



VETERANS ADMINISTRATION MARYLAND HEALTH CARE SYSTEM  
BALTIMORE DIVISION  
10 NORTH GREENE STREET  
BALTIMORE, MD 21201

GEN00029.1

*PATHOLOGY & LABORATORY MEDICINE SERVICE*

Packaging and Shipping of Specimens for Analysis Version 1

General Procedure Manual # GEN00029

**Purpose:**

Specimens are subject to the minimum packaging requirements of government and international regulations and must withstand leakage of contents, shocks, pressure or temperature, change and other conditions incident to ordinary handlings in transportation.

**Scope:**

- A. This procedure applies to all staff that package laboratory specimens for transport to a remote site (CBOC, Perry Point, Reference Lab, etc.).
- B. At the time of original training and at least every two years thereafter, the following shall occur and be appropriately documented.
  1. All send out staff, as well as certain other selected lab staff in micro, and/or pathology shall receive certified training on shipping infectious substances and diagnostic specimens.
  2. All other Blood Bank staff, satellite lab (Perry Point) and local CBOC staff receive local training.
- C. At the PLMS in the Baltimore site during administrative hours, final packaging and shipping of lab specimens must be done by the Send-Out Tech. During non-administrative hours when an urgent request for send-out of specimens is received, the section tech where the request is received is responsible for packaging and shipping with local courier only. All specimens for reference laboratory testing should be collected in accordance with the reference laboratory guidelines, e.g. preservatives for 24hr urines, specialized coagulation assays, etc. For further information on correct collection should be referred to the on-site referral laboratory packaging tech. at extension 5324 (Baltimore).



## Basic preparation/packaging of specimens

### A. Primary leak proof container:

1. All liquid specimens must be in labeled tubes/containers made of plastic with skirted tight-fitting caps exhibiting good integrity. If screw top caps are used for samples traveling by commercial courier service, they must be reinforced with adhesive tape or parafilm. This is considered the primary leak proof container.
2. Specimens to be transported by commercial courier service (Fed Ex, UPS, etc.) must not contain more than 500 mL in this primary container.

**Note:** Primary containers that contain a Dangerous Class 3: Flammables (such as the preservative in thin prep vials), Class 8: Corrosive (such as bleach) and class 9: Environmentally Unfriendly Substances (such as lithium batteries) must contain 30 mL or less.

Labels on primary containers should contain:

- a) Send out accessioning number and specimen type
  - b) Date/time of collection
  - c) If the computer generated accession/barcode label is available it must be used. It contains all of the requirements in a-c above.
  - d) If the lab order label (un-accessioned/non barcode label) is available it can be used but you must write date/time of collection, and your initials on the label.
  - e) If a specimen has been aliquoted from the original collection container, it should also include the initials of the staff member who aliquoted the specimen.
3. Glass slides will be labeled on the frosted edge and placed in hard cased container to protect from breakage.
  4. Paraffin blocks will be labeled on the plastic collar and wrapped in gauze.

### B. Secondary leak proof container:

1. The labeled specimen(s) must be placed into a secondary leak proof container.
2. This secondary container may be a zipper bag or leak proof plastic bin.



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C. Absorbent material:

1. Adequate absorbent material must be placed between the primary and secondary leak proof containers. There should be sufficient absorbent material to absorb two times the volume of the specimen (s) in the secondary leak proof container.

D. Shipping manifest:

1. A shipping manifest (lab request slip, worklist, etc.) must accompany all shipments and contain the following:
  - a. Originator of the shipment
  - b. Listing of specimens contained in the package
  - c. Date and time of packaging
  - d. Initials of the packager

E. Outer Container:

1. The secondary container and shipping manifest must be placed into a sturdy outer container which maintains specimen integrity and is appropriate for the mode of transportation being utilized and for the specific category of specimen (A or B). See Section IV below for details.
2. Pre-labeled coolers are used as the outer container in shipments that are transported by VA shuttle/courier from CBOC's or the Perry Point site.
3. After the outer container is packed it must be sealed. VA coolers must be zippered completely and secured with supplied plastic zip locks to ensure all Protected Health Information (PHI) is transporter safely. All other boxes should be sealed with packaging tape.

**Note:** When packaging shipments that contain dry ice, do not completely seal all the container seams with tape. You must allow space for the release of gases from the dry ice.

4. Tube mailers or other small containers can be placed in the commercial courier envelope designed for lab specimens.

**Note:** The commercial courier e.g. UPS plastic mailer is considered the outer container and **IS NOT** to be used as the Primary or Secondary Leak proof container.



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I. PACKAGING OF INFECTIOUS SUBSTANCE-CATEGORY B (DIAGNOSTIC SPECIMENS) BY FED EX, UPS, TAXI, STATE CURIER, VA CURIER OR US POSTAL SERVICE.

- A. Category B Infectious Substances (Diagnostic Medical Specimens) are defined as human material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, and body parts transported for purposes such as research, diagnosis, investigational activities, disease treatment or prevention and do not meet the criteria for inclusion in Category A. They fall under the UN shipping code UN 3373 (Diagnostic specimens or Clinical specimens). They must be packaged to comply with IATA Packing Instruction 650. The shipper must ensure that shipments are prepared in such a manner that they arrive at their destination in good condition and that they present no hazard to person or animals during shipment.
- B. Routine patient laboratory specimens being sent for diagnostic testing are included in this category.
- C. Specimens must be properly packaged as per Section III above. Specimens, which do not fall into this shipping category must be packaged according to Category A substances and follow IATA Packaging Instruction 602, which is addressed later in this policy. See Section V.
- D. Category B specimens packaged for transport by UPS or US mail may contain no more than 500 mL in the primary container and no more than 4 liters of total volume.

**Note:** A dangerous good that falls under Class 3: Flammables (such as the preservative in thin prep vials), Class 8: Corrosives (such as bleach) and Class 9 Environmentally unfriendly substances (such as lithium batteries) must contain 30 mL or less in the primary container with no more than 4 liters of total volume in outer packaging.

E. Room Temperature Shipments:

- 1. Specimens that must remain at room temperature must be kept separated from any refrigerated items in a shipment.
- 2. Ensure that the specimen is not placed near cold/frozen gel packs. If placed in same outer container with gel packs to room temperature sample must be insulated with packing material to maintain integrity of the sample.



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3. Outer shipping containers must be sturdy to protect specimens from breakage. Use a Styrofoam or other sturdy material box for the outer shipping container.
4. UPS plastic mailing envelopes may be used if specimens are placed in a sturdy rigid container what will fit in the envelope to protect the specimens against breakage. Paper bags are not acceptable.
5. The outer shipping container for local CBOC's and Perry Point site is the VA supplied cooler.

F. Refrigerated Shipments:

1. If sending refrigerated serum/plasma/urine: place two or three **FROZEN** gel packs on top of packaged specimens. If sending whole blood, place packaged specimen between two **REFRIGERATED** gel packs. **During summer months** a frozen gel pack should then be placed on top of the upper refrigerated gel pack.
2. Any necessary packaging material should be placed on top of gel packs.
3. Use a Styrofoam box or other sturdy material box.
4. The outer shipping container for local CBOC's and Perry Point site is the VA supplied cooler.

G. Frozen Shipments:

1. If a frozen specimen can be allowed to thaw but remain cold in transit, then place two to four frozen gel packs on top of packaged specimen(s).
2. For specimens that must remain frozen during transport, place 2-3 lbs. of dry ice on top of packaged specimen(s).

**NOTE:** When packaging shipments that contain dry ice, DO NOT completely seal all the container seams with tape. You must allow space for the release of gases from the dry ice.

3. Use of Styrofoam box or other sturdy material box with Styrofoam liner.



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H. The shipping form and labels to be used will depend on the mode of transportation to be used. See instructions Section VI "COMPLETION OF FORMS AND LABELS".

