Appendix B – Tab 9
Public Health Laboratory Testing & Shipping
Packaging and Shipping Specimens

I. Purpose
Laboratory specimens will be packaged and marked according to United States Department of Transportation 49 CFR Subpart H parts 171-180, the United States Postal Service Domestic Mail Manual Publication 52, and following International Air Transport Association Dangerous Goods Regulations.

II. Procedural Instructions
These instructions are for guidance purposes only. Use manufacturer’s instructions for your specific box system.

Employees must have a current certification of training on file.

• Specimen must be classified as an infectious substance in Division 6.2 and assigned to UN2814 Infectious Substance, affecting humans (Category A) or UN3373 Biological Substance, Category B as appropriate.
To assist in the assignment of infectious substances into Category A, see the Indicative List provided in Appendix A.

Infectious substances that do not meet the criteria for inclusion in Category A are assigned to Category B.

1. **Packaging the specimen for shipment as Infectious Substance, Category A (UN2814).**

Follow the instructions below when packaging specimens classified as an Infectious Substance, Category A (Appendix B).

- Use certified Category A ambient/refrigerated shippers.
- Reinforce tubes caps (leakproof primary container) with parafilm or adhesive tape.
- Wrap specimens in bubble wrap included in box.
- Place absorbent disk in bottom of white plastic container (leakproof secondary packaging).
- Place bubble wrap w/specimens in the white plastic container and seal.
- Maximum volume of complete package is 50mL.
- Category A may not be shipped by USPS.

**Assembly of refrigerated box:**
- Place white plastic container into the cardboard sleeve in the Styrofoam container.
- Place frozen ice brick into the Styrofoam container next to the cardboard sleeve.
- Replace Styrofoam lid.
- Place all paperwork in a Ziploc bag.
- Place Ziploc bag containing paperwork on top of Styrofoam box.
- Seal certified shipper, (Outer packaging).

**Assembly of ambient box:**
- Place white plastic container into certified shipper.
- Place all paperwork inside shipper.
- Seal certified shipper.

**Marking of Box:**
- Label with Consignee (To) and Shipper (From)
- Affix Infectious Substance Biohazard label in the premarked diamond.
- Label or write UN2814 Infectious Substance, affecting humans above or adjacent to the Infectious substance biohazard label.
- The name and telephone number of a person responsible for shipment must be legible on outside of box. This person is usually shipper. Phone number can be included on the FROM label.
2. Packaging the specimen for shipment as Biological Substance, Category B (UN3373).

Follow the instructions below when packaging specimens classified as a Biological Substance, Category B (Appendix C):

- Use category B ambient/refrigerated shippers.
- Use leakproof primary container.
- Place specimens in absorbent shuttle provided in box.
- Place shuttle w/specimens in the 95 kPa bag or white plastic container (leakproof secondary packaging).
- Primary container may not contain more than 1L and outer container may not contain more than 4L.

Assembly of Refrigerated Box:
- Lay frozen ice brick in bottom of Styrofoam inner container.
- Place 95 kPa bag with specimens on top of ice brick.
- Replace Styrofoam lid.
- Place all paperwork in a Ziploc bag.
- Place Ziploc bag containing paperwork on top of Styrofoam box.
- Seal outer shipper (outer packaging).

Marking of Box:
- Biological Substance, Category B shippers are preprinted with the applicable markings.
- Label with Consignee (To) and Shipper (From)
- The name and telephone number of a person responsible for shipment must be legible on outside of box.

Shipping Paperwork

Using FedEx to ship specimens.

- Category B paperwork
  - FedEx Airway bill
    - Mark "Yes Shipper's Declaration not required" under special handling
    - Write UN 3373 Biological Substance, Category B in Box 2
- Category A paperwork
  - FedEx Airway Bill (Appendix E)
    - Mark "Yes" under special handling
  - Shipper's Declaration for Dangerous Goods (Appendix D)
    - Shipper's Declarations must be completed using software that has data-compliance checks.
3. **Shipping Completed Box**

Arrange pickup by calling 1-800-GoFedEx.

Airway Bill and if applicable, the Shipper’s Declaration should be placed on the top of the box. If placing in a plastic pouch, red hatching’s from shipper’s declaration must show.

4. **Exceptions**

The following are exempt from the regulations of 49 CFR, 49 CFR and IATA.

- Dried blood spots or specimens for fecal occult blood detection placed on absorbent filter paper or other material.
- Environmental samples (including food and water samples), which are not considered to pose a significant risk of infection.

### III. References

49 CFR Parts 171-180, Department of Transportation 1200 New Jersey Ave SE, Washington, DC 20590 [http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?SID=585e275ee19254bad67625d8c92fe925&node=ecfr>ecfrbrowse/Title49/49cfrv2_02.tpl](http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?SID=585e275ee19254bad67625d8c92fe925&node=ecfr>ecfrbrowse/Title49/49cfrv2_02.tpl) April 2011

52nd Edition of the Dangerous Goods Regulations, International Air Transportation Association, 800 Place Victoria PO Box 113 Montreal, Quebec Canada H4Z 1M1, 2007


FedEx, [www.fedex.com](http://www.fedex.com)

### IV. Author

Leigh Ann Bates March 2011

Linda Dailey MT(ASCP) March 2011
### Table 3.6.D from IATA Dangerous Goods Regulations

**Indicative Examples of Infectious Substances Included in Category A in Any Form Unless Otherwise Indicted (3.6.2.2.2.1)**

<table>
<thead>
<tr>
<th>UN Number and Proper Shipping Name</th>
<th>Micro-organism</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 2814, infectious substance</td>
<td><em>Bacillus anthracis</em> (cultures only)</td>
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<tr>
<td>affecting humans</td>
<td><em>Bacillus abortus</em> (cultures only)</td>
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<td></td>
<td><em>Brucella melitensis</em> (cultures only)</td>
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<td></td>
<td><em>Brucella suis</em> (cultures only)</td>
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<td></td>
<td><em>Burkholderia mallei - Pseudomonas mallei</em> - Glanders (cultures only)</td>
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<td></td>
<td><em>Burkholderia pseudomallei - Pseudomonas pseudomallei</em> (cultures only)</td>
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<tr>
<td></td>
<td><em>Chlamydia psittaci</em> - avian strains (cultures only)</td>
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<td></td>
<td><em>Clostridium botulinum</em> (cultures only)</td>
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<td></td>
<td><em>Coxiella burnetii</em> (cultures only)</td>
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<td></td>
<td><em>Crimean-Congo hemorrhagic fever virus</em></td>
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<td></td>
<td><em>Dengue virus</em> (cultures only)</td>
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<td></td>
<td><em>Eastern equine encephalitis virus</em> (cultures only)</td>
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<td></td>
<td><em>Escherichia coli, vero toxigenic</em> (cultures only)</td>
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<td><em>Ebola virus</em></td>
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<td></td>
<td><em>Flexal virus</em></td>
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<td></td>
<td><em>Francisella tularensis</em> (cultures only)</td>
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<td><em>Guantanamo virus</em></td>
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<td></td>
<td><em>Hantavirus</em></td>
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<td></td>
<td><em>Hantavirus causing hemorrhagic fever with renal syndrome</em></td>
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<td></td>
<td><em>Hendra virus</em></td>
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<td></td>
<td><em>Hepatitis B virus</em> (cultures only)</td>
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<td></td>
<td><em>Herpes B virus</em> (cultures only)</td>
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<td></td>
<td><em>Human immunodeficiency virus</em> (cultures only)</td>
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<td></td>
<td><em>Highly pathogenic avian influenza virus</em> (cultures only)</td>
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<td></td>
<td><em>Japanese Encephalitis virus</em> (cultures only)</td>
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<td><em>Junin virus</em></td>
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<td><em>Kyasanur Forest disease virus</em></td>
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<td><em>Lassa virus</em></td>
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<td><em>Machupo virus</em></td>
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<td><em>Marburg virus</em></td>
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<td><em>Monkeypox virus</em></td>
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<td></td>
<td><em>Mycobacterium tuberculosis</em> (cultures only)</td>
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<td><em>Nipah virus</em></td>
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<td><em>Orf virus</em></td>
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<td><em>Orf hemorrhagic fever virus</em></td>
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<td><em>Poliomyelitis virus</em> (cultures only)</td>
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<td><em>Rabies virus</em> (cultures only)</td>
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<td><em>Rocky Mountain spotted fever virus</em> (cultures only)</td>
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<td><em>Rocky Mountain wood tick virus</em> (cultures only)</td>
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<td></td>
<td><em>Rift Valley fever virus</em> (cultures only)</td>
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<td></td>
<td><em>Russia spring-summer encephalitis virus</em> (cultures only)</td>
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<td></td>
<td><em>Saba virus</em></td>
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<td></td>
<td><em>Shigella dysenteriae type 1</em> (cultures only)</td>
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<td></td>
<td><em>Tick-borne encephalitis virus</em> (cultures only)</td>
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<td></td>
<td><em>Varicella virus</em></td>
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<td></td>
<td><em>Venezuelan equine encephalitis virus</em> (cultures only)</td>
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<td></td>
<td><em>West Nile virus</em> (cultures only)</td>
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<td></td>
<td><em>Yellow fever virus</em> (cultures only)</td>
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<tr>
<td></td>
<td><em>Yersinia pestis</em> (cultures only)</td>
</tr>
</tbody>
</table>
Shipper Examples A & B

