Pneumatic Tube Policy

Department / Service:	All Departments using the Pneumatic Tube System
Originator:	Estates and Facilities
Accountable Director:	Chief Nurse
Approved by:	John Auld, Head BMS Richard Cattell, Director of Pharmacy Ray Cochrane, Head of Estates
Approval date:	23rd August 2017
Extension approved:	11th May 2022
Review date: **This is the most current document and should be used until a revised version is in place**	11th November 2022
Target Organisation:	Worcestershire Acute Hospitals NHS Trust
Target Departments:	All clinical areas using pneumatic tube transfer stations
Target staff categories:	All staff using pneumatic tube transfer stations

Policy Overview:

The purpose of this policy is to inform all agreed users of the pneumatic tube system of their responsibility in the safe transfer and handling of appropriate specimens and selected medicines or prescriptions. Contravention of the policy may result in disciplinary action. The policy is applicable to all sites with a pneumatic tube system.

Latest Amendments to this policy:

Date	Amendment
23/08/17	For Issue / Use
23rd Jan 2020	Document extended for 6 months whilst review takes place with new Director of Facilities and Estates
August 2020	Document extended for 6 months during COVID period
February 2021	Document extended for 6 months as per Trust agreement 11.02.2021
May 2022	Document extended for 6 months whilst being reviewed and updated by Pathology

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1. Introduction

Pneumatic air tube transport systems can provide a safe, efficient and rapid means of sending certain types of urgent pathology specimens, selected pharmacy goods and documents throughout the hospital.

The Estates Department (Engie Facilities Management at WRH) are responsible for the maintenance of the air tube system. Trust departments are the users of the system and must be fully aware of how to safely use the system and what can and cannot be transferred in it.

Safe use of the system is fundamentally reliant on:

- The types of specimens suitable for dispatch
- The specimen carrier and
- Proper operation and control procedures being followed

2. Scope of this document

The air tube system is designed to be used for urgent transport of laboratory samples, selected pharmacy goods and pharmacy documents throughout the hospital. It is not for the transport of routine documentation or supplies. Inappropriate use will lead to delays and possible failure of the system.

All users of the system will be aware of this policy and its contents and ensure that correct protocol is followed at all times.

3. Definitions

Pneumatic Tube System – the internal automatic tube system used to transfer defined (specimens/prescriptions) from clinical areas to pathology/pharmacy by means of a carrier pod.

Pod/carrier – the plastic container/carrier used to carry the specimen/prescription within the tube system.

4. Responsibility and Duties

All users have a responsibility to follow correct protocol and only use the system for its intended purpose. Pathology specimens on the exclusion list must NOT be sent via the air tube because of the hazards associated with them (Appendix 6).

Staff must be aware of the disinfection protocol laid down by Infection Control and be aware of the need for safe and secure handling of medicines. All users must be aware of the correct procedures when transporting liquids. Spillage incidents must be reported immediately.

5. Policy

5.1 Operational Requirements

Locations of all stations connected to the system are listed in Appendix 2.

If a station has a door, it should be closed at all times and it should not be possible to identify patient names at the stations. This is to ensure confidentiality and the safe storage of medicines. When sending carriers always check that they have left the station.

Certain stations are code-locked for security. Issue and management of these codes will be the responsibility of the senior nurse in charge of the ward/directorate. The efficient running of the service is dependent upon correct operation by all users.

5.1.1 Operating Times

Pathology - The tube service will be available for the transport of biochemistry and haematology specimens 24 hours per day. Microbiology during opening times only.

Pharmacy Opening Hours - 8.30am – 4.30pm Mondays to Fridays, 9.00am – 12.00noon Saturdays and Bank Holidays (assuming department is open).

Outside of these hours, prescriptions must be delivered by hand - please also refer to the Pharmacy Operational Policy.

5.1.2 Training

Basic training in the system will be given at ward level by senior clinical staff. With regards to specific laboratory specimens contact Pathology, for prescriptions contact pharmacy department.

5.1.3 System Operation

Operating instructions are posted at each transfer station (appendix 1). Each station has a set allocation of carriers. Blue (Pathology), Green (Pharmacy).

Carriers are expensive and when not in use must be securely stored to avoid theft. They should be kept in rack located next to the station. Most currently available specimen carriers are not ‘leak proof’. Therefore, specimens must be packed in such a way as to prevent leakage and subsequent contamination of the system.

