

RECOMMENDATIONS FOR PROPER PACKAGING AND SHIPPING BY LAND, OF SAMPLES POTENTIALLY INFECTIOUS WITH EBOLA VIRUS¹ - 20 May 2026

(Adapted from *In-Country shipment: How to safely ship human blood samples from suspected Ebola cases within a country by road, rail and sea*, WHO, 2017)

Step 1: Before handling the sample, prepare all shipping equipment; **be sure you have everything you need:**

Plan the logistics of shipping

- Identify the name and contact details (phone and e-mail) technical referent for the event at the National Laboratory (who must be available 24 hours a day until the shipment is received) and the referent for epidemiology (or event manager at the Ministry of Health)
- Notify the National Laboratory that the sample will be shipped
- Contact the transporting company and verify the schedules and itineraries

Prepare the material for packaging

- Absorbent material enough to absorb the entire liquid content
- Rigid, leak-proof (screw cap) **secondary container**
- Rigid shipping box (**tertiary - outer-container**). For air shipping, a **P620** certified box **should be used** (see annex 2 and IATA guidelines)



¹ The recommendations in this document can be subject to later modifications in accordance to the advances in the knowledge of the disease and the etiologic agent.

- Cushioning material** (foam or bubble wrap) and tape to seal the outer package



- Material for refrigerated shipping:** Styrofoam container or cooler box (thermal isolation) and ice pads (frozen). The styrofoam container or cooler box must fit the tertiary (external) container



Prepare shipping documentation

- Name of contact person (receiver), clear and complete address, phone number and name of the institution where the sample will be received
- Format for submission of samples with all the basic data for patient identification and clinical information (see example, annex 1)
- Epidemiological record or summary of the patient's history (according to national guidelines)

Important: For **air shipments** [from the health facility to the National Laboratory (Central or Reference) and from the latter to the PAHO/WHO Collaborating Center], according to the IATA regulations for shipping of infectious substances Category A (UN2814), a shipper's Declaration for Dangerous Goods (DDG) **must be completed and included** (see example, annex 3), together with the air Waybill (see example, annex 4). Also remember that the person responsible for international shipping **must have** an updated issuer certificate recognized by IATA and WHO. (See: *Guidance on Regulations for the Transport of Infectious Substances 2025–2026*: <https://iris.who.int/items/b13811ad-8711-424a-9a7e->

Step 2: Prepare the sample and perform the packaging; please note the instructions given in the PAHO document: *RECOMMENDATIONS FOR THE SAFE COLLECTION AND PROPER MANAGEMENT OF SAMPLES POTENTIALLY INFECTED WITH EBOLA VIRUS* (Step 4). PAHO/WHO, 2026

Once the designated gloved assistant has tightly closed the top of the plastic leak-proof packaging container, he should disinfect the outside of the container with 70% alcohol or chlorine hypochlorite 0.5%



The assistant should carefully remove the gloves (and put them into a infectious waste bag for destruction) and wash his hands properly.



Package the sample

- 1** Open the secondary leak-proof container (rigid). Be sure that the size of the container match the number of samples being shipped
- 2** Insert the absorbent material. There should be enough material to absorb all contents in primary container



3 Wrap the primary container with cushioning material. If packaging more than one sample, wrap each primary container individually



4 Place the primary container(s) into the secondary container



5 Close the secondary container



Packaging in refrigeration (recommended)

6 Place the secondary leak-proof container into a styrofoam container and surround with ice packs



7 Place styrofoam container into the rigid shipping box (tertiary container)



8 Put laboratory form / letter and epidemiological questionnaire into an envelope



- 9** Put laboratory form / letter and epidemiological questionnaire into the rigid shipping box



- 10** Close the top of the shipping box (tertiary container)

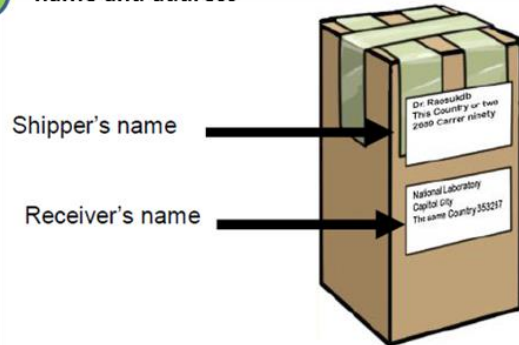


- 11** Tape the box closed

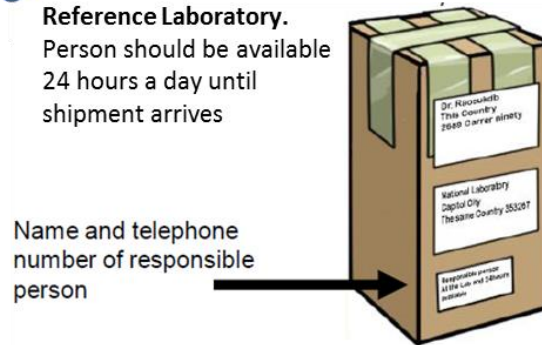


Marks and labels

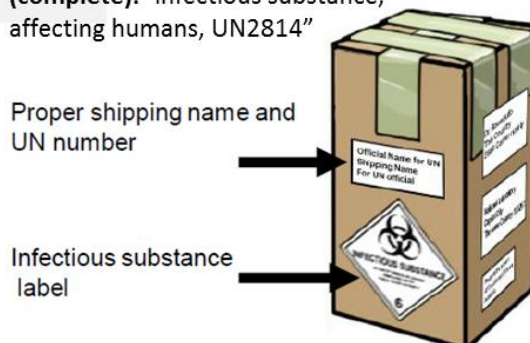
- 12** Write (clearly) the precise name and address



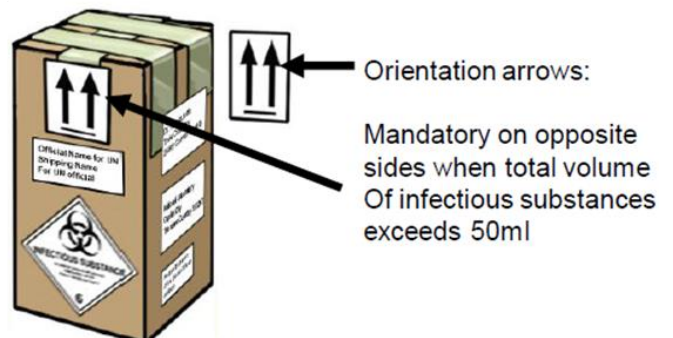
- 13** Name and the telephone number of the contact person at the National Reference Laboratory. Person should be available 24 hours a day until shipment arrives



- 14** Place the Infectious Substance label and the UN proper shipping name (complete): "infectious substance, affecting humans, UN2814"



