**Title: Use of the Pneumatic Tube System**

**Area Manual:**

**Reference Number:**

**Effective Date:** 2/14/12

**Contact People:**

**Replaces Policy:** N/A

**Scope:** Saratoga Hospital

**Policy:**

The Pevco Computerized Smart System Pneumatic Tube Transport System is a computerized transport system which utilizes a system of blowers, interzone and transfer storage pipes to propel carriers from sender to receiver. The system is currently intended for the transport of laboratory specimens and pharmacy medications.

**Procedure:**

***Station Directory:***

|  |  |  |
| --- | --- | --- |
| **Station #** | **Location** | **Key Contact** |
| 1 | ED Laboratory Room | Phlebotomist on duty |
| 2 | The Rail | Charge Nurse |
| 3 | Starting Gate | Charge Nurse |
| 4 | The Paddock | Charge Nurse |
| 5 | Top of the Stretch | Charge Nurse |
| 6 | Backstretch | Charge Nurse |
| 7 | Pharmacy | Pharmacy Staff |
| 8 | A-1 Patient Care Unit | Charge Nurse |
| 9 | Main Laboratory | Phlebotomy/Accessioning Supervisor |
| 10 | ICU | Charge Nurse |
| 11 | Blood Bank | Blood Bank Supervisor |
| 12 | A3 | Charge Nurse |

***Station Operation:***

**Prohibited Substances:** Not all items are suitable for transportation through the pneumatic tube system. Size, weight, safety and stability must be considered when evaluating for transport.

* Items + carrier = 6 lbs or more.
* Improper bulky fit preventing proper closure.
* Specimens not in a leak proof container.
* Syringes with attached needle.
* Food.
* Flammable substances and aerosols.
* Pharmacy maintains a list of medications that should NOT be transported via the tube system.
* Laboratory tests excluded from using the tube transport system:
	+ Cold agglutinins
	+ Chain of custody
	+ Body fluids (i.e.; CSF, Joint, Peritoneal, etc.)
	+ Biopsies
	+ Ammonia Level
	+ Lactic Acid

**Transport Precautions for Laboratory Specimens**:

* Proper packing of specimens and urines is essential in order to prevent leakage, breakage and contamination with potentially infectious specimens. Laboratory specimens must be tightly closed. Place all specimens in a biohazard zip lock plastic bag.
* Carrier liners **MUST** be used to prevent breakage and jarring. Use additional packing material if multiple objects are sent.
* Urine: Must be sent in a screw top cup or plastic stopper tubes. Do not use black rubber stopper tubes which dislodge during transit. Must be double bagged.

**Transport of Blood Products:**

* UNDER NO CIRCUMSTANCE is blood for more than one patient to be sent in one carrier.
* Note: maximum number of units that can be sent in one carrier:
	+ - RBC or FFP units (each unit must have a separate ziplock bag.): 2
		- Plateletpheresis: 1
		- Cryoprecipitate (one ziplock bag): 10
* If you receive a blood product you did not request, contact blood bank immediately!
* Products that have been entered cannot be transported through the tube system. These units must be returned to the blood bank by transportation.
* When the patient is ready for transfusion, the patient care unit will send a completed “Request for Blood Products” form to blood bank via the tube system.
* The blood bank tech will contact the patient care unit when they are ready to send the product.
* After issuing the unit in Meditech, the blood bank tech will select the appropriate carrier and place the blood product and issue card inside a clear plastic Ziploc bag. Press excess air from the bag and seal. Send carrier as per protocol (see below).
* The designated individual receiving the product is to confirm the information on the issue

 card and the product. After completion of confirmation, sign the issue card and record the

 time received. The issue card is returned to blood bank within 15 minutes from the tube

 system delivery time. It the issue card is not returned, within 15 minutes, the blood bank

 technologist will call the receiving department and confirm the product was received and

 request that the card be returned. If the product was not received the technologist will:

* + - Confirm that the product was sent to the correct department.
		- If product was not received, contact engineering for assistance.
* It is the transfusionist’s responsibility to identify the patient prior to transfusion. If any

 discrepancies in unit or patient identification are noted, contact the Blood Bank

 immediately and return the unit to the Blood Bank for resolution of discrepancy.

**Loading Carriers:**

* Open the carrier by pressing on the clips at both ends.
* Place labeled, intact contents in the protective lined padded carrier – contents must be completely contained WITHIN the carrier.
* Firmly close the carrier ensuring BOTH latches are engaged and is without protruding contents.

**Sending Carriers:**

**[Clear out carriers behind the dispatcher or the station will jam!]**

* Place carrier upright on dispatcher arm.
* Observe Station message display: “Station Ready” on the top line.
* To send, press pre-programmed Smart key station directory address for the appropriate destination.
* “Message” line on display changes to Station Name address.
* Transaction Accepted: carrier leaves the station.
* Transaction Rejected: carrier remains 🡪 error message appears:
	+ Destination number does not exist.
	+ Station may be signed off.
	+ Destination is full.
	+ Unload and begin again.

**Receiving Carriers:**

* Observe the message display; bottom line message “Inc=XX” for the number of expected carriers.
* Preparing to send a carrier is allowed. Insert the carrier, enter station address, press SEND. The carrier will be held until receiving the one on the way.
* An auditory tone will announce carrier arrival.
* Press CANCEL to silence the alarm.
* Promptly remove carriers to prevent a full receiver bin, which will result in turning off of the station.
* Open the carrier and remove contents.
* If specimen is compromised, immediately refer to cleaning procedures.
* If carrier or latches are damaged, immediately remove them from use and notify Clinical Engineering. Do NOT resend a damaged carrier through the system.
* Date and time punch the sample requisition.

**Clearing or Canceling a Transaction:**

* To clear a clerical entry, press CLEAR and begin again.
* A short error tone indicates an improper keyboard entry, press CLEAR and begin again.
* Press CANCEL to stop a transaction if the dispatcher has not yet started to move.
* If the transaction was rejected, press CANCEL and begin again.

**Display Messages:**

* Messages will instruct you for reference and minor troubleshooting assistance.
* Press USER OPTION under Special Function (User option Menu 2, press Help for List).
* Enter two-digit option code.

{OR}

* Press HELP under Special Function; two options will be listed at a time.
* Enter two-digit option code.
* Press SEND when the correct menu item appears.

**Action response to Message:**

* Call Destination:
	+ Selection Full – Try Later (Request to empty).
	+ Station Not in Service.
	+ Selection Scheduled Off.
	+ Selection Signed Off .
* Check Address:
	+ Selection does not exist. Try again.
* Check Station Selection:
	+ Selection not permitted.
* Press Cancel, try again:
	+ Transaction aborted.
* Call Engineering:
	+ Station Scheduled Off.
	+ Station not in Service.

***Maintenance/Troubleshooting:***

Engineering/Facility Operations is responsible for resolving all mechanical difficulties involving systems operations. The individual departments are responsible for all procedural user error problems and will store the system carriers and liners. The carriers for each station have the station number labeled on the side of the carrier. Empty carriers must be stored at their home stations.

***Maintenance:***

Maintenance (reset counts and alarms, inspect carriers, etc.). is performed by Engineering on a weekly basis.

***Down Time Procedure:***

Department: The person who finds that the tube system is not operational will:

1. Notify Engineering by calling the department office. If there is no response, use the Shop or On-call cell phone numbers:
	1. Department Main Office 8457
	2. Shop 8297
	3. On-call cell phone (9pm-7am) 577-0511
2. Place a work order.

Engineering: If the tube system goes down, the system will automatically notify key Engineering personnel. Engineering staff will perform an assessment. If the problem cannot be easily resolved, Engineering will make the determination on whether a “Code Brown” should be called.

1. If the entire system is not operational, a “Code Brown, tube system” will be called.
2. If the problem is limited to the one station, a “Code Brown” will only be called for the affected tube system.
3. When indicated, Engineering will send electronic phone messages to tube station users.
4. Once the problem is resolved, Engineering will cancel Code Brown.

 Tube Stations Users:

1. Once Code Brown is announced, users will review the information on the Code Brown. Placards will be placed at each station to warn staff that there is a problem with the tube system. When Code Brown is clear, remove placards and ensure system is operational before sending carriers.
2. Station users that are not affected by the Code Brown may continue to operate providing that carriers are not sent to the affected tube station.

Laboratory: Phlebotomist will review MobiLab in an attempt to identify specimens that are not accounted for:

1. A laboratory supervisor will be notified if specimens are missing.
2. Supervisor will ensure that the requisition is reviewed to identify all tests that need to be redrawn. Tests will immediately be canceled and re-ordered by the laboratory staff.
3. Phlebotomists will redraw specimens.
4. For all other specimen types (urines, swabs, etc), staff from the patient care units (PCU) will consult with laboratory accessioning to determine if specimen was received in the laboratory. PCU staff will decide whether the specimens need to be recollected or whether they wish to wait for the specimen to be retrieved from the tube system. If recollection is needed, a will send a cancellation notice through OE. The test will be re-ordered once recollection is complete.

Laboratory Specimens from the ED: For new specimens that need to be delivered to the laboratory, the phlebotomist will take their specimens to the secretary’s desk at the Rail. ED staff will coordinate deliveries with the phlebotomist and volunteers.

Blood Bank: Products will be delivered by transportation or volunteers.

Pharmacy: When the tube system goes down and medication is in the tube, pharmacy will prepare another dose and arrange for transport.

***Infection Control:***

***See Appendix #1: Pevco Decontamination Instructions.***

* Disinfection/Cleaning:
	+ Laboratory: Clean daily with Caviwipes. Document on the accessioning maintenance log.
* Decontamination: Necessary only when a spill of infectious material has occurred. Exposure control includes following universal precautions and personal protection equipment. Document on the accessioning maintenance log under comments.
* Contained spill:
	+ Discard the entire bag.
	+ Notify sender.
* Carriers:
	+ Remove from system and place in biohazard bag.
	+ Notify Surgical Services Central Supply x2618 for ethylene oxide sterilization.
	+ Laboratory disinfects the carriers soaking in 10% bleach solution, disposes and replaces the liner and rubbing band riding rings.
	+ NOTE: Non-infectious spills can be cleaned with detergent and hot water.
* Tube System Leakage:
	+ Immediately Shut down Tube System and notify Engineering to determine extent of Spill/Contamination.
	+ Call “*Code Brown”* (see below).
	+ Engineering will determine contamination extent.
	+ Engineering will disinfect between point of origin and final delivery.

**Origination Date: 2/14/12**

**Revision Dates:** 7/11/12, 10/3/12

**Review Dates:** 7/11/12, 10/3/12

**Signature, Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Print Name:**

**Signature, Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Print Name:**