All staff should be aware of the correct procedures when transporting liquids. All spillage incidents must be reported by the receiver to the relevant site helpdesk.

5.1.4 Packaging Pathology Specimens (Appendix 3)

Place the specimen and request form in the blue pathology carrier. Ensure it is packaged according to the following instructions.

- Do not send specimens on the exclusion list (Appendix 6)

- Only use laboratory approved/supplied containers
- Ensure specimen container is correctly closed/sealed
- Place each specimen in a plastic transport bag which has an integral sealing strip and a separate pocket for the request form. (in exceptional circumstances only, some departments may use a request forms with integral transport bag attached – to be advised by pathology if necessary). This will ensure that in the event of a specimen leaking it will not contaminate the form or other specimens within carrier
- Ensure that the carrier is correctly fastened

Note: if specimen is likely to rattle around in the carrier during transport, place absorbent wadding in the carrier to prevent movement and minimise potential damage during transport

5.1.5 Packaging Pharmaceutical Products (Appendix 4)

The Pharmacy link is to be used primarily for the delivery of prescription charts and orders from wards and departments to the Pharmacy Dispensary. Prescriptions should be batched whenever possible in order to reduce the number of system journeys.

It may be appropriate to send medicines to pharmacy and to delivery pharmaceutical products to ward areas. However the use of the system is severely limited by the size of the carriers and the relative lack of security in most ward areas. Medicines should not be sent to the pharmacy by ward staff without obtaining prior approval from a member of the Pharmacy Department. Medicines should not be sent to ward or department outlets without prior discussion with nursing staff to ensure that security at the receiving end is maintained.

If sending medicines please ensure that items are packed in a sealed plastic bag and placed securely into the container. If required, pack the carrier with bubble wrap or foam inserts.

5.1.6 Operation of Transfer Station

- Ensure that the product you wish to send is not on the exclusion list.
- Ensure that the receiving department know that you are sending the product, as some stations are located away from the Department.
- Enter the destinations address code; make sure you use the correct code.
- Open station door – insert carrier
- CHECK AGAIN THAT THE DESTINATION CODE IS CORRECT.
- Close the door – Select OK if displayed – the carrier will automatically transfer when the system is ready.
- Keep hands and any other items clear of the stations openings while the station is active.
- Check the carrier has left the station

5.1.7 Queuing

There may be a short delay before the carrier is despatched. Only one carrier can be transferred through the system at any one time. The central processor

continuously monitors the status of every station and will hold the carrier until the required line is clear. Where possible, users should batch items in the carrier to reduce traffic in the system.

5.1.8 Receiving a Carrier

Do not open the receiving cabinet door until the carrier has arrived.

- It is automatically slowed down before entering the station
- The amber "Carrier arriving" light comes on.
- The carrier is deposited into the receiving basket or cabinet.
- All stations are fitted with remote indicators; these provide an audible and visual indication of a carrier arriving.
- The station display indicator indicates the arrival.
- Should the station door be open during arrival an alarm will sound "close door"

THE RECEIVER SHOULD EMPTY THE CARRIER AND IMMEDIATELY RETURN IT TO THE SENDER. CARRIERS ARE SPECIFIC TO A SENDING STATION. THEY ARE LABELLED WITH A RETURN TO STATION NUMBER AND ADDRESS.

5.1.9 Carriers

5.1.9.1 Identification

Carriers are identified as follows:

Pathology Carrier – **Blue**
Pharmacy Carrier – **Green**

5.1.9.2 Loss of Carriers

Carriers can only be lost if they are misdirected or stolen. Care must be taken in programming the destination and reference should be made to the system address list.

When a station receives a carrier, be it laden or empty, the sending stations address will be highlighted on the receiving stations control panel.

If misdirected carrier is received carry out the following procedure;

1. Telephone the sender and inform them of their mistake.
2. Return the carrier to the sender via the system
3. The sender should inform the intended recipient of the delay.

In the event that a carrier has not arrived at its destination and is believed to be stuck within the air system, it will be necessary to purge the system as in Appendix 7.

5.2 System Management

Maintenance of the system is the responsibility of Estates (PFI partner, Engie FM at WRH). Operational responsibility of the system lies with all users of the system. Infection Control, Pathology and Pharmacy divisions act in advisory capacity.

