

Michigan Department of Health and Human Services - Bureau of Laboratories:
Chemical Threat (CT) Event- Sample Collection and Shipping Instructions
Shipping Instructions for Samples Collected from Individuals Potentially Exposed to Chemical Agents

Background:

During a chemical exposure incident, you may be asked by public health or other authorities to collect specimens from persons potentially exposed to chemical agents. Proper handling of these specimens will ensure laboratory test results are meaningful and the results can be used as evidence in a court of law.

Chemical Threat Response Kit Materials Provided (Unit #23)

- Laboratory Preparedness Guide
- MDHHS-MDCH chain of custody forms (serves as test requisition) (10)
- Shipping Instructions (this document) and DCH-1334
- Shipping Labels-(one UN3373 and one UN3373+UN1845, DOT9)
- Kit order form-DCH-0568
- Ziploc bags - 10X12"
- Sharpie
- Pen
- 6-grid urine box with 8-50ml absorbent squares
- Foam rack for blood tubes with 5-100mL absorbent rectangles

Specimen Packaging Kit (Box) Materials Provided (Unit #22)

- One shipping container* large enough for specimens, absorbent material, and cold packs **OR** dry ice (1)
- Cold-paks for blood samples (8)
- Secondary Packaging (Tyvek & Plastic) (2)
- Roll of Forensic Evidence Tape (1)
- Roll of Package strapping/filament tape (1)

Materials required but not provided

- Urine cups (100mL, screwcap with no preservative) – 1 per patient
- Purple-top (EDTA) blood tubes (5- mL) – 3 per patient
- Green-top **OR** Gray-top blood tubes (5-7mL) - 1 per patient
- Blank (empty) urine cups for each lot number used (2)
- Blank (empty) blood tubes for each lot number used (2)
- Dry ice for urine samples (not large chunks, pelletized preferred)
- Cold and frozen cold-paks for blood samples
- Padding- (blue hospital pads, newspaper, or other cushioning)
- Box for blood tubes

*If shipping by air, an IATA-compliant container including leak-proof secondary packaging and an outer container that meets regulations. The container provided by MDHHS meets these requirements.

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Specimen Collection Instructions

Labels for specimens should be generated by your facility and appropriately placed on the specimens. If using barcode labels, place on specimen so the barcode resembles a ladder. Labels should include:

- patient name
- age or DOB
- identifying number (medical record number or unique specimen identifier)
- date /time of collection
- collector's initials

It is helpful to include:

- ordering physician
- name of hospital

1. Urine specimens - collect for each patient:

- 40-60mL urine in a clean screw-capped container with no preservative
- If lot number and expiration date is not printed on the urine cup, transcribe this information on to the urine cup.
- If container is not leak-proof, seal lid with tape. **DO NOT** use parafilm or evidence tape
- Freeze as soon as possible to -70°C

2. Blood specimens - collect for adult patients only*

- **three** purple top EDTA tubes (5mL)
 - **unopened** allow to vacuum fill only
 - **number tubes** in order of draw (#1, #2, #3, etc.)
- **one** gray-top **OR** green-top tube (5-7mL)
 - **Draw purple-top tubes first!**
 - **unopened** - allow to vacuum fill only
- Refrigerate at 1-10°C. **Do not freeze!**

****Unless directed otherwise by CDC or MDHHS***

3. In addition to patient specimens, please include blank cups and tubes

- two empty, unopened urine cups from each lot number used
- two empty, unopened purple-top tubes from each lot number used
- two empty, unopened gray- or green-top tubes from each lot number used

4. Complete MDHHS-MDCH Chain of custody forms (8 patients per page)

- Keep a copy for your records
- Place in a zipper bag and ship with specimens
- Place zipper bag with MDHHS-MDCH Chain of Custody forms between Styrofoam container lid and rigid outer container

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Specimen Packaging Instructions

Specimens must be properly packaged, even if being transported by courier. See special instructions below for air transport by commercial carrier.

Outer containers

Use Styrofoam-insulated corrugated fiberboard outer containers (may be available from your transfusion service or send-outs department). Polystyrene foam liner should be one piece with a separate lid and should be at least 2" in thickness. Shippers should be able to pass the 4' drop test.

Do not ship frozen urine cups and blood tubes in the same package.

Blood

Wrap properly labeled blood tubes with absorbent material provided and place in foam rack to cushion. Wrap in additional cushioning to secure tubes inside rack. Place blood tubes and absorbents inside a box. Seal box with a continuous layer of evidence tape. Date and initial ½ on evidence tape and ½ on package.

Use two bag system to secure: Place specimens into the inner plastic Biohazard bag (STP 741) included with MDHHS shipping kit and seal. Place sealed Biohazard bag into the outer white Tyvek envelope (STP-740) and seal. **You must use both bags together.** (Other secondary packaging compliant with IATA packing instruction 650 may be used).

Urine

Place urine cups in a gridded box with absorbents. Seal box with a continuous layer of evidence tape. Date and initial ½ on evidence tape and ½ on package. Wrap box with enough absorbent material to contain liquid contents.

OR:

Package frozen urine cups individually. Wrap each cup with enough absorbent material to contain the contents, and place in a zipper bag. Seal bag with a continuous layer of evidence tape. Date and initial ½ on evidence tape and ½ on package.

Use two bag system to secure: Place specimens into the inner plastic Biohazard bag (STP 741) included with MDHHS shipping kit and seal. Place sealed Biohazard bag into the outer white Tyvek envelope (STP-740) and seal. **You must use both bags together.** (Other secondary packaging compliant with IATA packing instruction 650 may be used).

Packaging samples for shipment by commercial carrier:

Packaging must comply with current regulations (Department of Transportation, IATA) and must consist of three components: a leak-proof primary receptacle (blood tubes or urine cups), leak-proof secondary packaging (materials for protecting primary containers, and absorbent material) and a rigid outer container (Styrofoam-insulated corrugated, fiberboard container).

Compliant secondary packaging and outer container have been provided by MDHHS as "Chemical Terrorism Unit # 22". Pack and ship these specimens as "Biological Substance, Category B". (Use IATA packing instruction 650).

NOTE: The shipper is responsible for being sure that their package meets the current shipping regulations.

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Blood tubes

Ship at 4°C

- Place absorbent material in the bottom of the outer container for cushioning.
- Add a layer of frozen cold packs, then a layer of refrigerated cold packs.
- Place additional absorbent material on top of the cold packs.
- Place secondary containers on top of the absorbent.
- Place additional absorbent material on top of the secondary containers.
- Add another layer of frozen cold packs, then a layer of refrigerated cold packs.
- Place additional absorbent material on top of the cold packs.

Urine cups

Ship to ensure specimens will remain frozen while in transport

- Place absorbent material in the bottom of the outer container for cushioning.
- Add a layer of dry ice.
Note: Pellet-type dry ice is preferred. Large chunks have the potential for shattering urine cups during transport and flaked dry ice may not keep the specimens frozen long enough during shipment.
- Place additional absorbent material on top of the dry ice.
- Place secondary containers on top of the absorbent.
- Place additional absorbent material on top of the secondary containers.
- Add another layer of dry ice.
- Place additional absorbent material to reduce movement within the outer container.

All Packages:

- Include the chain of custody form sealed inside a large zipper bag and place the zipper bag on the outside of the Styrofoam container and inside the rigid outer container.
- Be sure the primary containers are aligned (as much as possible) in the same direction as the orientation arrows on the outer packaging.
- Secure outer packaging tops and bottoms with filamentous shipping/strapping tape.
- Label with shipper's (from-you) address and consignee's (to-MDHHS) address.
- Label with "responsible party" including a phone number.
- Affix labels and markings adjacent to the shipper's/consignee's address label:
 - UN 3373 diamond marking on the outer package; diamond on point orientation.
 - Label with proper shipping name, "Biological substance category B" on the outer packaging adjacent to the UN3373 marking.
 - For packages containing dry ice, place a class 9 hazard label on the same side of the outer packaging as the UN3373 marking.
 - Proper shipping name, ("dry ice" OR "carbon dioxide, solid"), "UN1845", the **weight of dry ice used** must be adjacent to the class 9 hazard label, and the statement "**Frozen Medical/Diagnostic Specimens**".

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Please notify MDHHS before shipping these specimens. Please include tracking numbers during this notification

Ship to: MDHHS Bureau of Laboratories
Division of Chemistry & Toxicology
3350 North Martin Luther King Junior Boulevard
Building 44, - Room 155
Lansing, MI 48906
517-335-8063

After hours emergencies should be called to **517-335-9030**

NOTE: If you have any questions or problems with sample packaging or shipment, please contact the Chemical Threat Response Training Coordinator by phone listed above or email to millert28@michigan.gov.

