Policy for Management of Suspected Viral Haemorrhagic Fevers

Printed copies must not be considered the definitive version

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1. Introduction

VIRAL HAEMORRHAGIC FEVERS

Viral Haemorrhagic fevers (VHF) are severe and life threatening diseases caused by a range of viruses. They are endemic in some parts of the world, particularly:

- Africa
- South America
- Middle East, and
- Eastern Europe

VHFs are of particular public health importance because:

- they can spread within a hospital setting
- they have a high case-fatality rate
- they are difficult to recognise and detect rapidly
- there is no effective treatment

Table 1: VHF

| Causative organisms | Of 15 viral agents, 4 are more commonly known:
|                    | • Lassa ( Arenaviridae )
|                    | • Crimean/Congo haemorrhagic fever caused by Nairovirus (Bunyaviridae)
|                    | • Marburg, and
|                    | • Ebola (Filoviridae)
| Clinical manifestation | Fever >38°C, headache, myalgia, pharyngitis, diarrhoea, vomiting, macropapular rash, bruising, bleeding, multi organ failure
| Incubation period | Up to 21 days (dependent on virus)
| Period of infectivity | Can be up to 61 days post onset. Virus can survive on surfaces for around 2 weeks, or longer on fabrics/soft furnishings
| Mode of transmission | Direct contact (through broken skin or mucous membrane) with blood or body fluids, and
|                     | Indirect contact with environments contaminated with splashes or droplets of blood or body fluids.
|                     | Experts agree that there is no evidence of an aerosol transmission risk from VHF patients.
| Reservoirs | Animal/insect hosts
|            | No natural environmental reservoirs in UK
|            | Secondary infection risk from exposure to infected blood or body fluid
| Population at risk | Travellers, healthcare workers, laboratory staff
|            | All recorded cases of VHF in the UK have been acquired abroad, with the exception of one laboratory worker who sustained a needle-stick injury.
| Notifiable disease | Yes
2. Patient Risk Assessment and Initial Patient Management

It is the responsibility of the general practitioner, or admitting clinician to recognise the risk of VHF. For the purposes of this policy, pregnant women and children should follow the same pathways as adults.

- Use the Community Quick Reference Guide for assessing patients for use in General Practice and Galloway Community Hospital (see appendix 1)
- Use the DGRI Quick Reference Guide for assessing patients who present to DGRI (see appendix 2)
- The duty Consultant Microbiologist will assist in the assessment by using the national algorithm (see appendix 3)

Following this assessment, patients will be classified as:

- VHF infection unlikely
- Low possibility of VHF infection
- High possibility of VHF infection
- Confirmed VHF

This will determine the interventions and precautions required to safely manage patient care and minimise the risk of infection to staff and the wider population.

3. Patient Placement

Dumfries & Galloway Royal Infirmary has 4 individual Airborne Infection Isolation (AII) Rooms, which are located in Combined Assessment Unit (CAU), Critical Care Unit (CCU), Ward B2 and Paediatrics. These rooms are neutral room pressure with a positive pressure room lobby designed to prevent air flowing to the corridor. The room located in CAU is designed with 2 separate lobby areas to assist with workflow and minimise potential contamination risks due to entry and exit procedures via a single lobby.

Patients classified as high possibility /confirmed VHF must be assessed and managed in the areas below:

DGRI –CAU All room (contingency if more than one patient presents at a time is CCU or Ward B2 or Paediatrics, only after discussion with Consultant Microbiologist)
GCH – A&E side room with en-suite
GP Surgery – Clinical room with hand hygiene facilities. Ideally with en-suite and no carpets/fabrics.
### 3.1 Pathways for suspected cases

**Discuss with Consultant Microbiologist**

- Patient presents at DGRI
  - Isolate patient in CAU Airborne Infection Isolation room and take bloods with full PPE.

  - Is malaria film positive?
    - No
      - Stand down precautions and investigate further.
    - Yes
      - Treat for malaria. Discuss with Microbiologist regarding standing down precautions.

  - Does the patient need to be in hospital?
    - No
      - Quarantine the patient at home until receipt of VHF result.
    - Yes
      - Quarantine the patient in single room with en-suite or GP clinical room.

- Patient presents at GP/GCH/cottage hospital
  - Is the patient able to make their own way to DGRI without public transport?
    - No
      - Stand down precautions and investigate further.
    - Yes
      - Quarantine the patient at home.

- Patient presents at home.
  - If well enough, is the patient able to make their way home without public transport?
    - No
      - Stand down precautions and investigate further.
    - Yes
      - Quarantine the patient at home.

- Is VHF test positive?
  - Yes
    - Arrange for SORT team to transfer patient to Brownlee for blood tests to be carried out, and/or while awaiting VHF blood test results.
  - No
    - Treat for malaria. Discuss with Microbiologist regarding standing down precautions.

- Is malaria film positive?
  - No
    - Stand down precautions and investigate further.
  - Yes
    - Treat for malaria. Discuss with Microbiologist regarding standing down precautions.
4. Communication Cascade and Formation of an Incident Management Team

Clinician responsible for patient

Consultant Microbiologist*

Local receiving ID unit (Brownlee Centre)

Scottish Ambulance Service (SAS)

Duty Microbiology BMS

Duty Haematology BMS

Duty Biochemistry BMS

Duty General Manager

Duty Infection Control Nurse

Duty Health Protection Consultant

Importer Fever Service

Scottish National VHF Test Service (SNVTS)

Cell Science Manager

2nd On-call haematology BMS

COO & CEO

Capacity Manager

Occupational Health

Health Protection Scotland

Local Comms Team

*The on-call Consultant Microbiologist may be covering from NHS Ayrshire and Arran; they will pass to NHS Dumfries and Galloway Consultant Microbiologist at the earliest opportunity
- An Incident Management Team will be formed as soon as practically possible (see Outbreak policy)


A multi-agency approach may be required depending on the circumstances surrounding the case(s).

The Major Incident Procedure may be invoked depending on the circumstances surrounding the case(s) (see public health policy page)

http://www.dghps.org/policies-and-plans/
5. **Roles and responsibilities**

**Consultant Microbiologist:**

- Will make the clinical decision for the risk of VHF.
- Will contact key members of staff (see Chapter 4 Communication Cascade).
- Attend / Chair Incident Management Team meetings in conjunction with the Consultant of Public Health Medicine (CPHM).
- Will oversee all results from the initial tests and make a further decision to either keep the current risk or downgrade/upgrade as appropriate.
- Will be in frequent communication with clinical staff to monitor patient, and make further changes to the risk assessment as and when required.
- Will update key members if changes need to be made to the risk assessment.
- Will be available for clinical advice regarding testing.
- Will lead in the laboratory management of the patient.
- Will liaise with specialists at the Imported Fever Service to assist in diagnosis of the patient.

**Infection Prevention & Control Nurse (ICN):**

- Will provide guidance and support to the multidisciplinary team involved with caring for the case(s).
- Will reinforce and check PPE capabilities.
- Will provide guidance and support to staff in order that they work in accordance with local and national policy.
- Attend Incident Management Team Meetings.

**Infection Control Manager:**

- Ensure the IPCT have the resources to manage a VHF incident, including out-of-hours and bank holidays.
- Communicate issues which may impair an effective response to the appropriate Board Directors or Unit Managers.
- Ensure the Executive Director responsible for HAI is aware of the state of preparedness or which may impair an effective response.
- Attend Incident Management Team Meetings.
- Ensure communications with national organisations are as per Board and National policies.
- Responsible for assisting Communications Manager in drafting external communications.
- Provide training and guidance as required or requested by the Incident Management Team.

**Cell Science Manager/Blood Sciences Manager, Microbiology BMS, Haematology BMS and Biochemistry BMS:**

- See separate Laboratory SOP (available to Laboratory Staff via Qpulse).
- Attend Incident Management Team Meeting if required.
Clinician with responsibility for patient

- Will provide patient medical care as required.
- Will liaise closely with Infection Specialist (Microbiologist/ID physician) and IPCN regarding infection control precautions, patient placement, investigation and management.
- Will ensure specimens are collected as per policy.
- Will liaise with the Microbiology BMS to ensure specimens are transported to the Lab appropriately.
- Will liaise with the Scottish Ambulance Service and Brownlee Infectious Diseases Unit, Glasgow / High Level Isolation Unit, Royal Free, London to arrange patient transfer if required.
- Attend Incident Management Team Meetings.

Nurse in charge of unit

- Liaise closely with the Infection Control Team to ensure staff are working in accordance with local and national policy.
- Lead with the implementation of precautions as agreed.
- Attend Incident Management Team Meetings.
- Ensure nursing staff routinely decontaminate equipment and the environment when the patient is in isolation in accordance with Section 13. Cleaning and Decontamination

Duty General Manager

- Attend the Incident Management Team meetings
- Ensure Chief Operating Officer and Chief Executive are informed.
- Alert support services managers as relevant
- Liaise with other clinical units to minimise disruption to patients and service.
- Liaise with ICM and ICD to ensure all agreed interventions are being implemented.
- Liaise with ICM and ICD to ensure all appropriate resources are available.

Health Protection Team / Public Health On Call

- The CPHM will attend / chair Incident Management Team meetings as appropriate (in conjunction with the Infection Control Doctor).

Occupational Health

- Will be responsible for staff contact tracing and monitoring.
- Will ensure packs available for daily monitoring>
- See Health Protection SOP (link above)
6. Specimen collection

**SPECIMEN COLLECTION**

Table 1: VHF Specimen Collection Form (M-F-245)

<table>
<thead>
<tr>
<th>INVESTIGATION</th>
<th>CONTAINER</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haematology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaria Screen</td>
<td>1xEDTA</td>
<td>Each sample MUST be placed in the provided universal then placed in the specimen bag</td>
</tr>
<tr>
<td>FBC</td>
<td>1xEDTA</td>
<td></td>
</tr>
<tr>
<td>Coag Screen</td>
<td>1xCitrate</td>
<td></td>
</tr>
<tr>
<td>Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U&amp;E, LFT, CRP</td>
<td>1xSerum</td>
<td></td>
</tr>
<tr>
<td>Microbiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VHF and imported pathogens screen</td>
<td>1xEDTA</td>
<td>Low volume specimens CANNOT be processed</td>
</tr>
<tr>
<td></td>
<td>1xSerum</td>
<td></td>
</tr>
<tr>
<td>Blood Culture</td>
<td>1xO₂</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1xAnO₂</td>
<td></td>
</tr>
<tr>
<td>Blood Gas Analyser</td>
<td>DO NOT USE</td>
<td></td>
</tr>
</tbody>
</table>

Specimen(s) taken to Microbiology by: Specimen(s) received by:

Date: Time:

The Box located in CAU Airborne Infection isolation room MUST contain all appropriate containers in Table 1 along with request forms, and copy of the form M-F-245 VHF Specimen Collection (shown above and in Appendix 8) to highlight specimens to be taken.

To minimise the risk to staff, the specimen flowchart (Pg 11) MUST be followed, and the following must be observed:

- Laboratory staff **MUST be informed of specimens PRIOR TO RECEIPT**
- Specimen handling and storage should be kept to a minimum
- Strict adherence to standard infection control precautions by all staff at all times
- Vacutainer system must be used
- Pneumatic tube system **MUST NOT** be used for the transport of samples to the laboratory
- All specimens **MUST** be appropriately labelled, double bagged and placed into the supplied box, see picture below (a rigid PVC container, located in the CAU Airborne Infection isolation)

**Container for specimens:**
**Specimen Flowchart**: How to safely transport specimens to laboratory for testing

Specimens in Table 1 taken in CAU Airborne Infection isolation and placed appropriately in the supplied box

[Diagram showing flowchart]

Clinician/Nurse **MUST** telephone On-Call Microbiology BMS to alert them to the arrival of specimens

[Diagram showing flowchart]

Specimens to be transported in the supplied box **DIRECT** to the Microbiology Department
7. **Infection Control Precautions**

Up-to-date advice on infection control precautions is available on the Health Protection Website by following the link below:


Precautions table, correct at time of policy review (July 2018) can be found in Appendix 7.

8. **Arranging patient transport**

To another Scottish Centre before VHF PCR result available/from community

To Royal free if VHF result positive

9. **Management of confirmed VHF patients**

Details of management are described in the National Guidance but will not be undertaken in Dumfries and Galloway.
10. Management of High Risk Waste

- The clinical waste bin should remain in the designated area until instruction from the Infection Control Team or Laboratories.

- The clinical waste bin requires specialist pick-up from an external contractor. The laboratory department will co-ordinate this arrangement.

- Prior to removal the outside surface of the clinical waste bin should be decontaminated with Actichlor Plus.

Recording on disposal sheet (see appendix 4)
11. In the event of patient death

See the NICP Manual Appendix 12 Key Infections from HSE Guidance ‘Controlling the risks of infection at work from Human Remains.

http://www.nipcm.hps.scot.nhs.uk/media/1415/nipcm-appendix12-20180712.pdf

Flow chart:

- Contact mortuary to obtain 2 heavy duty cadaver bags and trolley
  - No viewing of body
  - No washing/dressing of cadaver
  - Don PPE prior contact with cadaver
  - Attach death certificate to the cadaver (see appendix 6)
  - Double bag in heavy duty cadaver bag with absorbent material between each bag
  - Disinfect cadaver bag with 1000ppm available chlorine
  - Attach a 2nd death certificate to the cadaver bag (see appendix 6)
  - Contact mortuary or on call consultant microbiologist to receive at mortuary
  - Clinical team to transfer cadaver to mortuary
  - Store in bariatric cold store
  - Arrange appropriate coffin from local undertaker
12. Managing contacts

Members of the public and NHS D&G staff – follow link below:

http://www.dghps.org/

All clinical and laboratory staff who have been in contact with patient or patient samples should be recorded on patient contact sheet (see appendix 5)
13. **Cleaning and decontamination**

13.1 Recommended procedures when there has been no obvious contamination by blood and/or body fluids:

- Chlorine releasing agent: 1000ppm available chlorine (Daily)

13.2 Recommended procedures when there has been contamination by blood and/or body fluids:

- Chlorine releasing agent: 10,000ppm available chlorine

13.3 Crockery and cutlery:

- Disposable crockery and cutlery should be used where possible for those patients categorised as high possibility or confirmed VHF.
- Disposable and non disposable crockery and cutlery should be disposed of as sharps (e.g. knives and forks as may penetrate yellow bag) as per chapter 10 of this policy.

13.4 Toilets:

- Toilets or commodes may be used by patients categorised as 'high possibility' or 'confirmed' for VHF infection.
- Where commodes are employed, a dedicated commode should be used with a disposable bowl. After use, the contents are to be solidified with high-absorbency gel and then disposed of in the yellow stream waste as per chapter 10 of this policy.
- Toilets and commodes should be disinfected with a chlorine releasing agent containing 10,000ppm available chlorine at least daily, preferably after each use, and upon patient discharge.
- For non-ambulant patients, disposable bedpans should be used and the contents to be solidified with high-absorbency gel and then should be disposed in yellow stream waste as per chapter 10 of this policy.

13.5 Linen:

- All re-useable linen from patients with a 'high possibility' or 'confirmed' for VHF infection should **NOT** be returned to a laundry and must therefore be disposed in yellow stream waste as per chapter 9 of this policy

13.6 Terminal disinfection:

- Rooms used to house VHF positive patients will be cleaned with a chlorine releasing agent (10,000ppm available chlorine) followed by hydrogen peroxide fumigation. **This will need to be carried out following a thorough risk assessment by an external specialist contractor.**
14. Useful contact numbers

14.1 Consultant Microbiologist: Via DGRI switchboard

14.2 Infection Control Team: Office hours 01387 241627, OOH via DGRI switchboard

14.3 Consultant Public Health Medicine: Via DGRI switchboard

14.4 Scottish National VHF Testing Service (SNVTS): 0131 5361000

14.5 Imported Fever Service: 0844 7788990

14.6 Royal Free Hospital, London: 020 7794 0500

14.7 Scottish Ambulance Service: 01698 264201

14.8 Brownlee Centre, Glasgow: 0141 211 1074

14.9 DGRI Mortuary:
Office hours via DGRI switchboard, OOH contact Consultant Microbiologist via DGRI switchboard
15. Reference documents

15.1 General National information and Guidance


15.2 Management of Cases

The following is guidance on Viral Haemorrhagic Fever (VHF) from the Advisory Committee on Dangerous Pathogens (ACDP).


15.3 Transportation of Patients

If required Scottish Ambulance Service have a Special Operations Response Team (SORT) who can transport patients with VHF.

15.4 Infection Control

- http://www.nipcm.hps.scot.nhs.uk/a-z-pathogens/#v

15.5 Infection Control - General Practitioners

Advisory Committee on Dangerous Pathogens VHF guidance:


Health Protection Scotland VHF guidance:


Public Health England VHF guidance:


15.6 Waste Management

APPENDIX 1 - VIRAL HAEMORRHAGIC FEVER QUICK REFERENCE GUIDE (COMMUNITY)

For use in GP surgeries, Cottage Hospitals, and Galloway Community Hospital

Initial Steps for ALL Returning Travellers from Overseas with Fever

❖ BEFORE contacting Microbiologist:

1. Place patient in a single room (ideally with en-suite facilities). In Galloway Community Hospital, this will be the single room with en-suite facilities in A&E.

2. Prepare to take patient history. DO NOT EXAMINE PATIENT, OR TAKE ANY MONITORING EQUIPMENT INTO THE ROOM AT THIS POINT.

3. Take patient history (wearing gloves and plastic apron) including:
   1. Nature of fevers/rigors
   2. Date of return
   3. Duration of visit
   4. Exact locations visited (countries, cities, towns, regions)
   5. Visited caves or mines
   6. Stayed or worked in basic rural conditions
   7. Contact with animals:
      a. Primates, antelopes, bats
      b. Any sick animal
      c. Close involvement with animal slaughter
   8. Contact with any sick people and nature of their illness
   9. Tick bite / crushed tick with bare hands
   10. Any bleeding, bruising, vomiting or diarrhoea
   11. Anti-malarial prophylaxis taken? (which one, compliant?)

❖ Phone Consultant Microbiologist (contact through DGRI switchboard):

1. Microbiologist carries out risk assessment (Public Health England algorithm)

2. Microbiologist to guide on further action

❖ Outcome of Risk Assessment:

1. No risk of VHF/low risk VHF – patient can be cared for as normal, with guidance from Consultant Microbiologist if required.

2. High risk of VHF – No blood tests are to be undertaken. Patient will be prepared for transport to the Brownlee Infectious diseases unit in Glasgow. Advice will be given on appropriate management of patient by the Consultant Microbiologist on a case-by-case basis.

Please ensure GCH A&E have adequate stores of PPE (gloves, suits, goggles/visors, FFP3 masks) and that staff have been FFP3 fit tested recently. For any assistance, please contact the Infection Control Team on 01387 241627.

