



**NIGERIA CENTRE  
FOR DISEASE CONTROL**



**STANDARD OPERATING  
PROCEDURES FOR**

# **Lassa Fever Case Management**



Prepared by the  
Nigeria Centre for Disease Control  
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# Standard Operating Procedures for Lassa Fever Case Management

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## About NCDC

Nigeria Centre for Disease Control (NCDC) is Nigeria's national public health institute with the mandate to provide a healthier and safer Nigeria through the prevention and control of diseases of public health importance. It is focused on protecting the health of Nigerians through evidence based prevention, integrated disease surveillance and response activities, using a one health approach, guided by research and led by a skilled workforce.

NCDC operations and activities are guided by five key goals:

- Accurately measure the burden of infectious diseases in Nigeria
- Ensure Nigeria is able to meet its international obligations as a member of the World Health Assembly
- Develop a Public Health laboratory service network to support the detection, prevention and response to critical infectious diseases
- Reduce the adverse impact of predictable and unpredicted public health emergencies
- Create an efficiently managed and evidence based organisation with a clear focus of health promotion and disease prevention.

NCDC operates through five directorates: Surveillance and Epidemiology, Public Health Laboratory Services, Emergency Preparedness and Response, Prevention and Programmes Coordination and Administration.

NCDC is the host for the ECOWAS Regional Centre for Disease Control (RCDC) and now the regional hub for the Africa Centres for Disease Control (ACDC).



## Foreword

The last decade has seen the emergence and re-emergence of Viral Haemorrhagic Fevers (VHFs) in Nigeria and indeed in the West African sub-region. VHFs pose a great challenge to public health globally due to the high infectivity, morbidity and mortality associated with this group of diseases.

Seasonal outbreaks of Lassa fever have continued in Nigeria with cases now being recorded in states that have not reported these in the past. This situation has presented challenges in case management and infection prevention and control especially among health care workers with attendant health care worker infection being recorded, mainly due to the general ability of VHFs to spread readily in health facilities

Prevention of human to human transmission of VHFs through standard infection prevention and control measures during the care and management of suspected or confirmed VHF patients in the community and within health facilities remains the mainstay of control of VHF outbreaks.

With the aim of eliminating or minimising the risk of transmission to health care workers and others coming into contact with an infected person, this document has been developed to provide clear guidance to health care workers and health authorities involved in patient care and management as well as the response to VHF outbreaks in Nigeria.

These standard operating procedures provide healthcare workers a clear and easy guide to manage patients with Lassa fever in Nigeria.

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# Index Of Acronyms

<b>AST</b>	Aspartate Transaminase
<b>DSNO</b>	Disease Surveillance and Notification Officer
<b>EOC</b>	Emergency Operation Centre
<b>HEPA</b>	High Efficiency Particulate Air Respirator
<b>IDSR</b>	Integrated Disease Surveillance and Response
<b>IgM</b>	Immunoglobulin M
<b>IM</b>	Incident Manager
<b>LGA</b>	Local Government Area
<b>NSAIDs</b>	Non-Steroidal Anti-inflammatory Drugs
<b>PCR</b>	Polymerase Chain Reaction
<b>SGOT</b>	Serum Glutamic Oxaloacetic Transaminase
<b>SOP</b>	Standard Operating Procedure
<b>UTI</b>	Urinary Tract Infection
<b>VHF</b>	Viral Haemorrhagic Fever





# 1

## Clinical Management of Lassa Fever

### 1.1 CASE DEFINITIONS FOR LASSA FEVER

#### Alert case

Any person who has an unexplained fever (i.e. Malaria and other likely causes of fever have been ruled out), with or without bleeding

OR

Any person who died after an unexplained severe illness with fever and bleeding

#### Suspected case

An illness of gradual onset with one or more of the following: malaise, fever, headache, sore throat, cough, nausea, vomiting, diarrhoea, myalgia (muscle pain), central chest pain or retrosternal pain, hearing loss and either

a. History of contact with excreta or urine of rodents

OR

b. History of contact with a probable or confirmed Lassa fever case within a period of 21 days of onset of symptoms

OR

Any person with inexplicable bleeding/haemorrhaging

### **Probable case**

Any suspected case as defined above but who died without collection of specimen for laboratory testing.

### **Confirmed case**

Any suspected case with laboratory confirmation (positive IgM antibody, PCR or virus isolation).

