

## Laboratory Medicine Procedure for the Transportation & Posting of Specimens

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## 1 Purpose and Scope

This procedure deals with the safe transport of specimens and other pathological materials to and from the York and Scarborough laboratories.

This includes transport of specimens from within the Trust and from off-site users to the department, and the referral of specimens or pathological material to other laboratories and institutions either by courier or via the postal service.

Providers of this service includes Porters, Facilities (Pneumatic Tube System), Transport Department, Courier, and Taxi services.

The purpose of this procedure is to provide management considerations, departmental considerations, generic instruction and assign responsibility for the organisation and control of the carriage of specimens and pathological material to and from the Directorate of Laboratory Medicine.

**This procedure covers all staff in York and Scarborough Pathology and relates to all specimens and pathological material submitted to and referred from the laboratories.**

This procedure seeks to ensure that the transportation of these samples complies with current health and safety legislation and the Carriage of Dangerous Goods Regulations (ADR), which defines certain pathological materials as dangerous goods.

The procedure seeks to ensure that this directorate discharges its responsibilities under the Health and Safety at Work Act 1974, protecting anyone who encounter these specimens, the public at large and the environment.

## 2 Equipment

Primary and Secondary bags are provided by Laboratory Medicine for single sample bagging. See appendix 2 for labelling of these bags

- Absorbent material can be added when required or may be integrated into the primary container.
- Plastic slide boxes are provided for blood and tissue slides because they are regarded as 'sharps'
- A single white bag is available with coloured writing, red for Biochemistry, Haematology and Immunology samples and blue for Microbiology, Virology, Histology and Cytology samples to ease sample sorting when they reach Laboratory Medicine. These bags are reusable provided no contamination has occurred.

Tertiary, leak proof, plastic transport boxes are provided by Laboratory Medicine. See appendix 2 for labeling of these boxes

- Containers must comply with British Standards BS ISO 6710:1995, BS 5213:1975.
- Separate outer boxes for blood and non-blood samples, preferably secure or tamper proof

Please refer to departmental procedures, **section 14**, for specific equipment and consumables.

Risk Assessment (Environmental and Safety Controls)



Staff carrying out this procedure should have read and understood the Local Rules or Health and Safety Manual applicable to their department & site which should be followed at all times during the procedure.

- Q-Pulse reference: LM-HSR-TRANSPORT
- All human samples must be treated as potentially BIO-HAZARDOUS.
- Approved Personal Protective Equipment (PPE) including laboratory coats, disposable gloves must be worn. Eye protection should also be considered and must be worn when directed within the procedure.
- Exposure to Bio-Hazardous Material: In the event of a needle stick injury or accidental blood splashes to eyes or mouth:
  - If skin has been punctured encourage bleeding by gently squeezing. Wash with soap and running warm water then dry and dress the wound.
  - Splashes to the eyes: irrigate eyes thoroughly with eye wash / saline
  - Splashes to the mouth: gargle with drinking water (avoid swallowing)
- Contact the Occupational Health Department / Emergency Department for guidance and report all adverse incidents to your line manager / complete an AIR form.

This SOP and the associated risk assessment(s) have considered all hazards and necessary precautions required to control any risks identified. Where appropriate this is detailed in the COSHH assessment and Risk Assessment. Any risk; where possible is mitigated and or monitored with health surveillance to ensure health and safety for all those affected by this procedure

### 3 Health & Safety

#### 3.1 Disinfection of Transport Boxes

Metal and plastic specimen carriers must be disinfected weekly with 1% hypochlorite solution and whenever contaminated.

