Guidelines for the Clinical Management of Ebola Virus Disease at Kenyatta National Hospital

28 August 2014

CONTENTS

LIST OF TABLES

FOREWARD

GUIDELINES FOR CASE DETECTION AND MANAGEMENT OF EBOLA AT KENYATTA NATIONAL HOSPITAL

INTRODUCTION

Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a highly infectious, severe, and often fatal illness in humans. EVD outbreaks have a case fatality rate ranging from 55% to 90%. The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission via contact with body secretions and fluids.

The disease has an incubation period of 2 to 21 days and presents with sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding. Bleeding is a rare and late sign. Laboratory investigations reveal an early lymphopenia and later leukocytosis, reduced platelet counts and raised liver enzymes.

Severely ill patients require intensive supportive care mainly consisting of hydration and symptomatic management. No licensed specific treatment or vaccine is available for use in people or animals.

It is not always possible to identify patients with EVD early because initial symptoms may be non-specific. Due to the non-specific nature of symptoms, it is essential that before examining ANY patient at the hospital every health care worker should observe basic infection prevention measures. This includes wearing of gloves and masks, and hand washing with soap and water or 70% alcohol based sanitizer before and after examining patients.

INITIAL SCREENING AND TRIAGE FORM

The triage form (Table 1) presented on the next page will assist in identifying patients who should be properly screened for the possibility of Ebola.

One should suspect VHF if at completion of the form there is:

- One VHF symptom and a history of contact or travel
- OR fever and any sign of bleeding

A patient suspected to have VHF should be transferred to the Ebola Isolation Unit.

TABLE 1: TRIAGE/ INITIAL SCREENING FORM

TRIAGE FORM

Patient name:			Date:
Sex: m f	Age:		Register no.:
Address/Location:			
Reason for consultation:			
Time & date illness started:			
Did they receive treatment before coming to the hospital?		Yes No	
What kind of treatment? _____			
Where did they receive treatment? Hospital		Health centre (name): _____	
Traditional healer: _____		Other _____	

VHF Symptoms

Fever	Yes	No	# days: _____ Temperature: _____ºc.		
Vomit	Yes	No	Bloody	Yes	No
Headache	Yes	No			
Diarrhoea	Yes	No	Bloody	Yes	No
Nausea	Yes	No			
Haemorrhagic eyes	Yes	No			
Other haemorrhage	Yes	No	Location _____		
Breathlessness	Yes	No			
Bone/muscle pain	Yes	No			
Loss of appetite	Yes	No			
Asthenia/weakness	Yes	No			
Abdominal pain	Yes	No			
Jaundice	Yes	No			
Swallowing problems	Yes	No			
Hiccups	Yes	No			

Contact History

Is there somebody ill in the family?	Yes	No
Have you visited someone who is ill?	Yes	No
Has somebody died recently in your family	Yes	No
Have you been to a funeral recently?	Yes	No
Have you travelled to a country/area with an Ebola outbreak?	Yes	No

SUSPICION OF VHF	**YES**	**NO**

Patient Plan

Medicine ward		Adult emergency	
Orthopaedic ward		Paediatric emergency	
Surgery ward		VHF centre	
Maternity ward		Health centre	
Paediatric ward		At home	
Remarks:			
Name of nurse/doctor:			

CASE DEFINITION OF EBOLA

In general a patient is suspected of Ebola Virus Disease (EVD) if:

1. They have acute onset of fever (<3weeks) and any sign of bleeding (haemorrhagic or purpuric rash, epistaxis, haematemesis, haemoptysis, blood in stool, other haemorrhagic manifestations) with no known predisposing factors**)**
2. They have any symptom listed above and have an epidemiologic risk factor*(described below under epidemiological criteria)*

Patients can be further classified(into types of cases and contacts)using the following **Clinical and Epidemiologic Criteria**:

Clinical Criteria

- Fever < 3 weeks
- Muscle and joint aches
- Flu like Illness
- Profound Weakness
- Vomiting and Diarrhea
- Hiccups
- Haemorrhage – take note haemorrhage is a rare and late sign

Epidemiological criteria

High risk exposures

- Percutaneous, e.g. the needle stick, or mucous membrane exposure to body fluids of EVD patient
- Direct care or exposure to body fluids of an EVD patient without appropriate personal protective equipment (PPE)
- Laboratory worker processing body fluids of confirmed EVD patients without appropriate PPE or standard biosafety precautions
- Participation in funeral rites which include direct exposure to human remains in the geographic area where outbreak is occurring without appropriate PPE

Low risk exposures

- Household member or other casual contact[1] with an EVD patient
- Providing patient care or casual contact[1] without high-risk exposure with EVD patients in health care facilities in EVD outbreak affected countries*

No known exposure

- Persons with no known exposure were present in an EVD outbreak affected country* in the past 21 days with no low risk or high risk exposures.

[1] Casual contact is defined as:

a) being within approximately 3 feet (1 meter) or within the room or care area for a prolonged period of time (e.g., healthcare personnel, household members) while not wearing recommended personal protective equipment (i.e., droplet and contact precautions–see Infection Prevention and Control Recommendations); or b) having direct brief contact (e.g., shaking hands) with an EVD case while not wearing recommended personal protective equipment (i.e., droplet and contact precautions–see Infection Prevention and Control Recommendations). At this time, brief interactions, such as walking by a person or moving through a hospital, do not constitute casual contact.

*Outbreak affected countries include Guinea, Liberia, Sierra Leone, Nigeria and DRC Congo as of 28-August-2014

Using the clinical and epidemiological criteria the following patient groups are defined:

1. Person under investigation (PUI): Consistent symptoms and epidemiologic risk factors
    - Probable case: PUI with contact with an EVD case
2. Confirmed case: Laboratory confirmation
3. Contact
    - High risk exposure
    - Low risk exposure
    - No known exposure

SUMMARY CLASSIFICATION OF EBOLA CASES AND CONTACTS
The table below provides a summary of the different types of cases and contacts of Ebola.

TABLE 2: CLASSIFICATION OF EBOLA CASES AND CONTACTS

Suspect case *(The distinction b/w suspect, PUI and probable case is unimportant in outbreaks)*	**Suspect**	Fever (< 3 weeks duration) + signs of haemorrhage with no predisposing factor
	Person under investigation (PUI)	One clinical criteria + any epidemiologic risk factor
	Probable case	PUI with contact with an EVD case
Confirmed case	**Confirmed case**	Laboratory confirmation
Contacts	**Contact with high risk exposure**	Presence of high risk exposure
	Contact with low risk exposure	Presence of low risk exposure
	Contact with no known exposure	Presence of no known exposure

If a patient is suspected or confirmed to have EVD, they should be moved to the isolation unit. The referral office at A&E department should be contacted on 0719510510 to alert the A&E team leader doctor, nurse and Ebola committee chairperson. **The health care worker must wear full PPE in any further interaction with the patient.**

CASE MANAGEMENT

Suspect and confirmed cases require medical admission to an isolation unit. Suspect cases should be isolated in a separate unit from those with confirmed laboratory findings. For suspect cases, once laboratory results are available:

i. **IF THE TEST RESULTS ARE POSITIVE**, thepatient should be transferred to the isolation unit for EVD confirmed cases, the EVD management guidelines should be applied, and additional contact tracing mechanisms should be put in place i.e. physical follow up of contacts using contact tracing form

ii. **IF THE TEST RESULTS ARE NEGATIVE**and:
    a. **the patient is symptomatic**, they should be transferred to the appropriate unit for further investigation and management
    b. **the patient is asymptomatic**, they should be released home to continue self-monitoring for a further 21 days. This includes measuring temperature twice daily to check for fever, and other symptoms including vomiting or nausea, diarrhea, weakness or any sign of haemorrhage.

While managing suspected and confirmed cases limit patient movement and restrict access to the isolation unit.Due to the infectious nature of the disease, only health care personnel with full protective personal equipment are permitted into the Ebola isolation unit. All waste disposal Standard Operating Procedures must be adhered to.

It is imperative that compassionate care is provided to patients within the Ebola isolation unit, and their humanity is respected at all times.

The clinician receiving suspected and confirmed cases to the Ebola isolation unit will fill the **medical admission form, the epidemiological form,** and the **contact recording form.**

TABLE 3: MEDICAL ADMISSION FORM

Medical Admission Form

Most of the information in this form can be transferred to the Epidemiological Form

Person filling form: _____	Case ID# _____
Information provided by: _____	MSF ID# _____
Date: ___/___/_____	

Referral

Case referred by:	Epi team:	Health Centre:	Other:
Family contact person:			

Identity of the Patient

Name:_____ Surname(s): _____

Age – years:_____months:_ Date of birth: ___/___/_____

Sex: M: F: Ethnicity/Language: _____

Residence:

Head of family (name/surname): _____

Community/District of residence: _____

Address/Location: _____

Profession:

Farmer: Hunter: Housewife: Miner:

Shopkeeper: Child/Student:

Other: What: _____

Health worker: Type: _____

Institution/Location: _____

Details of the Illness

When did the illness start?	Date: ___/___/_____		# of days? _____
Have they had fever during the illness?	Yes:	No:	
→When did the fever start?	Date: ___/___/_____		# of days? _____
Have they had vomiting during the illness?	Yes:	No:	
Have they had diarrhoea during the illness?	Yes:	No:	
Have they had bleeding during the illness?	Yes:	No:	
→When did bleeding start?	Date: ___/___/_____		# of days? _____

If there is a time difference between onset of symptoms, and seeking help, explain why?

Current Symptoms

Fever on admission?	Yes:	Temperature _____^{o}C	No:
Non-Bleeding Symptoms:			
Headache	Yes:	how many days? _____	No:
Bone or muscle pain	Yes:	how many days? _____	No:
Stomach pain	Yes:	how many days? _____	No:
Weakness	Yes:	how many days? _____	No:
Anorexia	Yes:	how many days? _____	No:
Swallowing problems or pain	Yes:	how many days? _____	No:
Nausea	Yes:	how many days? _____	No:
Vomiting	Yes:	how many days? _____	No:
Diarrhoea	Yes:	how many days? _____	No:
Breathlessness	Yes:	how many days? _____	No:
Red or injected eyes	Yes:	how many days? _____	No:
Non-haemorrhagic rash	Yes:	how many days? _____	No:
Hiccups	Yes:	how many days? _____	No:
<u>Bleeding Symptoms:</u>			
Cutaneous bruising / Pet echia	Yes:	how many days? _____	No:
Cutaneous bleeding/injection sites	Yes:	how many days? _____	No:
Bleeding gums	Yes:	how many days? _____	No:
Diarrhoea with black or red blood	Yes:	how many days? _____	No:
Haematemesis (bloody vomit)	Yes:	how many days? _____	No:
Epistaxis (nose bleeds)	Yes:	how many days? _____	No:
Vaginal Bleeding	Yes:	how many days? _____	No:
Haemoptysis (coughing blood)	Yes:	how many days? _____	No:
Other symptoms:			
Other findings:			

Diagnosis

Suspect Probable Confirmed Not Case

If not a VHF case, what is the diagnosis? _____

Management/Admission

VHF Treatment Ward HBSRR

Other hospital service

For Home Based Support and Risk Reduction:

Name of caregiver: _____ Location: _____

Laboratory Tests

Date	Sample Type	Test Type	Result

Final Diagnosis

Suspect Probable Confirmed Not Case

If not a VHF case, what is the diagnosis? _____

Outcome

Died Recovered Transferred Fled

Comments: _____

TABLE 4: EPIDEMIOLOGIC FORM

Epidemiological Form

Person filling form: _____	Case ID# _____
Information provided by: _____	MSF ID# _____
Date: ___/___/_____	

Referral *This can be transferred from the Medical Admission Form*

Case referred by:	Epi team:	Health Centre:	Other:
Family contact person:			

Identity of the Patient *This can be transferred from the Medical Admission Form*

Name:_____ Surname(s): _____

Age – years:_____months:_ Date of birth: ___/___/_____

Sex: M: F: Ethnicity/Language: _____

Residence:

Head of family (name/surname): _____

Community/District of residence: _____

Address/Location: _____

Profession:

Farmer:	Hunter:	Housewife:
Miner:	Shopkeeper:	Child/Student:
Other:	What: _____	
Health worker:	Type: _____	
	Institution/Location: _____	

Contact with VHF Patients

Has the patient had contact with someone with VHF or someone who has been ill recently?

Name of VHF patient	Relationship	Date of contact	Symptoms	Type of contact*

*In case of contact with someone with VHF (or probable VHF), what was the closest contact:

1 - Slept in same house within the last 21 days.
2 - Had direct physical contact.
3 - Touched their body fluids (excreta, vomit etc.)
4 - Had sexual relations.
5 - Handled clothes or other personal objects.
6 - Suckled patient or breast-fed from patient.

Funerals

Has the patient been to a funeral in the last 21 days? Yes: No:

Did they touch or manipulate the body? Yes: No:

Name of deceased: _____ Date of funeral: ___/___/_____

Medical Treatment Received in the last 21 days

Has patient received medical treatment in the last 21 days? Yes: No:

Date(s) that this treatment was received: ___/___/_____

What treatment was received: Injection Tablets

Other (herbs, cuts, enemas, etc.)

Where was treatment received: Hospital Private Clinic

Traditional Healer

Other Location:

Contact with Dead or Sick Animals

Has patient had any physical contact with a dead or sick animal in the last 21 days?

Yes: No:

What kind of contact did the person have:

What kind of animal?

Details of the Illness *This can be transferred from the Medical Admission Form*

When did the illness start?	Date: ___/___/_____		# of days? _____
Have they had fever during the illness?	Yes:	No:	
→When did the fever start?	Date: ___/___/_____		# of days? _____
Have they had vomiting during the illness?	Yes:	No:	
Have they had diarrhoea during the illness?	Yes:	No:	
Have they had bleeding during the illness?	Yes:	No:	
→When did bleeding start?	Date: ___/___/_____		# of days? _____

If there is a time difference between onset of symptoms, and seeking help, explain why?

Current Symptoms *This can be transferred from the Medical Admission Form*

Fever on admission?	Yes:	Temperature _____^{o}C	No:
Non-Bleeding Symptoms:			
Headache	Yes:	how many days? _____	No:
Bone or muscle pain	Yes:	how many days? _____	No:
Stomach pain	Yes:	how many days? _____	No:
Weakness	Yes:	how many days? _____	No:
Anorexia	Yes:	how many days? _____	No:
Swallowing problems or pain	Yes:	how many days? _____	No:
Nausea	Yes:	how many days? _____	No:
Vomiting	Yes:	how many days? _____	No:
Diarrhoea	Yes:	how many days? _____	No:
Breathlessness	Yes:	how many days? _____	No:
Red or injected eyes	Yes:	how many days? _____	No:
Non-haemorrhagic rash	Yes:	how many days? _____	No:
Hiccups	Yes:	how many days? _____	No:
Bleeding Symptoms:			
Cutaneous bruising / Petechia	Yes:	how many days? _____	No:
Cutaneous bleeding/injection sites	Yes:	how many days? _____	No:
Bleeding gums	Yes:	how many days? _____	No:
Diarrhoea with black or red blood	Yes:	how many days? _____	No:
Haematemesis (bloody vomit)	Yes:	how many days? _____	No:
Epistaxis (nose bleeds)	Yes:	how many days? _____	No:
Vaginal Bleeding	Yes:	how many days? _____	No:
Haemoptysis (coughing blood)	Yes:	how many days? _____	No:
Other symptoms:			
Other findings:			

Diagnosis *This can be transferred from the Medical Admission Form*

Suspect Probable Confirmed Not Case

If not a VHF case, what is the diagnosis? _____

Management/Admission *This can be transferred from the Medical Admission Form*

VHF Treatment Ward HBSRR

Other hospital service

For Home Based Support and Risk Reduction:

Name of caregiver: _____ Location: _____

Laboratory Tests *This can be transferred from the Medical Admission Form*

Date	Sample Type	Test Type	Result

Final Diagnosis *This can be transferred from the Medical Admission Form*

Suspect Probable Confirmed Not Case

If not a VHF case, what is the diagnosis? _____

Outcome *This can be transferred from the Medical Admission Form*

Died Recovered Transferred Fled

Comments: _____

Burial

Who conducted the burial?

Family Mobile team

Other Who? _____

TABLE 5: CONTACT RECORDING FORM

CONTACT RECORDING FORM

Patient name:						**Age:**		**Sex:**	
Address/location (provide description):						**Mobile no.:**		**Name of employer:**	
Rural address/location (provide description):						**Alternative mobile no.**			
First name of contact	**Surname/family name of contact**	**Relationship to case**	**Age (yrs)**	**Sex (M/F)**	**Name of head of household**	**Address/location**	**Mobile number**	**Contact type* (1,2,3)**	**Date of last contact**

*Type of contact:

1= Slept in same house in last 21 days
2= Direct physical contact
3= Touched body fluids
4= Sexual relations
5= Handled clothes/personal objects
6=Breast feeding

RESOURCES REQUIRED

General supplies

In the Ebola isolation unit each patient should have their own items. (NB: Items must **NOT** be shared between patients).Patient items provided at admission include:

Quantity	Item	Check
1	Mattress covered with heavy-duty plastic sheeting	
1	Bed sheet andblanket	
1	**Blue** basin for bathing and laundry	
1	**Red** bucket with lid for collecting liquid waste (vomit, spills, etc.)	
1	**Green** bucket with lid for laundry	
1	Plastic plate	
1	Spoon	
1	Large plastic cup for drinking	
1	**Yellow** jerry can of 5l for drinking water or ORS	
1	Roll of paper towel	
1	Bar of soap	
5	Absorbent pads	

Medical items

It is expected that most patients will require the following medical items:

Item	Check
ORS fluids	
Oral potassium	
Potassium chloride ampoules	
Ciprofloxacin for oral administration and Ceftriaxone for IV administration	
Artemether/Lumefantrine	
Metoclopramide (Plasil)	
Ondansetron	
Imodium	
Sample collection kit	
Face mask	
Clean gloves	
Glucometer and strips	
BP machine	
Oral airway	
IV fluids -normal saline -10% dextrose -DNS	
IV cannula	
Strapping/tape	
Hand sanitizer	
Soap	
Thermometer	

Other medication: tramadol/ oxygen/ diazepam/phenobarbital/haloperidol/omeprazole	

Personnel requirements/shift in isolation unit

In general the minimum numbers of personnel required within the isolation unit are:

- 1 doctor (trained on sample collection procedures for Ebola in addition to Infection Prevention)
- 2 nurses (trained on Infection Prevention)
- 1 support staff (trained on Infection Prevention and SOPs for decontamination in Ebola)

MEDICAL MANAGEMENT

Precaution: Health care workers entering the Ebola isolation unit must wear PPE at all times. The protocol for donning (putting on) and doffing (removing) PPE must be adhered to.

There are **no** facilities for advanced care of patients with Ebola; this includes ventilator support, dialysis or ICU care.

General management

Start by conducting a primary survey of the patient. The aim of this primary survey is to identify the baseline status of the patient and existing symptoms such as hydration status and respiratory distress. Provide appropriate symptom-based interventions as per standard protocols. Draw blood for Ebola testing according to the specimen collection SOPs. No further laboratory investigations will be conducted at this point, if other conditions are strongly suspected, initiate empiric management (e.g. Artemether/Lumefantrine for malaria or Ciprofloxacin for bacterial infections).

Hydration

- If able to drink – prescribe ORS
- If in shock- fix IV line and provide IV fluids. All IV fluids must be well secured to avoid the possibility that the line can be pulled out by the patient resulting in contamination of the surroundings by blood.
    - For children provide 20 mls/kg normal saline over 1 hour and re-asess the need for continued IV fluids
    - For adults provide a 1L bolus of normal saline and re-asses the need for continued IV fluids

Routine nursing care

- Monitor the patient for signs of dehydration or shock and offer more fluids
- Take vitals once daily

Patients' progress and treatment is recordeddaily by using the daily observation form.The actual readings for the vital signs are recorded in the space on the form while presence or absence of symptoms including hemorrhagic symptoms is indicated using YES or NO against each symptom.

NB: Patient records are filled in the staff area (low risk zone) and not in the patient's room (high risk zone).

Provide regular psychological counselling to patients.

TABLE 6: DAILY OBSERVATION FORM

Observation Sheet

Family name:		
First name:		**Onset of symptoms:**
Identifier No.:		**Date of admission:**
Age:	**Sex:**	**Date of discharge:**

Day	**Ad**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Date														
Temperature ^{0}C														
Pulse														
Respiration														
Symptoms														
Headache														
Bone or muscle pain														
Stomach pain														
Tender abdomen														
Weakness/Fatigue														
Anorexia														
Swallowing problems														
Nausea														
Vomiting														
Diarrhoea														
Breathlessness														
Red or injected eyes														
Non-haemorrhagic rash														
Hiccups														
Oedema														
Anuria														
Haemorrhagic Symptoms														
Petechiae / Cutaneous bruising/														
Bleeding injection sites														
Bleeding gums														
Bloody diarrhoea														
Haematemesis (bloody vomit)														
Epistaxis (nose bleeds)														
Vaginal bleeding														
Haemoptysis (coughing blood)														
Other Symptoms														
Psychological problems														

Notes

Date:
Date:
Date:
Date:
Diagnosis:
Prescribed treatment:

Symptomatic management

TABLE 7: SYMPTOMATIC MANAGEMENT OF PATIENTS WITH EBOLA

Symptom/signs	Treatment
Fever	Paracetamol 1gm 6-8 hourly in adults, 10-15mg/kg in children. Avoid NSAIDs or Aspirin
Bleeding	Transfuse whole blood (Due to laboratory constraints, we will use O negative blood without cross matching)
Pain	Paracetamol 1gm 6-8 hourly in adults, 10-15mg/kg in children Oral tramadol if severe 50-75mg 8hourly in adults
Respiratory distress	Oxygen by face mask
Dehydration, vomiting and diarrhea	ORS (adults) – Give at least 4L per day, increase amount of fluids given if the patient appears dehydrated (dry mucous membranes, reduced skin turgor, sunken eyes), has tachycardia (pulse rate > 100/minute) or increased thirst ORS (Children) – 75mls/kg over 4 hours, followed by maintenance fluids calculated as follows: 1st 10kg – 100ml/kg, next 10kg – 50mls/kg, every Kg above that is 20mls/kg, an extra 10mls/kg should be given for every bout of diarrhea or vomiting In adult patients with shock, start with 1L normal saline given IV over 1-2 hours, reassess need for a further bolus. Maintain at 4L per day, increase amount of fluids given if the patient appears dehydrated (dry mucous membranes, reduced skin turgor, sunken eyes), has a tachycardia or increased thirst In children with shock provide a bolus of normal saline at 20mls/kg given IV followed by maintenance calculated as per body weight above of Ringers lactate.
Vomiting	Metoclopramide(Plasil)10mg 6-8hourly in adults Oral ondansetron 0.1mg/kg max 4mg in children
Diarrhoea	Imodium 2-4mg after every bout of diarrhea in adults.
Dyspepsia	Omeprazole 20 - 40mg once daily in adults; 1mg/kg in children

Convulsions	Diazepam 5-10mg once a day in adults Phenobarbital in children 10-15mg/kg as loading dose followed by maintenance of 3-5mg/kg (Consider hypoglycemia and treat appropriately)
Hypoglycemia	IV dextrose 10%, also start in patients not tolerating oral feeds
Anxiety	Psychological support, diazepam
Confusion	Reassurance, diazepam
Confusion and aggression in a non-cooperative patient	Haloperidol 5-10mg daily Rectal diazepam in children at 0.5mg/kg
Shock	IV Fluids as outlined above
Strong suspicion of other infections will be managed empirically: Malaria Bacterial infection	 AL (adults) 4tabs stat followed by 4 tabs 8hours later then 4 tabs BD for 3 days AL (children) – use the weight table Ciprofloxacin in adults 500mg BD for 7 days Augmentin in children at 20-25mg/kg BD

TABLE 8: TREATMENT SHEET ADULTS

Treatment sheet – ADULTS

Name …… Patient ID No ……..……

Bed No ……

Fluids

ORS – Give at least 4L per day, increase amount of fluids given if the patient appears dehydrated (dry mucous membranes, reduced skin turgor, sunken eyes), has tachycardia (pulse rate > 100/minute) or increased thirst

Normal saline – In patients with shock, start with 1L given over 1-2 hours, reassess need for a further bolus. Maintain at 4L per day, increase amount of fluids given if the patient appears dehydrated (dry mucous membranes, reduced skin turgor, sunken eyes), has a tachycardia or increased thirst

