Engaging the Community for Ebola vaccination during an outbreak

May 2016

1. Scope

The community is briefed about the vaccine and vaccination. This step applies to any vaccine and to any vaccination strategy, with some specificities for each.

2. Rationale and Procedures

**Rationale: Engaging the community is paramount**

- Engaging the community is the process through which a community confirms its willingness to participate in the vaccination sessions after being informed of all aspects of the vaccine and vaccination strategy that may influence their decision. The community engagement meeting gives you the opportunity to:
  - inform the community about the vaccines, the proposed vaccination strategy including in particular the target population, the vaccine schedule, the expected benefits and potential adverse events following immunization
  - discuss plans, address questions and understand community values and potential concerns
  - obtain local leaders commitment and community acceptance for implementing the vaccination

**Procedures:**

- **Task 1. Community Meeting:** In close coordination with the Ebola response team, the Ebola vaccination team organizes and moderates an information meeting with the local authorities, religious leaders and community representatives based on the key messages and supporting facts compiled in written policy/guidelines on the verification (for technical accuracy) and release of information on Ebola vaccines and vaccination.

- **Task 2. Meeting Report:** The communication officer/social mobilizer from the vaccination team reports to the technical lead for the vaccination team on the community engagement meeting, main concerns and questions raised, outcome of the discussion and acceptance or refusal/reason for refusal to participate to the vaccination, using the dedicated form reporting on the community engagement meeting.
3. References

1. Written policy/guidelines on the verification (for technical accuracy) and release of information on Ebola vaccines and vaccination.
2. Template form for reporting on the community engagement meeting


Defining a ring vaccination
May 2016

1. Scope
A vaccination ring comprises all the contacts of a confirmed case of EVD, plus the contacts of those contacts. The ring is not necessarily confined to a single geographical site.

2. Rationale
The purpose of ring vaccination is to stop transmission of EVD by vaccinating a circle of contacts and contacts of contacts at high risk. The importance of rapidly identifying all those in the ring is key to the success of this strategy.

3. Procedures
Contact tracing is normally initiated for suspected cases. Defining a ring for vaccination begins as soon as a confirmed EVD case (Box 1) is notified.

Box 1  EVD case definitions (1,2)

Suspected case:
Any person, alive or dead, suffering or having suffered from a sudden onset of high fever and having had contact with a suspected, probable or confirmed Ebola case, or a dead or sick animal,

OR Any person with sudden onset of high fever and at least three of the following symptoms: headache, vomiting, diarrhoea, anorexia/loss of appetite, lethargy, stomach pain, aching muscles or joints, difficulty swallowing, breathing difficulties, or hiccups;

OR Any person with unexplained bleeding/haemorrhaging;

OR Any person with sudden, unexplained death

Probable case
Any suspected case evaluated by a clinician,

OR Any person who died from ‘suspected’ EVD and had an epidemiological link to a confirmed case but was not tested and did not have laboratory confirmation of the disease

Confirmed case
Any suspected or probable cases with a positive laboratory result. Confirmed cases must test positive for the virus antigen by detection of Ebola virus RNA by reverse transcriptase-polymerase chain reaction (RT-PCR) or by detection of IgM antibodies directed against Ebola.
Step 2

**Ebola response centre**

- Follow established procedure for **contact tracing** (identify contacts if not already done i.e. if the first notification is a confirmed case)
- Determine if the confirmed case is a member of an earlier vaccination ring

**Ebola Response and Vaccination Team**

- **Identify/ confirm contacts of the case** (Box 2) (LOGxx_Ring Definition_GEVI_T_00ct2015.xlsx)
  - Arrange a home visit urgently
  - Locate the local leader appropriate to the context (spokesperson of the community, head of the household, or village leader). Introduce the team and explain the reasons for the visit.
  - Identify or review list of contacts

- **Identify contacts of contacts** (Box 3)
  - Identify a suitable geographic boundary around the residence of the case in which the local contacts of the case reside.
  - Identify the extended family members or neighbors who live within this geographic boundary, who are not listed in the contact list, and include them in the vaccination ring

- **Find out if any of the potential vaccinees are members of any previous vaccination ring** (including those who have not been vaccinated yet, or declined vaccination). People that already belong to a ring should not be included in a new ring

- **Identify a community liaison person for this vaccination ring site.** This will be someone that is readily available, approachable and has free access in the community

- **Identify /confirm contacts of the case who live outside the geographic boundary**
  - Visit them with the contact tracing team
  - Meet with local leader at these sites as above
  - Identify their household members for inclusion in the vaccination ring.
Box 2  **Definition of contacts (2)**

Any person who has been exposed to a suspected, probable, or confirmed case of EVD in at least one of the following ways:

i. has slept in the same household as a case
ii. has had direct physical contact with the case (alive or dead) during the illness
iii. has had direct physical contact with the (deceased) case at a funeral or during burial preparation rituals
iv. has touched the blood or body fluids (including urine, faeces, vomit, tears, or sweat) of a case during their illness
v. has touched the clothes or linens of a case
vi. a baby who has been breastfed by the case

**Note:** This should include health workers (including those involved in cleaning, waste management, laboratory technicians, healthcare workers)

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Box 3  **Definition of contacts of contacts (2,3)**

vii. the neighbours or extended family members to nearest geographic boundary in which the local contacts of the index case reside, typically the boundary of a residential compound (the boundary may be the wall or fence of a compound, or determined based on clear space between homes, such as roads, paths, fields or forest)

viii. household members of any contacts who do not live in the same locality (defined as in(i)) as the case.

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4. **References**


3. The ring vaccination trial: a novel cluster randomised controlled trial design to evaluate vaccine efficacy and effectiveness during outbreaks, with special reference to Ebola. BMJ 2015;351:h3740. doi: [http://dx.doi.org/10.1136/bmj.h3740](http://dx.doi.org/10.1136/bmj.h3740)
Vaccine Storage and Handling
May 2016

Habitual vaccine storage and handling best practices and protocols will not be detailed in the present document. Emphasis is made on the specific characteristics of the current Ebola vaccine and the necessary step needed to accommodate these specificities.

1. Scope

Staff in charge of receiving, conserving and storing the vaccines must ensure the vaccine good conservation and the correct maintenance of the management tools. This step applies to any vaccine.

2. Rationale and Procedures

Vaccine Distribution

• Habitual vaccine storage and handling best practices and protocols apply;

Arrival at Provider Facility

• Open the packages and verify that the temperature recorders are in place for vaccines;
• Open the package and remove the temperature recording device while documenting the temperature in the vaccine arrival report and accounting vaccine;
• Verify that the temperature is between the limits specified for the vaccine conservation (-80°C to -60°C);

Storage and Handling at Provider Facility

• The current Ebola vaccine must be stored and transported at very low temperatures (-80°C to -60°C). Vaccines should therefore be always packed into ultra-cold passive containers in order to minimize the risk of damage during transport;
• Staff need to wear ultra-cold protection gloves at all times
Step 3

Staff in charge of packing the vaccine for transport to the field must ensure vaccines are packed correctly.

*PCM: phase changing materials

## Packing Vaccine for Transport to the Field

- Organize preparatory activities
  - Prepare ultra-frozen PCM* and frozen water packs
- Hand hygiene - before handling vaccine cartons and vaccine vials
- Pack vaccines with ultra-frozen packs

## Prepare ultra-frozen PCM or ultra-frozen water packs

- Define which cold chain equipment is to be used to freeze the PCM* or water packs. Clearly define where the packs are to be pre-frozen;
- Calculate the number of PCM packs or water packs needed for each delivery. Calculate how long it will take to prepare these. If ultra-frozen packs are needed every working day, there must be two complete sets of packs; one set in use and the other set being prepared for the following day;
- Water packs should be frozen in a freezer room or deep freezer which is set at a temperature between -15°C and -25°C. Leave them until they are fully frozen.
- Prepare ultra-frozen PCM packs: wear your cold protective gloves. Move the pre-frozen PCM packs from the -20°C deep freezer into an ultra-cold freezer whose temperature is set at a temperature of -85°C. Leave the pre-frozen packs in the ultra-cold freezer and monitor the temperature until it stabilizes at -80°C. The packs are ready for use.