### **Alert threshold**

A single suspected case of Lassa fever. The outbreak threshold is a single confirmed case of Lassa fever. Clinicians should have a high index of suspicion when managing febrile illnesses; especially cases with

- A history of non-response to antimalarials or antibiotics.
- A compatible history of travel to an endemic area or an area with an ongoing outbreak, contact with a confirmed case of Lassa fever, negative thick blood film for malaria parasite are suggestive.
- Signs of haemorrhage and shock which is strongly suggestive, but these signs often appear late in the illness.

## 1.2 CASE IDENTIFICATION/DETECTION

History	<ul style="list-style-type: none"><li>• History of contact with rat urine and droppings or eating rats.</li><li>• All age groups are susceptible.</li><li>• Pregnant women are more susceptible especially in 3rd trimester.</li><li>• Close contact (e.g family members, caretakers, traditional healers, participants in traditional burial rites) of a Lassa fever patient within 3 weeks of date of onset of their illness.</li><li>• Receiving health care from a provider who is also treating Lassa patients.</li><li>• Sexual partner of a known or suspected case (virus can be present in semen for up to 3 months after clinical recovery).</li></ul>
Clinical Assessment	<ul style="list-style-type: none"><li>• Non-specific clinical features: early diagnosis difficult.</li><li>• High index of suspicion.</li><li>• Detailed clinical examination advised as patient may present at any stage of the disease.</li><li>• The incubation period is 6-21 days.</li><li>• Severity of illness may depend on a number of factors including the body's natural immune response, mode of transmission, duration of exposure, infecting dose, phase of illness in the case, and possibly even the virus strain.</li><li>• Swollen face and neck, sore throat and hearing loss are suggestive of Lassa fever.</li><li>• Hemorrhage seen in only about 20% of Lassa fever patients.</li><li>• Exclude other causes of fever.</li></ul>
Laboratory diagnosis	<ul style="list-style-type: none"><li>• Early laboratory diagnosis of Lassa fever is important so as to have a good outcome with ribavirin administration.</li><li>• All samples should be considered as highly infectious.</li><li>• Confirmation of Lassa fever requires highly specialized Reference Laboratories</li><li>• Exclude other causes of fever through appropriate investigations.</li></ul>

### 1.2.1 COMMON CLINICAL PRESENTATIONS

	Major	Minor
History	<ul style="list-style-type: none"> <li>Confirmed contact with a patient with Lassa Fever</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>
Physical examination	<ul style="list-style-type: none"> <li>Bleeding-mouth, nose, rectum and/or vagina</li> <li>Oedema of the neck and/or face</li> <li>Sub-conjunctival or conjunctival haemorrhage</li> <li>Jaundice</li> <li>Spontaneous abortion</li> <li>Deafness</li> <li>Persistent Hypotension</li> </ul>	<ul style="list-style-type: none"> <li>General malaise</li> <li>Headache</li> <li>Retrosternal pain</li> <li>Muscle or joint pain</li> <li>Cough</li> <li>Sore throat</li> <li>Abdominal pain</li> <li>Diarrhoea</li> </ul>
Laboratory diagnosis	<ul style="list-style-type: none"> <li>Elevated liver transaminases (SGOT/AST) 159 IU/l</li> </ul>	<ul style="list-style-type: none"> <li>Proteinuria</li> <li>Leucopenia &lt;4000 IU/L</li> </ul>

### 1.3 STAGES OF SEVERE LASSA FEVER

Clinical stages of severe Lassa Fever (adapted from McCarthy 2002)		
Stage	Time of onset	Symptoms
1	Day 1-3	<ul style="list-style-type: none"> <li>General weakness and malaise</li> </ul>
2	Day 4-7	<ul style="list-style-type: none"> <li>Sore throat with (white exudative patches) very common.</li> <li>Headache; back, chest, side, or abdominal pain.</li> <li>Conjunctivitis</li> <li>Nausea and vomiting</li> <li>Diarrhoea</li> <li>Productive cough</li> <li>Low blood pressure (systolic &lt;100mmHg)</li> <li>Anaemia</li> </ul>
3	After Day 7	<ul style="list-style-type: none"> <li>Oedema of the face and neck</li> <li>Convulsions</li> <li>Mucosal bleeding (mouth, nose, eyes)</li> <li>Internal bleeding</li> <li>Encephalopathy with confusion or disorientation</li> </ul>
4	After Day 14	<ul style="list-style-type: none"> <li>Coma</li> <li>Death</li> </ul>

