

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Introduction and Background

WHO has developed a protocol to provide information on the safe management of burial of patients who died from suspected or confirmed Ebola virus disease. These measures should be applied not only by medical personnel but by anyone involved in the management of burial of suspected or confirmed Ebola patients.

Twelve steps have been identified describing the different phases Burial Teams have to follow to ensure safe burials, starting from the moment the teams arrive in the village up to their return to the hospital after burial and disinfection procedures. These steps are based on tested experiences from the field.

The handling of human remains should be kept to a minimum. Always take into account cultural and religious concerns. Only trained personnel should handle remains during the outbreak.

The burial process is very sensitive for the family and the community and can be the source of trouble or even open conflict. Before starting any procedure the family must be fully informed about the dignified burial process and their religious and personal rights to show respect for the deceased. Ensure that the formal agreement of the family has been given before starting the burial. **No burial should begin until family agreement has been obtained.**

Step 1: Prior to departure: Team composition and preparation of disinfectants

Step 2: Assemble all necessary equipment

Step 3: Arrival at deceased patient home: prepare burial with family and evaluate risks

Step 4: Put on all Personal Protective Equipment (PPE)

Step 5: Placement of the body in the body bag

Step 6: Placement of the body bag in a coffin where culturally appropriate

Step 7: Sanitize family's environment

Step 8: Remove PPE, manage waste and perform hand hygiene

Step 9: Transport the coffin or the body bag to the cemetery

Step 10: Burial at the cemetery : place coffin or body bag into the grave.

Step 11: Burial at the cemetery : engaging community for prayers as this dissipates tensions and provides a peaceful time.

Step 12: Return to the hospital

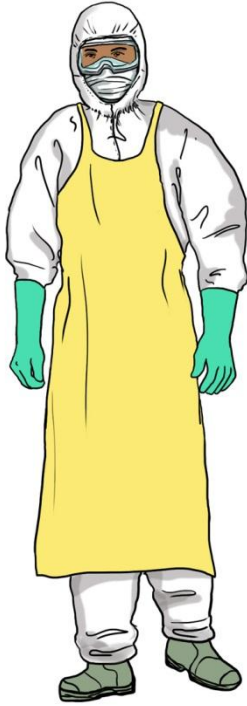
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Step 1: Prior to departure, Team composition and preparation of disinfectants



Full PPE in field situation



Sprayer & supervisor



Communicator

Prior to departure

One team should comprise:

- **4 members, wearing full PPE for field situation**
- **1 sprayer, wearing full PPE for field situation**
- **1 technical supervisor, not wearing PPE**
- **1 communicator, a person who interact with family and community, not wearing PPE**
- **1 religious representative, not wearing PPE**

All burial management team members should be clear on their roles and responsibilities, including who is the technical supervisor.

Disinfectant solutions must be prepared for the same day:

- 0.05% chlorine solution for hand hygiene
- 0.5% chlorine solution for disinfection of object and surfaces

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Step 2: Assemble all necessary equipment

❑ Assemble Body Bag to hold the body of the deceased :

- Impermeable, vinyl, minimum thickness 400 microns;
- Should be able to hold 100-125 kilos (200-250 lbs),
- At least 4 hands included in the body bag to allow safe hand carry
- Provide full containment of blood borne pathogens

❑ Assemble all necessary equipment to prevent infections :

For hand hygiene:

- Alcohol-based handrub solution (recommended) OR
- Clean running water, soap and towels (recommended) OR
- Chlorine solution 0.05% (when option above are not available)

Personal Protection Equipment (PPE):

- One pair of disposable gloves (non-sterile, ambidextrous)
- One pair of heavy duty gloves
- Disposable coverall suit (e.g. Tyvec suit) + impermeable plastic apron
- Face protection: Goggles and mask



- Footwear: wear rubber boots or closed, puncture and fluid resistant shoes and overshoes

For waste management materials:

- Disinfectant :
 - ✓ one Hand sprayer (0.05% chlorine solution)
 - ✓ one Back Sprayer (0.5% chlorine solution)
- Leak-proof and puncture resistant sharps container
- Two leak-proof infectious waste bags: one for disposable material (destruction) and one for reusable materials (disinfection)



Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Step 3: Arrival : prepare burial with family and evaluate risks



1. Prior to departure the team leader must brief the burial team about how to conduct a dignified burial in this particular religious and social context.
2. Arrival of the burial team from the Red Cross Society, Ministry of Health, WHO or MSF.
3. The staff should not be wearing PPE upon arrival.
4. Greet the family and offer your condolences before unloading the necessary material from the vehicles. Request respectfully for a family representative.
5. The communicator should contact a local faith representative at the request of the family members to arrange to meet at the place of collection for the burial of the deceased. If a local faith representative is not available the team leader can use the list provided of phone contacts, with the agreement of the family.
6. The communicator and the faith representative should work together with the family witness (such as a paternal uncle), to make sure that the burial is carried out in a dignified manner.
7. Burial team to wait whilst the faith representative and family witness can be called and have completed their discussion with the communicator about the safe and dignified burial.
8. The Burial team leader should ensure that the family witness and other family members have understood these procedures. **Obtain the formal agreement of the family's representative before proceeding.**

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Step 3: Arrival : prepare burial with family and evaluate risks (continued)



9. Burial team to refer to separate guidelines for the dignified burial of Muslim and Christian patients.
10. Identify the family members who will be participating in the burial rituals (prayers, orations, closing of the coffin, ...). If the family has prepared a coffin, identify 4 family members to carry the coffin.
11. Verify that the grave is dug. If this is not the case, send selected people to dig the grave at the cemetery or at the area identified by the family . This site should be agreed upon by the local authorities and neighbours.
12. Propose to one or two family members to witness the preparation activities of the body of the deceased patient on behalf of the other family members.
13. Ask the family witness if there are any specific requests from the family or community, for example, about the personal effects of the deceased. The family should decide what to do with the personal effects of the deceased (burn, bury in the grave or disinfect).
14. Allow the family witness, family members to take pictures of the preparation and burial. At the request of the family, the Burial team may take pictures on their behalf.
15. Ask the family if they want to prepare a civil, cultural or religious item (e.g. identity plaque, cross, picture of deceased) for the identification of the grave.

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Procedure for the dignified burial of a Christian patient

- Ask the family if there are any specific requests with regard to a dignified burial. Explain the process of a dignified Christian burial to the family members
- Give the family opportunity to view and an alternative to touching and bathing the body- e.g. sprinkling of water over the body or reading a scripture- placing the written scripture verse on the body before closing the body bag... their needs to be locally adapted and discussed
- Provide a symbol of dignity and clothing- e.g. a white cloth
- Identify a religious leader known or accepted by the family.
 - ✓ Burial teams should have lists and contact details of local religious leaders to offer to the family if they do not have their own priest
- The priest, can offer spiritual consolation, can pray with the family and read appropriate scriptures.
 - ✓ Prayer, blessing and sprinkling of the body with blessed water can be given without the need for physical contact.
 - ✓ Giving thanks for the life of the person
- Identify a burial site the family can accept and ensure the grave is appropriately labelled.
 - ✓ Allow the family members the opportunity to be involved in the digging/preparation of the grave, if that is their custom or preference.
 - ✓ Once the body/coffin is in the grave, allow the family members the option to throw the first soil in/on the grave according to local practice, hierarchy or tradition.
 - ✓ If the family would like certain items to be buried with the deceased, they should identify them to the BMT who will ensure this is done. (Family must not handle items themselves that have been in recent close contact with the deceased).
 - ✓ Invite the family to prepare or place the label / religious symbol at the grave e.g. a cross.
- A memorial service can be held at a later date, as per custom and /or preference

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Procedure for the dignified burial of a Muslim patient

An information card that uses the steps below, endorsed (signed) by a local Imam or Muslim representative, could be used to perform the dignified burial of a patient who has died from suspected or confirmed Ebola

- The team leader will explain the safe and dignified process of burial.
- Ask the family if there are any specific requests in regard to the process of a dignified burial, for example, do they want to perform a dry ablution on the body prior to burial?
- Deceased Muslims should not be cremated or placed in the body bag naked.
- A dry ablution can be performed by a Muslim member of the burial team on the deceased patient before being placed in the body bag. Otherwise a Muslim person/family member can perform this simple procedure once they have been placed in the body bag (see information for dry ablution).
- The deceased patient is shrouded by wrapping in a plain white cotton sheet before being placed in the body bag. The shroud should be knotted at both ends. The BMT should provide a shroud for the family or they provide one themselves.
- If there is a female member of the Burial team, she should shroud deceased female patients prior to placing in a body bag (see information for shrouding).
- Permission can be sought in advance from the Imam that the body bag can be used to represent a shroud. White body bags should be used for Muslim patients.

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Procedure for the dignified burial of a Muslim patient (continued)

Dry ablution

(To be only carried out by a Muslim person or Muslim faith representative).

A short Arabic prayer of intention is said over the deceased.

The hand of the Muslim Burial team member carrying out the dry ablution (in PPE), softly strikes their hands on clean sand or stone and then gently passes over the hands and then the face of the deceased. This symbolically represents the ablution that would normally have been done with water.

A short Arabic prayer is said over the deceased.

The body bag is closed if no request for shrouding has been made.

Dry ablution can also be carried out over the deceased in the body bag if a Muslim Burial team member is not available and it was not possible to perform directly on the body.

This process takes about 1-2 minutes only.

Shrouding

A plain unstitched white cotton sheet (scented with musk, camphor or perfumed) is placed on top of the opened body bag.

The deceased is lifted by the Burial team and placed on top of the shroud.

The extended side edges of the shroud are pulled over the top of the deceased to cover the head, body, legs and feet.

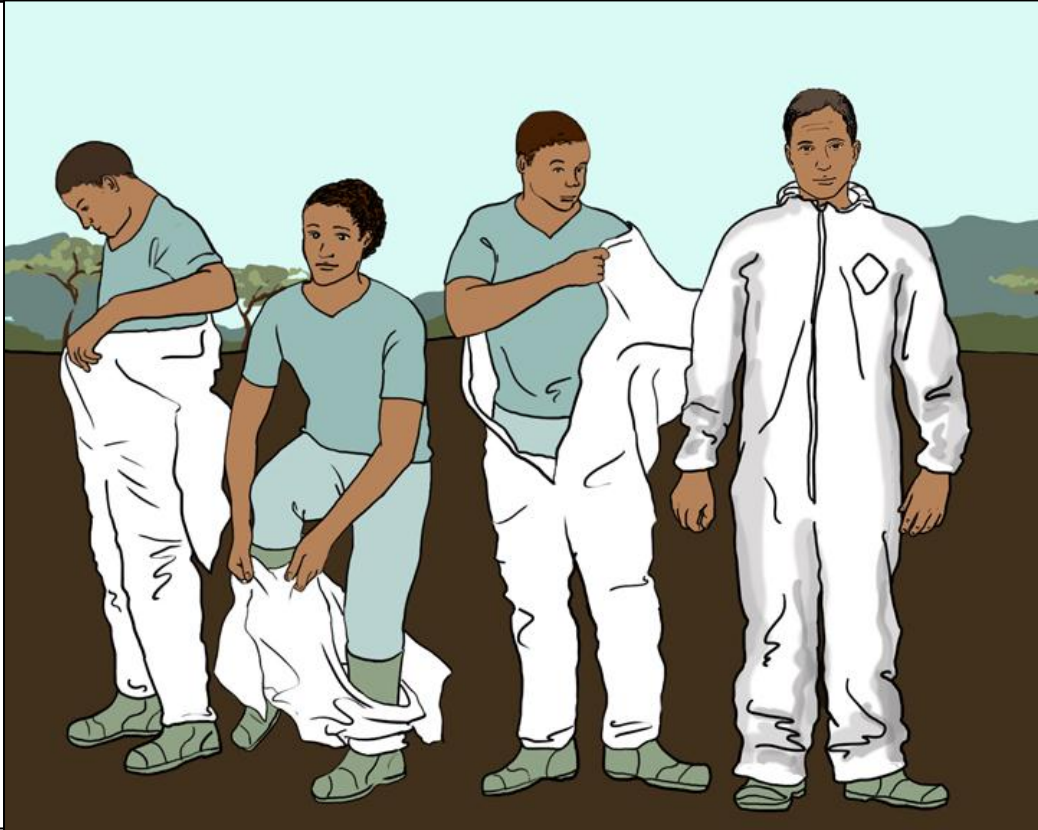
Three strips cut from the same fabric are used to tie and close up the shroud. One for above the head, one for below the feet and one for around the middle of the body. It is knotted at both ends.

If there is a female member of the Burial team, she should shroud the deceased female patients.

The body bag is closed.

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Step 4: Put on all personal protective equipment (PPE)



Evaluate the set-up of the environment

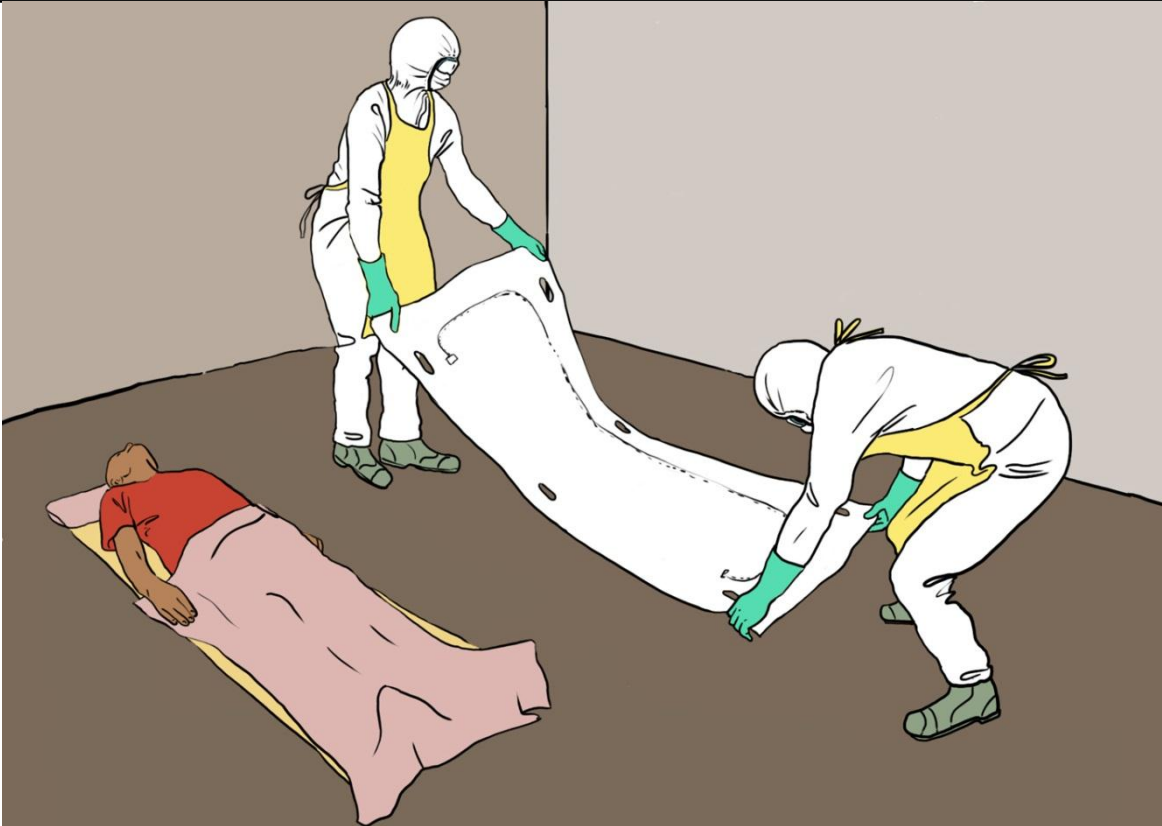
- a) Locate the room where the body of the deceased patient is, open the windows and doors for optimal light and ventilation
- b) Evaluate the size and weight of the deceased in order to choose the right size of body bag. This bag needs to be opaque.
- c) If a coffin is to be used, place the coffin outside the house
- d) Identify with the family, the rooms and annexes (bathroom, toilet) that were used by the deceased patient as they need to be cleaned and disinfected

