Course Title	IMT3 Simulation	Scenario Title	Fever in returning traveller - Infection control and bed management
Patient	Name: Sam Campbell Age: 43		

	Technical	Non-Technical
Learning Outcomes	- Infectious Disease history taking - Knowledge of suspected viral haemorrhagic fever, and PPE measures - VHF risk assessment criteria	- Use cognitive aids - - Know the environment – infection control measures, bed management - Anticipate and plan - Mobilise all available resources
Scenario Overview	The patient is a 43 year old patient who has returned from Liberia recently. The patient is a difficult historian but has features of unexplained mucosal bleeding from a high risk area. The scenario will allow candidates to take a history in a patient with a suspected viral haemorrhagic fever (VHF), and to think about wider health measures including risk stratification, PPE and isolation. This scenario requires a minimum of 2 faculty members: patient voice (can also be console/ phone advice if required), and the ED plant nurse.	
Set Up	Urgent care centre referral to medical take Manikin (or faculty can play as actor) Adult Bed/trolley/chair all fine Monitoring not on	
Prop List	Oxygen mask and tubing BP cuff Monitor Blood results Guidelines: link to: https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients	

Console		A	B	C	D
	RR	22			
	SpO_2	93			
	HR	108			
	BP	102/58			
	Rhythm	SR			
	Temp	37.9			
	Eyes	Slight injection (red)			
	Other	GCS 15/15			
	Other				
	Other				
Expected Actions	Candidates are expected to resuscitate the patient effectively while taking a focused history. This will include: Applying oxygen, gaining IV access – sending bloods, including cultures– note infection control issues. Risk stratification should take place to balance the safety of staff, self and the patient.				

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End Point	Risk assessment and ID discussion. Ordered negative pressure side room and alerted bed managers.

Participant briefing	You are the IMT3 doctor on take and you have been asked to see a patient in his 40s with low grade fever. The patient was discharged from ED at a different hospital 2 days ago with antibiotics for a chest infection. The notes from urgent care centre have not yet come through on the system.
Patient Briefing	You work in the military as a civilian advisor so are reluctant to give much information on first asking, but will open up if asked more direct questions and will be truthful. At first you will only give profession and that you were away on business (Liberia in past 10 days) and be vague. At first say that you arrived from France (as was in transit there) but if asked if you travelled anywhere else will mention you spent most of the past month in Liberia. Symptoms: - You developed a fever for the past 2-3 days, particularly at night - You have muscle aches and feeling generally lethargic - Came to hospital today as noticed bleeding from your gums and nose - No real cough - No urinary symptoms - Took malaria prophylaxis intermittently but forgot some doses (Malarone). - Given a penicillin-based antibiotic 2 days ago with no improvement (it was given three times a day) Other answers (if asked): - You are generally well and returned 10 days ago from Liberia. You did not drink tap water in Liberia, just bottled, but did have ice in drinks. No open water swimming whilst away, no dodgy meals and no-one else unwell. Only sexual activity is with wife. Did see rats' droppings where you stayed. No tick or mosquito bites. No IVDU. Given a penicillin-based antibiotic 2 days ago with no improvement. In Liberia you visited the capital Monrovia, Gbarnga and a farm between the two. You mainly stayed in hotels. HIV negative presumably as gave blood 3 years ago. Not tested since.
Patient PMHx	PMH: appendicectomy in 20s Drug hx: Nil regular Allergies: NKDA Social hx: Work as civilian advisor to the military. Recently travelled for 1 month to Liberia (transited via France). Family hx: Nil relevant

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Investigations & results	Bloods: Hb 159, WCC 26 neuts 19, lymphs 3, monocytes 2, eosinophils 0.5, Platelets 102 CRP 121 ALT 5135, AST 984 ALP 450 Bone profile and TFTs pending Na 142 K 4.4 Ur 21 Creat 405, INR 2.3, Bil 22 Alb 31 ABG: pH 7.35 PCO2 3.2 PO2 8.2 BE -6.0 Lactate 4.9, Gluc 6.7 CXR: Normal lung fields ECG: Sinus rhythm Urine dip: Blood+, Prot+, White cells -ve, Nitrites -ve, Ketones -ve
Plant Briefing	You are an ED nurse and are competent, and will do as asked. Ask “are you sure you want a side room?” if this is suggested. You will accept a good explanation.
On Examination	

