

Policy for

Prevention, Control and Management of Viral Haemorrhagic Fevers including EBOLA

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Method

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Changes from V9 to V10

Page 3 Key Contacts---staff in Argyll & Bute to inform NHS Highland Microbiologist as well as Argyll and Bute (Glasgow) Microbiologist

Page 11 2.2 additional information added to “High Possibility” paragraph

Page 12-13 2.3 additional information added to “High Possibility” paragraph

Page 19 5.1 Addition of “NB// in some areas in Argyll & Bute the colouring of tubes differs from the above.”

Page 21 9.2 addition of list of IMT attendees

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The aim of this policy is to highlight to all staff the recognition and safe management of Viral Haemorrhagic Fevers (VHFs), including Ebola, and to minimise the risk of transmission to healthcare workers.

Key Points

- Risk assessment for VHF is critical – preferably before attending the hospital
- The national guidance signposted in this policy is very detailed. Thus all patients in whom the possibility of VHF is considered should be isolated if they have already presented, and discussed immediately with the On Call Infection Specialist (see “key contacts” below) before further decisions are made.
- This guidance is aimed at 4 key VHF- Ebola, Lassa, Marburg and Crimean/Congo haemorrhagic fever
- There are no specific facilities for managing confirmed VHF in NHS Highland. Patients in whom there is a High Possibility of VHF would normally be transferred directly to the Infectious Diseases Units in either Aberdeen or Glasgow. Patients in whom the VHF screen is positive would usually then be transferred to the High Security Infectious Diseases Unit at the Royal Free Hospital, London. Certain situations may render this inappropriate, so NHS Highland may be required to provide care for patients for longer than normal, if advised to do so by specialists at these other centres.
- Most patients in the UK in whom the possibility of VHF as a diagnosis has been raised actually have malaria, therefore the role of NHS Highland will be to exclude the more common diagnoses such as malaria, as well as possibly sending the initial VHF screen

The **key contacts** for suspected VHF are:

Infection Specialists

North Highland (excluding Argyll & Bute): Duty or On Call (if Out of Hours) Consultant Microbiologist/Infection Control Doctor for NHS Highland: telephone switchboard on 01463 704 000. Within the period 9-5pm Mon-Fri the Duty Consultant is also available on Raigmore bleep 2242. Outwith these times they are available via Radiopager or mobile phone. The Microbiologist may discuss further with NHS Grampian On Call Infectious Diseases Consultant via NHS Grampian switchboard 0845 456 6000

Staff in Argyll & Bute should contact the On Call Consultant in Infectious Diseases for Greater Glasgow & Clyde directly via Gartnavel General Hospital switchboard on 0141 211 3000. They should also inform the On Call Consultant Microbiologist/Infection Control Doctor for Argyll & Bute via switchboard 01631 567 500, as well as the On Call Microbiologist/Infection Control Doctor for NHS Highland via Raigmore switchboard on 01463 704 000.

Health Protection/Public Health

Health Protection Team for NHS Highland : telephone 01463 704886 during working hours. Out of hours call Raigmore switchboard on 01463 704000 and ask for the on call person for Public Health.

Scottish Ambulance Service (see Section 10 for further information)

0345 602 3999

This policy is based on Department of Health guidance which summarises the main points of *Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence* produced by the Advisory Committee on Dangerous Pathogens (ACDP). It can be accessed at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/377143/VHF_guidance_document_updated_19112014.pdf

There is also a Scottish Supplement to this guidance:

<http://www.documents.hps.scot.nhs.uk/travel/VHF/ebola-scottish-supplement-2014-v2.pdf>

The policy is designed to assist staff in hospital accident and emergency departments and receiving units who may assess patients with unexplained pyrexia following a recent stay in countries where viral haemorrhagic fevers are endemic.

The following algorithm provides a brief guide to the initial assessment and management of such cases. It is currently found at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/377142/Algorithm_v5.pdf

and is reproduced as Figure 1 within this policy. Please note, this nationally produced algorithm does not action discussion with Infection Specialist until later in the patient pathway. Within NHS Highland this is NOT appropriate: **all patients suspected of having VHF should be discussed with an Infection Specialist immediately.**

NB// Hyperlinks do change. All of the linked guidance can be found on the Health Protection Scotland website (www.hps.scot.nhs.uk)

1.0 Introduction

Viral haemorrhagic fevers (VHF) are severe and life-threatening diseases caused by a range of viruses. Most are endemic in a number of parts of the world, **most notably Africa, parts of South America and some rural parts of the Middle East, the Balkans, South Russia and Western China.** Further details on the aetiological agents are found below in Table 1. Please note, this is NOT comprehensive, so if any doubt discuss with Infection Specialist (see Page 3). Information on recent VHF outbreaks can be accessed at the World Health Organisation website (<http://www.who.int/csr/don/en/>) as well as at Travax (www.travax.nhs.uk).

Virus	Geographical Distribution	Transmission Routes/Vectors
FILOVIRIDAE		
Ebola	Western, Central and Eastern Africa	Transmission to the index case probably via contact with infected animals. Contact with infected blood or body fluids.
Marburg	Central and Eastern Africa	Transmission to the index case probably via contact with infected animals. Contact with infected blood or body fluids.
ARENAVIRIDAE		
Chapare	Bolivia	Direct contact (e.g. bite) with infected rat or mouse. Direct contact with excreta of infected rat or mouse. Contact with materials (e.g. food) contaminated with excreta from infected rat or mouse. Inhalation of aerosols of excreta (often in dust) of rat or mouse.
Guanarito	Central Venezuela	Direct contact (e.g. bite) with infected rat or mouse. Direct contact with excreta of infected rat or mouse. Contact with materials (e.g. food) contaminated with excreta from infected rat or mouse. Inhalation of aerosols of excreta (often in dust) of rat or mouse. Contact with blood or body fluids from

