NSW Health

Addendum to Early Response to HCID Policy Directive: Response to suspected or confirmed viral haemorrhagic fever

Purpose and background

Purpose

The general approach to viral haemorrhagic fever (VHF) and other high consequence infectious disease (HCID) management is outlined in PD2024_005 Early Response to High Consequence Infectious Diseases. This Appendix provides additional advice specific to VHFs, especially where there is risk of human-to-human transmission.

Background context

VHFs are severe and life-threatening viral diseases that are endemic to parts of Africa, the Middle East, Eastern Europe, and Asia. Cases of VHF have also been recorded in areas where there is no known outbreak or endemic VHF. Most VHFs are caused when the virus passes from an animal (including insect) host population to a human. Outbreaks can occur when human-to-human spread is established. Some VHFs are known to be transmissible human-to-human, whilst others have limited transmissibility. VHFs are often associated with a high case fatality rate as there are few if any effective treatments.

Due to their long incubation period of up to 21 days and non-specific symptoms at onset (often including fever, myalgia and fatigue), exposures in the community or in healthcare settings may occur prior to the development of diagnostic symptoms. The main mode of human-to-human transmission is through exposure to body fluids, either through close contact in family settings, or through inadequate personal protective equipment (PPE) use or breaches in healthcare settings.

VHFs are notifiable infectious diseases and scheduled medical conditions under the *Public Health Act 2010*, as well as a listed disease under national biosecurity legislation and the International Health Regulations.

The response to suspected or confirmed case or cases of VHF should enable early diagnosis, provide patients with appropriate clinical care in a safe environment, and prevent transmission to others.

When there is a heightened risk of VHF transmission from human-to-human, a clinical alert will be issued, along with screening guidelines as required per PD2024_005 Early Response to High Consequence Infectious Diseases.

Where a case is suspected, urgent referral to the NSW Specialist Service for High Consequence Infectious Diseases is mandatory for notification and expert discussion and management decisions (1800-4243-00).NB: Information about current outbreaks is available at https://promedmail.org/. Cases of VHF have been recorded in areas where there is no known outbreak or endemic VHF. As some VHF can persist in semen and eye fluid for many years following recovery, sexual contacts of prior cases may also be at risk.

Healthcare facilities must always have appropriate PPE available to staff who may encounter a patient with VHF. Information about current outbreaks is available at https://promedmail.org/.

Key VHFs where human to human spread may occur

Viral Haemorrhagic Fever	Incubation period (days)	Location/s endemic
Lassa fever	6 to 21	Subsaharan Africa
Ebola	2 to 21	West/Central Africa
Marburg disease	2 to 21	Equatorial Africa
Crimean-Congo	3 to 13	Eastern Europe, Mediterranean, northwestern China, central Asia, southern Europe, Africa, Middle East, Indian Subcontinent
Argentine	5 to 19	Argentina
Bolivian	5 to 15	Bolivia
SFTS (Severe Fever with Thrombocytopaenia)	5-14	China/South-east Asia
Andes	4 to 42	South America (Argentina/Chile)
Korean (Hantaan) (NB person to person spread extremely rare)	5 to 42	Korea

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Management of a suspected case of VHF – person under investigation

Clinicians should immediately take steps to protect themselves and others if they suspect VHF. VHF may be suspected if the patient:

Person has a recent (within past 21 days) travel history to an area where VHFs are endemic or epidemic AND has a plausible exposure pathway	OR	Exposure to known or suspected case of VHF (present or past)
AND		
Symptom profile consistent with VHF (particularly fever with a clinically compatible illness/symptoms)*		

OR

- Meets the case definition specified in a recent NSW Health Safety Notice.

**While there may be other potential causes of VHF-like symptoms, cases should be treated as suspect until it is definitively excluded where there is a higher index of suspicion.*

Patients may be displaying other symptoms not suggestive of VHF, however VHF must be excluded as a potential diagnosis as quickly as possible. VHF-informed approaches to management of other conditions must remain in place while a formal diagnosis is made.

The following process should be followed if VHF is suspected:

1. Isolation and protection of staff and others

Isolate the case and ensure all persons have appropriate PPE as per the Clinical Excellence Commission (CEC) guidance[1]. The CEC guidance provides specific information on donning and doffing of PPE for VHF. Strict adherence to PPE can prevent transmission in health care settings. The case needs to be placed in a single room with restricted access and egress. Local Infection Prevention and Control Staff should be engaged as soon as possible.

The treating clinical team should escalate their suspicion to hospital executive level to arrange safe isolation and minimise facility exposures.

2. Referral to infectious diseases and liaison with NSW Specialist Service for High Consequence Infectious Diseases

Where a suspected VHF case is identified at a hospital or healthcare facility:

- If the facility has access to an infectious diseases (ID) clinician they should immediately contact that physician. If that clinician agrees that this is a likely or possible case of VHF, they should contact the NSW Specialist Service for High Consequence Infectious Diseases on 1800-4243-00 for advice on testing and definitive patient management. This is likely to include retrieval to the NSW Biocontainment Centre (NBC) at Westmead Hospital.
- In healthcare facilities where there is no local or designated ID clinician available, the senior treating clinician should immediately call the NSW Specialist Service for High Consequence Infectious Diseases for advice on immediate management, testing and specimen collection and potential retrieval of the patient to the NBC. Contact is through 1800-4243-00.

If notification is received from a Human Biosecurity Officer at the International Border:

- The on-call Human Biosecurity Officer (HBO) should gather details of the person, their age, their current clinical condition and their travel history to discuss the case with the NSW Specialist Service for High Consequence Infectious Diseases (1800-4243-00).
- Where possible, collection of patient details should be conducted via non-face-to-face methods or with use of appropriate PPE.
- The person will generally require admission for assessment, diagnosis and isolation. The Specialist Service for High Consequence Infectious Diseases should work with the NSW Ambulance Aeromedical Operations team to have the patient safely transported to the NSW Biocontainment Centre at Westmead Hospital.

Where the patient presents directly to a GP or other private specialist:

- If a patient has either a significant exposure history, or symptoms compatible with VHF and a relevant travel history, the treating clinician should call the NSW Specialist Service for High Consequence Infectious Diseases for advice (1800-4243-00).
- The NSW Specialist Service for High Consequence Infectious Diseases will provide the caller with immediate safety and infection prevention advice.

[1] https://www.cec.health.nsw.gov.au/keep-patients-safe/infection-prevention-and-control/high-consequence-infectious-diseases

- Where the NSW Specialist Service for High Consequence Infectious Diseases determines that the patient requires transfer to NBC for assessment, they will contact the NSW Ambulance Aeromedical Operations team to arrange patient transport.
- The NSW Specialist Service for High Consequence Infectious Diseases will notify the Ministry of Health Communicable Diseases on-call (CD-on-call) team if there is a suspected case. In all circumstances where a VHF is suspected in a patient, documentation of those who provided care or who had contact with the patient should be made to facilitate contact tracing, if required.

Where the patient is in home quarantine (after returning from a VHF-affected area or being identified as a close contact of someone with VHF) and declares new symptoms such as fever:

- Upon notification by the patient, the receiving PHU should contact the NSW Specialist Service for High Consequence Infectious Diseases to convene a case conference (per the below).

3. Case conference for clinical management

The focus of the initial case conference is to deal with urgent issues relating to the safe immediate care, transport and testing of a patient. The patient will most likely require transport to the NSW Biocontainment Centre for ongoing management given it is purpose-built to manage people with high consequence infectious diseases. Other issues such as escalation of notifications, staffing impacts, public health management and communications should be dealt with in subsequent discussions, after immediate concerns are met.

The initial case conference will be held via teleconference and will include:

- Westmead HCID on-call ID physician
- Westmead NBC Staff Specialist/s
- Westmead HCID on-call infection control representative
- NSW Health Pathology ICPMR representative (on-call microbiologist and/or PC4 laboratory scientist on-call)
- Westmead ICU on-call physician
- nominated operations manager for Westmead Hospital
- nominated operations manager at the originating hospital (or Biosecurity Officer if at Sydney International Airport),
- NSW Ambulance clinical management staff
- NSW Ambulance Aeromedical Operations team
- the treating clinical team
- the Ministry of Health Communicable Diseases on-call team and
- Public Health Units where exposures may have occurred (for information and immediate actions as required)
- If the case involves a child, representatives from ID, ICU and executive of Children's Hospital Westmead will also be involved

The NSW Specialist Service for High Consequence Infectious Diseases will initiate this teleconference by contacting the NSW Ambulance Aeromedical Operations team on 1800-650-004. CD-on-call will liaise with NSW Specialist Service for High Consequence Infectious Diseases to assist with gathering the contact details of the parties for the teleconference. NSW Ambulance will facilitate the teleconference via their Aeromedical Control Centre, and distribute dial in details to the above parties.

Depending on the urgency of the situation and immediate steps required to ensure safe treatment of the patient, per PD2024_005 Early Response to High Consequence Infectious Diseases, the case conference may determine:

- Timely access to laboratory testing for the suspected pathogen as well as other diagnostic tests forming part of the differential diagnosis.

- Ideally, specimens will be collected once the patient is at the NSW Biocontainment Centre. In circumstances where specimens are collected prior to transport, in discussion with the NSW Biocontainment Centre, and need to travel with the patient to the NSW Biocontainment Centre and they should be packaged appropriately and collected in accordance with National Guidelines.
- Adequacy of infection control including recency and nature of staff training and current physical infrastructure (including single rooms with anteroom and bathroom facilities), including reinforcement of PPE requirements for both the current treating team and the retrieval team.
- Access to therapeutic interventions prior to and during transport.
- Ensuring culturally safe care is considered both for Aboriginal and Torres Strait Islander peoples and those from Culturally and Linguistically Diverse communities. Interpreter services should be engaged where necessary.
- If the patient condition allows, arrangements should be made to interview the case or family member/friend to determine contacts for contact tracing.
- Consideration of any exposures that may have occurred whilst the patient was being assessed, including those in the laboratory.
- Management of waste and management of waste generated during transport

The NSW Ambulance Aeromedical Operations team will nominate a member of their team to be responsible for completing the High Consequence Infectious Disease Case Management Teleconference Action record template, which is held and maintained by the HCID Specialist Service. The nominated record taker will circulate this to attendees immediately following the meeting.

4. Contact management

A contact is a person who has been exposed to a patient who has or is likely to have a VHF (until the diagnosis is excluded) or exposed to that patient's blood, bodily fluids, excretions, or tissues following the onset of their fever whilst not wearing appropriate PPE. Contacts may not be in NSW or Australia.

When there is a clinical suspicion of a VHF on clinical and epidemiological grounds, collection of preliminary contact information should commence, for potential contact tracing should the diagnosis be confirmed.

Where the case is identified at the border, steps should be taken to prepare for contact tracing of aircraft and airport exposures, as relevant.

Where the case is identified at a healthcare facility, the following table should be used as a guide in determining appropriate steps for contact management.

Risk Category	Description	Action
Unclear	Not sure of contact.	Requires interview to be classified appropriately.
No risk	No low risk or high-risk contacts (e.g. staff member on shift working in a different area).	These people should be reassured. Information on disease and symptoms may be distributed.
Low and medium risk (as per national definitions)	Close contact in healthcare or community settings where close contact is defined as: • being within approximately one metre of a VHF patient or within the patient's room or care area for a prolonged	These contacts should be instructed to check their temperature twice daily and monitor for disease compatible symptoms for 21 days from last exposure; they should be directed to report to the PHU if temperature is

	period of time while not wearing recommended PPE, OR • having direct brief contact (e.g. shaking hands) with a VHF patient while not wearing recommended PPE.	elevated (>37.5°C) or they become symptomatic. If a temperature occurs they should be isolated immediately and may require transfer to the NBC, after discussion with the NSW HCID Service.
High risk	High-risk contacts are people with a definite history of either mucous membrane contact with the patient (kissing, sexual intercourse), or needlestick or other penetrating injuries contaminated with blood or other body fluids from the patient during their infectious period.	Inform about risks; institute twice daily active monitoring of temperature and other disease compatible symptoms for 21 days from last exposure. The PHU Surveillance Officer to initiate contact by 12 noon each day: further evaluation as necessary. Inform PHU surveillance officer urgently if symptoms develop. Depending on circumstances, contacts may be quarantined.

Where laboratory staff have processed specimens prior to diagnosis, the below procedure (section 5) should be followed.

5. Management of laboratory exposures if samples taken and processed prior to suspected VHF

Where a VHF is suspected, samples should not be taken or transported to the laboratory prior to discussion with the NSW Specialist Service for High Consequence Infectious Diseases. Where samples have already been taken and processed, a teleconference should be convened to discuss steps to be taken to control any potential exposures in staff and equipment.

Representation at this teleconference should include:

- ICPMR Microbiologist on call (via Westmead Hospital Switchboard 02 8890 8060 or 02 8890 5555)
- ICPMR PC4 Scientific officer on call (ICPMR microbiologist on call will notify).

The microbiologist and/or scientific officer will give recommendations on appropriate diagnostic testing strategies, specimen collection, packaging and transport as well as laboratory safety aspects, during the teleconference or offline as appropriate.

Managing laboratory exposure

Planning

Laboratory managers, in conjunction with supervising pathologists and local microbiologists, should pre-emptively undertake risk assessments of commonly used laboratory analysers/procedures in their department to identify the risk of contamination and transmission of VHF pathogens and other blood-borne HCIDs with these instruments.

Procedures for decontamination of equipment and analysers utilised in testing of blood samples positive for VHF viruses and other blood-borne HCIDs should be established if required by the risk assessment. The handling and disposal of laboratory waste and contaminated drainage from analysers will also need to be considered.

The processing of other samples (such as stool, urine, respiratory swabs, bronchoalveolar lavages, cerebrospinal fluid and tissue) should generally occur after blood samples, with a lower risk of inadvertent exposure. It is suggested the risk of contamination and transmission with these samples be assessed and managed on a case-by-case basis as the scenario arises.

Exposure management

If a sample(s) that has been inadvertently subject to testing is subsequently found to be from an individual positive for a VHF or other HCID, then an exposure management team should urgently be formed, consisting of:

- Senior scientist on duty in the local laboratory
- Local laboratory executive on call
- Local laboratory microbiologist
- Local laboratory supervising pathologist
- ICPMR microbiologist on call.

The team should:

- immediately institute measures to prevent further exposures, including quarantining samples that no longer need to be urgently processed
- identify potentially exposed staff, and undertake risk assessment of each staff member and institute post-exposure management, syndromic monitoring and follow up as applicable
- quarantine contaminated equipment/analysers as necessary until decontamination can be undertaken if required, and
- arrange for alternative testing arrangements for affected analysers to prevent a significant impact on service delivery.

6. Ongoing reassessment and management

If a patient has travelled from an area where VHF is endemic, or there is an ongoing VHF epidemic, and they remain unwell despite treatment of any obvious febrile illness (e.g. malaria, gastroenteritis, influenza) or they develop symptoms consistent with a VHF, they should be managed as a suspected VHF case. Contact should again be made with the NSW Specialist Service for High Consequence Infectious Diseases regarding further diagnostic investigations and management.

If VHF suspected, the NSW Specialist Service for High Consequence Infectious Diseases should convene a teleconference as per PD2024_005 Early Response to High Consequence Infectious Diseases. The patient may need to be transferred to the NSW Biocontainment Centre at this time.