II. PACKAGING OF INFETIOUS SUBSTANCES-CATEGORY A, FOR DELIVERY BY STATE COURIER.

- A. Category A Infectious Substances are those that are transported in a form that, when exposure to it occurs, it is capable of causing permanent disability, life-threatening or fatal disease to humans or animals. They fall under UN shipping code 2814 (Infectious substances affecting humans) or UN 2900 (Infectious substances affecting animals).
- B. Shipping of certain bacterial or viral isolates fall into this category. See Table 3.6 D. in the current IATA Dangerous Good Regulations for a full list of infectious substances which fall into Category A. All Category A substances must be packaged under IATA Packing Instruction 602.
- C. UPS is not certified to ship Category A substances. All shipments must be sent through Maryland State Health Department (MSHD) courier.
- D. Specimens are prepared in the same manner as described in Section III above. The secondary leak proof container **MUST** be certified to pass a 95kPa (13.8PSI) pressure test.
- E. Packaged specimens are then placed in specially labeled "approved" outer shipping containers. These containers are purchased through SenTpack. To be "approved" the box must have been certified for Class 6.2. They must have the full name and address of the shipper and consignee, 24 hour Emergency Contact Information, and Class 6 label. A supply of approved boxes is kept in the Microbiology and Chemistry sections of the laboratory along with detailed instructions on the use of the packaging material currently in use.
- F. A "Shippers Declaration of Dangerous Goods" document is also included in the packaging.



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#### IV. COMPLETION OF FORMS AND LABELS

##### A. General labeling requirements:

1. If the package contains 50 mL or more of fluid, then a Package Orientation Label must also be attached to the outer box (arrows pointing to the top of the box).
2. For all Category B shipments, via UPS, a UN 3373 label and a Biological Substance Category B/ air eligible label must be applied to the outer shipping container.
3. For all Category A shipments a UN 2814 label and a Class 6 Infectious Substance label must be attached to the outer shipping container (see instructions located with the current supply of approved boxes).
4. If the outer container contains **DRY ICE**:
  - a) UPS requires a properly completed UPS Dry Ice label attached to the outer box.

##### B. Taxi/VA Courier shipments:

1. Labels for local use, such as delivery to local reference labs or shipments from Perry Point and all CBOC's to the Baltimore Laboratory, must include the following:
  - a) Biohazard label
  - b) Address and phone # of sending facility
  - c) Address of testing facility
  - d) Instructions for the driver of number to call in case of emergency
  - e) Shipping name: Diagnostic Specimen
2. Pre-printed transport instructions form/label can be used.
  - a) Place a red/orange biohazard label in the appropriate location on form.
  - b) Place pre-printed testing lab address/phone number label in the outside location on form.
  - c) Attach to outside of the properly prepared and packaged specimen for transport.
  - d) For VA shuttle/courier coolers, place a completed label in the see thru pocket located on the top of the cooler.



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### C. UPS Shipments

1. As mentioned in section V UPS cannot be used for Category A shipments.
2. To generate the air bill go to: [www.campusship.ups.com](http://www.campusship.ups.com) and sign in with your User ID and Password (administer by the Section Supervisor)
  - a. Select the receiving address from the Corporate Address Book
  - b. Select Packaging Type and enter estimated weight
  - c. Select UPS Next Day Air for Service
  - d. If needed click in "Deliver On Saturday" box
  - e. If **Dry ice** is needed you must click in the Dry Ice Box and enter estimated weight
  - f. Review entered data and ship
  - g. Print label

**NOTE:** A manual air bill may be utilized if internet access is not available during computer downtimes.

3. If a UPS "Lab Pak" plastic mailer is used, a UN 3373 label and a Biological Substance Category B/ air eligible label must be applied to mailing envelope if it is not already pre-printed on the envelope by the shipper.
4. Attach the completed air bill to the outside of the outer shipping container in a see-through pouch.