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		infected patients.
Junin	Argentina	Direct contact (e.g. bite) with infected rat or mouse. Direct contact with excreta of infected rat or mouse. Contact with materials (e.g. food) contaminated with excreta from infected rat or mouse. Inhalation of aerosols of excreta (often in dust) of rat or mouse.
Lassa	West and Central Africa	Contact with excreta, or materials contaminated with excreta, of infected multimammate rat Inhalation of aerosols of excreta of multimammate rat. Contact with blood or body fluids from infected patients, or sexual contact.
Lujo	Southern Africa One outbreak to date in South Africa, ex-Zambia	Transmission to the index case unknown. Direct contact with infected patient, blood or body fluids.
Machupo	North eastern Bolivia	Direct contact (e.g. bite) with infected rat or mouse. Direct contact with excreta of infected rat or mouse. Contact with materials (e.g. food) contaminated with excreta from infected rat or mouse. Inhalation of aerosols of excreta (often in dust) of rat or mouse. Contact with blood or body fluids from infected patients.
Sabia	Brazil	Direct contact (e.g. bite) with infected rat or mouse. Direct contact with excreta of infected rat or mouse. Contact with materials (e.g. food) contaminated with excreta from infected rat or mouse. Inhalation of aerosols of excreta (often in dust) of rat or mouse.
BUNYAVIRIDAE		
Crimean-Congo Haemorrhagic Fever	Central and Eastern Europe, Central Asia, the Middle East, East and West Africa.	Bite of an infected tick. Contact with infected patients, their blood or body fluids. Contact with blood or tissues from infected livestock.
Hantavirus	Americas, Europe, China, Russia	Aerosols from rodent excreta

FLAVIVIRIDAE		
Alkhurma haemorrhagic fever	Saudi Arabia	Contact with an infected animal (sheep, camels). Bite of an infected tick or mosquito (principal vector species not yet identified).
Kyanasur Forest disease	India	Bite of an infected tick. Contact with an infected animal, most commonly monkeys or rodents.
Omsk haemorrhagic fever	Novosibirsk region of Siberia	Bite of an infected tick. Person-to-person

1.1 Transmission

The most common mode of transmission to healthcare workers is via a needlestick injury or contamination of open wounds/mucous membranes by body fluids from an infected patient. **There is no evidence either circumstantial or epidemiological that aerosol transmission occurs.**

1.2 Incubation periods and initial symptoms

All Viral Haemorrhagic Fevers, including Ebola, have **incubation periods of up to 21 days, therefore anyone presenting within 21 days of travel to a VHF endemic area is potentially at risk.** The features of each of these diseases are very similar. Patients may present with a history of fever, malaise, myalgia, anorexia, nausea, headache, sore throat, diarrhoea, petechial rash or bleeding (e.g. from throat, skin, gut). Pharyngitis and chest pain are characteristic early symptoms. Obvious bleeding is a later or terminal event.

2.0 Patient assessment and categorisation

In the UK, most patients who could have VHF are likely to present to Accident and Emergency Departments or *via* their general practitioner.

All patients in whom the possibility of VHF has been raised in the differential diagnosis should be risk assessed **in conjunction with an Infection Specialist (see “key contacts” Page 3)** as per the document [Viral haemorrhagic fevers risk assessment algorithm \(Version 5: 06.11.2014\)](#) which is reproduced as Figure 1 below.

2.1 Patients presenting to General Practitioners, Minor Injury Units/Out of-Hours services/Community Hospitals in NHS Highland

Detailed guidance for health care workers in these care settings has been issued by Health Protection Scotland. It can be found hyperlinked as supplementary documents in **Appendices 1 & 2**

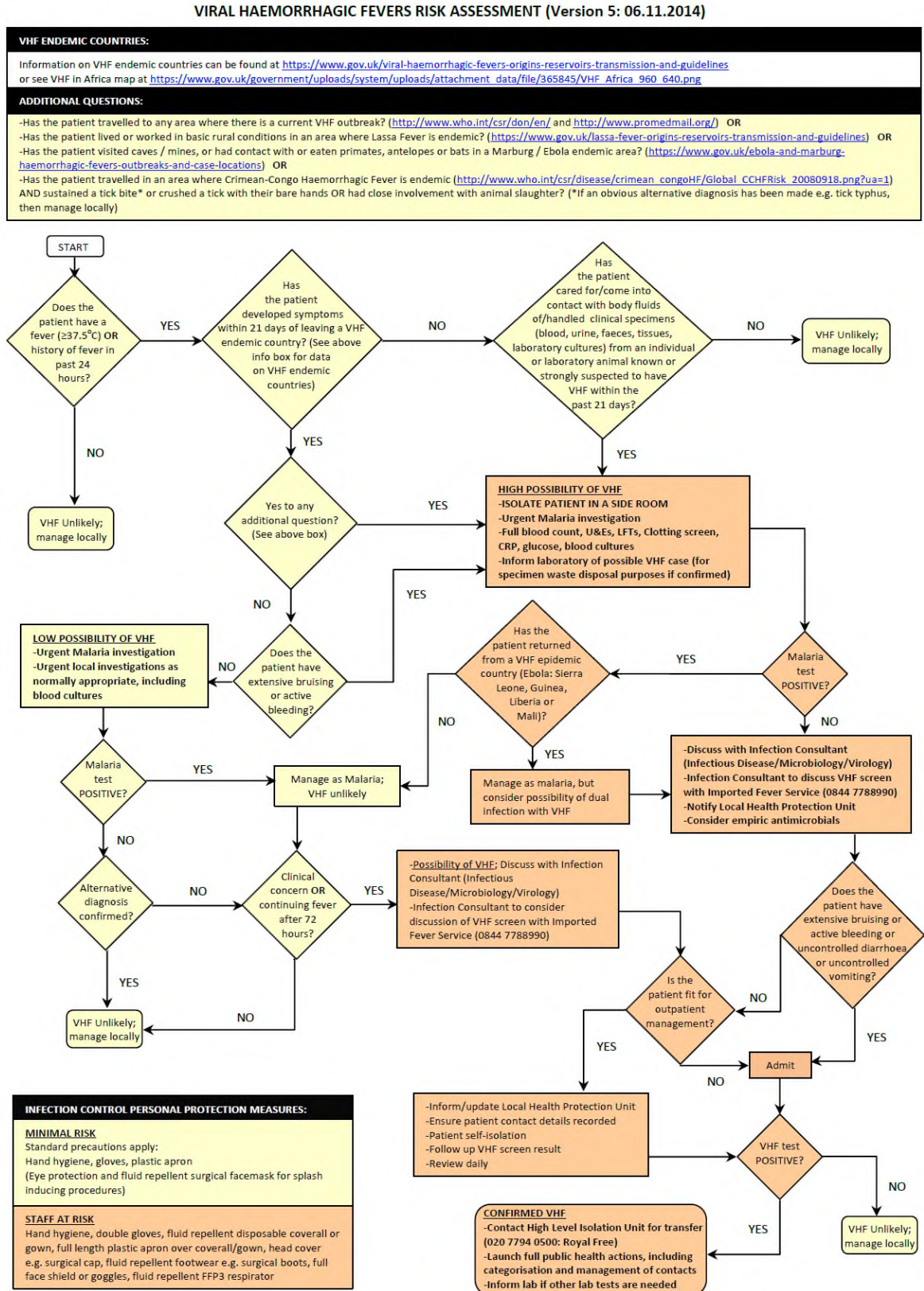
It is vital that during the current outbreak all areas seeing patients should routinely be asking the question at the time of referral/phone triage “Has the patient returned from West Africa within the last 21 days?”. This question is specifically to identify patients at risk from the current Ebola outbreak in West Africa (as at December 2014).

