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**Policies and Procedures**

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| **Policy Title:**Pneumatic Tube Use |
| **Department Responsible:**Facilities | **Policy Code:**OP-SAF-2005-74 | **Effective Date:**June 26, 2015 | **Next Review/Revision Date:**June 2018 |
| **Title of Person Responsible:**Executive Director, Facilities and Construction | **Approval Council:**Medical Executive Committee | **Date Approved by Council:** |

**PURPOSE:** Establish procedures and guidelines for the operation of the Computerized/Pneumatic Tube System transporting specimens, medications, supplies, records and other small items. This policy ensures the safe transportation of items and minimizes potential dangers to staff.

**DEFINITIONS:**

Carrier: A latched container used as the vehicle for transporting items within the tube system

Foam liner/padding: A foam layer placed inside the carrier used to stabilize contents to reduce the risk

of breakage or damage.

**POLICY:** Cone Health staff will follow the manufacturer’s instructions when transporting medications and lab specimens via a pneumatic tube system. In addition, staff will follow transport rules of the NC Board of Pharmacy, Quest Labs and any other applicable Cone Health Policies.

***NOTE****: Moses Cone (MC), Alamance Regional (AR), Wesley Long (WL), and Women’s Hospital (WH) each have an intra-hospital tube network. An active Cone Health ID badge is required to send tube carriers on the MC campus. This policy applies to all tube systems within CH. Carriers used are NEVER to be carried to another station. Always send carriers using the “Empty Send” process to preserve system programming..*

**PROCEDURE:**

**General Use**

1. Place items to be sent in an empty carrier. Ensure that contents are immobilized and/or securely contained. (If lab or pharmaceutical, refer to specific instructions below for sending and packaging)
2. Close carrier securely and ensure that both latches are engaged. Anything protruding or hanging from the carrier will cause it to get stuck in the tube and cause tube system failure.
3. Place carrier upright in transport dispatcher.
4. Select destination and send carrier.
5. Remove carrier(s) promptly from bin and remove contents from carrier.
6. If carriers are damaged, remove from the system and send to Facilities Management to be repaired.
7. If contents are received not intact, follow the cleaning procedure below for Spills/Leaks.

**Items *NOT* Approved for Transport**

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| * Products that exceed the manufacturer’s recommended tube weight and/or size limits
* Explosive or flammable substances
* Contaminated Sharps (needles attached to syringe)
* Products that have the potential for breakage
* Hazardous laboratory chemicals or reagents (formalin)
* Food or drink items
* Radioactive items
* Items that are leaking
* Lab specimen collected from patients with suspected or confirmed viral hemorrhagic fever including: Ebola virus, Viral hemorrhagic fever
* Empty/used blood bags
* Patient valuables
* Any other item determined not acceptable listed in this document
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**Delivery Errors**

* If your department receives a delivery in error, contact the sender to alert them of the error and forward the item to the appropriate tube station. If unable to determine who the sender is, contact Facilities Management.
* If there is a failure with tube en route call Facilities to report the failure. Provide receiving station and sending station numbers if known. Facilities will retrieve the tube and send it to the receiving station if known or return it to the sending station.

**Pharmacy Medication Transport Procedure**

The Pharmacy will utilize the pneumatic tube system for the transport of most medications and IV fluids to designated nursing units.

The **Secure Function** must be used to tube all narcotic medications and may also be used for a select group of other medications for which confirmation of delivery is deemed appropriate. The Pharmacy will use their discretion to determine if a secure transaction is necessary.

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| **Medications Allowed in Tube System** | **Secure** | **Comments**  |
| Most nonnarcotic meds and IV fluids | NO | Review below to be certain the med is not restricted.  |
| Narcotic PCAs | YES | Must be patient specific.  |
| Narcotic IV fluids | YES | Must be patient specific.  |
| Controlled substance IV fluids (e.g., Ativan drips) | YES | Must be patient specific.  |

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| **Medications NOT Allowed in Tube System** |
| Chemotherapy |
| Medications whose stability may be compromised with tubing (e.g., albumin, IVIG, tPA, ReoPro, Refludan, CroFab, Synagis, etc.) |
| Tube feedings |
| Meds whose cost or availability warrants hand delivery (e.g., Remicade, antihemophilic factors, etc.)  |

Prior to sending a secure transaction:

1. The Pharmacist or Pharmacy Technician will randomly assign a security code to the transaction.
2. The pharmacy must make direct contact with the patient’s nurse to reveal the security code needed for medication retrieval.
3. The security code, patient’s name, location, name of drug, name of sender, and name of receiver will be documented at the sending tube station.
4. Medications will be sent in a leak-proof, clear plastic bag, if necessary.
5. Fragile items must be immobilized with foam liners.
* If there is a delivery failure involving a tube sent as a secure transaction:
	+ The Pharmacy, Administrative Coordinator, and Facilities Management must be notified.
	+ Once retrieved, the tube will be hand-delivered to the Pharmacy.
	+ The pharmacist will cancel the secure transaction when the drug is in his/her possession, documented, and verified.

**Laboratory Specimens Transport Procedure (applicable to all tube systems unless otherwise noted)**

All specimens sent through the pneumatic tube system must be in a sealed leak proof biohazard specimen bag and padded to prevent breakage/spillage. Any container made of glass must have appropriate padding to prevent breakage.

**Lab Specific Items ALLOWED to be sent**

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| Blood specimensBlood gasesUrine other than 24 hour urine specimensMicrobiology Cultures collected outside the ORSyringes | including plasma/serum aliquotsSend on ice if delay is expected to be >20 minutesContainers must have securely tightened lids. Leakage could require recollectionCulture swabs, streps, wounds, wet preps, blood cultures, sputumOnly if there is no needle and syringe capped |

**Lab Specific Items *NOT* Allowed to be sent**

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| CSFAmniotic FluidBody fluid/non-urine (pleural, peritoneal)Transfusion productsMicrobiology specimens collected in the ORCytology specimensHistology specimens | Must be hand deliveredMust be hand deliveredMust be hand deliveredMust be signed out from Blood BankMust be hand deliveredMust be hand deliveredAll but OR frozen sections must be hand delivered at all locations. See below for ARMC exception for OR frozen specimens |

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| **Specimen** | **Tube System** | **Comments**  |
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| Stool specimens | Site specific | Must be hand delivered on all campuses except Alamance Regional.  |
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| Pathology specimens collected in the OR (tissue, biopsies) | Site specific | Must be hand delivered on all campuses except Alamance Regional. If a point to point system is in place, fresh tissue for Frozen Sections from the OR may be sent at Alamance Regional. Phone call is required prior to sending. |
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For questions concerning what can or cannot be sent through the tube system, please contact the laboratory on your campus:

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| **Campus** | **Number**  |
| Moses Cone | 832-8068  |
| Wesley Long | 832-0450  |
| Women’s Hospital | 832-6530  |
| Alamance Regional | 538-7800 |

**Packaging of Lab Specimens**

1. Use appropriate PPE when inserting and removing specimens of blood and body fluids from carriers.
2. Assure the primary specimen containers are securely closed and clean on the outside
3. Use biohazard zip-lock bags to package specimens prior to placing them in the carrier. Make certain bags are securely sealed.
4. Stabilize loose samples during transport with rubber bands and foam liners.
5. Package each urine specimen in an individual bag.
6. Place all paperwork in the outer pocket of the biohazard bag.
7. Place documents with HIPAA regulated information to the inside so it is unreadable through the carrier.

**Receipt of Lab Specimens**

1. While wearing appropriate PPE, remove the carrier from the bin.
2. Examine specimens for contamination or breakage before removing from Biohazard zip-lock bag. If a leak has occurred, follow the steps outlined in the Spills/Leaks section below.

***If spill or transport failure/error results in any delay of services to the patient, the incident must be documented via the electronic occurrence reporting system).***

**Spills/Leaks**

***Pharmacy/Medications, Supplies:***

For any unknown or suspicious spills, quarantine the tube at the location found on campus and call security and the Administrative Coordinator/designee. If spillage of known contents has occurred, use appropriate PPE and follow directions below:

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| **Location of Spill** | **Procedure**  |
| Within leak proof packaging  | Medication/Supplies: * Contact Pharmacy for proper disposal protocol and to order replacement medication.
* Contact Materials Management for proper disposal protocol and to order replacement.
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| Within carrier  | * Contact pharmacy for proper disposal protocol and to order replacement medication
* Check identification of medication
* Clean the carrier with all-purpose cleaner.
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***Laboratory Specimens***

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| **Description of Spill or Leak** | **Procedure** |
| Within leak proof biohazard bag | 1. Check identification of patient and specimen type.
2. Notify nursing to recollect specimen.
3. Discard specimen and packaging in regulated medical waste (RMW) container.

**If specimen is considered non-recollectable (frozen section), salvage specimen if possible or dispose of bag and specimen in biohazard container after removing paperwork from the side pouch.  Be sure to wear appropriate Personal Protective Equipment.** |
| Within the plastic carrier | 1. Check identification of patient and specimen type.
2. Notify nursing to recollect specimen.
3. Discard specimen and packaging in RMW container.
4. Clean the carrier and foam *following the below procedure. Wear appropriate PPE. The carrier foam must be disinfected with a 1:10 dilution of bleach*:
5. *Create a 1:10 dilution of bleach by using one part bleach to 9 parts of water. Volume of solution must be sufficient to soak the carrier and the foam liner. Use a large bucket or deep sink.*
6. *Place the carrier and the foam in the solution.*
7. *Let it soak for 10 minutes.*
8. *Rinse in sink after 10 minutes of soaking.*
9. *Let air dry, and place back in service when completely dry.*
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| Outside the plastic carrier and into the tube system | 1. Initiate emergency shutdown of tube system by calling Facilities Management. Provide:
2. Receiving station’s number
3. Sending station’s number
4. Type of spill (specimen and amount)
5. Time the spill in carrier first noticed
6. Check identification of patient and specimen type.
7. Notify nursing to recollect specimen.
8. Discard specimen and packaging in RMW container.
9. Facilities will decontaminate the system and will return the system to service when cleaning of the system is complete.
10. Clean the carrier and foam *following the below procedure. Wear appropriate PPE. The carrier foam must be disinfected with a 1:10 dilution of bleach*:
11. *Create a 1:10 dilution of bleach by using one part bleach to 9 parts of water. Volume of solution must be sufficient to soak the carrier and the foam liner. Use a large bucket or deep sink.*
12. *Place the carrier and the foam in the solution.*
13. *Let it soak for 10 minutes.*
14. *Rinse in sink after 10 minutes of soaking.*
15. *Let air dry, and place back in service when completely dry.*
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**REFERENCE DocumentS/Links:**

1. [www.swisslog.com](http://www.swisslog.com),
2. [Swisslog Infection Control Procedures](http://www.swisslog.com/-/media/Swisslog/Documents/HCS/TransLogic_Pneumatic_Tube_System/Related_Information/PTS_400_Infection_Control_White_Paper.pdf)
3. [Centers for Disease Control](http://www.cdc.gov/)
4. Clinical and laboratory Standards Institute.
5. Centers for Disease Control. *Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition*. U.S. Government Printing Office. 2009.
6. NCCLS: Protection of Laboratory Workers from Instrument Biohazards and Infectious Disease Transmitted by Blood, Body Fluids and Tissue: Approved Guidelines M29A3 March 2005.

**PREVIOUS REVISION/REVIEW DATES:**

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| --- | --- | --- | --- |
| *Date* | *Reviewed* | *Revised* | *Notes* |
| February 23, 2005 |  |  | Original effective date. |
| May 16, 2008 |  |  |  |
| May 26, 2009 |  |  |  |
| May 2012 |  |  |  |
| April 2014 |  |  |  |
| March 2015 |  | X | Updated for integration with ARMC, including updates to Lab transport, delivery error, and spills/leaks sections. |
| June 2015 |  | X |  |