	A	B	C	D
Colour				
Skin				
CRT	4			
GCS	15			
Pain Score				
Abdomen	soft			

	JVP not seen
Life Savers	The plant will ask where a bed should be booked for the patient and to prompt if anything else needs sending
Telephone Assistance	**Medical consultant:** The symptoms all sound a bit odd and do not fit with simple sepsis. Suggest discussion with infectious diseases/microbiology team. **Infectious diseases registrar/cons:** The patient has evidence of multiple organ dysfunction (liver and renal). Liberia is a country that has endemic cases of viral haemorrhagic fever (Lassa Fever and Ebola) and this must be considered. Direct them to: https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients Reasonable to start empirical antibiotics in the meantime and to send an urgent malaria test as severe sepsis/malaria more likely even with strong epidemiological risk

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Debriefing	VHF risk assessment criteria – where to look / ask (Department of health algorithm very useful, see appendix) Infection control – PPE, looking after team as well as patient. Ideally the patient should be put in a side room, and the bed manager/ nurse in charge should be made aware. Contacts should be minimised so only one doctor and one nurse should be allocated to the patient. Enhanced PPE should be worn (remember to go to the toilet and be comfortable first before donning all of this!) Bed management – Levels of beds, high, monitors, side rooms with ante rooms, positive and negative pressure etc – what available locally Knowing environment – infection control and notifying laboratory regarding high risk samples
References	https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients https://www.clinicalguidelines.scot.nhs.uk/nhsggc-guidelines/nhsggc-guidelines/emergency-medicine/viral-haemorrhagic-fever-vhf-patient-pathway-2021-paediatric-ed/ https://www.datadictionary.nhs.uk/attributes/critical_care_level.html
Curriculum mapping	**CiP Descriptors (Internal Medicine Curriculum Stage 1):** - Managing an acute unselected take - Managing an acute specialty-related take - Managing medical problems in patients in other specialties and special cases - Delivering effective resuscitation and managing the deteriorating patient
Written by: Date: Review date:	N Murch and edited by Ewan Mackay (Education Fellow) and Benjamin Lindsey (Registrar Infectious Diseases) June 2022 June 2024