The key point is to ensure that the patient has been isolated, and then discuss the case immediately with the On Call Infection Specialist (see Page 3 “Key Contacts”)

Blood samples should NOT be taken in these settings without prior authorisation from a Consultant Infection Specialist (see Page 3).

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Figure 1



Please note this algorithm is a guide designed to aid early diagnosis of VHF cases and should be used in conjunction with ACDP guidance: <https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients>

2.2 Patients requiring admission to hospital

All areas admitting patients should be routinely asking the question at the time of referral/phone triage “Has the patient returned from West Africa within the last 21 days?”. This question is specifically to identify patients at risk from the current Ebola outbreak in West Africa (December 2014). Patients who answer “NO” should still be assessed with full travel history if relevant to presentation, as they may be at risk of other tropical illnesses, including sporadic cases of VHF if returning from endemic countries.

The On Call Infection Specialist (see “key contacts” Page 3 for all ‘phone numbers) should be contacted immediately to discuss risk assessment as per the document “Viral haemorrhagic fevers risk assessment algorithm Version 5: 06.11.2014” which is reproduced as Figure 1 (above). Subsequent patient pathway/placement depends upon risk category:

“VHF Unlikely”

These patients should be transferred to single room in nearest hospital facility for assessment of alternative diagnoses i.e. normal pathway. Ambulance transport is as for any other patient.

“Low Possibility of VHF”

These patients should be transferred to single room with ensuite facilities in nearest Hospital. Ambulance transport is as for any other patient—Scottish Ambulance Service should be informed “Low possibility of VHF”.

“High Possibility of VHF”

These patients **MUST** be discussed with the regional specialist Infectious Diseases Unit as follows:

For North Highland (exc. Argyll & Bute) the NHS Highland Consultant Microbiologist should contact the On Call Infectious Diseases (ID) Consultant for NHS Grampian to discuss the patient. If the ID Consultant is in agreement with the Risk Assessment of “High Possibility” then transfer of the patient directly to the Infectious Diseases unit in Aberdeen should be arranged, following guidance from the ID Consultant. A high security ambulance is needed for these transfers. This should be arranged by the local Duty Manager; they should inform the Scottish Ambulance Service that there is a “High Possibility of VHF”. The NHS Highland Consultant Microbiologist should also inform On Call Consultant in Public Health. **See hyperlinked Appendix 6 for a summary of this agreed protocol with NHS Grampian**

For Argyll & Bute the clinician must contact the On Call ID Consultant for Greater Glasgow & Clyde directly to undertake the risk assessment. If the Risk Assessment is of “High Possibility” then transfer of the patient directly to

the Infectious Diseases unit in Glasgow should be arranged, following guidance from the ID Consultant. A high security ambulance is needed for these transfers. This should be arranged by the local Duty Manager; they should inform the Scottish Ambulance Service that there is a “High Possibility of VHF. The On Call Infection Control Doctor for Argyll and Bute (Consultant Microbiologist) should also be informed of these patients for their information, as should the On Call Infection Control Doctor for North Highland (Consultant Microbiologist) and the On Call Consultants in Public Health for NHS Highland and NHS Greater Glasgow & Clyde. **See hyperlinked Appendix 7 for a summary of this agreed protocol with NHS Greater Glasgow & Clyde.**

2.3 Patients not requiring admission on clinical grounds

If a patient is well enough to not require admission on clinical grounds then they should still be risk assessed as per Section 2.2 above, which will influence their pathway/placement:

“VHF Unlikely”

These patients should be managed as normal i.e. at home or in the community.