#### Dealing with Spillages during Transport

- Samples should always be transported within the hospital site in a secondary container, either the diagnostic specimen sample transport bag or lockable metal tin. If the secondary container is dropped in transit and a breakage is suspected, the secondary container should not be opened. The suspected container should be returned to Laboratory Medicine, where staff should be made aware that a breakage is suspected. The container should then be taken to the Microbiology Department for appropriate action to be taken.
- Transport staff must not touch or try to clear up the spill. Stay with the specimen to prevent other people touching it and send somebody to the Microbiology Dept for assistance or, get a member of staff to phone Microbiology on extension York 5856 Scarborough 2288 for assistance.
- In the event of a spillage of formalin from a Histology sample (this could be from sample containers varying from 60ml through to 500ml) if the spillage happens in normal working hours please contact the histology laboratory on ext. York 5728 for advice or assistance, and for disposal of contaminated material.
- **Should the spillage happen out of normal working hours (8.30 to 5pm Monday-Friday) then the spillage granules are located in laboratory medicine reception just inside the double doors on the shelves to the left hand side.**
- Portering staff should be aware that formalin is a hazardous fluid that should not be touched without gloves. Care should be taken not to splash in the eye, should this occur promptly wash eyes with lots of water while lifting the eyelids, for 15 minutes.
- For small spillages try to ventilate the area; the spill may be mopped up (whilst wearing gloves) with a paper towel and the contaminated material placed in a sealed bag and brought to the histology department for disposal in clinical waste.

- For larger spillages try to ventilate the area or if this is not possible try to restrict access to the area of the spill. Please contact Laboratory Medicine specimen reception to obtain spillage absorption granules specific for formalin. These should be scattered around the spillage to contain it then poured over the centre to absorb and neutralise any remainder. The granules and any other contaminated material should then be placed in a sealed bag and disposed of in the nearest clinical waste.

### 3.2 The importance of classification of infectious substances, patient specimens and UN numbers

The classification of infectious substances and patient specimens for the purpose of transportation can be found at <http://www.hse.gov.uk/biosafety/blood-borne-viruses/transportation-of-infectious-substances.htm>. These details the hazards posed by the different types of specimen

- HSE classification includes Category A and B. Details can be found in Appendix 2
- The Microbiology Department will assist in assigning this classification. As a guide, all departments with the exception of Microbiology will receive or dispatch diagnostic specimens (Cat B). Microbiology occasionally receives or dispatch infectious materials (Cat A).

**The correct classification of infectious substances and patient specimens informs the safe:**

- Transport through compliance with the relevant “UN” transport guidance. See <http://www.hse.gov.uk/cdg/manual/classification.htm> and Appendix 2.
- Diagnostic specimens are assigned UN3373 classification. The transport requirements of this classification can be applied to almost all specimens received and dispatched by Laboratory Medicine with the exception of infectious substances where UN 2814 applies. The Microbiology Depart will advise on all the requirements of UN2814.
- When using dry ice as a refrigerant UN904 applies. See Appendix 2
- Packaging through compliance with packaging instruction defined by ADR, the European Agreement concerning the International Carriage of Dangerous Goods by Road. The full text can be found here: <http://www.unece.org/trans/danger/publi/adr/adr2015/15contentse.html>. and appendix 2
- Labelling of the packaging to indicate the risk. See <http://www.hse.gov.uk/biosafety/blood-borne-viruses/transportation-of-infectious-substances.htm> and Appendix 2 for a description of packaging instructions PI 650.
- Transport type. In general, category B samples that are sent using UN 3373 can normally be sent via the postal service. However, as a proportion of the post in the UK will travel by air at some point in its journey, the packaging will need to comply with the ICAO standards. Similarly, some courier companies will accept only category B infectious samples, hence it may be necessary to use a different company for category A infectious samples. Requirements should always discuss your transport requirements with your chosen carrier

## 4 Labelling of Patient Specimen & Request Form

Labelling must be in accordance with the Laboratory Medicine Policy for Filling in Request Forms & Labelling Samples (LM-POL-LABELLING)

## 5 Local Classification of High-Risk Specimens and Mode of Transport

- High risk classification excludes **some** samples for the pneumatic tube transport and informs choice of transport should the sample require to be referred to an outside laboratory.
  - Blood samples and small urine and faecal can be sent via the PTS.

- Respiratory samples and fluid / sputum samples **must not**.
- It should not be inferred from this that some blood is 'safer' than others; all blood must be treated as potentially infectious and treated with utmost care. The application of high-risk status to a sample does however notify staff when the risk is known. The HSE advise the provision of sufficient information on Specimen Request forms to enable staff in Clinical Diagnostic Laboratories to apply the correct safety measures to control the risk is the responsibility of the requestor. The lack of sufficient relevant clinical details provided on specimen request forms can result in samples being handled at the wrong biological containment level with resulting increased risk of infection to laboratory staff.
- High-risk specimens must be identified as "high-risk". This must be via the requesting system. The HSE advise the provision of sufficient information on specimen request forms to staff in clinical diagnostic laboratories to enable them to apply the correct safety measures to control the risk. The lack of sufficient relevant clinical details provided on specimen request forms can result in samples being handled at the wrong biological containment level with resulting increased risk of infection to laboratory staff.
  - For electronic requests please tick the high-risk box on Ordercomms or the request card. Some areas e.g. Sexual Health use a high-risk sticker or appropriate wording on the request form (Danger of Infection or High Risk).
  - Samples from patients with jaundice of unknown origin and patients known to engage in high risk activities, such as IV drug abuse, and or those with recent history of relevant foreign travel that may increase likelihood of exotic agents being present must also be considered high risk.
- The request form should be clearly visible so the risk can be assessed before the sample is removed from the packaging. High risk samples should be double bagged.
- Any specimen that fulfills one or more of the following criteria constitutes a high-risk specimen:
  - All specimens from patients known to carry the blood-borne viruses HIV, Hepatitis B and Hepatitis C
  - All specimens from patients where the clinical picture indicate a high likelihood of HIV, Hepatitis B or Hepatitis C.
  - All specimens from patients who have unexplained jaundice.
  - All specimens from known IV-drug abusers
  - All specimens from patients suspected or known to have SPONGIFORM ENCEPHALOPATHY (e.g. CJD type diseases)
  - All samples that are suspect or know positive for Covid-19.
  - Brain and spinal cord samples from suspected CJD patients present the highest risk, and should not be transported as Category B samples, however other more routine samples such as CSF, blood, faeces and urine all represent a lower risk and could be transported at Category B level. Any specimens associated with CJD or variant-CJD cases must NOT be transported by described methods outlined below. Any concerns about a specific CJD patient should be discussed with a Microbiology Consultant - Microbiology Department (Tel 01904 725131 or through switchboard).
  - Sputum or bronchial specimens from patients with known or suspected pulmonary Tuberculosis or Multi drug resistant TB
  - Tissues or fluids suspected of containing Tuberculosis
  - All specimens from patients with pyrexia who have a recent (within 1 month) history of foreign travel beyond Europe.



## 6 Modes of Transport Generic Guidance

- The following modes of transport for receiving and sending specimens
  - Surface transport within site by foot
  - Surface transport of samples between sites by road by hospital drivers, laboratory medicine staff, phlebotomists, courier/contracted services
  - Postal service
  - Pneumatic Air Tube
- It is the responsibility of the sender to ensure that specimens are dispatched in an appropriate and safe manner that conforms to national and international guidelines. The transport of unidentified specimens, incorrectly packaged specimens, or specimens in containers not designated for that purpose is in breach of those guidelines. See Appendix 2.
- The specimen container must be placed in a primary plastic transport bag and sealed, either by an integral sealing strip, or by other suitable means to enable opening without using sharp-pointed instruments. Bags **MUST NOT** be sealed with pins, staples or metal clips as they may cause injury and may affect the integrity of the bag.
- A secondary transport bag is supplied to all areas. Secondary specimen transport carrier bags are sealable, opaque plastic bags to be used for the transport of all samples. They are reusable provided no contamination has occurred.
- A tertiary UN3373 leak proof transport box with securely fastened lid for high volume is supplied

Table below details the packaging for the transport mode and specimen category:

6.1 Mode of Transport	Cat A UN2814/UN2900	Cat B UN3373
6.2 Surface transport foot	Triple packaging	Double packaging, Triple packed for large volumes or Theatres
6.3 Surface Transport Road	Packaging instructions PI650	Triple packaging
6.4 Post	Not permitted	Packaging instructions PI650 Including the use of absorbent material placed in the primary packaging
6.5 Pneumatic air tube	Not permitted	Double packaging + pneumatic tube container

**The sender must ensure that the specimen container is properly closed and is not contaminated on the outside.**

- The request form must **NOT** be put in the bag with the specimen. York Teaching Hospital NHS Foundation Trust laboratory medicine request forms (including those used for Order Comms requests) have an integrated sealable plastic bag for the specimen. However, in the absence of these request forms a plastic bag with a side pocket can accommodate the completed request form.
- Under no circumstances should anyone transport specimen containers in their hands or pockets.

- Transport boxes must not be opened in transit other than for the purpose of loading specimens
- In the case of vehicle transport
- The transport box must be secured in the boot or the cargo area of the vehicle. The boxes must never be transported in the passenger area of the vehicle.
- Driver should be provided with disposable gloves and a spillage kit in the transport vehicle. If there is a leak from any transport box, the disposable gloves must be worn and the hypochlorite (bleach) granules poured over the spillage. Do not attempt to mop up the spillage. The disposable gloves must be removed, taking care not to touch anything else, and disposed of in the clinical refuse bag provided. The driver must drive back to the laboratory immediately and seek assistance.
- If the vehicle breaks down or is involved in an accident no-one must be allowed to touch the specimen box unless they come from the hospital, and are familiar with the local procedure.
- Any untoward incident on route must be reported to the laboratory as soon as practicable on 01904 726542 (York Laboratory Medicine Ground Floor Reception) or 726802 (York 2<sup>nd</sup> Floor Specimen Reception) 725721 (York Microbiology Department), (01723 712356) Scarborough Laboratory Medicine Office, Scarborough Microbiology Department (01723 712288).
- Staff responsible for transport must cover cuts, grazes or broken skin on their hands with a waterproof dressing, and any injuries sustained on route must be reported to their manager and dealt with according to local policy.
- Staff responsible for transport must wash their hands before meal breaks and at the end of a work period.

## 7 Specific Departmental Guidance

### Laboratory medicine (All Departments)

- See LM-INF-SLA TRANSPORT for Trust Transport
- See BT-INF-TAXI for Trust service level agreements with outside transport and Taxi suppliers
- See LM-POL-LOCAL for rules for Estates and Facilities staff

### Biochemistry

- Details of the various transport options can be found within this document
- See SR-SOP-TRANSPORT and this document for monitoring samples

### Blood Transfusion

- See BT-INF-PORTERS for instruction to Porters to remove blood from the Blood Kiosk
- See BT-POL-TRANSFERHOSP for transfer of blood and blood products between hospitals
- See BT-SOP-TRANSIT for transporting blood within and outside the hospital
- See BT-TEM-TAXI and SBT-TEM-TAXI for Taxi driver instructions for transporting blood

### Cytology

- See CY-SOP-TRANSPORT for specific guidance

### Haematology

- See BloodFast SLA for Blood Sciences / Transfusion
- Details of the various transport options can be found within this document
- Transport requirements for send away tests are detailed in
- CO-SOP-COAGSAS, HA-SOP-HAEMSAS.



## Histology

- See HI-SOP-TRANSPORT for specific guidance

## Microbiology

- See MB-SOP-REC-SEND and MB-SOP-REC-REFLAB for transportation of samples to referral laboratories.
- See MB-SOP-COMPARE – Cross Site comparability Testing
- See MB-SOP-AFB-SCAR – TB samples going from SGH to YTH
- See SMB-SOP-TRANSPORT for Monitoring the Transportation of Microbiology samples.
- See MB-SOP-GASCYLIN for Procedure for the Safe Transport, Storage and use of Gas Cylinders.

## 8 Surface Transport of Diagnostic Specimens on the Hospital Site by Hospital Staff.

- See Generic Guidance above
- Trust staff must observe Local Rules (LM-POL-LOCAL), know the location of and how to access Laboratory for delivery of samples. All laboratories include a manned reception in core hours and processes are in place for accessing the laboratory outside of core hours which includes training to ensure that those with nominated delivery responsibilities do so to the correct place.

### 8.1 Drop off points for samples out of hours delivered by hand is as follows:

Scarborough: All samples go to Blood Sciences Reception.

York:

Blood Sciences: All samples are taken to Blood Sciences reception on second floor.