## Packing vaccines with ultra-frozen packs

- Ebola vaccine must ALWAYS be transported using either ultra-frozen PCM packs;
- Calculate the number of ultra-cold passive containers needed for each delivery. This will depend on the quantity of vaccines to be packed and the number of recipients to be supplied;
- Pre-cool the passive containers: keep always the passive containers cleaned in an air-conditioned room prior packing with ultra-frozen packs;
- Wear your cold protective gloves;
- Use the correct size and number of packs for the chosen container;
- Line the container exactly as described on the instructions from the manufacturer;
- Pack the vaccine vial racks in the passive container with the vial caps uppermost;
- Place the temperature-monitoring device with the vaccine in the passive container and activate the recording;
- Close the lid and engage the latch;
- Place a packing list and the temperature monitoring report sheet in the pocket/pouch on top of the container;
- Label the container with the final destination details information;
- Have the consignment checked by the supervisor;
- Keep the container in the packing room, or in a covered holding area, until all other containers in the consignment have been packed.
- Load the consignment in the assigned transportation vehicle immediately;
- Keep the containers away from direct sunlight during transport;

## References

3. Checklist for Safe Vaccine Storage and Handling
Step 3

2. Vaccine Storage and Handling - Epidemiology and Prevention of Vaccine-Preventable Diseases

3. Vaccine Storage and Handling Toolkit
Vaccine Preparation and Administration
May 2016

Habitual vaccine administration best practices and protocols will not be detailed in the present document. Emphasis is made on the specific characteristics of the current Ebola vaccine and the necessary step needed to accommodate these specificities.

1. Scope

Vaccination administration procedures include the appropriate handling and preparation of the vaccine and should be followed by both the preparation and vaccination team.

2. Procedures

Security Measures

• The rVSV vaccine is composed by a genetically modified organism therefore it is necessary to wear gloves, gown and protective eyewear while administering the vaccine;
• Wearing gloves is imperative at all times while handling the syringes, needles or vials;
• After administering the vaccine, handling vials or any of the other materials, personnel must wash their hands;

Vaccine Preparation A

• It is imperative to make sure that the vaccine vial is thawed at room temperature.
• After thawing, the vaccine must kept on ice or refrigerated (2-8° C) until it is diluted (for up to 12 hours before using it to prepare the dilutions as long as the temperature has been controlled and the vial caps has not been punctured by a needle).
• Once the vaccine has been diluted it should be kept on ice or refrigerated until it is used on a patient.
• Thawed and diluted vaccine should be used within one working day (up to 12 hours) otherwise it needs to be discarded.
### Step 4

#### Vaccine Preparation B

- Take out the BPSC1001 from the ultra-cold freezer ($\leq -60^\circ C$) and allow the vial to thaw completely at room temperature for about 10 minutes;
- Shake the vial for about 30 seconds and let it sit for at least 5 minutes;
- Once thawed, the BPSC1001 solution should appear colourless without any visible particles;
- If there are any visible particles in the solution, personnel has to reject the bottle and label the vial properly with the sign « REJECTED » together with the date, the hour of thawing and their initials;
- Discarded bottles must be stored by the pharmacist/pharmacy responsible for the drug accountability. The rejected bottles must be kept safe in a separated container at room temperature;
- If the bottle has not been rejected, it should be labelled with the date, the hour it was thawed, personnel’s initials and time of expiration 8 hours ahead;