System support for contamination, lost carrier, system out of use can be obtained from the relevant helpdesk (Redditch x 44902, WRH x 33333 option 5).

During system downtime porters will collect and delivery specimens. Departments should call the relevant helpdesk to log the request.

5.3 Contamination and Spillage

5.3.1 Contamination of carriers

Pathology Specimens: The aim of using a pneumatic air tube transfer system is to transport urgent specimens safely, i.e. to prevent damage, leakage or spill of potentially harmful contents from contaminating the system or posing a hazard to the recipient.

If specimen carriers are received with indications of broken or leaking specimens, the reception staff should notify a Senior member of the Pathology department to assess the nature of any damage and decide how best to deal with it. Only trained staff should deal with leaking specimens.

If there is any chance that the system itself has also been contaminated then immediate action must be taken as detailed below in order to avoid any further issues.

Refer to local Pathology department procedures for dealing with Biological spillages.

As a minimum:

- Staff must wear gloves and protective laboratory coat
- If the carrier contains a damaged specimen of unknown origin it should be opened within a Class 1 microbiological safety cabinet. This will provide protection from aerosols produced during transport.
- For other leaking specimens - Do not open carrier for at least 10 minutes after receipt to allow aerosols to settle
- Take care with any hazardous sharps – dispose into sharps bin
- Decontaminate the contents and carrier with suitable disinfectant – refer to Infection Control Disinfection Policy and local Pathology department procedures for dealing with Biological spillages
- Complete a Trust Incident report form

Dependent upon the specimen it may be discarded and a repeat requested.

Pharmacy Medicines: the carrier could be reused after appropriate cleaning with detergent and hot water. It should be dried thoroughly.

5.3.2 Suspected Contamination of the System (i.e. leaking contents escaping from the carrier)

Contact the relevant site helpdesk to inform them of the suspected contamination. Estates will arrange to shut down the system and follow agreed protocol for system decontamination. Helpdesk will contact switchboard who will inform station departments of the contamination and that the system is temporarily unavailable.

On system being "clean" switchboard to inform the wards and departments that the system is operational.

6. Implementation

6.1 Plan for implementation

The policy will be published on the Trust intranet and also circulated to all head of department and managers of the areas where tube stations are located.

6.2 Dissemination

Policy to be disseminated to all users of the stations by departmental heads/leads.

6.3 Training and awareness

All staff should be trained in the use of the system by the person in charge of the department.

7. Monitoring and compliance

All users of the system have a responsibility to ensure that the system is used for its intended purpose. All managers of an area where a transfer station is located is responsible for ensuring that all staff using the system are fully trained.

Monitoring and compliance

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the Policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	Pneumatic Tube Policy	Author to Review by consultation with user groups and stakeholders	Yearly or if an incident occurs	Author	New document uploaded onto intranet.	yearly
	Training	System users will train new staff on how to use pneumatic tube system and give refresher training	Yearly or if an incident occurs	Vent RP / DP Estates Officers	Departmental Training Matrices reviewed by heads of departments	yearly
	Misuse	Receivers of pods that have been badly packed or departments suffering breakdown due to misuse of the system will report misuse on Datix	Whenever misuse is experienced	Receivers of pods, Clinical departments	Estates / Facilities will pick up any misuse on Datix	Yearly or if an incident occurs
	Audit	Annual audit of Datix for Pneumatic Tube incidents	Yearly	Estates / Facilities	Annual report to got to TIPCC	Yearly

8. Policy Review

The policy will be reviewed every two years. Estates will lead the policy review with involvement from Pathology, pharmacy, infection control and health and safety leads.

9. References

Policy:	**Code**:
Trust Health and Safety Policy	WAHT-CG-125
Infection Control Policies - ALL	available on line
Information Governance – confidentiality	WAHT-CG-579
Pharmacy Operational Policies	

10.Background

10.1 Equality requirements

There are no specific equality requirements.

10.2 Financial risk assessment

Improper use of the system may result in downtime of the system. Additional resource may be required to physically move specimens around the building.

10.3 Consultation

This policy has been jointly reviewed by Estates, Facilities, Pharmacy and Pathology.

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
John Auld, Head BMS
Richard Cattell, Director of Pharmacy
Ray Cochrane, Head of Estates
Simon Noon, Principal Engineer
Heather Gentry, Lead Nurse Infection Control
Paul Graham, Health and Safety Manager
Briony Mills, Facilities Manager

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee

10.4 Approval Process

This policy has been jointly reviewed by Estates & Facilities, Pathology and Pharmacy. Advice was sort from Infection control and health and safety. Once policy content agreed it will be forwarded to TIPCC for approval.