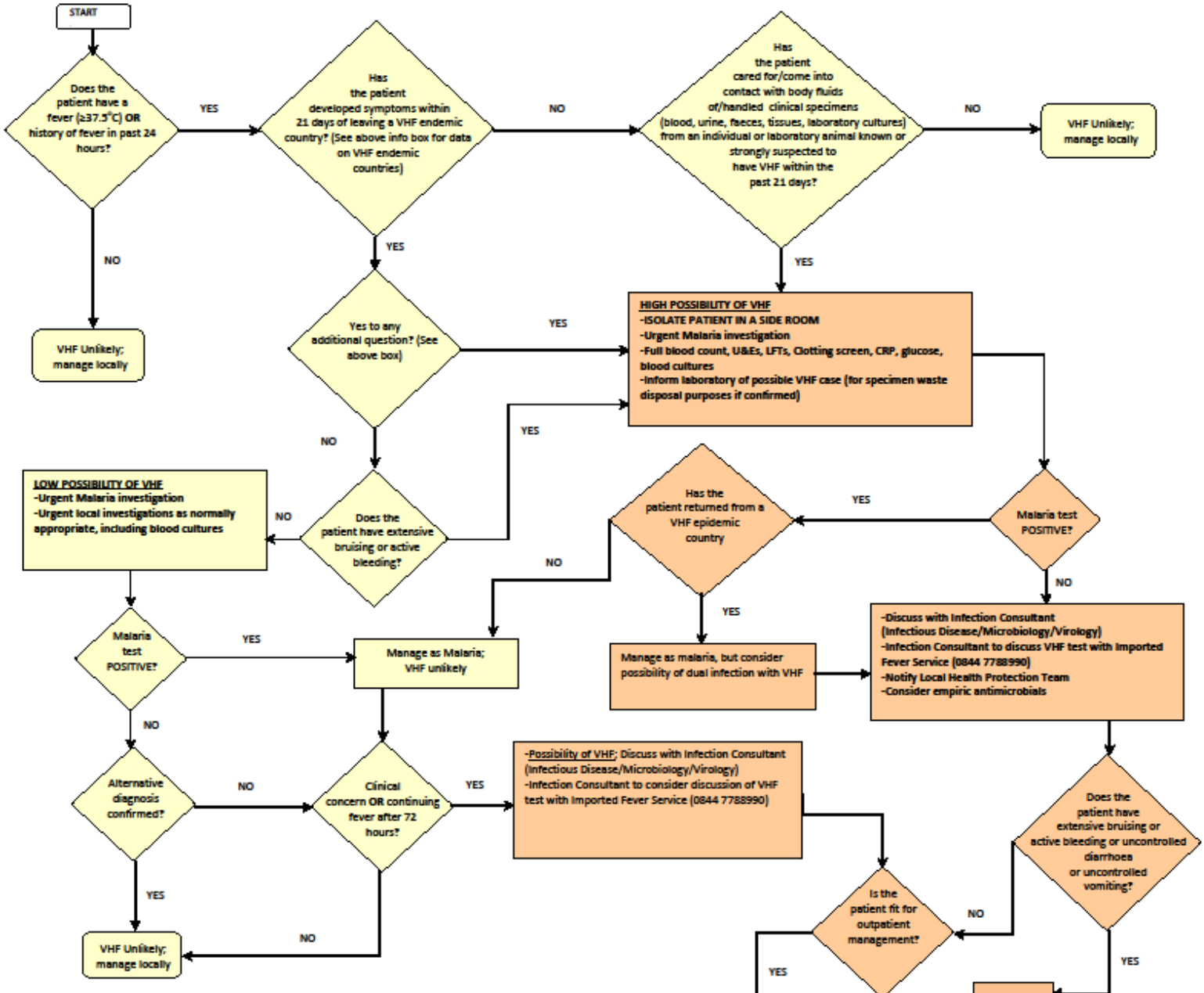
VIRAL HAEMORRHAGIC FEVERS RISK ASSESSMENT (Version 6: 15.11.2015)

VHF ENDEMIC COUNTRIES:

Information on VHF endemic countries can be found at https://www.gov.uk/viral-haemorrhagic-fevers-origins-reservoirs-transmission-and-guidelines
or see VHF in Africa map at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/365845/VHF_Africa_960_640.png

ADDITIONAL QUESTIONS:

-Has the patient travelled to any area where there is a current VHF outbreak? (http://www.promedmail.org/) **OR**
-Has the patient lived or worked in basic rural conditions in an area where Lassa Fever is endemic? (https://www.gov.uk/lassa-fever-origins-reservoirs-transmission-and-guidelines) **OR**
-Has the patient visited caves / mines, or had contact with or eaten primates, antelopes or bats in a Marburg / Ebola endemic area? (https://www.gov.uk/ebola-and-marburg-haemorrhagic-fevers-outbreaks-and-case-locations) **OR**
-Has the patient travelled in an area where Crimean-Congo Haemorrhagic Fever is endemic (http://www.who.int/csr/disease/crimean_congoHF/Global_CCHFRisk_20080918.png?ua=1) AND sustained a tick bite* or crushed a tick with their bare hands OR had close involvement with animal slaughter? (*If an obvious alternative diagnosis has been made e.g. tick typhus, then manage locally)



INFECTION CONTROL PERSONAL PROTECTION MEASURES:

MINIMAL RISK
Standard precautions apply:
Hand hygiene, gloves, plastic apron
(Eye protection and fluid repellent surgical facemask for splash inducing procedures)

STAFF AT RISK
Hand hygiene, double gloves, fluid repellent disposable coverall or gown, full length plastic apron over coverall/gown, head cover e.g. surgical cap, fluid repellent footwear e.g. surgical boots, full face shield or goggles, fluid repellent FFP3 respirator