#### Administration

- Habitual vaccine administration best practices and protocols apply;
- 2 qualified vaccinators (e.g. one doctor and one nurse) are responsible for vaccinating the participants;
- The vaccination team is responsible for making the compulsory 30 minutes observation following the vaccination;
- The current Ebola vaccine is composed by a genetically modified organism, therefore Place a plaster on the site of injection;

#### Post-administration Wastage

- It is necessary to ensure that the waste created is disposed effectively. Responsible staff have to dispose of:
  - needles and syringes in a safety box
  - cotton pads, paper towels, protective gowns and gloves need to be collected in a trash bag
  - open vaccines and vials
- and make sure that the waste is incinerated on the same day.
1. Scope

The most efficient and safe delivery of available vaccine is planned via community vaccination posts. This step applies to the planning of vaccination sites by vaccination teams. Ideally, plans should be shared to identify best practices, avoid unnecessary overlapping of services, and maximize the effective and efficient delivery of Ebola vaccinations.

2. Rationale and Procedures

**Vaccine Teams**

- **Vaccination teams** at each post should minimally include the following:
  - one team lead/supervisor
  - one vaccinator,
  - one screener/registration officer
  - one assistant/volunteer
  - one security/crowd controller

- When there is a greater or more imminent risk of EVD in the community, there may be a need for additional security at vaccination posts or with mobile teams.

**Central Coordinator**

- A **central coordinator** will also be necessary to;
  - coordinate team movements;
  - ensure vaccination teams have the adequate supplies before being sent to the field;
  - re-stock vaccination teams that need additional supplies;
  - plan team movement for the coming 5 days, based upon guidance from the Ebola Response Task Force;
  - monitor each team movement daily;

The **EBOLA NITAG** is responsible for approving the number of people present at each vaccination post and on each vaccination team.
In addition to supervision given by the vaccination team supervisors, independent monitors should also evaluate the Ebola vaccination activities. A description of this process, a detailed supervisory plan for the vaccination post, and sample forms for independent monitors are included in the Guide Appendices N and O.

Consent must be obtained from every individual. For licensed vaccines, consent is verbal.
Step 5

Choosing a Vaccination Site

- Ebola vaccine deployment will function best whenever teams can operate at existing health care facilities or at other public points near the target population.
- **The vaccination team should identify a site that is acceptable to the community** (e.g., schools) where they can set up a vaccination post that will allow them to:
  - vaccinate the necessary number of eligible individuals;
  - provide a safe environment;
  - avoid crowding and allow for infection control practices

Choosing a vaccination Site

- Chosen sites need to be structured in order to allow adequate space for organization and infection control while minimizing contact among vaccinees. A separate tent may be required for vaccination in high risk areas to keep distance between a health facility where Ebola patients may be presenting and the vaccination site.

→ If a **ring vaccination approach** is being used, this may or may not be near the cases house.(?)

→ The **Guidance for Immunization Programmes in the African Region in the Context of Ebola**, should be consulted in the planning of daily vaccination post activities, and should be available for all vaccination team members.

3. References

   [http://apps.who.int/iris/bitstream/10665/137330/1/WHO_IVB_14.08_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/137330/1/WHO_IVB_14.08_eng.pdf?ua=1)
1. **Scope**

To determine who is eligible for vaccination by checking for signs and symptoms of Ebola Virus Disease (EVD).

2. **Rationale and Procedures**

**The Screener**

- will be stationed to screen the target population presenting for vaccination near the entrance to the facility where the vaccination post is located, and before the waiting area;
- **determines who is eligible for vaccination by checking for signs of EVD** (that will usually be defined by the screening process instituted as part of the Ebola response for all health facilities);

**Screening for Eligibility Criteria**

- If eligibility criteria are not yet established, it is suggested that a person is **not eligible** for vaccination under the following circumstances:
  - Temperature (measured by infrared thermometer) is greater than 38°C OR
  - There is report of a fever in the past 24 hours, and any of the following symptoms are present:
    - Lethargy
    - Loss of appetite
    - Diarrhea
    - Vomiting

→ **When individuals meeting the above criteria are identified, it is necessary to ensure that they are isolated and treated according to the response plan for suspected cases of EVD.**

→ The rest of the vaccination team, local health clinics, and other relevant authorities should be notified of those who have been **quarantined** in the course of the Ebola Vaccine deployment.
Those who pass the screening are directed to the waiting area, where communication materials about Ebola vaccine and identification and reporting of signs and symptoms of EVD should be available. A team member should be trained and available to answer any questions that vaccinees may have about Ebola Vaccine, AEFI, and other concerns.

3. References

1. Clinical Trials Registers (?)
   https://clinicaltrials.gov/ct2/show/NCT00072605
   http://www.pactr.org/ATMWeb/appmanager/atm/atmregistry?_nfpb=true&_pageLabel=atm.portal_page_home
1. Scope

All vaccine doses administered should be fully documented. Providing individuals with documentation of vaccination is important, because it ensures that individuals receive the vaccine they need and prevents unnecessary vaccination.

For example, if multiple strategies are employed, such as vaccination of contacts and their contacts and healthcare worker/front line worker vaccination, it is important to ensure that individuals avoid being vaccinated twice (use of indelible markers for finger, marking vaccinated individuals may be considered).

2. Rationale and Procedures

- **Documentation**
  - Accurate documentation can help prevent administration errors and curtail the number and costs of excess vaccine doses administered;
  - Providers also should update patients’ permanent medical records to reflect any documented episodes of adverse events after vaccination and any serologic test results related to vaccine-preventable diseases;
  - For more information on appropriate documentation of Ebola vaccine, please see Appendix N and O of the present guide;

- **Vaccinator’s Assistant**
  - will document all doses of vaccine administered;
  - will provide each vaccinee with a vaccination card confirming that the vaccination was done (the immunization record include vaccine administered and date(s) of administration);
  - will document when patients refuse vaccine despite the immunization providers’ recommendation;

→ *Participation in immunization information systems is encouraged, when feasible.*
3. References

1. http://www.cdc.gov/vaccines/hcp/adults/downloads/standards-documentation.pdf (to be confirmed or completed)
Managing Fever After Vaccination
May 2016

1. Scope
The investigation and management of fever in individual who have received Ebola vaccine.

2. Rationale
In a person who has received an Ebola vaccine, fever can be a side effect of vaccination but can also be due to EVD or to other causes such as malaria. Typically vaccine product related fever occurs in the first three days after vaccination. The risk assessment approach should be same whether vaccinated or not, although the likelihood of EVD is higher in someone who has not been vaccinated.

3. Procedures
If a vaccinated contact or contact of contact has fever verified as >38°C:

Scenario 1:
- **Fever in a contact(1) plus any of the following additional symptoms**: sore throat, diarrhea, vomiting, muscle pain and rash -- consider as suspected EVD, give IPC advice, refer immediately to a suitable EVD treatment centre.

Scenario 2:
- **Fever without other symptoms and without focus of infection** in a contact or other vaccinated individual. Investigate for malaria and rapid test for EVD.
  - If EVD negative and malaria test positive, treat for malaria, give IPC advice and review in 48 hours.
  - If EVD negative and malaria test negative. Refer to EVD treatment centre.
  - If EVD test positive OR fever persists without a focus of infection, refer to EVD treatment centre.

Scenario 3:
- **Fever with obvious focus of infection** in a contact or other vaccinated individual -- investigate for malaria, treat the focus of infection and for malaria if test positive. Review after 48 hours. If fever persists, refer to EVD treatment centre.
It is important to document the time of vaccination in the immunization cards provided to subjects and also in the records maintained by the health care workers.

4. References


2. WHO. Implementation and management of contact tracing for Ebola virus disease, 2015 http://apps.who.int/iris/bitstream/10665/185258/1/WHO_EVD_Guidance_Contact_15.1_e ng.pdf?ua=1
Waste Management
May 2016

Standard vaccine administration best practices and protocols is not detailed in the present document. Emphasis is made on the specific characteristics of the current Ebola vaccines and the necessary steps needed to accommodate these specificities.

The overriding principles of waste management for the current Ebola vaccines are (1) the proper accounting of vaccine during its entire lifecycle, from release of the finished containers in packages to either administration to subjects or discard; and (2) the safe destruction of vaccine vials and syringes, used or unused. This is accomplished through rigorous and detailed attention to the transfer, allocation, subdivision, administration or consumption, and discard of product. Complete reconciliation of the total number of vaccine vials and/or syringes by lot or material number is critical to assuring vaccine was used appropriately.

Definitions (if applicable):
PCM – Phase Change Material
GMO – Genetically Modified Organism

1. Scope

In order to reduce the risk of contact with contaminated waste generated during the vaccine handling and administration, staff must ensure an appropriate and safe waste management and disposal.
2. **Rationale and Procedures**

### Security Measures

- **If the vaccine is composed of a genetically modified organism**, it is necessary to **wear gloves, gown and protective eyewear** while administering the vaccine;

- **PCM is composed of substances that are harmful and flammable**; therefore it is necessary to **wear gloves, gown and goggles** while manipulating the PCM products. The product should be stored in ventilated spaces and away from an ignition source;

- The waste generated during the vaccination campaign using Ebola Vaccine must be safely disposed as described in the box below:

### Waste Management

- **Waste disposal after vaccination sessions and post-vaccination visits**: all material that can have been potentially contaminated by the vaccine (injectable material, disinfection material, plasters, gloves etc.) is evacuated in specific bins with lids. These bins are daily retrieved so to ensure a safe waste disposal.

- **Decontamination of potentially contaminated surfaces**: surfaces potentially contaminated by vaccine preparation or by biological material are disinfected using appropriate disinfectants;

- **PCM products should not be released into the environment**;

- Safety boxes (needles and syringes), cotton pads, open/discard vials and all equipment that has been potentially contaminated (gowns, linens, etc.), should be properly collected according to the waste management plan approved before the vaccination and properly disposed of in compliance with the country national policy for health care waste management;

- At the end of the vaccination efforts and when the decision has been made to decommission the Arktek Passive Storage Devices, the PCM material should be properly destroyed locally in compliance with the country national policy for health care waste management;

- Proper disposal should be in accordance with the country national policy and standards for health care waste management;

- **Wherever no policy or standards are specified the options below should preferably be considered**:
  - **High-temperature incineration (up to 1200 °C with preferably gas-cleaning equipment)**
  - **Encapsulation/inertization in conjunction with proper landfilling may be considered**;

- In any case, the disposal of these wastes should never consist in incineration at lower temperatures (in single-chamber incinerators or open-air burning); these methods are inappropriate and release hazardous emissions into the atmosphere;
Step 9

Roles and Responsibility

• **Central Depot**: The central depot will have primary inventory responsibility for waste management, total inventory accountability and control for both vials and product filled syringes. The Central Depot will receive inventory reports from vaccination teams with vial and syringe inventory movement and use. They will also be issuing vaccine to the vaccination teams. The central depot will account for and physically collect all returned unused vials and syringes as well as rejected damaged or waste vials and syringes.

• **Vaccination teams**: Vaccination teams will be responsible for vaccine inventory of vaccine doses issued to them. Reports will be communicated to the Central Depot for total reconciliation of both vials and product filled syringes. Vaccination teams will account for and physically collect any unused vials and syringes as well as rejected damaged or waste vials and syringes from the immunization sites for consolidation and return to the central depot.

Materials needed

• Central Depot / Vaccination Team Vaccine Accountability Log
• Vaccination Team Vaccine Accountability Log
Step 9

Draft-Not for Implementation

Detail Procedures

• The Central Depot will establish a master inventory log that will account for each unit of vaccine (vial and/or syringe) to be used during the entire vaccine effort. The log will have complete inventory reconciliation from the initial receipt, issue of vaccine for shipment either to a vaccination team, reconciling of returned vaccine in good condition, and finally any vaccine that has been damaged, rejected or designated as waste.

• As part of the physical receiving process, a Central Depot / District Vaccine Accountability Log will be filled out as the record of receipt. Information from the log will be communicated to the Central Depot and entered into the master inventory log. This information includes the Air Weigh Bill / Truck Number, Lot Number(s), Date Received, Quantity of Vials Received, Temperature Verification -60C to -80C, Data Logger Info Recorded/ Communicated, Damaged Vials Upon Receipt, Damaged Vials Placed in Quarantine, Put away Storage Location(s), and a signature of the Responsible Individual.

• The shipping process will be documented by the recording of information on a log sheet which will be communicated to the Central Depot for inventory documentation and reconciliation. That information includes Air (Helicopter)/ Truck Number Identifier, Lot Number, Date Shipped, Quantity of Syringes Shipped, Syringes Satisfactorily Packed for 2-8C shipment, Quantity of Vials returned to Central Depot, Temperature Verification of Vials -60C to -80C, -60 to -80 Temp Data Logger Activated / Operable, Destination – District or Immunization Site, and the signature of the Responsible Individual.

• Vaccination team accountability will be performed on location at the immunization site and communicated to the Central Depot upon completion of the team’s vaccination ring. The communicated information includes the Date (mm/dd/yy), Lot Number (one sheet for each lot number), Immunization Location, the Location Organization’s Name, the Responsible Individual’s Name, and the date and time that the End of Immunization Day Site Vaccine Accountability Log sent to Central Depot, was sent. Other accountability information is also included: Syringes Received, Check sum (from below), Administered, Returned Unused, Rejected, and Damaged or Waste Syringes.

• The vaccination team will return unused, rejected, and damaged or waste vials and syringes to the central depot.

• The central depot will reconcile all inventory, physically keep any returned syringes and vials matching them to the vaccination teams.

• Once unused, rejected and damaged or waste syringes and vials have been fully reconciled by checking against previously issued vaccine, the materials will be properly destroyed locally in accordance with the country MOHS standards by a qualified destruction entity identified by the MOHS.

3. References

1. Management of Waste from Immunization Campaign Activities, WHO
   http://www.who.int/water_sanitation_health/medicalwaste/phe_wsh_immunizationcampaign.pdf
Handling and Disposal of Phase Change Material

May 2016

Overview:
The overriding principle for handling and disposal of the Phase Change Material (PCM) used in the Arktek Passive Storage Devices for maintaining ultra-cold temperatures, is safety. Proper attention to requirements specified in the Material Safety Data Sheet is critical to prevent fire and to prevent injury from contact with skin or eyes.

Roles and Responsibilities:

Central Depot: The central depot will have primary responsibility for proper storage of the PCM and ultimate responsibility for proper disposal of the PCM.

Materials Needed:
Fire extinguishers, class B

Procedures:
The Central Depot will establish training on the Material Safety Data Sheets for personal handling the PCM, filling Coolant Blocks with PCM, and using the Arktek Passive Storage Devices. Due to high fire hazard, particular caution must be taken (1) when initially filling the coolant blocks with PCM, (2) with proper storage of any unused PCM in sealed container in a ventilated space away from exposure to sources of heat, spark or flame, (3) in proper handling of coolant blocks filled with PCM.

At the end of the vaccination efforts and when the decision has been made to decommission the Arktek Passive Storage Devices, the PCM material will be properly destroyed locally in accordance with the country Ministry of Health (MoH) standards by a qualified destruction entity identified by the MoH.

References:
TRIVE - SOP 10.6 (Version 1.0, 25-MAR-2015) Material Safety Data Sheet for PlusICE E-78 (PCM)