10.5 Version Control

This section should contain a list of key amendments made to this document each time it is reviewed.

Date	Amendment	By:
23/08/17	For Issue / Use	S Noon

Appendix 1

System Operating Instructions

- Make sure that the item you want to send is not on the exclusion list, see Appendix 6.
- Pack the item as per instructions; see Appendix 4 for Pharmaceutical products and Appendix 3 for Pathology specimens.
- Check the departments address code, these are detailed in Appendix 2, note there are different codes for sending full containers and returning empty containers.
- When you are satisfied that you have the correct department's address code type this three digit number using the keypad on the top right hand corner of the machine.
- To open the station's door press the silver button located on the bottom left hand corner of the door, the door will open.
- Insert the container into the cabinet by gently pushing the container between the parallel bars.
- Do not close the door. Check again that the destination code that you have just entered is correct.
- When you are satisfied that everything is in order close the door, the carrier will be automatically transferred to your chosen destination.

Appendix 2

Station Address List

Department	Station Address
Worcestershire Royal Hospital	
Avon	601
Laurel	602
Beech	603
Maxillo-Facial	604
Pathology Reception	not currently in use
Pathology	400
Pharmacy Dispensary	500
Chestnut	612
A&E	606
Riverbank	607
Lavender	608
AMU/Trauma and Ortho (Hazel)	609
Day Procedures	610
Delivery Suite	611
Alexandra Hospital	
Ward 01	00001
Ward 02	00002
M.A.U. Male/Female	00004
C.C.U.	00005
Ward 06	00006
Ward 09	00009
Ward 10	00010
Ward 11	00011
Ward 12	00012
Ward 14	00014
Ward 15	00015
Ward 16	00016
Ward 17	00017
Ward 18	00018
Birch Unit	00019
Neo Natal	00059
Out Patients	00116
A & E	00200
A & E - Send 1	00201
A & E - Send 2	00202
A & E - Send 3	00203
I.T.U.	00300
Orthopaedic Centre	00400
Haematology	00716
Haematology - Send 1	00717
Haematology - Send 2	00718
Haematology - Send 3	00719
Pharmacy	00811

Appendix 3

Packaging Pathology Specimens

Most currently available specimen carriers are not 'leak proof'. Therefore, specimens must be packed in such a way as to prevent leakage and subsequent contamination of the system.

Place the specimen and request form in the blue pathology carrier. Ensure it is packaged according to the following instructions.

- Do not send specimens on the exclusion list (Appendix 6)
- Only use laboratory approved/supplied containers
- Ensure specimen container is correctly fastened
- Place each specimen in a plastic transport bag which has an integral sealing strip and a separate pocket for the request form. . (in exceptional circumstances only, some departments may use a request form with integral transport bag attached – to be advised by pathology if necessary). This will ensure that in the event of a specimen leaking it will not contaminate the form or other specimens within carrier
- Ensure that the carrier is correctly closed

Note: if specimen is likely to rattle around in the carrier during transport, place absorbent wadding in the carrier to prevent movement and minimise potential damage during transport

Appendix 4

Packing pharmacy products

Paperwork

- Ensure that the correct, current ward or department is clearly marked on all in-patient and take-home drug charts and pharmacy requisitions sent to Pharmacy.
- If possible, batch documents together in order to reduce the number of system journeys.

Medicines

- Do not pack anything on the exclusion list (Appendix 6)
- Ensure that the contents are packed in a sealed plastic bag and placed securely into the container.
- If necessary add additional soft packaging such as bubble wrap or foam inserts to fill container.
- Take particular care if sending glass ampoules or vials to ensure that there is minimal movement within the container and that the outer plastic bag is sealed correctly.
- Seal the carrier
- Follow the operating procedures as in Appendix 1.
- Only send medicines with prior agreement to wards or departments with their prior agreement.

Appendix 5

Protocol/Contamination/Spillage

Suspected Contamination of the System (i.e. leaking specimens escaping from the carrier)

Contact the Helpdesk to inform them of the suspected contamination. Estates will shut the system down. Estates to apply agreed protocol for system decontamination. Helpdesk to inform switchboard who will inform the wards and departments that the system has been shut down. A Trust Incident report form should be completed once the system has been made safe by the notifying department. On the system being "clean" switchboard to inform the ward and department that the system is operational.