## Laboratory Findings

- Proteinuria
- Leukocytes and platelets counts are often normal; Elevated Liver Enzymes may occur

### 1.4 MANAGEMENT OF CASES

#### 1.4.1 NOTIFICATION

All suspected cases of Lassa fever should be immediately reported to the LGA DSNO and State Epidemiologist using the immediate/case-based surveillance reporting form (IDSR 001A). If the form is not available in the healthcare facility, the DSNO should be called to provide this.

#### 1.4.2 INFECTION PREVENTION AND CONTROL

- The patient should be isolated in a holding room immediately, to limit contact.
- The holding room should have dedicated en-suite facilities or at least a dedicated bathroom and toilet.
- The number of staff in contact with the patient should be restricted.
- Infection control measures by staff for Lassa fever or any VHF in a patient is set out in the table below:

#### Staff protection

- Standard precautions plus droplet precautions

#### Control measures

- Hand hygiene
- Double gloves
- Fluid repellent disposable overall or gown
- Full length plastic apron over overall/gown
- Head cover e.g. surgical cap

- Fluid repellent footwear e.g. surgical boots/shoe covers
- Full face shield or goggles
- Fluid repellent FFP 2 respirator used as splash protection. If the respirator is to be used as respiratory protection when managing a patient with infections known to be transmitted via the airborne route, it must be worn as per manufacturer's recommendations/instructions

*(See NCDC guidelines on Infection Prevention and Control of VHF for more details)*

- It is recommended that, if a patient is bruised or bleeding or has uncontrolled diarrhoea or uncontrolled vomiting; the lead clinician should ensure that Lassa fever testing as well as testing for other VHF is carried out.
- Single use (disposable) equipment and supplies should be used. The use of a needle-free intravenous system to eliminate the risk of needle-stick injuries should also be considered.
- Appropriate waste, laundry, decontamination and disinfection should be carried out.
- Communication with staff about potential infection risks is paramount. Staff must be informed about and understand the risks associated with Lassa fever or any VHF patient.

*[For example]*

- The severity of Lassa Fever or any VHF if infection is confirmed;
- That virus may be present:
- In blood;
- In body fluids, including urine;

- On contaminated instruments and equipment;
- In waste;
- On contaminated clothing;
- On contaminated surfaces.
- That exposure to the virus may occur:
  - Directly, through exposure (of broken skin or mucous membranes) to blood and/or body fluids during invasive, aerosolizing or splash procedures;
  - Indirectly, through exposure (of broken skin or mucous membranes) to environments, surfaces, equipment or clothing contaminated with splashes or droplets of blood or body fluids.
- Potential aerosol generating procedures include:
  - Endotracheal intubation;
  - Bronchoscopy;
  - Airway suctioning;
  - Positive pressure ventilation via face mask;
  - High frequency oscillatory ventilation;
  - Central line insertion;
  - Diagnostic sputum induction.
- The drug of choice for treatment of Lassa fever infection is parenteral Ribavirin.
- Parenteral Ribavirin is administered over a period of 10 days. Outcome is more favorable if treatment is commenced within six days of onset of symptoms.

#### 1.4.2 TREATMENT



Period	Dose	Frequency
Loading Dose	33mg/kg (maximum dose of 2.64 g)	Stat
Day 1-4	16mg/kg (maximum dose of 1.28 g)	6 hourly
Day 5-10	8mg/kg (maximum dose of 0.64g)	8 hourly

#### 1.4.2.1 For suspected cases

For a suspected case who has established contact with a confirmed case, commence Ribavirin immediately while awaiting lab result OR if symptoms support a classic case of Lassa fever

#### 1.4.2.2 Supportive therapy include:

- Oxygenation- if respiratory rate > 20 breaths/minute.
- Blood pressure monitoring.
- Treatment of complicating infections.
- Appropriate fluid and electrolyte balance.
- Grouping and cross-matching of blood and transfusion as indicated.
- Management of side effects as they occur.

#### 1.4.3

#### PRECAUTIONS TO TAKE WHEN TREATING CASES OF LASSA FEVER

- NSAIDS are contraindicated due to risk of bleeding
- Avoid intramuscular injections to avoid hematoma
- Use cotton wool to clean the mouth of patient instead of hard toothbrush
- Any skin ulcers should be cleaned and dressed gently
- Avoid nasogastric tube, urinary catheter insertion as much as possible

- DO NOT remove old blood clots from previous bleeding sites.
- NEVER RECAP needles.
- For pregnant patients, gentle vaginal examination should be done only infrequently.
- Patients experiencing seizures should be given diazepam and put under oxygen concentrator.
- Do not enter patient's room or get in contact with a patient without putting on full PPE.

**1.4.4  
POOR  
PROGNOSTIC  
INDICATORS**

- Pregnant women
- Bleeding cases
- Tremors/seizures
- Serum AST > 150 IU/ml
- Late commencement of Ribavirin (after 10th day of onset of illness)

**1.4.4.1 Side Effects/Pharmacovigilance**

Frequency of Occurrence	Affected System	Side Effects of Ribavirin
Very Common	Central Nervous System	Headache, Dizziness
	Respiratory System	Shortness of breath, Influenza-like illness
	Gastrointestinal System	Appetite loss, Nausea, Vomiting, Diarrhoea, Abdominal Pain
	Musculoskeletal System	Joint aches and pains, Muscle aches and pains, Muscle weakness
	Others	Fever, Anxiety, Hair loss, Itchiness, Dry Skin, Rash, Fatigue, Rigors, Irritability, Anaemia, Weight loss, Depression, Insomnia, Emotional lability, Dry Mouth, Impaired concentration

#### 1.4.5

#### **DRUG INTERACTIONS**

- Zidovudine – Increased risk of anaemia
- Didanosine – Increased risk of mitochondrial toxicity

#### 1.4.6

#### **IDENTIFICATION, MANAGEMENT AND SURVEILLANCE OF LASSA FEVER CONTACTS**

A contact is defined as a person who has been exposed to an infected person, or to an infected person's secretions, excretions, or tissues within three weeks of the patient's onset of illness.

It is a public health responsibility to:

- Identify, assess and categorize contacts of a patient with Lassa fever.
- Ensure the appropriate monitoring of higher risk contacts;
- Arrange further evaluation for contacts who develop a temperature of  $\geq 37.5^{\circ}\text{C}$  within 21 days of the last possible exposure;
- Consider antiviral prophylaxis, and arrange as necessary.

All contacts should be identified by responsible authorities' e.g. Public Health institution or infection control team or hospital emergency team etc. Contacts are categorized into:

- Category 1: No-risk contacts
- Category 2: Low-risk contacts
- Category 3: High-risk contacts

<p>Category 1: No-risk contacts</p>	<ul style="list-style-type: none"> <li>• No direct contact with the patient or body fluids.</li> <li>• Casual contact, e.g. sharing a room with the patient, without direct contact with body fluids or other potentially infectious material.</li> <li>• Handling of laboratory specimens under contained conditions</li> </ul>
<p>Category 2: Low-risk contacts</p>	<ul style="list-style-type: none"> <li>• Direct contact with the patient, e.g. routine medical/nursing care, OR</li> <li>• Handling body fluids wearing appropriate personal protective equipment, OR</li> <li>• Breach of laboratory containment without direct contact with specimen</li> </ul>
<p>Category 3: High-risk contacts</p>	<ul style="list-style-type: none"> <li>• Unprotected exposure of skin or mucous membranes to potentially infectious blood or body fluids, including clothing and bedding.</li> <li>• This includes: unprotected handling of clinical/laboratory specimens; mucosal exposure to splashes; needle-stick injury and kissing and/or sexual contact.</li> </ul>

**1.4.7  
POST EXPOSURE  
PROPHYLAXIS  
FOR HIGH RISK  
CONTACTS**

Although experience is limited, post-exposure prophylaxis with Ribavirin should be considered for high-risk contacts of confirmed cases. The prophylactic regimen is Ribavirin 500mg by mouth every 6 hours for 7 days.

**1.4.8  
DEAD BODY  
MANAGEMENT  
(SAFE AND  
DIGNIFIED  
BURIAL)**

In the event of the death of a suspected or confirmed case of Lassa fever, an immediate notification should be sent to the LGA DSNO.