APPENDIX 2 – VIRAL HAEMORRHAGIC FEVER QUICK REFERENCE GUIDE (DGRI)

Initial Steps for ALL Returning Travellers from Overseas with Fever
BEFORE contacting Microbiologist:

12. Place patient in negative pressure room in A&E

13. Prepare to take patient history. DO NOT EXAMINE PATIENT, OR TAKE ANY MONITORING EQUIPMENT INTO THE ROOM AT THIS POINT.

14. Take patient history (wearing gloves and plastic apron) including:
   a. Nature of fevers/rigors
   b. Date of return
   c. Duration of visit
   d. Exact locations visited (countries, cities, towns, regions)
   e. Visited caves or mines
   f. Stayed or worked in basic rural conditions
   g. Contact with animals:
      i. Primates, antelopes, bats
      ii. Any sick animal
      iii. Close involvement with animal slaughter
   h. Contact with any sick people and nature of their illness
   i. Tick bite / crushed tick with bare hands
   j. Any bleeding, bruising, vomiting or diarrhoea
   k. Anti-malarial prophylaxis taken? (which one, compliant?)

Phone Consultant Microbiologist (contact through DGRI switchboard):

3. Microbiologist carries out risk assessment (Public Health England algorithm)

4. Microbiologist to guide on patient placement, PPE, and blood sampling for investigation

Outcome of Risk Assessment = High possibility of VHF

1. ACTIVATE DOOR LOCKING MECHANISM

2. There is a camera in the room for patient monitoring and an intercom system for communication.

3. Upgrade PPE (add eye protection and FFP3. Fluid repellent suit/boots and double glove if bruising, bleeding, vomiting or diarrhoea)

4. PATIENT CAN NOW BE EXAMINED. Any monitoring/diagnostic equipment taken into the patient room MUST REMAIN IN THE ROOM until the patient is declared not a VHF risk, or once the patient has been transferred out of the hospital and equipment has been decontaminated if patient tests positive for VHF.

5. Blood tests (ALL REQUESTS MUST BE CLEARLY MARKED “HIGH POSSIBILITY OF VHF”):

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Container</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haematology</td>
<td>Malaria film</td>
<td>1xEDTA</td>
</tr>
<tr>
<td>FBC</td>
<td>1xEDTA</td>
<td>Separate bag from Malaria and Coag</td>
</tr>
</tbody>
</table>
requests. Low volume specimens cannot be processed.

| Coag screen | 1xCitrate | Separate bag from Malaria and FBC requests |
| Biochemistry | U&E, LFT, CRP | 1xSerum |
| Glucose | 1xFluoride |
| Microbiology | Blood culture | 1xO2 1xAnO2 |
| VHF and imported pathogens screen | 2xEDTA 1xSerum Urine (Universal Container) |
| Blood gas analyser | DO NOT USE |

**DO NOT USE POD SYSTEM FOR ANY SPECIMEN**
APPENDIX 4 – HIGH RISK WASTE LOG SHEET

All waste (including linen and sharps containers) must be double bagged, sealed, tagged and itemised.

Sign and record date and time of disposal.

Section 1 – List of all waste

<table>
<thead>
<tr>
<th>Item Number (Include Date and Time)</th>
<th>Description of Waste</th>
</tr>
</thead>
</table>

Date/Time: 
Signature:
Section 2 – Packaging for removal to external waste contractor for incineration, place in containment level 3 room until collected by external contractor.

<table>
<thead>
<tr>
<th>Number of items</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time:</td>
<td>Signature:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consignment Number</th>
<th>Waste Bin Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 6 – Removal of waste for incineration by external contractor

<table>
<thead>
<tr>
<th>Date/Time:</th>
<th>Signature for Contractor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time:</td>
<td>Signature for Laboratory:</td>
</tr>
<tr>
<td>Date/Time:</td>
<td>Signature of Witness:</td>
</tr>
</tbody>
</table>
APPENDIX 5 – HIGH RISK CONTACT SHEET

- All staff members in contact with patient/specimen/cultures MUST be documented on form below for traceability purposes.
- Display form in all areas that staff will come in contact with the suspected RISK and record the type of RISK below e.g. VHF, Anthrax.
- Form once completed MUST be sent to Microbiology and filed in the High Risk folder.

<table>
<thead>
<tr>
<th>NATURE OF HIGH RISK:</th>
<th>Name</th>
<th>Job Title</th>
<th>Date</th>
<th>Time</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IN</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OUT</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 6 – INFECTION RISK DEATH CERTIFICATE

Notification of Death

This form, on completion by Ward Staff, must be secured by tape to the body, if a body bag is used a second form must be completed and taped to the outside of the body bag.