Blood Transfusion: All samples are sent via Blood Sciences Reception. Any urgent transfusion samples should be handed to a BMS.

Microbiology: Between 5pm and 8pm an urgent sample can be taken directly to first floor Microbiology; the requesting clinician must call to inform the department that it will be arriving. After 8pm all samples are sent via Blood Sciences reception (second floor).

Histology:

Formalin fixed samples are taken to Blood Sciences Reception (second floor).

Fresh samples for histology (not in fixative) are placed in the Microbiology cold room (first floor).

Cytology:

Cytology out of hours samples should be placed in the small desk top LEC fridge in S1 22.

- In the case of large specimens, such as certain histopathology specimens or 24-hour urine containers, the primary receptacle may be placed in clear plastic sacks and sealed at the neck to prevent leakage. The request form must be securely taped to the neck of the sack in such a way that it can be processed within the laboratory without damaging or defacing the request form. Staples, pins and metal clips must NOT be used. Very large specimens must be discussed with the laboratory staff prior to dispatch to the laboratory as the laboratory may not have the means to store the specimen. Advice must be sort on the method or transportation and storage location.

## 8.2 Pneumatic Air Tube Transport of Diagnostic Specimens within the York Hospital Site

- Specimen Types can be transported soon after blood taking with the exception of clotted blood specimens (brown-topped tubes) these must rest to ensure that the clot has formed before being sent in order to prevent haemolysis (please note to avoid delays in processing the time the sample was taken MUST be documented on the request form).
- Specimens must be placed in pouches attached to the request form and inserted into the leak proof pods carefully with sufficient absorbent packing material to absorb any leaks. Suitable material could be paper towels or cotton wool.
- Histology Specimens must not be sent in the Pneumatic Air Tube.
- Some High-risk specimens (See Section 9) can be sent in the Pneumatic Air Tube, however careful packaging is paramount as it is impossible to disinfect the system adequately if a leakage occurs, these can be safely transported as described in Section 7.
- In the event of a leakage or breakage within a pod, the pod must be placed in a leak-proof plastic container to contain any further leakage and a senior member of staff in microbiology informed. Out of hours, the on-call BMS should be contacted:
- The pod must only be opened within the confines of the microbiology safety cabinet in order to contain any aerosols. Spillages must be cleaned up with an appropriate disinfectant.
- The pod must be autoclaved before being used again
- Specimens may be cleaned up, but ideally, if they are easily repeated, fresh specimens should be requested.
- Facilities (Telephone Ext: 5566) must be contacted, the Pneumatic Air Tube system should be isolated and the special disinfection pod should be sent through the air tube. Facilities have responsibility for the Tube System on the York Site.

## 8.3 Pneumatic Air Tube Transport of Diagnostic Specimens on the Scarborough Hospital Site

- Please refer to LM-SOP-PTS. Pneumatic Air Tube System – Transport of Pathology Samples

## 8.4 Surface Transport of Diagnostic Specimens

### Between Scarborough and York Laboratories and from Off-Site to York and Scarborough Laboratories (E.g. GPs, GUM, Prisons & New Selby War Memorial Hospital using Transport Managed by The Transport Department.

- See Generic Guidance
- Transport Department has responsibility for their Drivers and a local SLA is in place to manage this service. See LM-INF-SLA TRANSPORT
- There are scheduled runs in place
- On arrival at Scarborough Hospital laboratory, the driver must complete the transport log, SLM-TEM-SPECRECEIPT, in the specimen drop off reception. There is 24/7 access to this area. The driver will alert the laboratory to the delivery verbally or the bell. Delivery records are then saved in Q-Pulse as SLM-REC-SPECRECEIPTXXXX (where XXXX is the year and month).
- On arrival at York hospital laboratories the driver will drop off the consignment at Specimen Reception on the ground floor during core hours and complete the driver records the delivery time in LM-TEM-SPECRECEIPT. This is then saved in Q-Pulse as LM-REC-SPECRECEIPT XXXX (where XXXX is the year and month). Outside of these hours samples are dropped off at the main reception and shift staff are informed of the delivery by the receptionist. Porters deliver samples direct to the laboratory