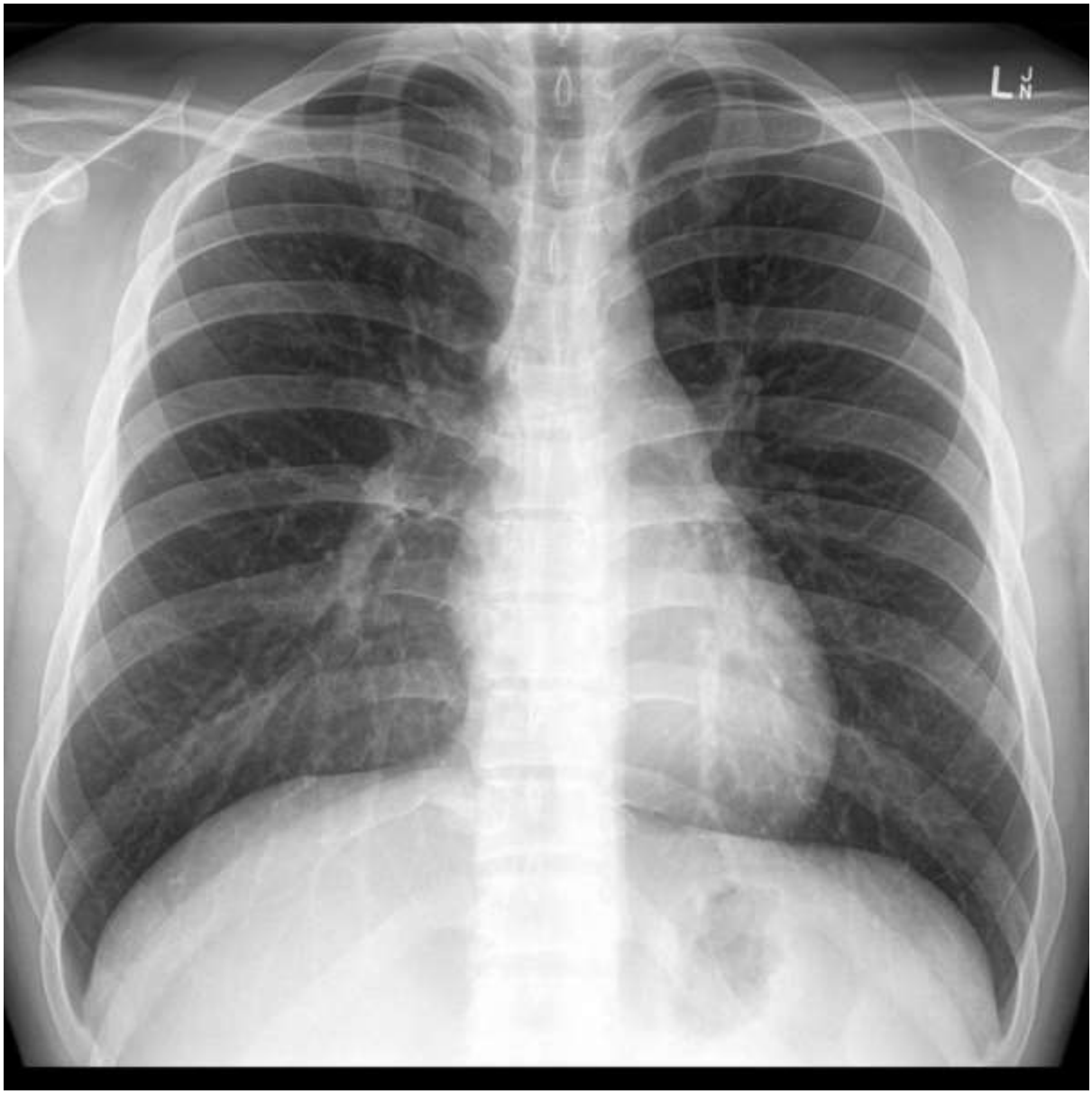


Image courtesy of radiopaedia.org