Please complete the whole of this form

Deceased Full Name:
Hospital Number:
Date of Birth:
(Stick on medical label if available)

Ward: Consultant:
Date of Admission: Date/Time of Death:

Give details of any jewellery on the body:

Patient ID wrist band in place? Yes □ No □
Are there any medical Implants on the body? Yes □ No □

If yes, please specify:

Reason for use of body bag:
Leakage □ Major Trauma □ Infection Risk □
Level of Infection Risk:
N/A □ High □ Medium □ Low □

Signature of Nurse In Charge:
Name and Designation of doctor confirming death:

Date: July 2018
Version: 1
### APPENDIX 7 – PRECAUTIONS SUMMARY FOR HOSPITAL SETTINGS

<table>
<thead>
<tr>
<th>PPE: To protect body area including head and neck</th>
<th>Low Possibility of VHF</th>
<th>High Possibility of VHF</th>
<th>Confirmed VHF</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable plastic apron over appropriate uniforms</td>
<td>The HCO should change into scrubs</td>
<td>Disposable fluid resistant coverall (with hood) plus high grade disposable plastic apron over the coverall.</td>
<td>Disposable means single use.</td>
<td>See HPS Advice for Purchase of Required PPE for VHF Preparedness: <a href="http://www.hps.gov.hk/eng/guideline-detail.aspx?id=65537">http://www.hps.gov.hk/eng/guideline-detail.aspx?id=65537</a></td>
</tr>
<tr>
<td>PPE: To protect face, including mucous membranes of the eyes, mouth and respiratory tract</td>
<td>Disposable full face visor or face visor with integral fluid resistant surgical face mask or goggles and a fluid resistant surgical face mask</td>
<td>FFP3 respirator &amp; compatible full length visor/throat shield to enter room</td>
<td>Any reusable PPE items e.g. full length visors or goggles may be used but MUST HAVE A DECONTAMINATION SCHEDULE WITH RESPONSIBILITY ASSESSED. FFP3 respirators may be washed or washed according to preference – the full length visor/throat shield will protect against splashes and spray.</td>
<td></td>
</tr>
<tr>
<td>PPE: To protect hands</td>
<td>Non sterile nitrile gloves or non sterile single use gloves</td>
<td>Disposable surgical gloves X2 (double gloving)</td>
<td>Cover all cuts or abrasions with a waterproof dressing and perform hand hygiene before donning gloves.</td>
<td></td>
</tr>
<tr>
<td>Aseptic Converting Procedures as listed in the National Infection Prevention and Control manuals.</td>
<td>FFP3 respirator and compatible eye protection</td>
<td>Disposable fluid resistant coverall (with hood) plus high grade disposable apron, Wellington boots and overboots, FFP3 respirator, full length visor/throat shield and double surgical gloves</td>
<td>Hand protection must overlap the visor (front of visor and be of a tight fit without causing discomfort).</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>Single patient use BIP in center</td>
<td>Use needle safety devices where possible</td>
<td>Keep stocks supplies out of the room.</td>
<td></td>
</tr>
</tbody>
</table>

Keep stock supplies out of the room.

Make sure the equipment is removed before placing in the room.

DO NOT remove equipment from the room without permission of IPCP.
<table>
<thead>
<tr>
<th>Specimens required</th>
<th>Low Possibility of VHF</th>
<th>High Possibility of VHF</th>
<th>Confirmed VHF</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malakia screen urgent FBC, U&amp;Es, LFTs, Glucose, CRP, coagulation studies, urine culture, stool culture and blood cultures (if within the X-ray department)</td>
<td>Urgent VHF testing Urgent Malakia screen FBC, U&amp;Es, LFTs, Glucose, CRP, coagulation studies, culture and blood cultures</td>
<td>Patient under the care of the ID physician</td>
<td>Do not take specimens from high possibility VHF case without prior discussion with ID physician</td>
<td></td>
</tr>
<tr>
<td>Process / transport of specimens</td>
<td>It is not necessary to notify lab in advance of sending specimens Standard transport (sealed container)</td>
<td>Notify lab in advance of sending specimens CL2 No vacuum transport of specimens</td>
<td>Notify lab in advance of sending specimens Can be CL2 with permission / additional procedures No vacuum transport of specimens</td>
<td>See ACPD for additional precautions: <a href="https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients">https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients</a></td>
</tr>
<tr>
<td>Toileting facilities</td>
<td>As per SCPs</td>
<td>Patient may use a toilet Commode / hoist: solid/liquid contents - (Category A waste autoclavable/inoculable)</td>
<td>Patient may use a toilet</td>
<td>See ACPD guidance for further information: <a href="http://www.hpa.scot.nhs.uk/travelxld/note/note4696.html">http://www.hpa.scot.nhs.uk/travelxld/note/note4696.html</a></td>
</tr>
<tr>
<td>Spills of blood or body fluids</td>
<td>SCPs (as per National Infection Prevention and Control Manual Appendix 11) for decontamination of blood and body fluid spills Blood 10,000 ppm + Cd</td>
<td>Blood 10,000 ppm + Cd Contact time 3 minutes</td>
<td>Yellow PPE appropriate for the VHF risk category – as above</td>
<td>Yellow PPE appropriate for the VHF risk category – as above</td>
</tr>
<tr>
<td>Notification</td>
<td>Low Possibility of VHF</td>
<td>High Possibility of VHF</td>
<td>Confirmed VHF</td>
<td>Comments</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------</td>
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</tr>
<tr>
<td></td>
<td>Inform ICD, ID physician; notify CPHM</td>
<td>Inform ICD and ID physician; Notify CPHM, HPS; Notify a HLIU concerning patient management and possible early transfer</td>
<td>Inform ICD and ID physician; Notify CPHM, HPS; Notify a HLIU concerning patient management and transfer; HPS to notify SSEN/CD and PHE for further communication to ECDC</td>
<td>ICD - Infection Control Doctor; ID - Infectious Disease physician; CPHM - Consultant in Public Health Medicine; HPS - Health Protection Scotland; SSEN/CD - Scottish Government Health and Social Care Directorate; PHE - Public Health England; ECDC - European Centre for Disease Control; HLIU - High Level Isolation Unit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hospital Infection Incident Assessment Tool (HIAT)</th>
<th>Amber</th>
<th>Red</th>
<th>Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Infection Incident Assessment Tool (HIAT)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Formal Incident Management Team | IFCT & CPHM | Full IFCT, CPHM, HPS, Pharmacy, Management, Estates | Full IFCT, CPHM, HPS, Pharmacy, Management, Estates |