Refrigerated Infectious Substance, Category A Shipper

Ambient Infectious Substance Category A Shipper
Refrigerated Category B Shipper

Ambient Category B Shipper
Shipper’s Declaration

Provide at least three (3) signed copies of the completed Shipper’s Declaration (with diagonal hatchings printed in red) to FedEx Express for shipping.
FedEx Shipping Label
Multi-Shipper Instructions

Packing Instructions for the Multi-Shipper

The enclosed Biological Substance, Category B specimen shipping system has been developed in accordance with the DOT triple packaging requirements found in 49CFR 173.199 and IATA Packing Instruction 650.

Ambient Shipping System

Components:
- IATA size transport box with markings
- Medium 95kPa Canister
- Aqui-Pak 6 tube absorbent pouch
- Biohazard symbol label
- Bubble wrap sheet

Instructions for use:

Once specimens are collected, open multi-shipper and remove all contents from the box. Follow the steps below to ensure safe and compliant shipping:

1. Insert up to six sample tubes into Aqui-Pak absorbent pouch.
2. Roll up Aqui-Pak - tube and insert inside medium 95kPa canister.
3. Apply biohazard label to outside of medium 95kPa canister
4. Wrap medium 95kPa canister in provided bubble wrap and place inside box
5. Complete patient test requisition form and fold to fit inside kit box.
6. Place address label and postage on top of box. Do not hang over on the sides. Box has been fitted with a Kennedy label to ensure complete removal of labels.

How to Correctly Pack This Box

1. Place specimens in tube shuttles.
2. Place tube shuttles in plastic container.
3. Place bubble wrap and lab form around outside of plastic container.
4. Put in box → Place laboratory label on box.

Do NOT put tape or biohazard label on outside of box.

If tape is used to seal box, a small piece will do....

If you have questions please contact Leigh Ann Bates at leighann.bates@ky.gov or 502-564-4446 ext. 4490
Collection & Packaging of Enteric Pathogens

Collection and Packaging of Enteric Pathogens

**Supplies Needed for Enteric Pathogens**

- Cary Blair Transport Media with Indicator
- Aluminum Can with Blister pack
- Laboratory Form 219
- Outer Can with Lid

**Collection of Specimen**

*D O N T D I S C A R D L I Q U I D I N T H E V I A L*

1. Store Cary Blair media at room temperature.
2. Check expiration date of specimen vial.
3. Make sure two identifiers or lab label is on specimen vial.
4. Specimen should be sent to the laboratory as soon as possible. This medium is intended for use as a transport medium and should not be used as a storage or enrichment medium.

**Stool Specimens**

1. Collect stool specimen into clean container. DO NOT mix urine or water with sample.
2. Open vial carefully. Using the collection spoon attached to the cap, add enough specimen until the liquid reaches the arrow on the label. Approximately one gram.
3. Replace cap tightly and agitate vial.

**Swab Specimens**

1. Remove cap and immerse swab into medium.
2. Break swab shaft evenly with the tip of the vial.
3. Replace cap and tightly.

**Packaging and Shipping**

1. Place sample vial back into zippered bag with Zorb sheet.
2. Place zippered bag inside the aluminum can and tighten lid.
3. Wrap lab form around outside of aluminum can and place inside the outer can. Address label should be on the outside of the outer can. Specimen must be mailed to KY Public Health Lab on the day of collection.

02/2011