Contamination of carriers from:
***Pathology specimens**:* The aim of using a pneumatic air tube transfer system is to transport urgent specimens safely, i.e. to prevent damage, leakage or spill of potentially harmful contents from contaminating the system or posing a hazard to the recipient.

If specimen carriers are received with indications of broken or leaking specimens, the reception staff should notify a Senior member of the Pathology department to assess the nature of any damage and decide how best to deal with it. Only trained staff should deal with leaking specimens.

If there is any chance that the system itself has also been contaminated then immediate action must be taken as detailed below in order to avoid any further issues.

Refer to local Pathology department procedures for dealing with Biological spillages.
As a minimum:

- Staff must wear gloves and protective laboratory coat
- If the carrier contains a damaged specimen of unknown origin it should be opened within a Class 1 microbiological safety cabinet. This will provide operator protection from aerosols produced during transport.
- For other leaking specimens - Do not open carrier for at least 10 minutes after receipt to allow aerosols to settle
- Take care with any hazardous sharps – dispose into sharps bin
- Decontaminate the contents and carrier with suitable disinfectant – refer to Infection Control Disinfection Policy and local Pathology department procedures for dealing with Biological spillages
- Complete a Trust Incident report form

Dependent upon the specimen it may be discarded and a repeat requested.

Pharmacy Medicines: The carrier may be reused after appropriate cleaning with detergent and hot water. It should be dried thoroughly.

Appendix 6

Exclusion List of Pharmacy products

1. Cytotoxic drugs
2. Controlled drugs
3. Vaccines
4. Flammable substances including inhalation anaesthetics
5. Products packed in glass over 50ml volume
6. Any substance labelled with a Hazard symbol (black on orange).
7. Any package over 1kg (NB. a 1 litre bag of infusion fluid weighs approximately 1kg)

Exclusion list of Pathology Specimens

The vibration to which specimens are subjected during transit may cause damage to the specimen or container.

Also, due to the hazardous nature of Pathological specimens, potential routes of infection (from leaking containers) and the requirements of COSHH, the following specimen types MUST NOT be transported via the pneumatic air tube system:

1. Histology or cytology specimens
2. Glass containers including Blood Culture bottles
3. Any specimens known or suspected to have TB or other Mycobacteria sp.
4. Specimens that are known or suspected of containing chemical or radiation hazards
5. Non-repeatable specimens e.g. CSF, Joint aspirate, intra-operative specimens.
6. Items of a personal or confidential nature accepting of course that any patient data is confidential
7. Items that could be affected by temperature change.

Note: only Biochemistry and Haematology specimens can be sent 24hrs a day. Microbiology samples must not be transported out of normal laboratory hours since the integrity of the specimen can be affected if not stored appropriately (see handbook)

If in doubt do not send via the pneumatic air tube system

Appendix 7

Carrier Lost in the System - Purging

- The air tube must be purged and shut down by Estates (PFI Engie FM at WRH).
- Depending on the situation, either a full purge or selected purge may be required.

Full System Purge

At the control panel press “Esc” and the F1 the return. The full system purge takes around 45 minutes and any carriers in the system will arrive in the lab. If the carrier is not destined for the lab, it may be sent to its final destination.

Selective Purge

At the control panel press “esc” then F2. Scroll the up and down arrows until the individual unit to be purged is selected and press return.

Switch Off Voltage

At the control panel press “esc” then F5. Scroll up and down arrows until the individual unit to be switched off is found. Press right arrow to read on the status item OUT OF USE press return.

Any further problem will be required to be reported to the relevant site helpdesk for action.

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the Policy/guidance affect one group less or more favourably than another on the basis of:**	No	
	• Race		
	• Ethnic origins (including gypsies and travellers)		
	• Nationality		
	• Gender		
	• Culture		
	• Religion or belief		
	• Sexual orientation including lesbian, gay and bisexual people		
	• Age		
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the Policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	No	
6.	**What alternatives are there to achieving the Policy/guidance without the impact?**	No	
7.	**Can we reduce the impact by taking different action?**	No	

If you have identified a potential discriminatory impact of this key document, please refer it to Assistant Manager of Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Assistant Manager of Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval