Key steps for storage, distribution, and handling of vaccines at ultra low temperature

1. Reception
   Before starting the process of opening the thermal shipper container:
   - Wear proper personal protective equipment (goggles, cryogenic gloves, and apron).
   - Make sure the ultra-low temperature (ULT) freezer is at -80°C.
   - Open shipping containers one at a time.
   - Do not open vial boxes except when vials need to be removed for transfer to ULT Freezer, thawing, or use.
   - Open the vaccine thermal shipper container and immediately press the STOP button of the temperature monitoring device.
   - Check if there is a red alert light: If it could be, there is temperature excursion, or wi-fi failure or battery failure, immediately inform the provider who will indicate the steps to follow.
   - Inspect the integrity of the thermal shipper container.
   - Check the batch number, expiration date, and quantities in the thermal shipper container.
   - Transfer the vaccine to the ULT freezer (-80°C). This process should not take more than three minutes.

2. Transfer to the ULT freezer

3. After receiving
   - Discard dry ice in open spaces away from other people if the thermal shipper container will not be reused.
   - If the thermal shipper container will be reused, follow the manufacturer’s instructions.
   - Return thermal shipper containers and temperature monitoring devices according to the manufacturer’s instructions. See: https://www.cvdvaccine-us.com/product-storage-and-dry-ice

4. Store the diluent
   - Store the diluent in its original packaging at room temperature no higher than +25°C, or between +2°C to +8°C, if possible.

5. Record the entry of vaccines and supplies in the inventory system
   - Quantity, batch number, presentation, expiration date, and storage temperature.

Note: Constantly check for updated information on COVID-19 vaccines. See the following WHO webpage: https://www.who.int/es/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines
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Storage

Monitor and record the temperature of ULT freezers at least three times a day. Use the temperature control format.

Label the secondary packaging of the vaccine with the date and time, when temperature storage has been changed (from -80°C to -20°C, or between +2° to +8°C) and record the new expiration date in the inventory system.

Distribution

Prepare cold boxes and packs according to the shipping temperature (-20°C or between +2°C to +8°C). Include the temperature monitoring device.

Make sure the secondary packaging or individual vaccine vials have the new date and time of each temperature change.

Note: Constantly check for updated information on COVID-19 vaccines. See the following WHO webpage:
Gently invert the vaccine vial 10 times. Do not shake it before dilution.

Withdraw 1.8 ml from the diluent vial with one dilution syringe. Use only one dilution syringe per vial.

Add 1.8 ml of diluent to the vaccine vial; equalize vial pressure before removing the needle by withdrawing 1.8 ml of air from the vial into the empty mixing syringe.

NOTE: Before diluting the vaccine, the diluent should be at a temperature between +2°C to +8°C.

Discard the dilution syringe in a safety box (Do not reuse the dilution syringes. Diluent vials are single use only. Discard the vial with any remaining diluent).

Inspect to make sure the vaccine is a uniform suspension while in color; do not use if it is discolored or contains particles.

Gently invert the vial with the diluted vaccine 10 times to mix; do not shake.

Record the date and time of dilution on the vaccine vial label.

Store the vaccine at a temperature between +2°C to +8°C. Avoid exposure to sunlight and ultraviolet light during the vaccination session.

Withdraw a 0.3 ml dose of the vaccine at the time of administration. It is not recommended to preload the vaccine in the syringes.

Use the entire vaccine within 6 hours after dilution.

Discard any unused diluted vaccine after 6 hours, as it does not contain preservatives.

Note: Constantly check for updated information on COVID-19 vaccines. See the following WHO webpage: https://www.who.int/es/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines