

# UNIVERSITY OF TOLEDO HEALTH SCIENCE CAMPUS

SUBJECT: SPECIMEN TRANSPORT IN  
COMPUTERIZED TUBE SYSTEM

Procedure No: S-08-011

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## PROCEDURE STATEMENT

All laboratory specimens will be transported in a manner consistent with existing infection control procedures.

## PURPOSE OF PROCEDURE

To establish safe procedures and guidelines for the operation of the pneumatic tube system for transporting laboratory specimens from patient care areas to the clinical laboratory.

## PROCEDURE

### I. ITEMS NOT APPROVED FOR TRANSPORT IN THE CTS SYSTEM

1. 24-hour urines (containers larger than urine cup)
2. Formalin and/or alcohol preserved specimens
3. Blood bags, IV sets, IV solutions that have been implicated in a possible transfusion reaction.
4. Drinks or food items
5. Contaminated supplies
6. Sharps
7. Non-leak tight containers containing liquids
8. Blood gases (except as noted below)
9. Flammable liquids
10. Hazardous chemicals
11. Specimens in syringes
12. Specimens from patients with dangerous, communicable diseases
13. Hazardous drugs (chemo agents)

### II. PACKAGING

Potentially infectious items must be contained and transported in a manner that prevents breakage, leakage or contamination of the system. In accordance with Standard Precautions and OSHA Bloodborne Pathogen standard, all blood and body fluids must be handled as potentially infectious. Refer to the Exposure Control Plan in the Infection Control Manual for handling of biohazardous materials.

Gloves must be worn when inserting and removing specimens of blood and body fluids from carriers.

Leakage is primarily due to:

- Improper packaging and non-immobilization of contents
- Use of non-leak tight containers or failure to tighten container lids

To prevent spillage or breakage, remember:

- Containment prevents leakage
- Immobilization insures integrity

A combination of Ziploc baggies, Zip N' Fold pouches, and red zippered pouch (labeled as biohazard) will be used to immobilize and package items. See the following for specific packaging procedures:

- A. Urine and Stool Specimens (120 ml or less plastic container)
  - 1. Make sure container cap is secure.
  - 2. Place sealed, labeled specimen in clean Ziploc bag. (Bags are available from Central Service).
  - 3. Completely close Ziploc bag.
  - 4. Place Ziploc bag in Zip N' Fold pouch.
  - 5. Seal pouch.
  - 6. Place pouch in carrier and send to Lab.
  - 7. Lab will return the department's empty Zip N' Fold pouch or carrier liner to the sender.
  
- B. Blood/Body Fluids - Vacutainer Tubes
  - 1. Place labeled tubes in slots of vacutainer tube bag. Only one tube per slot.
  - 2. Fold over vacutainer tube bag and place in clear Ziploc bag.
  - 3. Completely close Ziploc bag.
  - 4. Place Ziploc bag in Zip N' Fold pouch.
  - 5. Seal pouch.
  - 6. Place pouch in carrier and send to Lab.
  - 7. Lab will return the department's empty Zip N' Fold pouch or carrier liner to the sender.
  
- C. Culture Specimens (Cultures, sterile containers less than 150 ml)
  - 1. Make sure specimens are securely contained in primary container. Note: Do not send needle attached to syringe. Remove needle and replace with Syringe Luer Lock Tip cap.
  - 2. Place sealed, labeled specimen in clear Ziploc bag.
  - 3. Completely close Ziploc bag.
  - 4. Place Ziploc bag in Zip N' Fold pouch.
  - 5. Seal pouch.
  - 6. Place pouch in carrier and send to Lab.
  - 7. Lab will return the department's empty Zip N' Fold pouch or carrier liner to the sender.
  
- D. Blood Culture Bottles
  - 1. Make sure blood culture bottles are intact and not leaking
  - 2. Place each individual blood culture bottle in a clear Ziploc bag
  - 3. Completely close Ziploc bag
  - 4. Place enclosed blood culture bottles in red carrier liner with bottle bottoms facing each other
  - 5. Place padding in between blood bottles (either foam or wadded paper towels)
  - 6. Seal pouch
  - 7. Place carrier liner in carrier, and send to lab.
  - 8. Lab will return empty carrier liner to the sender.
  
- E. The transport of ABG samples will be allowed on an emergency basis from the Emergency Room to the 2<sup>nd</sup> or 3<sup>rd</sup> floor Blood Gas Labs. The following conditions must be met:
  - 1. The Blood Gas Lab must be called prior to transport.
  - 2. A combination of a leakproof vial must contain the syringe along with a Ziplock bag/Zip N Fold and a red zippered pouch (labeled as biohazard).
  
- F. Pharmacy Transport
  - 1. The blue pneumatic tubes are for pharmacy use only.
  - 2. No biohazards are to go into the blue tubes.
  - 3. Reciever will return empty blue tube back to Pharmacy.
  - 4. Controlled substances must be sent using the secure send function.
  - 5. No hazardous drugs (chemo agents) can be transported.

### III. DECONTAMINATION PROCEDURES (DO NOT DISCARD CARRIERS)

Carrier Liners: Discard contaminated foam insert into an infectious waste bag prior to forwarding to Central Service for decontamination and sterilization. Transport the carrier liner in a secondary container clearly marked with a biohazard label.

Zip N' Fold pouches: Forward to Central Decontamination in a secondary container with a biohazard label for decontamination followed by sterilization.

Plastic Carriers: Forward to Central Decontamination in a secondary container with a biohazard label for decontamination followed by sterilization.

### IV. SYSTEM SPILL PROCEDURES

#### A. Procedures for Users

Note: Always use Standard Precautions when handling carriers that may be contaminated.

1. STOP SENDING CARRIERS FROM THE STATION WHERE THE CONTAMINATION WAS FIRST NOTICED, even at the slightest suspicion of a spill, initiate EMERGENCY SHUTDOWN from your station. (punch in special function 91, and then SEND)
2. Call Facilities Maintenance (419-383-4298).
3. Notify Facilities Maintenance and state:
  - a. Receiving station's number
  - b. Sending station's number (if known)
  - c. Type of spill, specimen type and suspected amount
  - d. Time the contaminated carrier arrived (or was first noticed)
  - e. Number of contaminated carriers that have arrived
4. Notify Infection Control (419-383-5006) of system spill and Environmental Health and Radiation Safety (419-530-3600) Departments so that it may be logged.
5. Follow the Decontamination Procedure in this policy.
6. Remove contents of carrier using protective clothing (utilizing Standard Precautions).
7. Discard the specimen and secondary containment bag or pouch (if unable to be cleaned or salvaged) into a red infectious waste bag.
8. Call the sending station and request another specimen be hand delivered.
9. Contact Central Decontamination (419-383-5107) for further decontamination of the Zip N' Fold pouch and carrier. Place the carrier and Zip N' Fold in a biohazard waste bag and deliver to Central Decontamination.
10. *Facilities Maintenance is responsible for decontamination of the system and will return the system to service when cleaning is completed.*
11. Contact Environmental Health and Radiation Safety (419-530-3600) for any spills outside of the station. (Example: carpet cleaning).

#### B. Facilities Maintenance Action

1. Immediately verify that the system has been shut down. The system can be turned off at the System Control Center (SCC) or at any station.
2. From the system transaction printout, verify from which station the carrier was dispatched and when. Use the riser diagram to determine the route that the carrier traversed from the source station to the destination station. Use the transaction printout to determine if other transactions used that route or any part of it before the system was shut off.
  - a. Determine from the "System Traffic Display" if any transactions in process, when the system was shut off, used that route or any part of it.
  - b. If any of these transactions used the same route or any part of it, determine their source and destination stations and clean-out those routes in addition to the route in which the spill occurred.

3. Purge the entire system to clear the "Emergency Stop" status of the system. Be careful to assign contaminated stations as the recovery stations in those zones with contaminated routes. This procedure will eliminate the spread of contamination to other routes in contaminated zones.
4. From the SCC, individually schedule "Off" all stations on any zone with one or more contaminated routes.
5. Assign "Off Dispatch" to any station on contaminated routes. This will allow clean-out carriers to be sent back to the stations from which they were dispatched.

C. Procedure for Disinfecting Stations and Tubing<sup>1</sup>

The basic procedure consists of sending a carrier containing the clean-out bottle from station to station until all affected segments of the system have been traversed. This procedure will require one person except when cleaning the interzone lines, which will require two people and telephone/radio communication between them.

As the carrier travels through the tubing, the clean-out bottle dispenses the cleaning solution, while the carrier rubbing bands act as swabs.

1. Donning protective clothing prepare bleach solution, 1:10 dilution of bleach (5.25% sodium hypochlorite). The use of 1:10 bleach solution is the most universal cleaning agent for all types of spills (airborne and blood borne) and is least damaging to the system. (Bleach can be obtained from the Environmental Health and Radiation Safety Department, Central Stores or Environmental Services.)
2. Fill the clean-out bottle to within 1/4" of the top holes on bottle.
3. Place the lid on the bottle.
4. While maintaining the upright position of the bottle, place it in a carrier.
5. Close and latch the carrier.
6. Periodically check the level of the cleaning solution. When there is less than an inch of solution left in the bottle, refill it and towel dry the carrier rubbing bands.

After cleaning, a slight amount of cleaning solution may remain in the tubing. This will not affect the system operation.

Use diagnostics to clean-out any contaminated interzone lines.

Turn the contaminated zones on.

Send the clean-out carrier back to yourself from all stations suspected of being contaminated to clean the contaminated routes.

Reassign all stations on "Off" schedules to their original on/off schedules when clean-out is completed.

When the schedules have been entered, the system will be fully operational. If appropriate, a hospital-wide "All Clear On the Tube System" will be announced by the Operator.

Remember, use good judgment in cleaning up after an accident. Use the same precautions you would apply if the spill were out in the open.

<sup>1</sup>Reference:

Translogic Corporation, Denver, CO.  
1994 (Manufacturers guidelines)

1/2/02  
2/2/05  
1/24/08  
1/12/11  
12/27/13  
11/9/16

## PNEUMATIC TUBE

### SPILL CONTROL-SHUTDOWN PROCEDURE

1. Should you **EVEN SUSPECT** a spill, **SHUT DOWN THE SYSTEM!!**
2. Stop sending carriers from the station where the contamination first noticed.
3. At the station punch in:
  - **SPECIAL FUNCTION,**
  - **91** and then punch **SEND/ENTER**
4. Call Facility Maintenance at: **419-383-4298**
  - State receiving station's number
  - Sending station's number if known
  - Type of spill, specimen type and suspected amount
  - Time the contaminated carrier arrived
  - Contact Env. Health & Radiation Safety for bleach (419-530-3600)
5. Refer to Env. Health & Radiation Safety procedure S-08-011, <http://www.utoledo.edu/depts/safety/docs/S-08-011.pdf> for further details related to infection control and decontamination.