport/Seaport/Land), the Entry Point Health Office (AKPS), and designated Referral Hospitals (Refer to Annex 5).
- Facility Preparation: Set up dedicated screening areas and temporary isolation rooms to manage high-risk travelers separately.

12.4. Health Screening Upon Arrival

Screening is implemented in layers, encompassing:

- Temperature Screening using thermal scanners or handheld devices at the arrival hall.
- Observation for clinical symptoms (fever, cough, shortness of breath, altered mental status) by personnel at the counters.
- Mandating all passengers from West Bengal to complete a Health Declaration Form with full and traceable contact information.
- Verifying travel history and exposure within the previous 14 days.

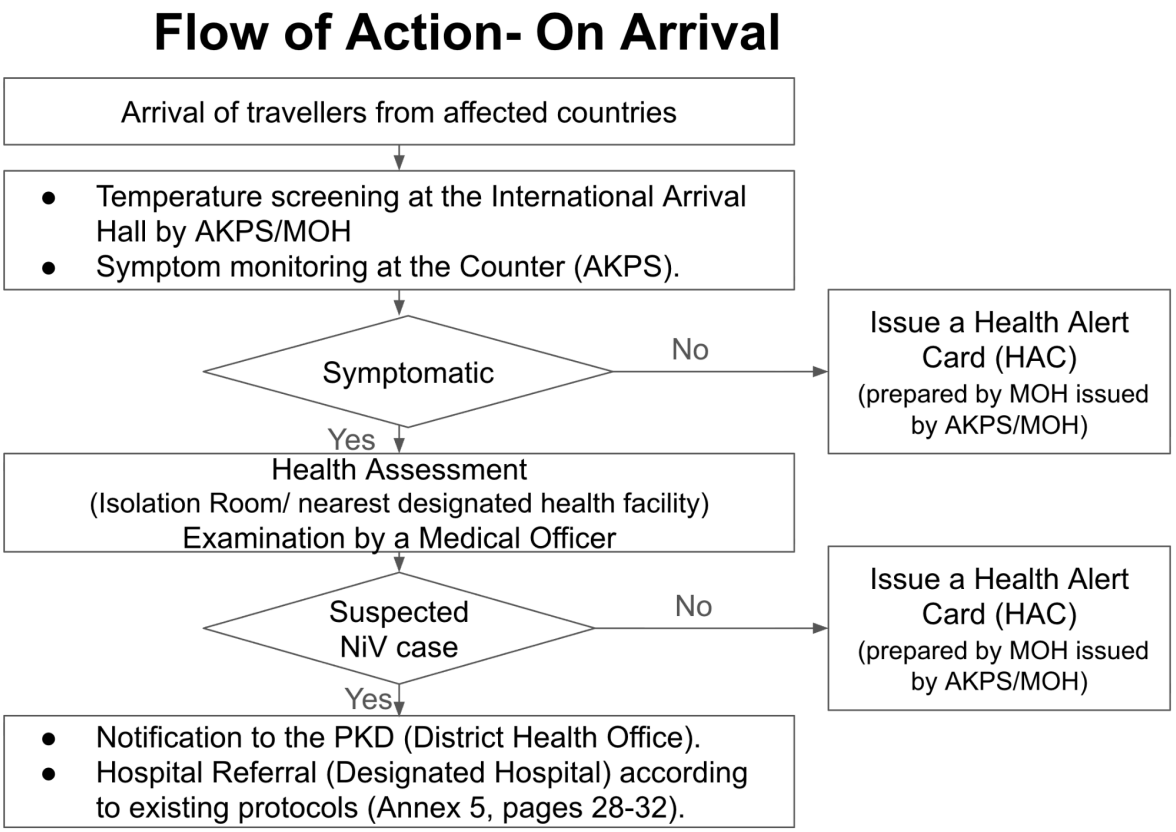


Figure 7: Flow of action at the International Point-of-Entry (POE) upon arrival

12.5. Management of Suspected Cases at Points of Entry (PoE)

When a traveler meets the definition of a suspected case (clinical symptoms + epidemiological criteria):

- Immediately isolate passengers who meet the suspected case definition in the temporary isolation/quarantine room at the airport.
- Activate emergency medical referral procedures to the designated public hospital (Refer to Annex 5).
- Ensure:
    - Personnel utilize PPE according to the risk level (Level 1).
    - The movement route of the suspected case is controlled to prevent exposure to the general public.

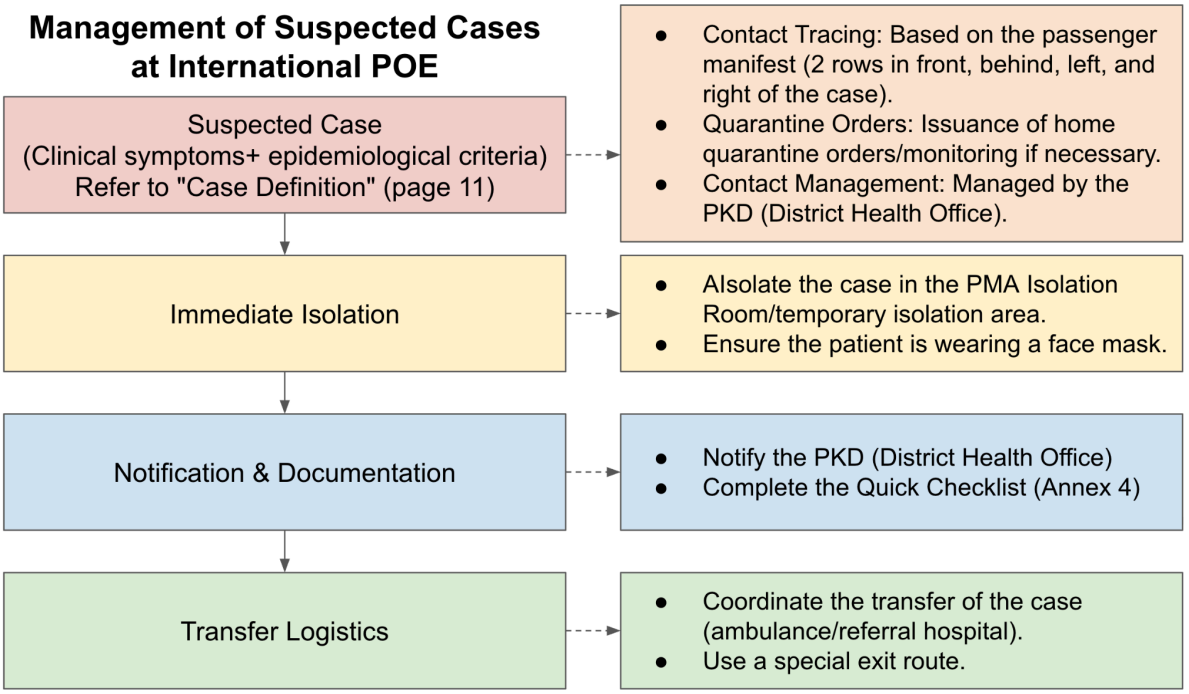


Figure 8: Management of Suspected Cases at International Entry Points (POE)

12.6. Management of Close Contacts and Other Passengers

- Air/Sea PoE: Identify close contacts based on the passenger manifest (e.g., for aircraft: individuals seated 2 rows in front, behind, to the left, and to the right of the case).
- Action: Issue a 14-day home quarantine order or mandate daily active monitoring by the District Health Office (PKD) for high-risk contacts (including daily reports, follow-up actions, and health alert cards).
- Provide health advice to all passengers via videos or educational materials regarding:
    - Signs and symptoms of NiV (Nipah Virus) infection.
    - Actions to be taken if symptoms develop after arrival.

12.7. Risk Communication at the Airport

- Provide digital displays, posters, and public announcements regarding the Nipah virus.
- Deliver key messages on:
    - Modes of transmission.
    - The importance of early reporting.
    - Health facility contact numbers for immediate reference.

- Coordinate communication messages with:
    - Airlines.
    - Airport management.
    - Official government media (if necessary).

12.8. Safety and Protection of Frontline Personnel

- Ensure brief training (refresher courses) are provided to:
    - MCBA (Malaysia Checkpoints and Border Agency/ AKPS)
    - Airport security
    - Cleaning crews
- Provide:
    - Sufficient PPE (supplied by Airport Management)
    - Disinfection procedures for screening and isolation areas
- Enforce health monitoring for all personnel directly involved in operations.

12.9. Coordination and Reporting

- Report all suspected cases and actions taken to:
    - Airport Operations Room / MCBA (Malaysia Checkpoints and Border Agency)
    - National Crisis Preparedness and Response Centre (CPRC)
- Update data for the purposes of:
    - Surveillance
    - Contact tracing
    - Continuous risk assessment

13. Preparedness and Response at Primary Healthcare Facilities

Nipah virus (NiV) infection is a major public health threat due to its high fatality rate, potential for human-to-human transmission, and the current absence of specific antiviral treatments or vaccines. Consequently, primary healthcare facilities play a critical role as the first point of screening to ensure early detection and immediate isolation to contain an outbreak.

Screening for NiV infection at the primary level is challenging because early symptoms are non-specific and resemble other diseases such as Dengue, Influenza, and COVID-19. Without a high index of suspicion, delays in case

detection may occur, thereby increasing the risk of infection to healthcare workers when isolation procedures and PPE compliance are not maintained. The preparedness of the screening counter (triage) is vital, as there is a risk of transmission through respiratory droplets and body fluids from patients to healthcare workers and other patients. Therefore, a quick checklist for use at the screening counter is provided in Annex 4.

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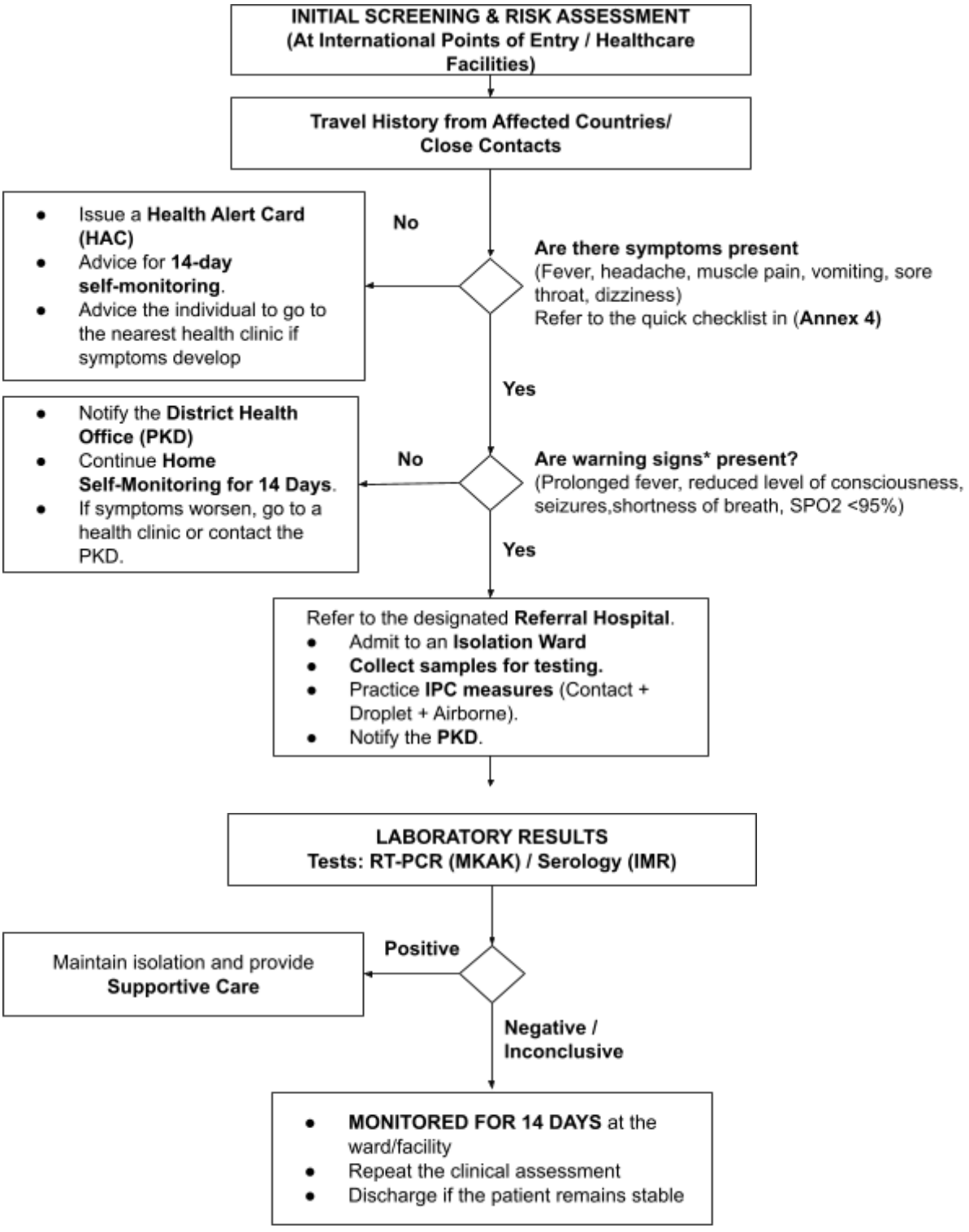
Annex 1

Flow Chart for the Management of Suspected NiV Infection Cases

(Phase 1: No imported cases reported in any other country)



Annex 2

DISEASE CONTROL DIVISION

MINISTRY OF HEALTH MALAYSIA

CASE INVESTIGATION FORM
VIRAL ENCEPHALITIS (NIPAH)

State	District	Investigation Date

1. CASE INFORMATION

Name			
ID / Passport No.		Gender	
Age		Citizenship	
Race / Ethnicity		Country of Origin (if non-citizen)	
Phone Number		Occupation	
Residential Address			
Workplace / School Address			

2. CLINICAL INFORMATION

2.1 Symptoms and Signs

No.	Symptom / Sign	Yes	No	Date of Onset
i.	Fever			
ii.	Headache			
iii.	Muscle pain (Myalgia)			
iv.	Lethargy / Fatigue			
v.	Sore throat			
vi.	Cough			
vii.	Vomiting			
viii.	Diarrhea			
ix.	Confusion			
x.	Behavioral changes			
xi.	Slurred speech			

No.	Symptom / Sign	Yes	No	Date of Onset
xii.	Memory impairment			
xiii.	Drowsiness / reduced level of consciousness			
xiv.	Seizures			
xv.	Paralysis (focal neurological deficit)			
xvi.	Coma			
xvii.	Shortness of breath / Pneumonia / ARDS			
xviii.	Others (please specify):			

2.2 Laboratory Tests

Type of Test	Laboratory	Specimen	Date of sample taken	Result	Date of result

2.3 Treatment and Case Status

Hospital		Type of Ward	
Admission Date		Case Status	Alive / Deceased
Discharge Date		Date of Death (if applicable)	

3. RISK FACTORS

Item	Yes	No	Notes
Case from an outbreak area			
Recently arrived from abroad (state country & date)			
Visited an outbreak area			
Contact with a suspected/confirmed individual			
Direct contact with animals (state type & location)			
Direct contact with contaminated food (state type & location)			
Occupation-related infection			
Other risk factors (please specify)			

4. CLOSE CONTACT INFORMATION *(Can be attached on a separate page)*

Name	**Age**	**Relationship**	**Phone No.**	**Symptoms (if any, state onset date)**	**Date of Last Exposure**	**Notes**

5. CONFIRMATION BY OFFICER

Investigating Officer Comments		Name/Signature/Date
District Epidemiology Officer Comments		Name/Signature/Date
State Epidemiology Officer Comments		Name/Signature/Date

Annex 3

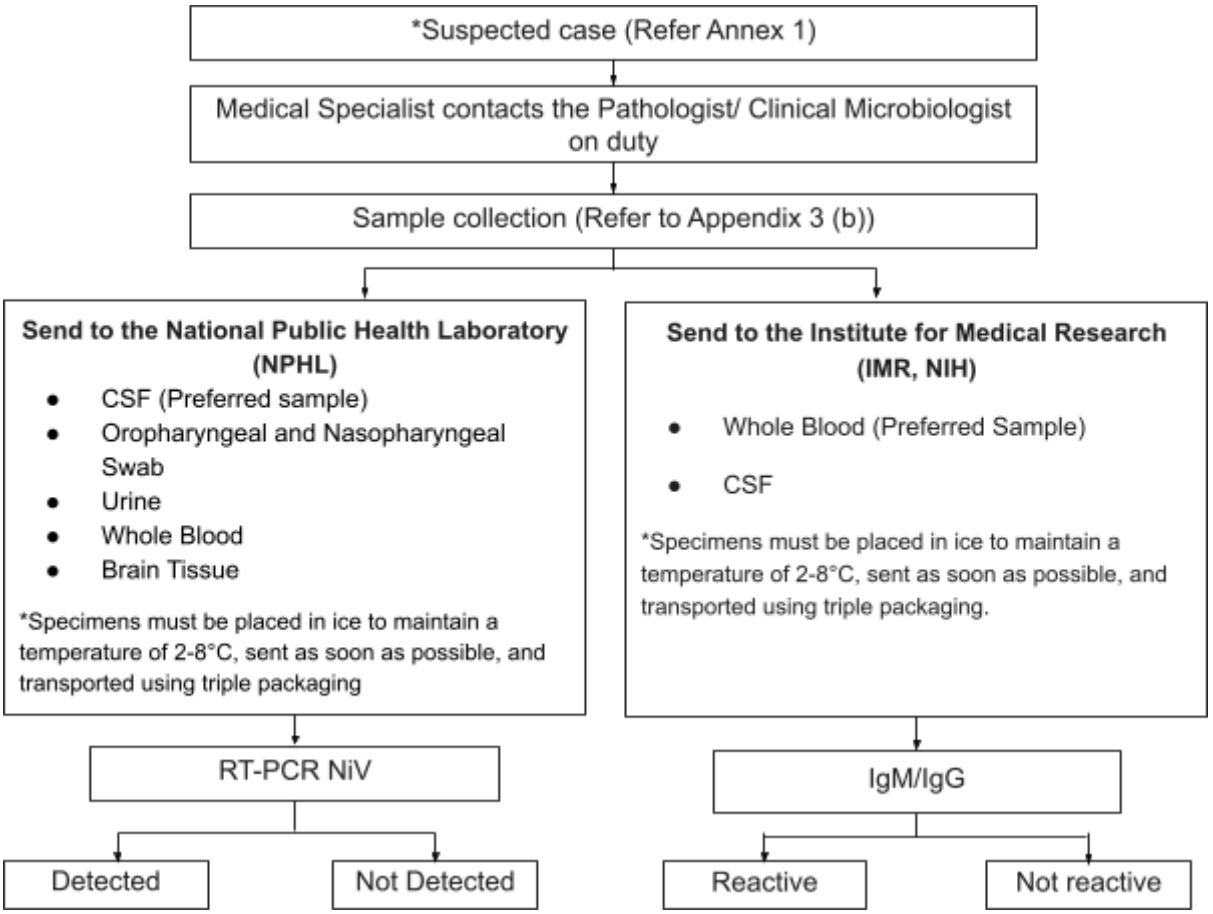
A) Guidelines for Sample Collection for Nipah Virus (NiV) Infection Laboratory Testing

Name of Test	Reference Laboratory	LTAT	Results
rRT-PCR NiV	**NATIONAL PUBLIC HEALTH LABORATORY (NPHL),** Ministry of Health Malaysia, Lot 1853 Kg Melayu Sg Buloh, 48100 Sungai Buloh, SELANGOR	3 days (Urgent cases upon consultation)	All results from MKAK will be issued through the Public Health Laboratory Information System (SIMKA). All users must be registered with the SIMKA administrator. Please contact the MKAK general line (mkak_careline@moh.gov.my) for user registration. Applicants are required to log in to the SIMKA website.
Serology IgG dan IgM NiV	**INSTITUTE FOR MEDICAL RESEARCH (IMR)**, National Institutes of Health (NIH), Blok C, No.1, Jalan Setia Murni U13/52 Seksyen U13 Setia Alam, 40170 Shah Alam, Selangor	3 days (Urgent cases upon consultation)	All results from IMR will be issued through the Specimen Management Information System (SMIS). All users must be registered with the SMIS administrator.

B) Types of samples and transportation methods for Nipah virus (NiV) infection laboratory testing

No	Type of sample	Container	Volume	Transport Media	Notes	Transportation
1	CSF	Screw-capped sterile container	0.5 – 1.0 ml	-	Wrap container with parafilm.	1. Specimens must be transported to the laboratory as soon as possible after collection using triple-layer packaging. Store at temperatures of 2-8°C before and during transport. 2. Separate the application forms from the samples and attach the forms to the outside of the sample delivery box.
2	Urine	Screw-capped sterile container	5.0 – 10.0 ml	-		
3	Oropharyngeal & Nasopharyngeal Swab	Dacron swab in VTM tube		Viral Transport Media (VTM)	Place both swabs in one (1) VTM tube.	
4	*Whole blood*	Plain Tube	2-4 ml	-	Serum separation from whole blood sample is performed in a **BSL-3 Laboratory**	
5	Brain tissue	Screw-capped sterile container	1.5 cm^3 brain tissue in 4-5 drops VTM / normal saline	Viral Transport Media (VTM)/ normal saline	Post-mortem materials are managed on a case-by-case basis.	

C) Laboratory Diagnosis Flow Chart for Suspected NiV Cases



Note:

Nipah Virus testing can only be requested by an Infectious Disease Specialist and must be discussed with the Pathologist (Microbiology) at the designated referral hospital (Refer to Annex 5).

Annex 4

QUICK CHECKLIST

NIPAH VIRUS (NiV) INFECTION

To be placed at the screening (triage) counter

1. Does the patient have a **Fever AND at least ONE** of the following symptoms:
   - ☐ Persistent/worsening cough
   - ☐ Shortness of breath
   - ☐ Altered mental status (e.g., confusion)
   - ☐ Altered level of consciousness (e.g., drowsiness)
   - ☐ Seizures

   AND

2. Does the patient have the following history **within 14 days** before symptoms started:
   - ☐ **Travel History:** Returned from or resided in an area with a known NiV outbreak/affected area (such as West Bengal, India);

     OR

   - ☐ **Close contact** with a confirmed or suspected NiV case.

3. **Actions by personnel at the screening (triage) counter:**
   - Isolate the patient immediately.
   - Ensure the patient wears a face mask.
   - IMMEDIATE referral to a Family Medicine Specialist / Medical Officer.

Annex 5

LIST OF DESIGNATED HOSPITALS FOR THE MANAGEMENT OF CONFIRMED NIPAH VIRUS INFECTION PATIENTS

NO	STATE	HOSPITAL	ADDRESS AND PHONE NUMBER
1	Perlis	Hospital Tuanku Fauziah, Kangar	**Hospital Tuanku Fauziah** Jalan Tun Abd Razak 01000 Kangar, Perlis Tel : 04-973 8000 Emel : htfps@moh.gov.my
2	Kedah	Hospital Sultanah Bahiyah, Alor Setar	**Hospital Sultanah Bahiyah** KM 6, Jln Langgar, Alor Setar 05460 Alor Setar, Kedah Tel : 04-7406233 Emel : hsb@moh.gov.my
3		Hospital Sultan Abdul Halim, Sungai Petani	**Hospital Sultan Abdul Halim** Jalan Lencongan Timur, Bandar Amanjaya, 08000 Sungai Petani, Kedah Darul Aman Tel: +6044457333 Email: hsah@moh.gov.my
4		Hospital Sultanah Maliha, Langkawi	**Hospital Sultanah Maliha** Bukit Tekuh, Jalan Padang Matsirat, 07000 Langkawi, Kedah Darulaman Tel : 04-9663333 E-mel : hlangkawi@moh.gov.my
5	Pulau Pinang	Hospital Pulau Pinang	**Hospital Pulau Pinang** Jalan Residensi 10990 Pulau Pinang Tel : 04-2225333 Emel: prohpinang@moh.gov.my
6		Hospital Seberang Jaya	**Hospital Seberang Jaya** Jalan Tun Hussein Onn, 13700, Seberang Jaya, Pulau Pinang Tel: 04-3827333 Emel: HSJ_PRO@moh.gov.my

NO	STATE	HOSPITAL	ADDRESS AND PHONE NUMBER
7	Perak	Hospital Raja Permaisuri Bainun, Ipoh	**Hospital Raja Permaisuri Bainun** Jalan Raja Ashman Shah 30450 Ipoh, Perak Darul Ridzuan Tel: 05-2087000 Emel: hrpb_info@moh.gov.my
8		Hospital Taiping	**Hospital Taiping** Jalan Taming Sari 34000 Taiping, Perak Darul Ridzuan No. Tel: +05 8204 000 E-mel: htaiping@moh.gov.my
9	Selangor & Federal Territory of Kuala Lumpur/ Putrajaya	Hospital Sungai Buloh	**Hospital Sungai Buloh** Jalan Hospital 47000 Sungai Buluh, Selangor Tel : 03-61454333
10		Hospital Tunku Azizah	**Hospital Tunku Azizah** lot 25, Jalan Raja Muda Abdul Aziz, Kampung Baru, 50300 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur Tel: 03-2600 3000
11	N. Sembilan	Hospital Tuanku Jaafar, Seremban	**Hospital Tuanku Ja'afar Seremban** Jalan Rasah 70300 Seremban, N. Sembilan Tel : 06-768 4000
12	Melaka	Hospital Melaka	**Hospital Melaka** Jalan Mufti Haji Khalil Melaka, Melaka 75400 Melaka Tel : 06-2892344
13	Johor	Hospital Sultanah Aminah, Johor Bahru	**Hospital Sultanah Aminah** Jalan Persiaran Abu Bakar Sultan 80100, Johor Bahru,Johor Tel: 07-2257000 Fax: 07-2242694
14		Hospital Permai, Johor Bahru	**Hospital Permai** Persiaran Kempas Baru, Kempas Banjaran, 81200 Johor Bahru, Johor Tel: 07-231 1000 Emel: hpermai@moh.gov.my

NO	STATE	HOSPITAL	ADDRESS AND PHONE NUMBER
15	Pahang	Hospital Tengku Ampuan Afzan, Kuantan	**Hospital Tengku Ampuan Afzan** Jalan Tanah Putih, 25100 Kuantan, Pahang Tel : 09-5572222 Emel: htaa@moh.gov.my
16	Kelantan	Hospital Raja Perempuan Zainab II	**Hospital Raja Perempuan Zainab II** Bandar Kota Bharu, 15586 Kota Bharu, Kelantan Tel: 09-7452000 Emel: hrpz2@moh.gov.my
17		Hospital Sultan Ismail Petra	**Hospital Sultan Ismail Petra** KM 6, Jalan Kuala Krai - Gua Musang, 18000 Kuala Krai, Kelantan Tel: 09-961 1666 Emel: hsip@moh.gov.my
18		Hospital Tumpat	**Hospital Tumpat** Jalan Kelaburan 62000 Tumpat, Kelantan Tel : 09-7263000
19	Terengganu	Hospital Sultanah Nur Zahirah, Terengganu	**Hospital Sultanah Nur Zahirah** Jalan Sultan Mahmud, 20400 Kuala Terengganu, Terengganu Tel : 09-6212121 Emel: prohsnzkt@moh.gov.my
20		Hospital Besut	**Hospital Besut** Jalan Pasir Akar, Kampung Tanduk, 22000 Jerteh, Terengganu Tel: 09-697 1130
21		Hospital Hulu Terengganu	**Hospital Hulu Terengganu** Batu 23, Jln Kuala Berang, Kampung Batu 23, 21700 Kuala Berang, Terengganu Tel: 09-681 3333
22	Sabah	Hospital Queen Elizabeth, Kota Kinabalu	**Hospital Queen Elizabeth**, Karung Berkunci No. 2029, 88586 Kota Kinabalu, Sabah Tel: 088-517555

NO	STATE	HOSPITAL	ADDRESS AND PHONE NUMBER
23		Hospital Duchess of Kent, Sandakan	**Hospital Duchess of Kent** KM 3.2, Jalan Utara 90000 Sandakan, Sabah Tel:089 248600 Emel: hdok@moh.gov.my
24		Hospital Tawau	**Hospital Tawau** Peti Surat 67 91000 Tawau Sabah Tel : 089-706000 (Hospital Baru) / 089-983533 (Hospital Lama)
25		Hospital Wanita dan Kanak-Kanak, Likas	**Hospital Wanita dan Kanak-Kanak, Likas** Karung Berkunci 187, 88996 Kota Kinabalu, Sabah Tel: 088-522 600
26		Hospital Keningau	**Hospital Keningau** Peti Surat 11 Jalan Apin-Apin, 89007 Keningau, Sabah Tel: 087-313 000
27	Sarawak	Hospital Umum Sarawak, Kuching	**Hospital Umum Kuching** Jalan Tun Ahmad Zaidi Adruce Kuching, Sarawak 93586 Kuching, Sarawak Tel : 082-276666
28		Hospital Sibu	**Hospital Sibu** Batu 5 ½, Jalan Ulu Oya 96000 Sibu, Sarawak Tel : 084-343333
29		Hospital Miri	**Hospital Miri** Jalan Cahaya 98000 Miri, Sarawak Tel : 085-420033
30		Hospital Bintulu	**Hospital Bintulu** Jalan Nyabau 97000 Bintulu, Sarawak Tel : 086-255899

NO	STATE	HOSPITAL	ADDRESS AND PHONE NUMBER
31		Hospital Sri Aman	**Hospital Sri Aman** Jalan Hospital Sri Aman, 95007 Sri Aman, Sarawak. Tel: 083-322151
32	Federal Territory of Labuan	Hospital Labuan	**Hospital Labuan** Peti Surat 81006, 87020 W.P. Labuan No.Tel: 087 596 888

KAD AMARAN KESIHATAN
JANGKITAN VIRUS NIPAH
Untuk Pengembara dari Kawasan Terjejas

NOTIS PENTING KESIHATAN

Anda telah tiba dari kawasan yang melaporkan kes Jangkitan Virus Nipah. Virus Nipah ialah penyakit zoonotik serius yang boleh menular kepada manusia melalui kontak dengan haiwan yang dijangkiti (terutamanya kelawar buah dan khinzir), pengambilan air nira mentah atau buah-buahan yang tercemar, serta dalam keadaan tertentu, melalui penularan dari manusia ke manusia.

Pengesanan awal dan rawatan segera adalah amat penting.

GEJALA UNTUK DIPANTAU
(Dalam Tempoh 14 Hari Selepas Ketibaan)

TINDAKAN SEKIRANYA BERGEJALA

1. Segera ke fasiliti kesihatan kerajaan terdekat.
2. Maklumkan sejarah perjalanan kepada petugas kesihatan.
3. Pakai pelitup muka dan elakkan kontak rapat dengan orang lain.

Untuk maklumat lanjut, sila hubungi Pejabat Kesihatan Daerah yang berhampiran.

Dikeluarkan oleh:
Kementerian Kesihatan Malaysia

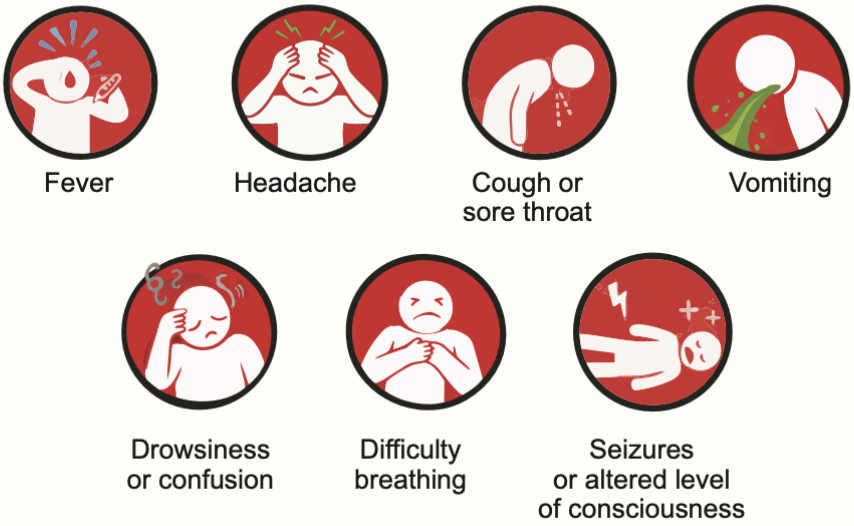
HEALTH ALERT CARD
NIPAH VIRUS INFECTION
For Travellers from Affected Areas

IMPORTANT HEALTH NOTICE

You have arrived from a country/area reporting cases of Nipah Virus Infection. Nipah virus is a serious zoonotic disease that can be transmitted to humans through contact with infected animals (particularly fruit bats and pigs), consumption of contaminated raw palm sap or fruits, and in certain situations, through person-to-person transmission.

Early detection and prompt medical attention are essential.

SYMPTOMS TO MONITOR
(Within 14 Days After Arrival)



IF YOU DEVELOP SYMPTOMS

1. Seek medical attention at the nearest government health facility immediately.
2. Inform the healthcare provider of your recent travel history.
3. Wear a face mask and avoid close contact with others.

For further information, please contact the nearest District Health Office.

Issued by:
Ministry of Health Malaysia

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