*Refer to the section on Safe Burial Practices for the management of the dead body.*



# 2

## Standard Operating Procedure for Hospital Discharge of a Confirmed Lassa Fever Patient

### 2.1 DISCHARGE CRITERIA (ISOLATION WARD CLINICAL TEAM)

The decision to discharge a patient should be taken on clinical grounds, and supported by laboratory results. A negative PCR means that the virus can no longer be detected in the blood and the patient is unlikely to be infectious with casual contact.

*Patients can be discharged if they meet ALL of the following criteria:*

Clinical Criteria	<ul style="list-style-type: none"><li>• 3 days without fever or significant symptoms AND</li><li>• A significant improvement in clinical condition AND</li><li>• Ability to feed, bathe and walk independently.</li></ul>
Laboratory Criteria	<ul style="list-style-type: none"><li>• Blood PCR turns negative after having been positive</li></ul>

\*Fever can be absent in the late and terminal stages of the illness and is therefore not a reliable single sign for discharge (or admission). Absence of fever alone cannot be used to plan discharges.

\*\*Serial negative blood PCR are required to consider transfer of an ill patient who has resolved Lassa fever but also has another illness.

## **2.2 DISCHARGE PROCEDURES**

- Notify State Epidemiologist/Emergency Operations Centre (EOC) if activated – (Facility Case Management Team Lead will inform EOC Incident Manager).

### **2.2.1 DISINFECTION - ISOLATION WARD CLINICAL TEAM)**

- All clothes should be disinfected by soaking them for 30 minutes in a 0.05% chlorine solution, then wash with soap, rinse with water and then air-dry.
- Very dirty clothes should be burnt. It is useful for replacement clothing to be brought by family members.
- All discharged patients should take a shower with 0.05% chlorine solution before putting on his/her replacement clothes. They should avoid any contact with items in the isolation ward.
- Disinfect other washable belongings with 0.5% chlorine solution and return to the patient. The patient should go to the patient exit where hands and feet will be sprayed.
- The hospital belongings like bed, mattress (with plastic protection) and buckets need to be disinfected with 0.5% chlorine and may be reused by another patient.
- Sheets should be burned and eating utensils properly disposed.

### **2.2.2 PROVIDE A MEDICAL CERTIFICATE – (CASE MANAGEMENT TEAM)**

This should be given at discharge by the State Epidemiologist or IM to certify that the patient does not constitute any danger to his family and his community.

### 2.2.3

#### **PROVIDE A SOLIDARITY KIT – (CASE MANAGEMENT TEAM)**

Wherever possible a Solidarity Kit is distributed to Lassa fever patients upon their return home, or to their families in the event of their death. The contents of the kit are intended to replace those items that have probably been destroyed following admission in the isolation treatment ward, and while carrying out the house disinfection activities.

Patients who were temporarily admitted in the isolation area, but turned out to be negative, should only receive items that have been destroyed during their presence in the ward.

#### **2.2.2.1 Possible Contents Of The Solidarity Kit**

- 1 Mattress or mat (if destroyed during home decontamination)
- 1 Mosquito net
- 2 Bed sheets
- 1 Blanket
- 4 Towels
- 4 Bars of soap for personal hygiene
- 4 Bars of soap for laundry
- New Clothing (for discharged patients)

### 2.2.4

#### **SUPPORTIVE TREATMENT AND FOLLOW UP – (CASE MANAGEMENT TEAM)**

Rejection of patients by their communities is a common phenomenon in Lassa fever outbreaks.

A medical person or a health promoter or a psychologist should accompany patients to their homes with a view to explaining to the family and the community that they are no longer infectious and that touching them is not a problem.

- Before discharge, notify the State Risk Communication team to prepare house/community for re-entry.
- At discharge, member of Health Promotion team should accompany the patient back into the community.



### 2.2.5

#### **ACCOMPANY PATIENT TO HIS/ HER HOME – (CASE MANAGEMENT TEAM)**

- Convalescent patients will be weak for some weeks or months and additional help can be provided:
- Provide 1-2 months' supply of vitamin supplements.
- If patient is severely malnourished or family is poor, provide nutritional supplements (type of supplement to be determined in consultation with EOC response team ) in addition to the normal food for two weeks.
- Provide condoms for discharged adult patients and advise use for a minimum period of three months.
- Provide verbal counseling and written information to the patient and their primary sexual partners.
- The virus can be found in the semen up to three months after onset of disease, so theoretically, infecting other people is possible.
- Lassa fever is part of the patient's medical history; they should disclose this history to medical and dental personnel, particularly before undergoing procedures for the next three months.
- Social work follow up at 3, 7 and 21 days after discharge.
- Psycho-social team.
- Follow up patients for at least two weeks after discharge (depending on patient needs).
- As appropriate, referrals for further mental health support can be made.

#### **2.2.4.1 In cases of bereavement**

- A member of the psycho-social team should be engaged to help inform the deceased patient's relatives; this information should be given to the family before any information is released to the media.
- Grief counseling for family members should continue for at least two weeks.

# 3

## Discharge of a Suspected Lassa Fever Patient

### 3.1 DISCHARGE CRITERIA (ISOLATION WARD CLINICAL TEAM)

Suspected patients can be discharged if they meet ALL of the following criteria:

Clinical Criteria	<ul style="list-style-type: none"><li>• Patient is without significant symptoms suggesting Lassa fever and clinical suspicion is low</li></ul>
Laboratory Criteria	<ul style="list-style-type: none"><li>• Two negative blood PCRs 48 hours apart OR</li><li>• a single negative blood PCR in a blood sample taken at least 72 hours after onset of symptom</li></ul>

*If patient still has symptoms, but these are not thought to be due to Lassa fever, s/he can be referred to another ward once the patient has had one negative blood PCR 72 hours after onset of symptoms.\**

### 3.2 DISCHARGE PROCEDURES – (CASE MANAGEMENT TEAM)

- Case Management Team Lead to notify State Epidemiologist/Incident Manager at Emergency Operations Centre (EOC)

**3.2.1**

**PROVIDE A  
MEDICAL  
CERTIFICATE**

- This should be given at discharge by a designated State Epidemiologist/Incident Manager to certify that the patient does not constitute any danger to his/her family and community.

**3.2.2**

**REPLACEMENT OF  
DESTROYED ITEMS**

- Patients who were temporarily isolated in the isolated area, but turned out to be negative, should only receive items that have been destroyed during their presence in the ward.

**3.2.3**

**SUPPORTIVE  
TREATMENT AND  
FOLLOW UP**

- Mental health assessment, support and intervention for patients and family while in isolation ward/quarantine facility.
- Referrals made as appropriate for follow up.  
Refer suspect case discharges to state surveillance team for 21 days monitoring.

# 4

## Protocol for Safe Burial of Lassa Fever Victims

There is a major risk of transmission when a patient dies of Lassa fever, as the dead body remains contagious for several days after death. The family and members of the community are also at risk, if the burial rites involve manipulation and cleaning of the body.

### 4.1 SAFELY PREPARE THE DEAD BODIES

The burial must take place as early as possible after preparation of the remains at the hospital.

The Safe Burial team should:

- Prepare the body with care in order to avoid the risk of transmission.
- Strive to respect the cultural practices and religious beliefs of the family, as long as they do not result in a risk of transmission. Let the family understand that certain practices that entail a risk of transmission would be abandoned.
- Advise the family and the community about actions to take in order to protect themselves against the disease. If the body is prepared without information or support to the family and the community, the members of the community would not be willing to bring other relatives to the hospital for fear of not receiving the dead body once the patient has died.
- Find an influential member of the family to ensure that dangerous practices like touching and washing the

dead body should be avoided.

#### 4.1.1 TO PREPARE THE BODY AT THE HOSPITAL

- Wear protective clothing as recommended for members of staff of the isolation area; wear a second pair of thick rubber gloves.
- Disinfect the body by spraying household bleach (0.5% Solution) on the body and adjacent regions.
- Put the body in a body bag, which should be tightly closed. Spray with household bleach (0.5% Solution).
- If there is no body bag, wrap the body in two thick cotton materials, which should be soaked with household bleach diluted at 0.5% solution. Then, wrap the body in plastic (plastic kitchen table cover), which should be attached with a plastic adhesive tape. Spray with household bleach diluted at 0.5% Solution. Place the body in a coffin, where appropriate.
- Transport the body to the burial place as quickly as possible. Designate a health worker or a member of staff of the establishment to accompany the remains in order to be sure that all safety precautions are observed.

#### 4.2 SAFELY TRANSPORT THE BODY

The control measures for the infection of Lassa fever should remain in force during the transportation of the body to the burial site.