| Ongoing patient assessments | Monitor temperature; Identify for bleeding, bruising and for rash, petechial, or ecchymosis - if symptoms appear; discuss potential diagnosis with ID physician | If malaria negative and patient remains febrile and no other diagnosis, then discuss with ID physician; Patient under the care of the ID physician/HLIU |

| Routine cleaning of patient room | As per SCPS | Perform routine cleaning and disinfection of patient care area; 1000 ppm enviro for hard surfaces; 10,000 ppm enviro for bioterrorism facilities; This should be performed by clinical staff as part of usual activities; When PPE appropriate for the VHF risk category - as above |

| Terminal clean decontamination | Disinfect room with 1000 ppm as per National Infection Prevention and Control Manual | Disinfect room with 1000 ppm as per National Infection Prevention and Control Manual | Disinfect room with 1000 ppm as per National Infection Prevention and Control Manual | Disinfect room with 1000 ppm as per National Infection Prevention and Control Manual | Disinfect room with 1000 ppm as per National Infection Prevention and Control Manual; Leave disinfected equipment within the area until disinfection process complete; This will need to be confirmed; Ventilation can be reactivated before the room can be used; This may take several days; Environmental services will need to be involved regarding the ventilation prior to ventilation. |

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Policy No. IC-124  
Title: Policy for Management of Suspected Viral Haemorrhagic Fevers  
Date: July 2018  
Version: 1
<table>
<thead>
<tr>
<th>Stand Down - when precautions can be discontinued</th>
<th>Low Possibility of VHF</th>
<th>High Possibility of VHF</th>
<th>Confirmed VHF</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Infection Control Officer confirms safe to stand down, e.g. the patient is</td>
<td>Consultant Infection Control Officer confirms it is safe to stand down, e.g. the patient is</td>
<td>On patient discharge: death</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• VHF negative</td>
<td>• VHF negative</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• responding to treatment for an alternative diagnosis</td>
<td>• responding to treatment for an alternative diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Assessed risk for 24 hours</td>
<td>• Assessed risk for 24 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff exposure</td>
<td>Procedure as per SCIPs</td>
<td>Procedure as per SCIPs</td>
<td>Procedure as per SCIPs</td>
<td></td>
</tr>
<tr>
<td>Procedure as per SCIPs</td>
<td>Procedure as per SCIPs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide reassurance and confirm when stand down that exposure was not to VHF</td>
<td>Provide reassurance and confirm when stand down that exposure was not to VHF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care of the deceased</td>
<td>As per SCIPs and standard hospital procedures</td>
<td>Viewing of the deceased should be avoided</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Do not wash or dress the deceased</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Place deceased in a double disposable body bag, with absorbent material between each bag. Seal the bag, and disinfect surface of outer bag with 1000ppm available chlorine disinfectant</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Label bag as High risk of infection and place in a bucket with sealed joints. Keep in a separate, identified cold store unit in the mortuary to avoid prompt disposal or burial.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post mortem examinations should not be performed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blood sampling can be undertaken in the mortuary by a competent person to confirm or exclude VHF diagnosis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Source: <a href="http://www.nhs.uk/stopped-cholera-prevention-and-control-anual-z">www.nhs.uk/stopped-cholera-prevention-and-control-anual-z</a> ❤️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff support</td>
<td>Low Possibility of VHF</td>
<td>High Possibility of VHF</td>
<td>Confirmed VHF</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------</td>
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<td>--------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>Prevention / Management:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ensure sufficient supplies of appropriately fitting PPE to the relevant specifications are available.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ensure sufficient staff are face fit tested and FFP3 respirators are available if required for any ADF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Showers are recommended at the end of each shift for staff exposed to blood or body fluids</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Staff who care for these patients must know about VHF:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The VHF is present in blood and body fluids, including urine, on contaminated instruments and equipment, in waste on contaminated clothing (including PPE) and contaminated surfaces.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mode of transmission is through direct contact, exposure of broken skin or mucous membranes to blood and/or other body fluids, when coughing or when causing spitting or splashing of blood/body fluids occur. (It is not airborne)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Indirect transmission via broken skin contact with mucous membranes or broken skin and contaminated equipment or surfaces.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• NB risk is highest during the later stages of illness when vomiting, diarrhoea and often haemorrhage may lead to splash and droplet generation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX 8 - VHF SPECIMEN COLLECTION FORM (M-F-245)

