

Note: This is an SOP for shipping whole blood specimens taken in Vacutainers serum separator tubes (with or without DBS samples). Storage and shipping protocols may vary if DBS only, capillary blood, or oral liquid solution samples are used and country where survey is conducted.

Toolkit Document: Example of a specimen shipping SOP in support of a national measles rubella serosurvey study

Country X

Standard Operating Procedures (SOP)

Specimen Shipment

Version: MM YYYY

1. Purpose/Background

- a. The purpose of this document is to describe how to package blood samples [liquid serum sample or DBS] by the standard triple packaging system and preparations needed to either courier or hand carry specimens from site to central lab. Shipment plan may vary by site, please contact your supervisor on site-specific shipment details.

2. Scope/Applicability

- a. This SOP is intended for Unit Lab technician (ULT) who will package and transport specimens from site to central lab either by courier or hand carried by central lab staff. Site coordinator(s) (SC) and central lab staff (if present) must also provide support.

3. Roles and responsibilities

- a. Site ULT is responsible for packing samples and preparing shipment. SC(s) and central lab staff (if present) must also provide support.

4. Summary table of responsibilities:

Site	1. Ensure all liquid serum specimens are stored in -20°C freezer and HemaSpot HF DBS devices stored at room temperature as per locations specified in lab tally sheet. 2. Keep copies of updated lab tally sheet (2 copies - must contain entries of all specimens to be shipped) and cryo/freezer box maps. 3. Keep the following materials ready in laboratory to prepare shipment: PPE (lab coat, mask, gloves, triple packaging containers etc.) 4. Complete details, sign and stamp documentation. 5. ULT (and site coordinator(s) if possible) must package samples for shipment.
Courier or central lab staff	1. Bring shipping labels required to ship materials from site to central lab. 2. Central lab staff, if present, to support ULT in packaging for shipment.

	3. Check sample packaging and shipment documentation. 4. Transport shipment from site to central lab.
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5. Prerequisites / Supplies Needed Ensure you have all the material that you need BEFORE beginning:

For Triple layer sample packaging:

- Lab coat
- Mask
- Gloves
- Lab Tally Sheet
- Freezer box maps
- Primary container:
 - Liquid serum sample: Labeled sample aliquots stored in screw cap vials (or cryovials)
 - Dried Blood Spots (DBS): Labeled DBS device
- Secondary container:
 - Liquid serum sample: Small (capacity: 9x9) plastic cryobox
 - DBS: Ziploc bags
- Tertiary container:
 - If shipping by **courier option**: Thermocol box with dry ice [liquid serum sample] or air-tight plastic container [DBS].
 - If shipping by **hand-carry option**: Large cold box [liquid serum specimens] or air-tight plastic container [DBS].
- Outer container: Cardboard box [all specimen types]
- Cotton and tissue roll
- Packing tape
- Shipment labels

6. Procedure

a. Packing Shipment (led by ULT and SC(s) with support from CENTRAL LAB staff if present):

- i. Wear Personal protective equipment (PPE): lab coat, gloves and mask.
- ii. For **Liquid serum samples**:
 1. Remove cryobox from freezer (do this one by one) and place it on an ice pack.
 2. Check individual sample label details against Lab tally sheet: participant ID, Aliquot ID (check for “V1” or “V2” at the end of specimen ID),
 3. Use Lab Tally sheet and relevant freezer box map to check position of specimens in cryobox. Keep a record of any discrepancies.

4. Remove a cryobox from freezer and keep on ice. Open lid and pack a layer of cotton on top of the vials and close lid. Ensure vials stay upright and do not move.
5. Wipe cryobox with tissue paper.
6. Seal the cryobox around the sides with brown tape.
7. Wrap cryobox with absorbent material tissue paper or cotton.
8. If shipping by **courier option**:
 - a. Place cryobox in plastic bag with dry ice inside thermocol box.
 - b. Tie and seal plastic bag.
 - c. Once thermocol box is full, seal with tape and move on to another box.
9. If shipping by **hand-carry option**:
 - a. Line the bottom layer of cold box with frozen ice packs or dry ice (if relevant) and then place the cryoboxes on top.
 - b. Once cold box is full, seal with tape.
10. Repeat steps 1 through 9 for all cryoboxes with specimens to be shipped. Follow the steps in **Appendix 1** while packing into the outer container for both shipment options.

iii. For **HemaSpot HF (DBS) devices**:

1. Ensure HF devices are labeled and placed inside individually sealed bags (with 2 desiccants), that all HF devices from the same study cluster are placed into a larger Ziploc bag (with at least 5 desiccant bags in larger bag). Cluster-specific larger Ziploc bags should be placed in airtight plastic containers.
2. Place plastic containers into a cardboard box.
 - a. *Note: When shipping any DBS device, try to minimize temperature fluctuation (shifting from cold to hot, etc.), exposure to humidity and sunlight.*

iv. Once shipment is packed, stick appropriate shipment labels on each outer container:

1. Address labels:

The sender's, name, address and telephone number

Dr. XXX YYY,

Title

Address

Phone No. XXXXXXXXX,

Mobile No. XXXXXXXXX

The receiver's name, address and telephone number

Dr. XXX YYY,

Title

Address

Phone No. XXXXXXXXX,

Mobile No. XXXXXXXXX

2. Other labels to affix to outer containers (see Appendix 2):

a. Handle with care label

b. Biological substance category label

b. Preparing Documentation: The following documents must be prepared by ULT and SC prior to shipment pick up (See appendix 4)

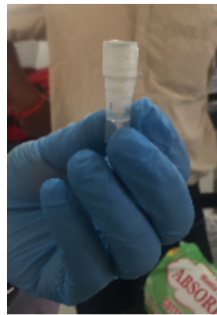
1. Declaration form must be completed depending on the shipment option chosen: Form should be printed on site letter-head and signed and stamped by relevant site authority.
2. Shippers Certificate for Non Hazardous Cargo: Complete form, sign and stamp by relevant site authority.
3. Custom Invoice form: Complete form, sign and stamp.

These documents must be carried along with packed shipment and lab tally sheet and freezer box maps by courier or central lab staff back to central lab.

Please note, the above documents are specified for air travel; the type of documentation may vary based on type of transportation used to ship specimens.

Appendix 1: Sample transportation visual

Courier option [liquid sample]:



Primary container: screw cap vial



Pack cryobox with absorbent material (cotton roll/ tissue paper)



Wipe box dry and seal box with tape

Secondary container: Freezerbox



Wrap box with tissue paper



Place thermocol box in cardboard box.
Seal outer box with tape

**Outer container: Card board box
(provided by courier)**



Close lid of thermocol box
and seal with tape



Tie/ seal bag.
*Add additional packing material
(bubble wrap etc) to ensure bag
does not move inside box.*

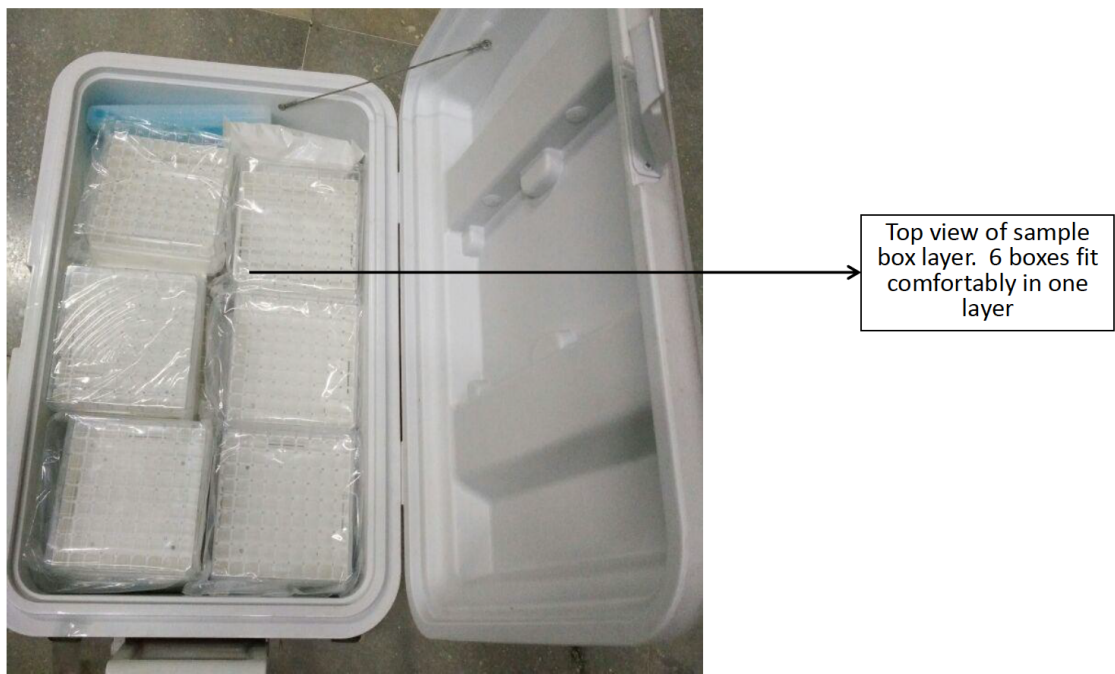
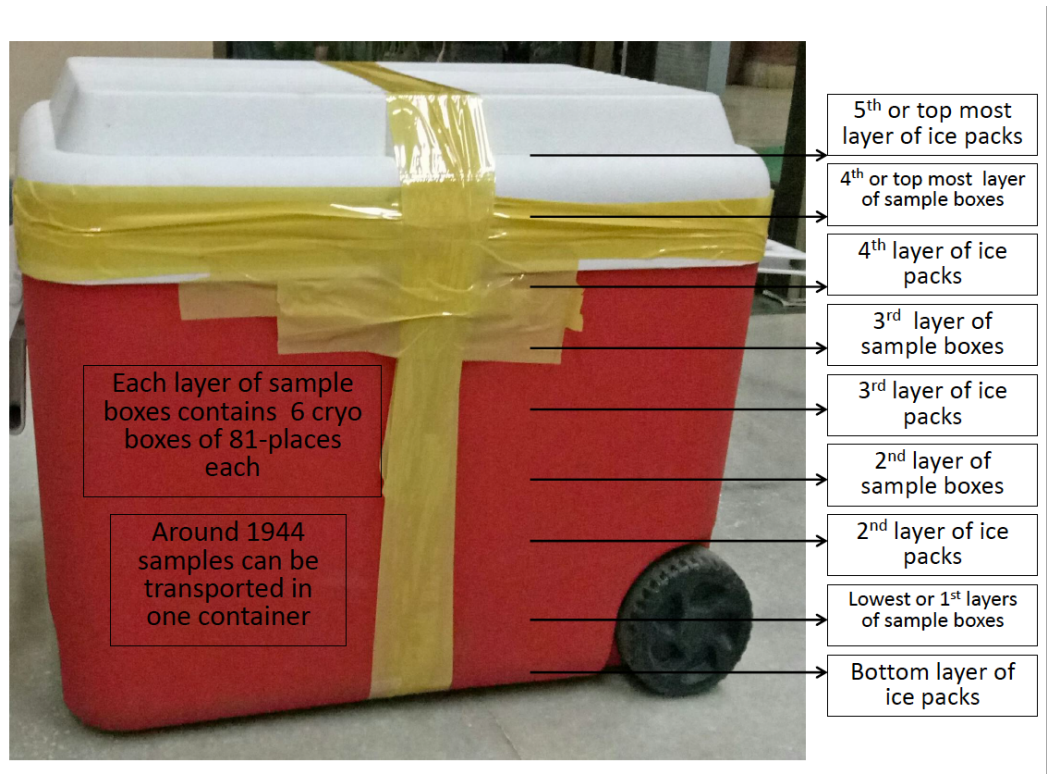
**Tertiary Container: Thermocol box with dry ice
(provided by courier)**

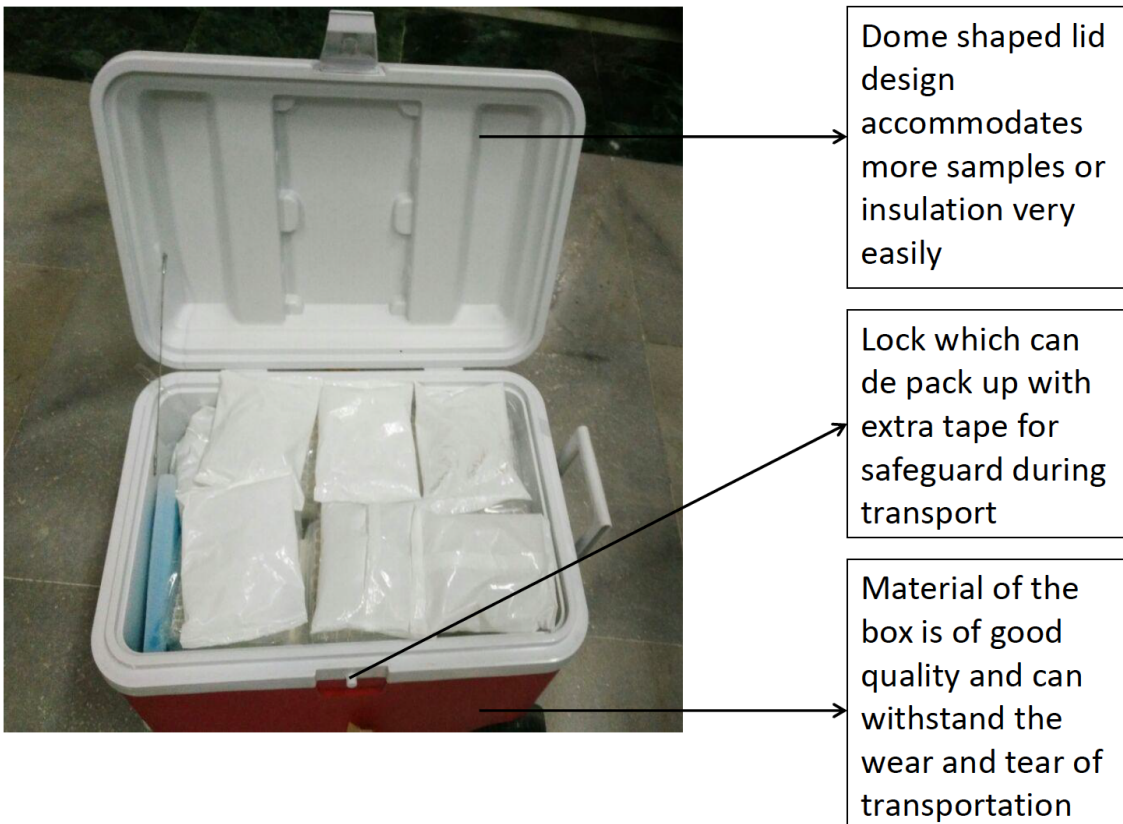


Place cryobox in bag with
dry ice inside thermocol

Appendix 1: Sample transportation visual

Hand carry option [liquid sample]





Appendix 2: Sample Shipment labels

1. Address label

Shipper:

<INSERT SITE NAME, ADDRESS>

Contact information:

<INSERT NAME AND PHONE NUMBER OF SITE
CONTACT PERSON>

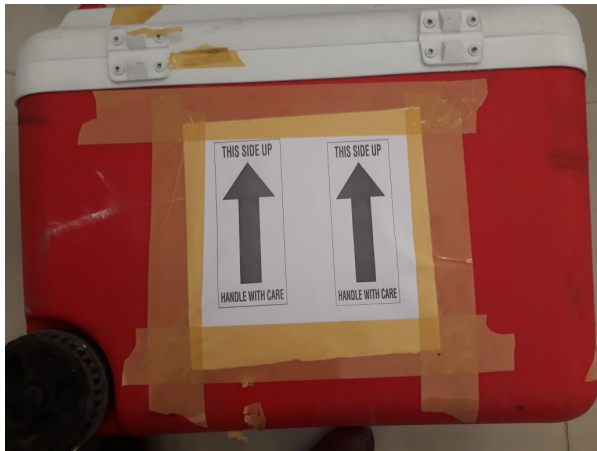
Consignee:

<INSERT SITE NAME, ADDRESS>

Contact information:

<INSERT NAME AND PHONE NUMBER OF SITE
CONTACT PERSON>

2. “Handle with care” label



3. “Biological Substance Category B” label [liquid serum sample]



Appendix 4: Shipping Documents

Declaration form (Liquid serum specimen)

<To be printed on site letterhead>

To,
The Cargo Manager
.....Airways.

Date :- ____/____/____

Dear Sir/Madam
MAWB No. : *Check with Courier or central lab Staff*

To Whomsoever It May Concern

This to certify that the articles / substances of this shipment are properly described by the name **Biological Substances Category (B) UN 3373** and they does not correspond to any of hazard classes of dangerous goods i.e non-hazardous, non-poisonous, non infectious, non flammable, non explosive, non-radioactive, non-infectious. It is not a restricted item as per current edition of IATA Dangerous Goods Regulation (Edition 58th) and can be safely transported by a Passenger Aircraft.

The shipment is packed as per IATA Packing Instructions 650 with all necessary regulations pertaining to packing and documentation complied with. The shipment is packed in Dry Ice which has been used as refrigerant purpose and for cooling purpose.

Dry Ice(UN 1845)_____KG, Class 9, _____ Box

Thanking You

Your's Truly

**<CONTACT NAME,
SITE ADDRESS, AND
CONTACT PHONE
NUMBER FOR SITE>**

Appendix 4: Shipping Documents

Declaration form (DBS specimen)

<To be printed on site letterhead>

To,
The Cargo Manager
.....Airways.

Date :- ____ / ____ / ____

Dear Sir/Madam
MAWB No. *Check with courier or central lab staff*

To Whomsoever It May Concern

This to certify that the articles / substances of this shipment are properly described by the name **Non regulated, exempt materials** and they does not correspond to any of hazard classes of dangerous goods i.e non-hazardous, non-poisonous, non infectious, non flammable, non explosive, non-radioactive, non-infectious. It is not a restricted item as per current edition of IATA Dangerous Goods Regulation (Edition 58th) and can be safely transported by a Passenger Aircraft.

Thanking You

Your's Truly

**<CONTACT NAME,
SITE ADDRESS, AND
CONTACT PHONE NUMBER
FOR SITE>**