10% dextrose – To be given to patients who are unable to feed, 500ml 8 hourly

Medication	Dose	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
Paracetamol									
Tramadol									
Metoclopramide									
Imodium									
Diazepam									
Haloperidol									
AL									
Ciprofloxacin									

TABLE 9: TREATMENT SHEET CHILDREN

Treatment sheet – CHILDREN

Name …… Patient ID No ……..……

Bed No ……

ORS – 75mls/kg over 4 hours, followed by maintenance fluids calculated as follows:
1st 10kg – 100ml/kg, next 10kg – 50mls/kg, every Kg above that is 20mls/kg, an extra 10mls/kg should be given for every bout of diarrhea or vomiting
Normal saline – Bolus of 20mls/kg followed by maintenance calculated as per body weight above of Ringers lactate.

Medication	**Dose**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**
Paracetamol									
Ondansetron									
Diazepam									
Omeprazole									
AL									
Augmentin									

DISCHARGE CRITERIA

Suspect patients who test negative are released from the isolation unit. They should have 2 negative blood PCR tests 48 hours apart with at least one test being done 3 days or more after onset of symptoms. If still symptomatic for a febrile illness, they will be investigated and managed for other possible medical conditions outside the Ebola isolation unit.

Confirmed Ebola cases can be discharged from the isolation unit 3 days after complete resolution of symptoms with a negative PCR test. The following information should be provided to these patients:

Information for Ebola patients leaving the VHF treatment unit

The doctor has examined you, and it is now safe for you to go home or be transferred to the main hospital. This means that you will not infect other people with Ebola.

All the items you came with from home must be left in the unit. You will need to arrange for a fresh set of clothes to be brought to the unit for you to wear when you leave.

Take all medications as may be prescribed for you by the doctor

When you are at home:

1. After recovery, you may still feel weak for 1 to 2 months. It is important to:
    - Take plenty of rest
    - Eat a balanced diet
    - Take the multivitamin tablets provided for one month
    - Drink as much water as you can
    - Avoid breastfeeding until allowed to do so by your doctor

2. If you get sick, especially if you have fever, you should go to a health facility for examination and treatment.

Note: If you are male, there is a possibility of transmitting Ebola during sexual intercourse, you should abstain, or use condoms for 3 months after discharge

ACCIDENTAL EXPOSURE OF HEALTH CARE WORKERS
For accidental exposure use guidelines provided below

! The main objective is to react appropriately and minimise the risk of infection.

Definition of Exposure

- Needle-stick injury.
- Other puncture, laceration or abrasion caused by potentially contaminated object.
- Unprotected contact with patient's body or body fluids, or other potentially contaminated material.

Procedure

Do not panic!

Try to remain calm and follow the steps below.

Needle stick injury, or other puncture, laceration or abrasion injury caused by sharp, potentially contaminated object.

- Immediately immerse the exposed site in 70% alcohol for 30 sec or 0.5% chlorine solution for 3 minutes.
- Thoroughly wash affected area with soap and clean water.
- Flush with clean running water for 30 seconds.
- Apply dressing if required.
- Take HIV Post Exposure Prophylaxis (PEP) if advised.
- Check temperature daily for 21 days.

Unprotected contact with VHF patient's body or body fluids, or other contaminated material.

- Contact with the eyes:
  - Immediately flush the affected eye with copious amounts of clean water, ringer lactate or sodium fluid.
- Contact with the mouth or nose:
  - Immediately rinse the mouth or nose with 0.05% chlorine solution. Do not swallow the chlorine solution.
  - Rinse mouth or nose thoroughly with clean water
- Contact with broken skin:
  - Rinse the affected area with 0.5% chlorine solution.
  - Thoroughly wash the affected area with soap and clean water

Report the incident to the Supervisor of the Treatment Unit or Doctor in Charge.

Notes:

- Consider exposed person as contact, check temperature daily and follow up for 21 days.
- Finally, identify the cause of the accident in order to take corrective action and prevent future accidents.

REFERENCES

MSF Ebola and Marburg Outbreak Control Manual – version 2:0 Peter Thomson, MSF 2007

Infection Control for Viral Haemorrhagic Fevers in the African Health Care Setting – WHO, CDC

Clinical Management of Patients with Viral Haemorrhagic Fever: A pocket guide for the front-line health worker. 30th March 2014

CDC fact sheets

WHO fact sheets