Put on all personal protective equipment (PPE) by burial management team in the presence of the family according to the recommended steps

1. Each individual wear rubber boots
2. Perform Hand Hygiene
3. Put on coverall suit and plastic apron
4. Put on face Mask and safety Goggle
5. Hood up
6. Make thumb hole in suit
7. Put on inner gloves (under cuff)
8. Put on outer gloves (over cuff)

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Step 5: Placement of the body in the body bag



Entry into the house with at least 2 persons of the burial team :

- a. Laboratory-Epidemiology team collect a post-mortem sample for confirmation (see oral swab protocol)
- b. Place the body bag along the body
- c. Open the body bag
- d. At least two persons take the body by arms and legs
- e. Place the body in the body bag
- f. Close the body bag
- g. Disinfecting the outer side of the body bag by spraying over the surface of the body bag with a suitable disinfectant (e.g., 0.5% chlorine solution)

IMPORTANT NOTES:

- **Manipulation of the body should be minimal**
- **Remains should not be sprayed, washed or embalmed.**

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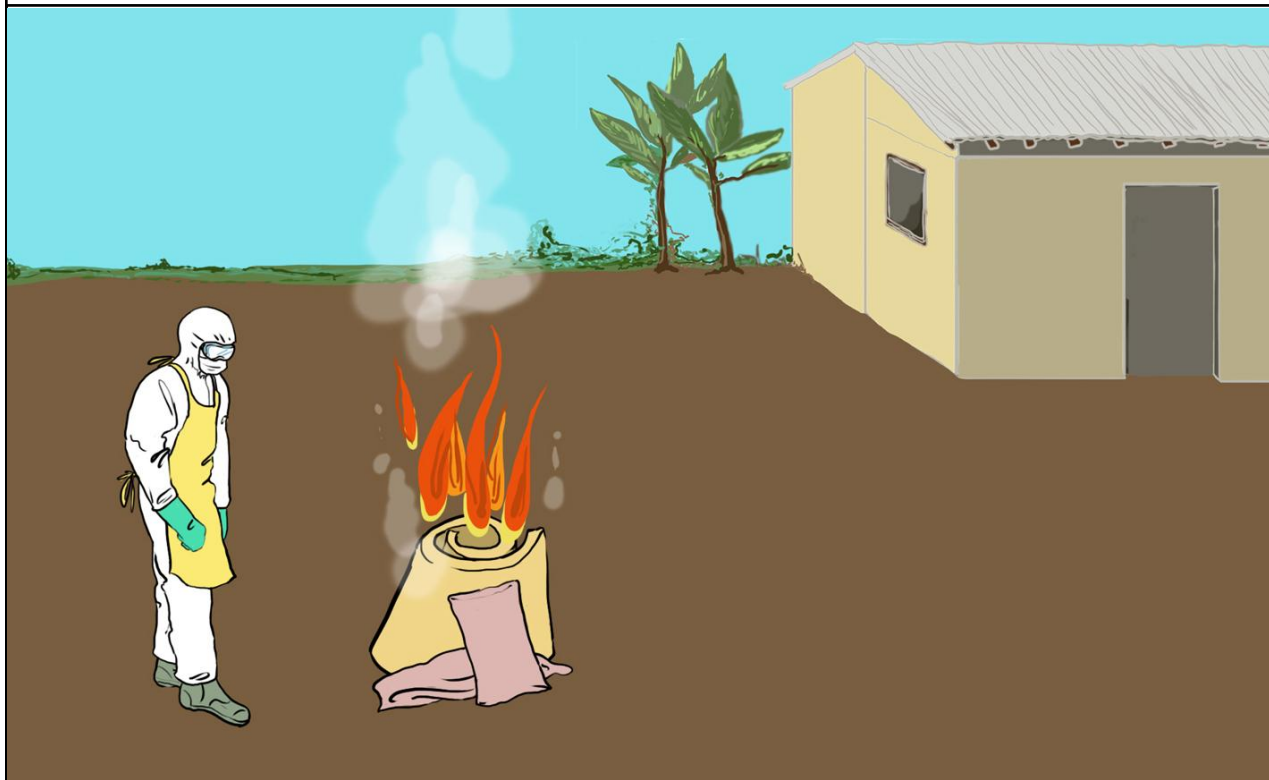
Step 6: Placement of the body bag in the coffin where culturally appropriate



1. Transport the body bag to the coffin, which should be placed outside the house, by 2 or 4 persons wearing PPE (depending on the weight of the body and the number of persons in PPE)
 2. Place clothes and/or objects of the deceased patient inside the coffin if the family so wishes
 3. Allow one of the family members to close the coffin, ensure they are wearing gloves at all times
 4. Disinfect the coffin
 5. Respect the grieving time requested by the family
- At the end of this step the coffin is decontaminated and is ready to be transported**
 - In case no coffin is available, the body bag should be gently placed on the rear of the pickup vehicle by placing the head towards the front. This should be performed by 2 staff wearing PPE.**

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Step 7: Sanitize family's environment



Collection of soiled objects, disinfection if needed, or burning and cleaning and disinfection of the environment (rooms, house) wearing PPE:

1. Collect any sharps that might have been used on the patient and dispose them in a leak-proof and puncture resistant container.
2. Clean with clean water and detergent and then disinfect with a suitable disinfectant (e.g., 0.5% chlorine solution) all rooms and annexes of the house that were possibly infected by the deceased patient. Special focus should be given to areas soiled by blood, nasal secretions, sputum, urine, stool and vomit.
3. Clean with water and detergent all objects (e.g. dishes...) possibly infected by the deceased patient; then disinfect with a chlorine solution 0.5%.
4. Gather in a plastic bag, bed linen, clothes and objects of the deceased, if any, that were not placed in the coffin and need to be buried with the coffin. Ensure the bag is tightly closed and disinfected.
5. Mattresses, straw mats soiled with body fluid of the deceased patient should be burnt at a distance from the house. Ensure the family have given permission to destroy the mattresses, straw mat, etc. **Team must replace with new items.**

After this operation and before proceeding to removing the PPE think through : Did the burial team has disinfected or placed in a disinfected bag all belongings of the deceased patient ? Did the burial team burn the mattresses?

At the end of this step all places in the home are disinfected

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Step 8: Remove PPE, manage waste and perform hand hygiene

A : Disinfect boots without removing them

B : Remove apron



1. Untie the apron, remove it and discard into infectious waste bag for disinfection
2. Wash outer gloves

C : Remove outer gloves.

1. Remove outer gloves
2. Wash inner gloves

D : Remove coverall

1. Take Hood off
2. Pull zip down
3. Wash inner gloves
4. Remove coverall suit, from inside, peeling it off
5. Dispose the coverall suit in the infectious waste bag for destruction
6. Wash inner gloves

E1 : Remove goggles from behind

Place it in a waste bag for disinfection.
Wash inner gloves

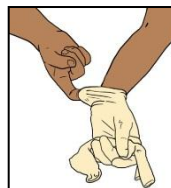


E2 : Remove mask from behind

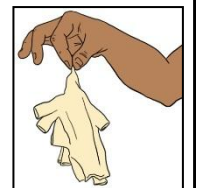
Place it in waste bag for destruction
Wash inner gloves

F : Remove inner gloves

1. Grasp the outer edge of the 1st glove and peel it off.
2. Hold the 1st glove in the gloved hand and drag a bare finger under the 2nd glove.
3. Remove 2nd glove from the inside, creating a "bag" for both gloves and throw it in waste bag for disposal.



G : Wash Hands



1. Disinfect rubber boots without removing them. When you are back to Hospital or Team headquarters at the end of the working day, each team member should take off rubber boots and disinfect them (see step 12).
2. Remove PPE of the burial team carefully following the recommended steps and perform hand hygiene
3. Recover the single-use PPE in an appropriate waste bag, prepared by the supervisor. The bag will be closed and disinfected and there after brought for burning to the hospital (or other designated place where single-use equipment will be burned)
4. Recover any reusable disinfected equipment in a waste bag, closed and disinfected on-site, before bringing this to the hospital or team headquarters for appropriate handling.
5. Perform hand hygiene.

At the end of this step the burial management team has removed their PPE (except the rubber boots) and has performed hand hygiene

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Step 9: Wear gloves and transport the coffin or the body bag to the cemetery



Wear gloves and transport the coffin or the body bag from the house to the cemetery

1. For the transport of the coffin, which has not been soiled, protection with household gloves is sufficient
2. Distribute household gloves to the family members who will carry the coffin
3. The rear of the car can serve as a hearse
4. The coffin is placed (delicately) on the platform of the car that will serve as the hearse, usually the head towards the front
5. Respect the time of grieving, possibly with a speech about the deceased and religious songs (chants) to aid the departure of the deceased to the cemetery, according to cultural and religious habits
6. During the departure of the funeral procession to the cemetery, some family members might be on rear of the car with the coffin
7. No family member should sit in the car cabin
8. Only the burial management team, without PPE, has the right to sit in the car cabin
9. The other participants of the funeral will follow on foot, behind the car at walking pace, with the alarm lights on and possibly dressed with funeral signs (bundles of palm trees on the bumper)
10. Conventional expression of pain through shouting, crying/songs of crying should be respected

At the end of this step the coffin has departed for the cemetery

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Step 10: Burial at cemetery: place coffin or body bag into the grave



Placement of coffin or body bag into the grave.

1. Manually carry the coffin or body bag to the grave, which is already prepared, by the carriers wearing household gloves, followed by the funeral participants
2. Place strings/ropes (and/or lianas) for lowering the coffin or body bag into the grave
3. The coffin or body bag is placed on the ropes
4. Slowly lower the coffin or body bag into the grave, either with ropes prepared in advance, or with individuals wearing gloves who stepped into the graves
5. Place the coffin or body bag and bags with clothes and objects belonging to the deceased into the grave
6. Depending on the custom in place, respect the rituals that allow for the spirit of the deceased to be liberated (opening of a node of the closed coffin, pulling the ropes from the grave,).

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Step 11: Burial at the cemetery: engaging community for prayers



Engaging community for prayers as this dissipates tensions and provides a peaceful time.

1. Respect the time required for prayers and funeral speeches
2. Family members and their assistants should be allowed to close the grave
3. Special attention should be given to the first shovel of earth, in general this is done carefully around the head area
4. Place an identification on the grave (name of the deceased and the date) and a religious symbol if requested
5. Recover all household gloves,
6. Place household gloves in an infectious waste bag for disinfection.
7. Burial team to attend funeral and offer condolences (sign book) or offer small gifts to support the funeral.
8. **Family to communally wash hands with disinfectant after the burial (using chlorine solution 0.05% or make an alcohol-based hand-rub solution available for hand hygiene performance) for all members involved in the funeral process.**
9. Thank the family members.

Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease.

Step 12: Return to the Hospital or Team headquarters



1. Organize the incineration of the single-use (disposable) equipment at the hospital or in another designated place for burning this type of equipment
2. The reusable equipment is again disinfected and dried
3. The post-mortem samples are send to the laboratory team
4. The car used for the funerals needs to be cleaned and disinfected (especially the rear
5. At the end of the working day, before going back home, each team member should take off rubber boots and disinfect them with 0.5% chlorine solution. Rubber boots should be kept at the hospital of team headquarter.

It may be worthwhile to use a checklist, to ensure that all steps are followed during the entire process from arrival at the house until the end of the funeral. Any problems detected should be reported

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