### **Transportation:**

- A. **Contract Courier Service:** Specimens should be prepared and packaged as described above. Monday through Friday at approximately 10 am, VA courier will pick up specimens for local delivery from the following sites:
  - From Fort Howard, Fort Meade, Glen Bernie and Loch Raven to Baltimore (three deliveries per day, no holidays, no weekends)
  - From Baltimore to Washington DC (once per day, no holidays, no weekends)
  - From Eastern Shore, Cambridge and Pocomoke to Perry Point (twice daily, no holidays, no weekends)





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- B. **Shuttle Service (VA courier):** Specimens should be prepared and packaged as described above. Deliver to the designated shuttle pick-up area in Central Processing Area for the Baltimore site or Perry Point site (first shuttle leaves site at approximately 9 am with multiple pick-up and delivery times, no holidays, and no weekends).
- C. **Cab Service:** Specimens should be prepared and packaged as described above. Call the Cab Service being utilized by Lab Service. Provide the dispatcher the following information: person calling, location of package pick-up and location of where the package is to be delivered. Can service is to be used for local deliveries that cannot wait for the next VA Courier Service (holidays and weekends).

**References:**

- a. International Air Transport Association (IATA), Dangerous Goods Regulations Current Edition
- b. Laboratory SOP Manuals for Blood Bank, Send-out Testing, Chemistry, Microbiology and Anatomic Pathology procedures.

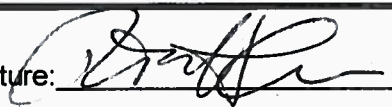
**Attachments:**

- A. Specimen Transport Log
- B. Courier Instructions for Transport of Patient Specimens

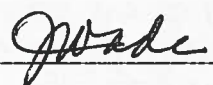


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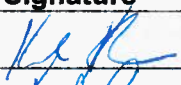

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DATE ADOPTED	Author of Procedure/Policy	Chief of Service
09/04/2015	Karla Peralta, BS MT (ASCP)	Signature:  Dong H. Lee M.D.

Policy/Procedure(s) Retired:		Date retired:
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Review Date	Version Number	Signature of reviewer
11/13/17	1	

**REVISION HISTORY**

Date revised	Revision #	Changes made	Signature
08/11/2016	1	Added courier transport training	
11/12/2017	N/A	Reformatted, changed document control number from GEN00030	

DATE SENT:		DATE RECD:	
TIME SENT:		TIME RECD:	
SENDING TECH:		RECEIVING TECH:	

**Circle your location:**

Perry Point	Fort Meade CBOC	Glen Burnie CBOC	Loch Raven CBOC
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**List the INDIVIDUAL ACCESSION #'s sent in this batch of samples:**

	GOLD	BLUE	PURPLE	GREEN	YELLOW (URINE)	URINE CUPS	CULTURES	OTHER#
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

*\*if more than 20 samples are in this batch, record them on a second log and staple it to this one.*

**Laboratory Staff Only**

ALL of the above samples were received? YES/NO      Receiving tech initials: \_\_\_\_\_

Transport bag completely emptied? YES / NO    1<sup>st</sup> verifier initials: \_\_\_\_\_ 2<sup>nd</sup> verifier initials: \_\_\_\_\_

**Techs: Please note missing samples below, document investigation below:**

*\*forward this form to each affected sample supervisor for review*

Supervisor (SPV) Review, if indicated (SPV return completed form to specimen transport log file):

SPV signature:		Date:	
SPV signature:		Date:	



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**Attachment B**

**VA Maryland Health Care System**

**Baltimore, Maryland**

**Pathology and Laboratory Medicine Service**

**Courier Instructions for Transport of Patient Specimens**

This guide is offered to our courier service and their drivers to help them safely transport medical specimens to and from VAMCHS Laboratories and CBOCs for testing.

**Objectives**

This guide has been developed to meet the following objectives:

- Provide instructions for packaging specimens
- Provide information about supplies
- Use as a tool for training additional staff members
- Specimen Integrity

Specimens must be packed and shipped properly for accurate testing, which helps ensure that patients receive optimal quality of care. A specimen may not be viable for testing if it becomes too cold or too hot. It may be necessary to collect another specimen from the patient, which may delay treatment.