<table>
<thead>
<tr>
<th>INVESTIGATION</th>
<th>CONTAINER</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Haematology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaria Screen</td>
<td>1xEDTA</td>
<td>Each sample MUST be placed in the provided</td>
</tr>
<tr>
<td>FBC</td>
<td>1xEDTA</td>
<td>universal then placed in the specimen bag</td>
</tr>
<tr>
<td>Coag Screen</td>
<td>1xCitrate</td>
<td></td>
</tr>
<tr>
<td><strong>Biochemistry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U&amp;E, LFT, CRP</td>
<td>1xSerum</td>
<td></td>
</tr>
<tr>
<td><strong>Microbiology</strong></td>
<td></td>
<td>Low volume specimens CANNOT be processed</td>
</tr>
<tr>
<td>VHF and imported pathogens screen</td>
<td>2xEDTA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1xSerum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 x Urine</td>
<td></td>
</tr>
<tr>
<td>Blood Culture</td>
<td>1xO₂</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1xAnO₂</td>
<td></td>
</tr>
</tbody>
</table>

**Blood Gas Analyser**

<table>
<thead>
<tr>
<th>Specimen(s) taken to Microbiology by:</th>
<th>Specimen(s) received by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Time:</td>
</tr>
</tbody>
</table>

### Blood Test Bottles for Reference

- **EDTA:**

- **Blood culture O₂:**

- **Citrate:**

- **Blood culture AnO₂:**

- **Serum:**

- **Blood culture Paediatric:**
APPENDIX 9 – NATIONAL VIRAL HAEMORRHAGIC FEVER TEST SERVICE

Double click object below to view as full pdf.

Scottish National Viral Haemorrhagic Fever Test Service

The Scottish National Viral Haemorrhagic Fever Test Service (SNVTS) is based at the Royal Infirmary of Edinburgh and offers Ebola, Marburg, Crimean-Congo Haemorrhagic Fever, Lassa Fever, Dengue Fever and Malaria testing (by molecular assays) to NHS Scotland in close collaborative partnership with the Rare and Imported Pathogens Laboratory (RIP) at Porton Down, Wiltshire. SNVTS operates within 7-day laboratory working hours with on-call capacity for testing of urgent “high possibility of VHF” samples using molecular (real-time PCR) approaches.

Approach

In line with UK arrangements, Scottish Doctors attending patients with possible VHF should contact their local Infection Consultant (Infectious Diseases Physician, Consultant Virologist or Consultant Microbiologist) for initial case discussion and advice. If such discussion merits further VHF assessment, the local Infection Consultant should contact the UK Imported Fever Service (IFS) on 08 44 77 80 99 0 (RPL Doctor On Call: 07789 031 672).

The IFS Doctor will assist with risk assessment (including need for, and urgency of, sample testing and immediate management). If the agreed outcome supports VHF testing of samples, the IFS Doctor will approach SNVTS by contacting the Duty/On Call Consultant Virologist (the SNVTS Consultant On Call) at the Royal Infirmary of Edinburgh through 0131 556 1000 (Hospital switchboard) who will confirm details with the local Infection Consultant and instruct testing.

Please note that SNVTS will NOT accept samples for urgent VHF testing unless such an approach has been agreed in conversation between the local Infection Consultant and IFS. Equally, IFS will advise on a case by case basis whether samples may be sent as Category A or B shipments.

Any cases of possible VHF in Scotland should be notified immediately by the local Infection Consultant to the local Health Protection Team who will inform Health Protection Scotland and Scottish Government with a view to consider convening a Problem Assessment Group/Incident Management Team meeting (for Membership and details of approach, please refer to national guidance). Equally, the local Infection Prevention and Control Service should be notified immediately.

Samples

One 4.5 ml serum separation gel blood tube and two 4.5 ml anticoagulated EDTA blood tubes should be forwarded for testing at SNVTS alongside a completed SNVTS test request form. If possible, a urine sample should also be included (But collection of it should not delay blood sample shipment).

Please note that samples to be sent to SNVTS for testing should NOT be processed in any manner by the local hospital team/laboratory. Instead, the samples above should be sent intact and unprocessed.

There is no cost incurred to Scottish Health Boards for VHF testing at SNVTS.