“Low Possibility of VHF”

These patients can be managed out of hospital by the GP or attending healthcare worker, or referred to hospital for appropriate testing, as clinically indicated. To be in this category, the patient will be febrile with a recent relevant travel history, thus it is likely that being seen by a Consultant Physician at nearest Acute Hospital would be the most appropriate care in most cases, to exclude other diagnoses rapidly e.g malaria. Ambulance transport, if needed, is as for any other patient—Scottish Ambulance Service should be informed “Low possibility of VHF”.

“High Possibility of VHF”

These patients **MUST** be discussed with the regional specialist Infectious Diseases Unit. **They will require transfer/admission to Regional Infectious Disease unit for assessment even if clinically well.**

Staff in Primary Care/General Practice should NOT take blood tests from these patients.

For North Highland (exc. Argyll & Bute) the NHS Highland Consultant Microbiologist should contact the On Call Infectious Diseases (ID) Consultant for NHS Grampian to discuss the patient. If the ID Consultant is in agreement with the Risk Assessment of “High Possibility” then transfer of the patient directly to the Infectious Diseases unit in Aberdeen should be arranged, following guidance from the ID Consultant. A high security ambulance is

needed for these transfers. This should be arranged by the local Duty Manager; they should inform the Scottish Ambulance Service that there is a “High Possibility of VHF”. The NHS Highland Consultant Microbiologist should also inform On Call Consultant in Public Health. **See hyperlinked Appendix 6 for a summary of this agreed protocol with NHS Grampian**

For Argyll & Bute the clinician must contact the On Call ID Consultant for Greater Glasgow & Clyde directly to undertake the risk assessment. If the Risk Assessment is of “High Possibility” then transfer of the patient directly to the Infectious Diseases unit in Glasgow should be arranged, following guidance from the ID Consultant. A high security ambulance is needed for these transfers. This should be arranged by the local Duty Manager; they should inform the Scottish Ambulance Service that there is a “High Possibility of VHF. The On Call Infection Control Doctor for Argyll and Bute (Consultant Microbiologist) should also be informed of these patients for their information, as should the On Call Infection Control Doctor for North Highland (Consultant Microbiologist) and the On Call Consultants in Public Health for NHS Highland and NHS Greater Glasgow & Clyde. **See hyperlinked Appendix 7 for a summary of this agreed protocol with NHS Greater Glasgow & Clyde.**

2.4 Patients in whom the diagnosis of VHF is not considered until after admission

The above triage and risk assessment procedures should render this a remote possibility. However, patients who are already inpatients at the time at which the possibility of VHF is raised as part of the differential diagnosis should be isolated into a side room within the current ward immediately. Appropriate PPE should be used (see Section 4). The patient should be discussed immediately with the On Call Infection Specialist following guidance in Section 2.2, in order to risk assess the patient.

In addition to the advice in Section 2.2:

If the risk assessment is “High Possibility of VHF” or above then the ward should be closed immediately to new transfers/admissions/discharges

The Consultant Microbiologist/Infection Control Doctor covering that area of Highland (see Key Contacts Page 3) should convene an emergency Incident Management Team in conjunction with Consultant in Public Health to discuss subsequent handling of the ward, other patients and staff.

3 Initial Management of Patients

The management of a patient with suspected VHF will be the responsibility of the clinicians caring for the patient. The role of clinicians within NHS Highland is to provide supportive care whilst excluding malaria as the most likely alternative diagnosis.

A fundamental principle of caring for patients is to minimise the number of staff exposed. Thus all patient care should be delivered by the most senior (Consultant) medical and nursing staff within that specialty, to prevent the need for re-assessment.

The care will generally need to be provided by the admitting specialty. An exception to this is the Emergency Department, who will hand on care to the appropriate specialty as per initial assessment, as they would normally.

Advice on specialist management/treatment should be sought via local Infection (Microbiology or Infectious Disease) Specialists, who will seek advice from colleagues elsewhere as needed.

Obstetric and Paediatric patients should be risk assessed as for other patients. If an Obstetric or Paediatric patient presents to a non specialist area or GP, then the reviewing clinician should seek clinical advice from the relevant specialty. In turn, it is likely that Consultant Obstetricians/ Paediatricians within Highland would seek advice on clinical management from specialist colleagues outwith NHS Highland.

4 Infection control

Infection Control Procedures within NHS Highland are based on National Guidance from Health Protection Scotland. A link to a summary of these precautions, which provide more detail on certain aspects, can be found in tabulated form in Appendix 4.

4.1 “VHF Unlikely” or “Low Possibility of VHF”

These patients require a side room with ensuite facilities/dedicated commode. The door should be closed.

4.2 “High possibility of VHF”

These patients require a single room with en-suite facilities, as well as significant areas of surrounding space. It is vital that there are clearly segregated areas flowing from “Clean” to “dirty” to

- Put on PPE (Clean)
- See patient (Dirty)
- Remove PPE (Dirty)
- Shower and change into own clothes (Clean)

This requires significant amounts of space, and clear segregation of zones. There must be no through-flow of staff or patients i.e. the area must be contained and controlled. This may require complete/ partial closure or reconfiguration of the unit to achieve.

Patients designated as “High Possibility of VHF” within NHS Highland would be transferred directly to regional Infectious Diseases Units in Glasgow or Aberdeen (see Section 2.2 above). Thus, “High Possibility” cases are only likely to be cared for in areas receiving direct presentations of patients e.g. Emergency Departments, and only for a short time before transfer can be arranged to an Infectious Diseases unit. It is the responsibility of each such unit to identify the most suitable room/area/facility to be used in the event of a presentation of a “High Possibility” patient directly.

4.3 To minimise the risk of infection to staff, strict infection control procedures **MUST** be followed at all times. When selecting PPE for protection of healthcare and laboratory staff the potential exposure routes to be considered are **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. Regarding VHF infection risk:

- transmission has usually been associated with patient care in the absence of appropriate barrier precautions to prevent exposure to blood and other body fluids;

- the risk for person-to-person transmission of VHF viruses is highest during the later stages of illness, when vomiting, diarrhoea, and often haemorrhage, may lead to splash and droplet generation.

4.4 A fundamental principle of caring for patients with suspected VHF is to minimise the number of staff caring for them. Care should be delivered by the minimum number of senior staff necessary.

4.5 Personal Protective Equipment (PPE) required depends upon the likelihood of infection as per the risk assessment undertaken (see 2.0 Patient assessment and categorisation above).

TABLE 2: A GUIDE TO WHAT PPE STAFF SHOULD WEAR. YOU SHOULD NOT USE IT TO SEE A PATIENT WITH SUSPECTED VIRAL HAEMORRHAGIC FEVER (EBOLA) UNLESS YOU HAVE HAD SPECIFIC TRAINING IN ITS USE AND/OR ARE BEING SUPERVISED BY SOMEONE WITH THAT TRAINING

<u>CLASSIFICATION OF RISK (SEE FIGURE 1 PAGE 9) or click here</u>	<u>PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR STAFF</u>
<u>VHF UNLIKELY</u>	<ul style="list-style-type: none"> • Standard Infection Control Precautions, plus any additional precautions as required by potential alternative diagnoses e.g. Droplet, Aerosol <p>See Health Protection Scotland National Infection Prevention & Control Manual for further information</p>
<u>LOW POSSIBILITY OF VHF</u>	<ul style="list-style-type: none"> • Hand hygiene • Ensure any cuts/abrasions covered by waterproof dressings • Disposable Fluid repellent apron • Gloves (standard nitrile) • Full face visor (recommended) OR surgical mask with integrated visor OR surgical facemask PLUS separate eye protection e.g goggles
<u>HIGH POSSIBILITY OF VHF or CONFIRMED VHF</u>	<ul style="list-style-type: none"> • Hand hygiene • Ensure any cuts/abrasions covered by waterproof dressings • Wear surgical scrubs underneath outer PPE instead of own clothes. • Fluid repellent suit with integral hood • Disposable apron over the suit • Wellington boots • Disposable Overboots • Double surgical gloves (extended length cuff sterile surgical gloves) • Full face visor • FFP3 respirator (or powered visor)

4.6 Safe use of this PPE requires specific training in putting it on and taking it off, in terms of the sequence and techniques used. Staff should NOT care for VHF/Ebola patients unless they have been trained in the use of PPE, and/or are being supervised by someone who has. In particular, it is vital that instructions for removing PPE are followed exactly. **To this end the staff member using the PPE should be accompanied by a “buddy” or “trained observer”** who should take command of the process to ensure discipline in the use of PPE.

Step-by-step instructions on the correct procedure for Putting On (“Donning”) and removing (“Doffing”) PPE can be found in Appendix 3. A training video supporting this, produced by Health Protection Scotland can be found at the following link:

<http://www.nes.scot.nhs.uk/education-and-training/by-theme-initiative/public-health/health-protection/blood-borne-viruses/viral-haemorrhagic-fever.aspx>

In case of difficulties with the above link, it is also available on the NHS Highland intranet Infection Prevention & Control page:

<http://intranet.nhsh.scot.nhs.uk/Org/CorpServ/InfectionPreventionandControl/Ebola/Pages/Default.aspx>

A Smartsheet of NHS Highland staff who have received training in the correct use of PPE when caring for suspected VHF/Ebola patients is available on the NHS Highland intranet Infection Prevention & Control page:

<http://intranet.nhsh.scot.nhs.uk/Org/CorpServ/InfectionPreventionandControl/Ebola/Pages/Default.aspx>

4.7 Where FFP3 masks are mentioned, it is important that wearers have undergone face-fit testing to ensure such respirators achieve a good seal. If FFP3 masks are required from the risk assessment, then only staff who have been previously fit tested and trained satisfactorily should care for the patient. Powered visors (if available) can be used as an alternative by those staff whom have not been fit tested successfully for FFP3, or in whom FFP3 masks cannot be used e.g. staff with beards. Powered visors should be disposed off after use (single use). However, it is important to note that the procedure for using the required PPE differs if a powered visor is used, so they should only be used if staff have received specific training on their use.

4.8 Either disposable or dedicated patient care equipment e.g. dedicated stethoscopes should be used for all patients.

4.9. Further information on Standard and Transmission-Based Infection Prevention & Control Precautions can be found in the National Infection Prevention and Control

Manual, available on the NHS Highland Infection Prevention and Control intranet page and linked below:

<http://www.documents.hps.scot.nhs.uk/hai/infection-control/ic-manual/ipcm-p-v2-3.pdf>

4.10 Waste generated as a result of specimen collection should be handled as highly infectious (Category A)—see section 12. Waste should be placed directly into dedicated inside hard container. It should NOT be moved from the PPE removal zone/patient room until instructed to do so by Infection Control Team or Infection Specialist.

5 Diagnostic specimens

Specimens from patients with a possibility of VHF present a hazard to Laboratory staff. Discuss testing BEFORE samples are taken with the On Call Consultant Microbiologist. The On Call Microbiologist MUST ensure that biomedical scientist staff in both Blood Sciences & Microbiology are informed immediately.

POINT OF CARE TESTING EQUIPMENT, INCLUDING BLOOD GAS MACHINES, SHOULD NOT BE USED WITHOUT PRIOR APPROVAL OF INFECTION SPECIALIST

5.1 Strict Infection Prevention & Control Precautions should be followed when taking blood samples, including the use of an assistant. Within Raigmore Hospital, sealable hard, leak-proof containers for transporting VHF specimens are located in A&E, Ward 6A, the respiratory ward, as well as the Microbiology laboratory. Other hospitals in Highland should contact their local laboratory to obtain a suitable container.

How to safely collect blood samples from persons suspected to be infected with Viral Haemorrhagic Fever (based on WHO guidelines)

1. Assemble all required equipment for phlebotomy, including disposable tourniquet, as well as dedicated sharps bins and clinical waste bag. Blood tubes should be pre-labelled at this point. Ensure specimen request form remains in clean zone with the assistant—it will need to be removed from the specimen bag at the perforation. Safety engineered devices for taking blood should be used at all times. A trolley stationed outside the room in the clean zone should be available to use as a “work station”
2. Put on PPE as per details in Appendix 2.
3. Ensure assistant wearing gloves, apron, eye protection and surgical mask is stationed at the door of the room.
4. Enter room with equipment and & shut door as usual
5. Take blood from patient as usual, put samples into specimen bag

6. Approach door and signal for assistant outside to open door. Assistant to hold open container out to the door way without entering the room.
7. Without touching the container or your assistant, place the tubes/specimen bag directly into the container.
8. Remove PPE and exit room as per usual.
9. Assistant to tightly close container with lid, and place onto trolley outside door of room. Assistant to then remove PPE and perform hand hygiene. A new pair of gloves should then be put on and the container carried by hand to Blood Sciences department, where they should be met by Biomedical Scientist wearing appropriate PPE at an open door.

In general, specimens taken should be kept to the minimum necessary for patient management and diagnostic evaluation. This should not exceed the following without prior discussion:

- EDTA (FBC tube) sample for malaria testing & FBC **RED TOP TUBE**
- Serum (4.5 ml) for VHF testing **BROWN TOP TUBE**
- EDTA blood (7.5 ml EDTA tube) for VHF testing **BLUE TOP TUBE**
- U&Es, LFTS, CRP **BROWN TOP TUBE**
- Clotting screen **GREEN TOP TUBE**
- Blood cultures

NB// in some areas in Argyll & Bute the colouring of tubes differs from the above.

5.2 Samples should be transported by hand to the laboratory. The pneumatic tube (POD) system, if available locally, should NOT be used.

5.3 Waste generated as a result of specimen collection should be handled as highly infectious (Category A)—see section 12 of this policy for advice on “soft waste” and “sharps”.

Section 6: Laboratory procedures

- 6.1 **The Duty or On Call Consultant Microbiologist will inform the On Call Blood Science & Microbiology biomedical scientists for the relevant Highland laboratory as soon as possible after they are initially made aware of the case. They must quite clearly state “there are high risk samples from a patient who may have Ebola/Viral Haemorrhagic Fever coming to the lab”**
- 6.2 Samples should arrive at the laboratory by hand (see above 5.1 and 5.2).
- 6.3 Detailed procedures for laboratory staff are contained within the Standard Operating Procedure (SOP) for VHF for laboratory staff

6.8 Arranging for VHF testing at the external reference laboratory

Any patient being tested for VHF will have been risk assessed as “High Possibility”. Therefore they MUST have been discussed with a regional Infectious Diseases unit prior to VHF testing being considered. Within NHS Highland, it is the responsibility of the On Call Consultant Microbiologist to arrange VHF testing, in conjunction with biomedical scientist colleagues in NHS Highland laboratories. The Reference Facility is:

Scottish National Viral Haemorrhagic Fever Test Service (SNVTS)
Laboratory Medicine
Royal Infirmary of Edinburgh
Little France
Edinburgh
EH16 4SA

Full details of how to arrange testing are contained within the Standard Operating Procedure (SOP) for laboratory staff

7.0 Management of a patient with confirmed VHF

7.1. This is an unlikely scenario within NHS Highland, as pathways mean that it is likely that the patient would be already transferred to a regional Infectious Diseases unit prior to confirmation of VHF diagnosis. However, if a patient is confirmed as having VHF then following should apply:

- Restrict the number of staff in contact with the patient and compile a list of all staff who have been in direct contact with the patient
- On Call Microbiologist and/or named Consultant to discuss with On Call Infectious Diseases Consultant at the Royal Free Hospital, London 020 7794 0500 to arrange transfer to their High Level Isolation Unit.
- Incident Management Team should be formed urgently, if not already done so

8.0 Viral haemorrhagic fever (VHF) infected bodies

8.1 Please see pages 82-86 (Appendix 12) of the document *Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence* for detailed information on this. This document is available on the Infection Prevention & Control intranet page, as well as here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/377143/VHF_guidance_document_updated_19112014.pdf

9.0 Public Health Actions

9.1 Notification of cases and suspected cases, contact tracing

Please see pages 25-32 Section 6 of the document *Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence* for detailed information on this. **The Health Protection Team must, by law, be informed of all possible cases of VHF on clinical suspicion. This includes “Low Possibility”, “High Possibility” and “Confirmed” categories.**

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/377143/VHF_guidance_document_updated_19112014.pdf

9.2 Initial action by Consultant in Public Health Medicine (CPHM)

If a High possibility of VHF category patient or a confirmed case has been reported, the CPHM should urgently convene a Problem Assessment Group (PAG) or Incident Management Team (IMT), to take responsibility for ensuring that the measures recommended in the full ACDP guidance are implemented correctly. Procedures within the NHS Highland Outbreak Policy should be followed. The Scottish Supplement to the ACDP guidance recommends that the process of identifying contacts should commence when a patient has been categorised as “High Possibility of VHF”. The IMT will include the following as appropriate to the case:

- Consultant in Public Health Medicine (Chair)
- Consultant Microbiologist/Infection Control Doctor
- Consultant Infectious Disease Physician (Regional {Glasgow/Aberdeen} +/- Local)
- Scottish National VHF Testing Service representative (Virologist, Royal Infirmary Edinburgh)
- Health Protection Nurse
- Infection Prevention & Control Nurse
- Infection Control Manager
- Lead clinician from the area affected
- General Practitioner as appropriate
- Emergency Planning Officer
- Communications
- Environmental and Sustainability manager
- Senior NHS Highland Operational Manager – from relevant unit/locality
- On Call NHS Highland Executive Level Manager
- Scottish Ambulance Service representative
- Police Scotland representative
- Regional Consultant in Public Health Medicine (Glasgow/Aberdeen)
- Highland council representative
- Health Protection Scotland representative

- Scottish Government representative

10.0 Transfer of patients by ambulance

- 10.1 The responsibility for arranging ambulance transfers, if required, lies with the appropriate local Duty Manager (Secondary Care) or assessing Health Care Worker e.g. GP (Primary Care)
- 10.2 Patients risk assessed as “VHF Unlikely” or “Low Possibility of VHF” can be transported as per normal.
- 10.3 Patients with “High Possibility of VHF” should be discussed immediately with the Scottish Ambulance Service (SAS)—see Page 4 for contact number. The SAS will follow their guidance for category 4 infection prevention and control measures (IHCD Ambulance Service Basic Training Manual, 2008. Section 17.5 Category 4 Infections), which provides clear operational procedures for the transfer of a VHF patient in the UK. Ambulance crew transferring a VHF patient must be specifically and adequately trained, and undertake periodic exercises to test their procedures. There may be a delay in providing the high security ambulance required for these patients, as the nearest suitable vehicle to NHS Highland is located in Aberdeen.

Scottish Ambulance Service have their own policy on this subject, which can be found in draft form here:

<http://www.documents.hps.scot.nhs.uk/travel/vhf/vhf-transportation-patient-v1.2.pdf>

In addition, further information may be found on pages 49-50 of the document *Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence* produced by the Advisory Committee on Dangerous Pathogens (ACDP)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/377143/VHF_guidance_document_updated_19112014.pdf

11.0 Management of staff accidentally exposed to potentially infectious material

11.1

Accidental exposures that need to be dealt with promptly are:

☐ **percutaneous injury e.g. needlesticks:**

Immediately wash the affected part with soap and water. Encourage bleeding via squeezing.

☐ **contact with broken skin:**

Immediately wash the affected part with soap and water.

☐ **contact with mucous membranes (eyes, nose, or mouth):**

Immediately irrigate the area with emergency wash bottles, which should be accessible in case of such an emergency.

11.2 In all cases, the incident should be reported to the relevant line manager, who should immediately seek advice from the On Call Infection Specialist, as well as Occupational Health (next working day). The Health Protection Team should be informed.

11.3 Further detail is provided on pages 68-9 in the document *Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence* produced by the Advisory Committee on Dangerous Pathogens (ACDP) which is linked below:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/377143/VHF_guidance_document_updated_19112014.pdf

12.0 Waste Management

Waste Management for Highly Infectious Waste in NHS Highland

The NHS Highlands waste contractor: *Healthcare Environmental Services* requires to be notified that highly infectious waste is being produced or may be produced from a suspected case. Notification will be made as follows;

- The Infection Control Team for the operational unit concerned will in routine hours Mon – Friday, 8am – 16.00 contact the NHS Waste Management Manager on – 01463-706523.
- If the Waste Manager is unavailable the Control of Infection team will contact the Hotel Services Manager/Support Services Manager for the operational unit concerned via the switchboard.
- For out-of-hours the On Call Infection Control Doctor (Consultant Microbiologist) will contact the relevant operational duty Manager.
- *HES phone number – 0150182223 is available all year round on a 24 hr basis.*

‘Soft’ waste should be double bagged in YELLOW clinical waste bags and closed with a tag. Bags should then be placed in a Daniels 60 litre Wiva container with solid lid – Pecos order number – non-catalog – DD102. (it is recommended that a minimum of 20

bins are purchased and held as minimum stock) Waste should not be removed from clinical care room without prior authorisation from Infection Control.

The outer packaging of the Daniels 60 litre bin must be clearly labelled, the label must state:

- Waste description: 'highly infectious waste';
- The source or point of generation of the waste: 'room x / ward x'; and
- The date produced.

Labels for printing and using on highly infectious waste can be found in Appendix 5

Any sharps waste should be placed in a regular sharps container (the smallest size needed to accommodate the amount of waste produced, ensuring the sharps box is not filled more than $\frac{3}{4}$ full). The container should then be sealed and placed in a suitably sized rigid container.

See appendix 5 for label template.

The Contractor should liaise with the site regarding suitable short-term on-site quarantine storage for highly infectious wastes separate from ALL other wastes. If a quarantine area is not immediately available waste should be stored in the patient's room in a safe manner e.g. bagged and boxed. Quarantine areas for highly infectious waste should be away from areas used to store other wastes, including other clinical wastes. Where practicable within the quarantine area boxes containing highly infectious waste should be placed directly into a dedicated 770 litre wheeled container to avoid double handling of the waste before uplift, these 770 litre bins must then be identified by attaching the diamond signage provided in appendix 2. Quarantine areas should be locked to prevent unauthorised access and a record of all waste entering and leaving the area must be maintained.

The timing and frequency of collection must be agreed with the waste contractor at a local level. Highly infectious waste must not be permitted to accumulate.

The contractor is responsible for providing any additional packaging or labelling required prior to movement off site.

The contractor is responsible for completion of the DfT derogation required to move this waste and the security plan required in line with the Carriage Regulations 1996 (as amended).

In the event that this procedure requires to be activated any associated costs will appear in the regular monthly invoice, thus no further authorisation will be required from the Board Waste Management Officer.

13 Environmental decontamination & laundry

- 13.1 For patients categorised as "VHF unlikely" or "Low Possibility of VHF"(see Figure 1) standard cleaning and decontamination procedures should apply,

including for the treatment of laundry. Actichlor plus (1000ppm chlorine) should be used for decontamination in place of detergent. Further detail can be obtained in the table linked from Appendix 4.

13.2 For all other possible VHF patients (i.e. high possibility, confirmed) the following points apply. Further detail can be obtained in the table linked from Appendix 4.

- The patient care room should not be cleaned by domestic staff whilst occupied. It is the responsibility of nursing and/or medical staff to clean down near-patient touch surfaces. Domestic staff would only be involved in the final terminal clean of the room
- Domestic or other staff cleaning VHF areas should wear appropriate PPE as per patient's risk assessment as for other staff (see Section 4). They need to have been trained as competent in using this PPE and/or be supervised by a trained observer/buddy.
- The patient care and all surrounding areas should be cleaned using Actichlor plus minimum 1000 ppm.
- Toilets and commodes should be cleaned with 10, 000 ppm chlorine agent after every use
- If commodes are used, a dedicated commode with disposable bowl should be used. After use, the contents must be solidified with high-absorbency gel and then disposed of as highly infectious (Category A) waste as for other patient waste.
- For non ambulant patients, disposable bedpans should be used. After use contents should be solidified with high-absorbency gel and then disposed of as highly infectious (Category A) waste as for other patient waste.
- Blood or body fluid spills should be cleaned using 10 000 ppm chlorine releasing agents as per NHS Highland policy, by staff wearing appropriate PPE based on patient risk assessment (see Section 4)
- In the event of a confirmed case of VHF, following discharge/transfer of the patient the room will require fumigation-----this should NOT be done until a thorough risk assessment has been carried out with specialist advice from colleagues at the Royal Free Hospital, London. Fumigation may require evacuation of other patients in shared/nearby facilities. Post-fumigation, the room should be terminally cleaned with 1000 ppm chlorine release agents, by staff wearing full PPE based on patient risk assessment (See section 4)

- 13.3 All patient linen, whether disposable or reusable, should be treated as single use and disposed of as Category A (highly Infectious) Waste—see Section 11 for more details. Linen must NOT be returned to the laundry.
- 13.4 Crockery and cutlery used should be disposable, and disposed of after use as highly infectious (Category A) waste—see Section 11.

14 References/Further information

- 1) *Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence*. Advisory Committee on Dangerous Pathogens (ACDP) 2014.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/377143/VHF_guidance_document_updated_19112014.pdf
- 2) Health Protection Scotland website. Ebola documents. 2014
<http://www.hps.scot.nhs.uk/travel/viralhaemorrhagicfever.aspx>
- 3) NHS Highland “Policy for the Safe Handling of Sharps”
<http://intranet.nhsh.scot.nhs.uk/PoliciesLibrary/Documents/Policy%20for%20the%20Safe%20Handling%20of%20Sharps.pdf>
- 4) NHS Highland policy “Management of Sharp Injuries, Blood and Body Fluids in Healthcare”
<http://intranet.nhsh.scot.nhs.uk/PoliciesLibrary/Documents/The%20Management%20of%20Sharps%20Injuries,%20Blood%20and%20Body%20Fluid%20Exposure%20in%20Healthcare.pdf>

15.0 Equality Statement

- 11.1 This policy must be implemented fairly and without prejudice whether on the ground of race, gender, sexual orientation or religion.

APPENDIX 1

Information for Primary Care: Managing Patients Who Require Assessment for Ebola Virus Disease

**This national document, produced by Health Protection Scotland,
is available here:**

<http://www.documents.hps.scot.nhs.uk/travel/VHF/ebola-primary-care-guidance-2014-12.pdf>

APPENDIX 2

Summary of Viral Haemorrhagic Fever (VHF) Precautions for General Practitioners in Scotland

**This national document, produced by Health Protection Scotland,
is available here:**

<http://www.documents.hps.scot.nhs.uk/travel/vhf/vhf-ic-gp-summary-precautions-v2.pdf>

APPENDIX 3

Instructions for Putting On (Donning) and Taking Off (Doffing) Personal Protective Equipment (PPE) when caring for patients with suspected Ebola or other VHF

**NB// This document is also available as a pdf on the Ebola/VHF page on the
NHS Highland Infection Prevention and Control intranet site here:**

<http://intranet.nhsh.scot.nhs.uk/Org/CorpServ/InfectionPreventionandControl/Ebola/Documents/NHS%20Highland%20PPE%20Donning%20and%20Doffing%20Guidelines%20for%20Ebola.pdf>

APPENDIX 4

**Viral Haemorrhagic Fever (VHF) Infection Prevention and Control Precautions
Summary for the Hospital Setting**

**This national document, produced by Health Protection Scotland,
is available here:**

<http://www.documents.hps.scot.nhs.uk/travel/vhf/ebola-ic-precautions-table-v2.pdf>

APPENDIX 5

Example label for Highly Infectious Waste

APPENDIX 6

**Summary of agreed transfer protocols for “High Possibility”
Ebola/VHF cases between NHS Highland (excluding Argyll & Bute)
and NHS Grampian**

**This pdf flow chart can be accessed on the NHS Highland
Infection Prevention & Control intranet site:**

**[http://intranet.nhsh.scot.nhs.uk/Org/CorpServ/InfectionPr
eventionandControl/Ebola/Pages/Default.aspx](http://intranet.nhsh.scot.nhs.uk/Org/CorpServ/InfectionPreventionandControl/Ebola/Pages/Default.aspx)**

APPENDIX 7

**Summary of agreed transfer protocols for “High Possibility”
Ebola/VHF cases between NHS Highland (Argyll & Bute) and NHS
Greater Glasgow & Clyde**

**This pdf flow chart can be accessed on the NHS Highland
Infection Prevention & Control intranet site:**

<http://intranet.nhsh.scot.nhs.uk/Org/CorpServ/InfectionPreventionandControl/Ebola/Pages/Default.aspx>