Pathology and Medical Laboratory Service's (P&LMS) goal is to ensure that all medical specimens arrive at the testing facility:

- At the correct temperature for testing
- Intact in the container, without breakage or leakage
- In the shortest possible time
- In compliance with all applicable regulations

This guide has been prepared to help couriers understand their role in accomplishing these goals. By following the guidelines for proper specimen preparation, packing, shipping, and documentation, couriers can comply with regulations and safely transport VAMCHS Laboratories specimens.



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### Packaging Specimens



Biohazard bags (with **BIOHAZARD** symbol) being transported to testing laboratories must be maintained at an appropriate temperature: ambient/ refrigerate.

Specimens must be separated by temperature, and each of these temperature bags must be packaged in a specific manner (done by laboratory staff). P&LMS provides dark green-colored shipping bags in small and large sizes, the small bag holds approximately 2-3 leak-proof containers and the large size bag holds up to 5 leak-proof containers. Transportation bags provided by P&LMS contain appropriate labeling biohazards and zip lock tie. The leak-proof container holds the cool packs needed to keep refrigerate/ambient specimens cool for up to 4-6 hours (depending on season).

All specimens must be shipped in a leak-proof container, regardless of transport temperature. The leak-proof containers also contain material that can absorb the full liquid content of the specimens placed inside.

The following pages provide couriers with detailed instructions for information about shipping infectious substances, safety in the laboratory, and cleaning up leaks and spills.

### General Instructions for Transport of Specimens

- Do not leave a box containing specimens in an unlocked car/shuttle.
- Do not place any documents, packages, envelopes, and so forth, outside of the biohazard bags.

For additional assistance or questions regarding specimen packaging, supplies, or shipping, contact courier support.

### Courier Support is available:

Baltimore Laboratory -Accessioning: **410-605-7000 X 5328 (24 Hours, 7 days a week)**

Perry Point Laboratory: **410-642-2411 X 5010 (7:00 am- 6:00pm, Monday-Friday)**

### Safety in the Laboratory

**Universal Precautions** - refers to the practice of avoiding physical contact with patients' blood and bodily fluids by wearing nonporous barriers such as medical gloves, goggles, and face shields. It also refers to the concept of handling all human blood and other potentially infectious materials as if infectious for HIV, HBV, HCV or other blood borne pathogens, regardless of the perceived "low risk" status of a



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patient or patient population, for further information please refer to VAMHCS Policy Memorandum 512-113PL-002, *Infection Control Policy*.

P&LMS packaging materials are designed to protect everyone who handles them. However, couriers should always take special precautions in a laboratory:

- Cover any cuts or scrapes with a bandage.
- Wash hands before leaving each laboratory.
- Open-toed shoes are not acceptable in the laboratory areas.
- Do not put the bags down in a wet area.
- Do not touch any specimen bag or container that appears soiled. Ask a laboratory staff person to place the specimens in another bag for safe transportation.
- In the event of a cut or puncture to the skin in the lab, tell a laboratory staff person immediately.

#### **Packing the Courier Vehicle**

Pack the courier vehicle with the following items (more about some of these items later):

- Box of gloves
- Absorbent material (paper towel)
- Spill kit

#### **Leaks and Spills**

To be safe, treat every spill as if it were infectious. If any specimen container in the laboratory appears to be leaking, do not touch it. Bring it to the attention of lab personnel for repackaging. Do this even if the leaking container is inside another bag.

If a leak or spill occurs away from a laboratory, the courier will have to clean it up, using either a commercial cleanup kit or disinfectant spray as follows:

- Make sure no one touches or walks through the spill.
- Always wear gloves when dealing with a spill.
- If a spill is large, blot up as much as possible with the absorbent material.

Any materials used to clean up a spill, including paper towels and gloves, should be discarded in a biohazard container. DO NOT place these materials in the regular trash containers.

- Notify the Laboratory Staff of the situation.

Any leak or spill should be reported immediately to P&LMS or your supervisor. Do not wait for the end of the run. Call P&LMS immediately at 1-410-605-7000 x5328. Be sure to communicate whether the courier or anyone else came in contact with the specimen.