- 15** Verify that the orientation arrows are on the box



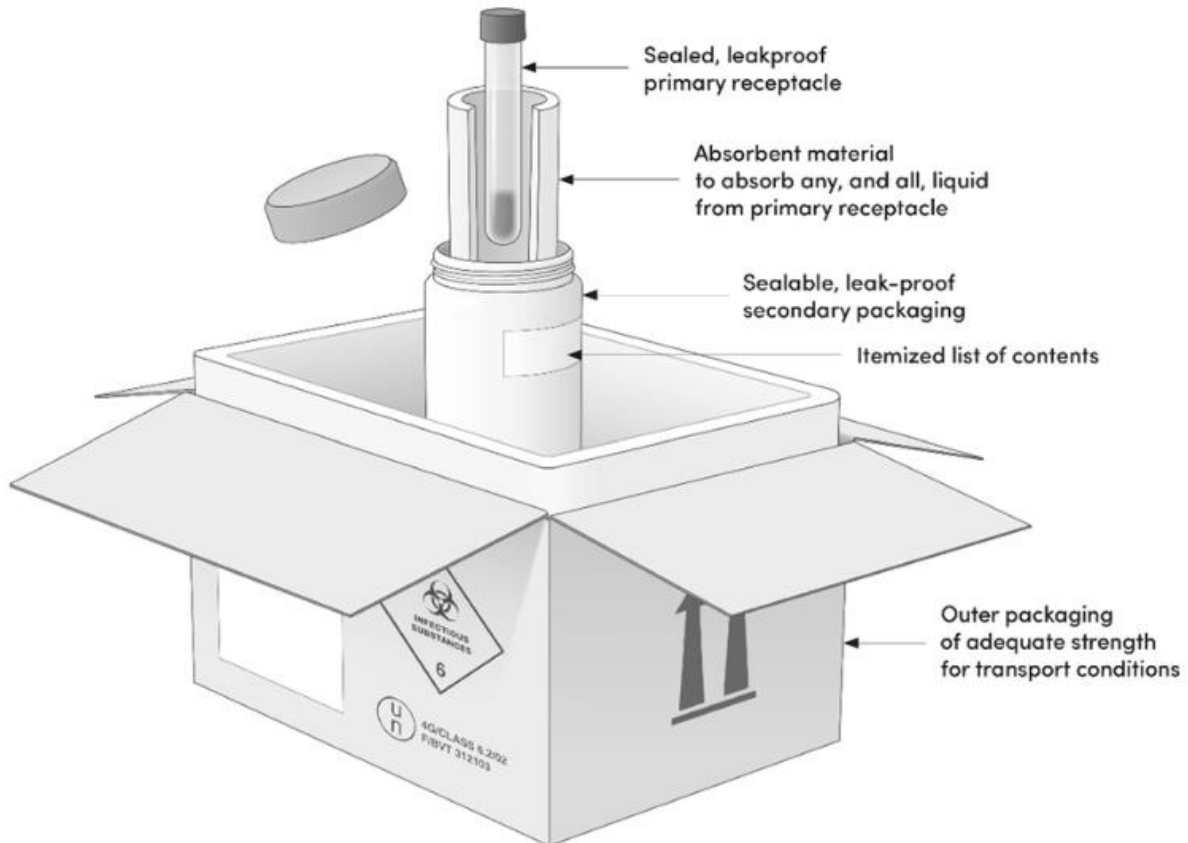
Annex 1

Sample submission form (example). This information should be sent along with the sample from the National Laboratory to the PAHO/WHO Collaborating Centre. The same format can be used for sending samples within the country to the National Laboratory.

SAMPLE SUBMISSION FORM TO WHO COLLABORATING CENTER					
Sender Name		Institution		Sender Address	
Zip Code		Email Address		Tel #	
PATIENT'S INFORMATION					
Patient's identification	Age (years)	Sex	Patients's Nationality	Current location of patient	Results of other microbiological test (if previously performed)
Patient Deceased? (Y/N)	Patient in isolation facility (Y/N)	Contact during the last 21 days with confirmed EVD case or with individuals where EVD is suspected		Travel history (last 21 days) to countries where EVD has been confirmed (place & dates)	Travel history (last 21 days) to other countries
Onset of symptoms (date)	Fever	Muscle pain	Nausea	Bleeding signs	Other symptoms
Is the patient under any kind of treatment (if yes, please specify)		Is the patient responding at the treatment?		Additional information (if relevant)	
SAMPLE 1					
Sample lab code	Date of sample collection	Type of sample (whole blood, serum, plasma, other -specify-)		Is the sample inactivated? (if yes, explain the method, e.g. heat, chemical, etc.)	Do you accept to share the results with PAHO regional office (Y/N)
SAMPLE 2					
Sample lab code	Date of sample collection	Type of sample (whole blood, serum, plasma, other -specify-)		Is the sample inactivated? (if yes, explain the method, e.g. heat, chemical, etc.)	Do you accept to share the results with PAHO regional office (Y/N)

Annex 2

Example of triple packaging system (P620) mandatory for the packaging and labeling of Category A infectious substances (see: *Guidance on Regulations for the Transport of Infectious Substances 2025–2026*: <https://iris.who.int/items/b13811ad-8711-424a-9a7e-6dd6d997c448>)



Anexo 3

Shipper's Declaration for Dangerous Goods (DDG) (mandatory for shipping of Category A substances by air).

SHIPPER'S DECLARATION FOR DANGEROUS GOODS						
Shipper Write name of the sender here Write address here Write phone number here				Air Waybill No. XXXX Page 1 of 1 Pages Shipper's Reference Number XXXX <small>(optional):</small>		
Consignee						
<i>Two completed and signed copies of this Declaration must be handed to the operator.</i>				WARNING Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.		
TRANSPORT DETAILS This shipment is within the limitations prescribed for: <small>(delete non-applicable)</small>				Airport of Departure		
<input type="checkbox"/> PASSENGER AND CARGO AIRCRAFT		<input checked="" type="checkbox"/> CARGO AIRCRAFT ONLY				
Airport of Destination: Winnipeg				Shipment type: <small>(delete non-applicable)</small> <input type="checkbox"/> NON-RADIOACTIVE <input checked="" type="checkbox"/> RADIOACTIVE		
NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods Identification						
UN of ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Pack- ing group	Quantity and type of packing	Packing Inst.	Authorization
UN2814	Infectious substance affecting humans (Ebola virus)	6.2		1 X 5 ml Total: 5 ml 1 Fibreboard box	620	
UN1845	Dry Ice	9	III	5 Kg Overpack used	954	
Additional Handling Information ERAP# ERP2-0746 PHAC's 24hr. ERAP Duty Officer: 1-800 545-7661 24 Hour Number: CANUTEC (613) 996-6666						
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met.				Name/Title of Signatory Write name here Place and Date Write place and date here Signature <small>(see warning above)</small>		

Annex 4

Air Waybill

PLEASE PRINT CLEARLY OR TYPE / VEUILLEZ IMPRIMER OU ÉCRIRE EN LETTRES MOULÉES

PUROLATOR'S COPY / COPIE DE PUROLATOR

1 SENDER ACCOUNT NO. / N° DE COMPTE DE L'ÉMETTEUR: () IMPORTANT TELEPHONE: ()

2 SENDER (FROM) / EXPÉDITEUR (DE): MD DYJUR YRIAN

3 STREET ADDRESS / ADRESSE (N° ET RUE): APT. SUITE / APP. BUREAU

4 CITY / VILLE: FORTAL / ZIP

5 RECEIVER (TO) / DESTINATAIRE (À): DR GARY KOBINGER

6 STREET ADDRESS / ADRESSE (N° ET RUE): 1015 ARLINGTON ST

7 CITY / VILLE: WINNIPEG

8 DESCRIPTION (INCLUDING DANGEROUS GOODS / INCLUTANT MARCHANDISES DANGEREUSES): UN2814, Infectious substance, (Ebola virus), Class 6.2, 5ml

9 SENDER REFERENCE (IF ANY) / RÉFÉRENCE DE L'ÉMETTEUR: PICKUP / BOUTEILLE - N° DE CODE: 2-1427

10 SENDER SIGNATURE / SIGNATURE DE L'ÉMETTEUR: X

11 SHIP MODE / MODE DE TRANSPORT: AIR AERIEN GROUND ROUTIER

12 PURD. LETTER 9 AM 0h

13 PURD. FAX 10:30

14 BILL OF LADING NO. / N° DE CONNEXION / N° DE CONNEXION: 1210 499 2172

15 Purolator purolator.com 1 888 SHIP-123

16 DECLARED VALUE / VALEUR DÉCLARÉE: \$

17 WEIGHT / POIDS: 1 KG 5 LB

18 011 1210499217