- Take the shortest route possible for safety reasons and also to limit any possibility of transmission through accidental contact.
- Any member of the safe burial team who needs to touch

or handle the body during the transportation should wear the same protective clothes as those worn in the isolation area. The driver of the vehicle does not need to wear protective clothes if s/he does not have any contact with the body.

- Take a spray containing household bleach at 0.5% concentration for use in case of accidental contact with the body or infectious body fluids and also use it to clean fluids spilled in the vehicle.

#### **4.3 PREPARE THE BURIAL SITE**

- The tomb must be at least two metres deep.
- Explain to the family that it is not possible to see the body and help the family to understand why the burial ceremony should be restricted to the family alone.

#### **4.4 DISINFECT THE VEHICLE AFTER TRANSPORTING THE BODY**

- The safe burial Team who will disinfect the vehicle should wear protective clothes.
- Wash the interior of the vehicle where the body was placed with a household bleach solution at 0.5% Solution.
- Leave the bleach solution to act for 10 minutes.
- Rinse abundantly with clean water and let it dry.

NB: Be careful – rinse well as household bleach is corrosive.

**4.5  
REGULATORY  
LIST OF PERSONAL  
PROTECTIVE  
CLOTHING & OTHER  
CONSUMABLES  
AT THE FACILITY**

**4.5.1 PERSONAL PROTECTIVE CLOTHING**

- A working dress or a used dress to be worn over shirt and trousers (no long skirt).
- A pair of disposable surgical gloves.
- Rubber boots.
- Shoe protectors.
- An overall or an outside dress (surgical overall or single-use long sleeves overall with cuffs).
- A plastic apron that covers the two layers of clothing.
- A second pair of light gloves or thick gloves. The wearing of the second pair of gloves is an additional safety measure and for use during the manipulation of contaminated material.
- A HEPA (High Efficiency Particulate Air Respirator) mask or other biosafety mask (if these are not available, use a surgical mask).
- A cotton cap or hat.
- Anti-mist protective goggles or non-corrective glasses.

**4.5.2  
OTHER  
EQUIPMENT AND  
CONSUMABLES**

- Heat gun for taking temperature.
- Sprayers
- Overalls
- Overshoe in polyethylene
- Demister spray
- Adhesive tape

## References

- WHO: *Clinical Management of Patients with Viral Haemorrhagic Fever: A Pocket Guide for the Front-line Health Worker. Interim Emergency Guidance-Generic Draft For West African Adaptation*, 13 April 2014.
- Richmond, JK, Baglole, DJ. Clinical review: *Lassa Fever: Epidemiology, Clinical Features, And Social Consequences*, British Medical Journal 6
- WHO: IMAI District Clinician Manual: *Hospital Care for Adolescents and Adults. Guidelines for the Management of Common Illnesses with Limited Resources*, 2011.  
Available at [http://apps.who.int/iris/bitstream/10665/77751/1/9789241548281\\_Vol1\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/77751/1/9789241548281_Vol1_eng.pdf).
- DahmaneA et al. *Constraints In The Diagnosis And Treatment Of Lassa Fever And The Effect On Mortality In Hospitalized Children And Women With Obstetric Conditions In A Rural District Hospital In Sierra Leone*, Transactions Royal Society Tropical Medicine and Hygiene 2014, 108: 126–132.
- Blumberg L, Enria D, Bausch DG: *Viral Haemorrhagic Fevers, In Manson’s Tropical Diseases*, In Press – 2014.
- McCormick, JB, Fisher-Hock, SP. *Lassa fever: Current Topics in Microbiology and Immunology*, 2002, 262:75-109.
- WHO. *Technical Guidelines for Integrated Disease Surveillance and Response in Nigeria*, March 2013



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NIGERIA CENTRE FOR DISEASE  
**CONTROL STANDARD OPERATING  
PROCEDURES FOR LASSA FEVER  
CASE MANAGEMENT GUIDEBOOK**

**The Standard Operating Procedures for Lassa Fever Case Management was prepared by the Nigeria Centre for Disease to provide guidance to all healthcare workers on steps to take when managing a suspected or confirmed case of Lassa fever infection. It will ensure adherence to standard practices of care and supportive management for patients infected with Lassa fever. It provides important management steps to take to reduce mortality among confirmed cases and reduce rates of transmission of infection in health care workers and the general public.**

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