### 8.5 Transport of Diagnostic Specimens by Scarborough Laboratory Medicine Drivers and Scarborough Phlebotomists

- See Generic Guidance, section 13 above
- These staff work within or near to the laboratory and are fully conversant with the location and function of Specimen Reception and sample requirements. They only transport specimens. They are considered a low compliance risk
- There are scheduled runs in place
- The driver arrives at Scarborough Hospital in core hours and delivers the samples directly to the laboratory

### 8.6 Surface Transport of Diagnostic Samples by other Suppliers

- See Generic Guidance
- All suppliers used have a Trust contract in place. See BT-INF-TAXI
- Laboratory Medicine have contributed to this contract. See LM-REC-TRANSCONT
- The Blood fast carrier services is an NHS recognised transport service which transports samples between Hull, Leeds, York and Scarborough). Samples are packaged according to H&S transport regulations (See below section 14.3) and collected from this laboratory for direct carriage to the appropriate laboratory.
- Nippy and Fleetway Taxis are used for urgent transport of specimens and blood. See BT-TEM-TAXI and SBT-TEM-TAXI for Taxi driver instructions for transporting blood
- Departments have separate arrangements in place. See sections above
- Postal Transport of Diagnostic Specimens to Referral Laboratories by Road, Rail, Air or by Royal Mail.

Samples can be transported between laboratories using various methods. Franking for postage is routinely available but alternatives must be used should a problem be experienced with the franking facility and vice versa with other transport facilities.

- Postal system using approved packaging
- Carrier services (DX).

DX is a private interlinking postal system, which guarantees next day delivery by 09.00 to any Laboratory or complex participating in the system. Cost depends on the number of boxes used and the number of parcels sent to different addresses. The system provides the containers for packing the samples, which MUST be used at all, times and these comply with UN3373 for Cat B material. This courier is also UN2814 certified.

- Microbiology and Haematology use this service to send packages to all PHLS and Reference Laboratories who participate in the service. A list of commonly used DX addresses is available in Appendix 3.
- See section 8 for the categorization of samples to be dispatched. The specimen must be categorised as according to the terms category A or B. Specimens from known or suspected CJD or variant-CJD cases fall into their own special category in the UK (Section 19.6 and Appendix 2 for UN904 requirements).

### 8.7 Procedure for Diagnostic Samples UN 3373 (Category B)

- See section 10 for a summary of the packing and Appendix 2 for the detail
- The outer packaging must include the following:
  - The sender's name address and telephone number
  - The receiver's name address and telephone number
  - The hazard diamond with "UN3373" inside
  - The statement "BIOLOGICAL SUBSTANCE, CATEGORY B"

- Always ensure that there is a record (either written or electronic) of the specimen referral.
- All specimens transported by the postal service must also be labelled "FIRST CLASS POST"
- All specimens transported by DX are placed in the blue DX collection box by microbiology staff

### **8.8 Booking DX Specialist Category A courier**

- See section 10 for a summary of the packing and Appendix 2 for the detail
- Monday to Friday 9am to 5 pm contact DX Customer Service team on 01753 654654
- DX will complete the ADR documentation and email to you for confirmation and signature
- All other times contact Carol Hutber on 07887 822835 or Peter Hathaway on 07837 046886
- They will ask you for the DX address (York Hospital, DX 742340, York YO91 2YO) (Scarborough Hospital, DX 6281200, Scarborough YO11 2TT), contact name and phone number. They will ask for a confirmatory text following the phone call.
- The courier should be on site to pick up the sample between 30 minutes to 2 hours from first contact

### **8.9 Procedure for CJD-type specimens**

- Clinicians on the ward arrange transport for these specimens. The National Spongiform Encephalopathy Surveillance Centre in Edinburgh, which investigates these specimens, uses a specific courier service.
- The York laboratory packages and stores the relevant specimens at  $-70^{\circ}\text{C}$  in anticipation of the courier's arrival.
- Specimens are packaged in accordance with Category A specimens.
- Always ensure that there is a record (either written or electronic) of the specimen referral.

## **9 Audit**

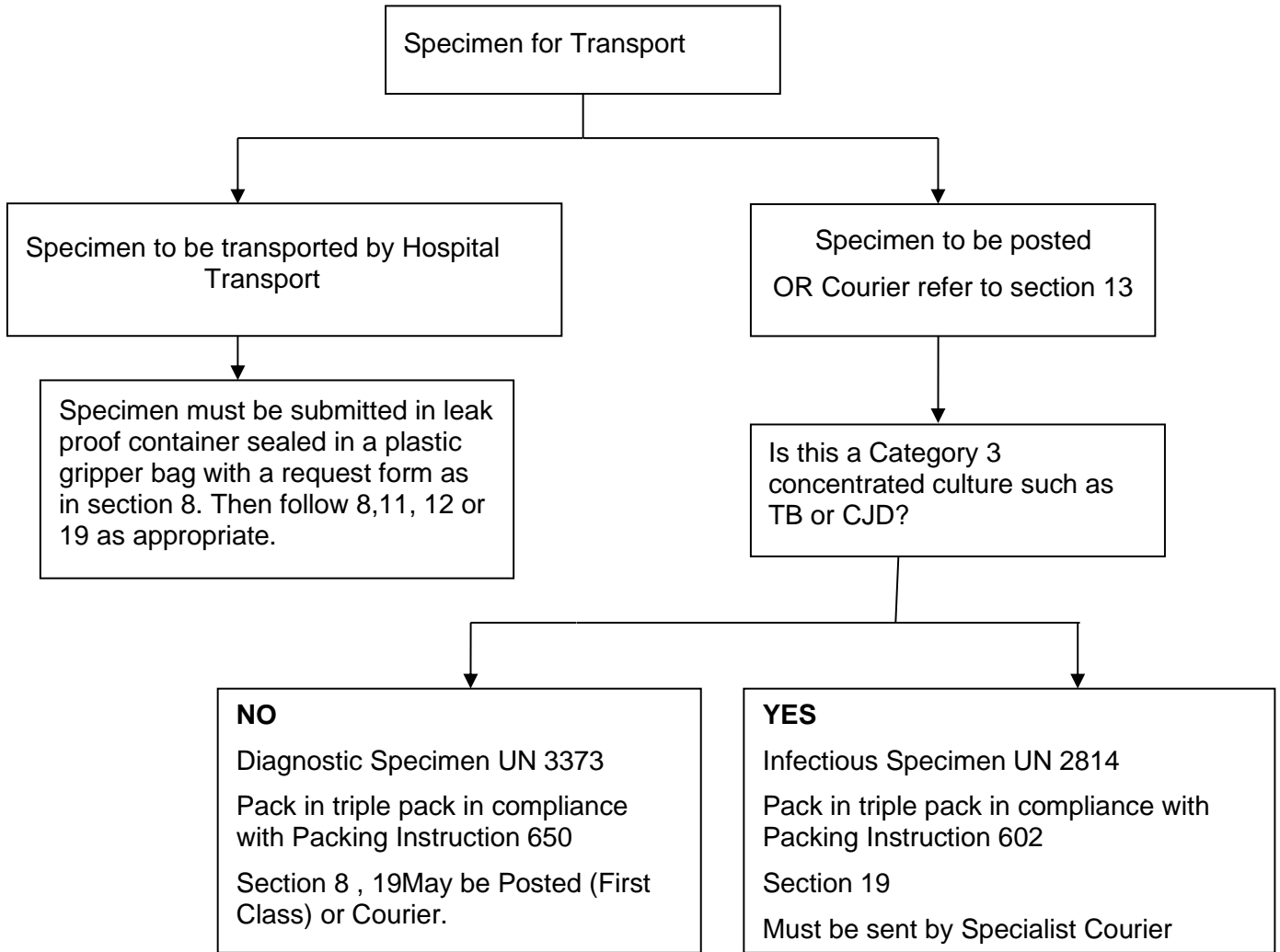
- The time of receipt of the samples at both sites is recorded as the time the sample is booked into Telepath. An audit is performed once a month on both sites to monitor the difference between the arrival time of samples in pathology and the booking time in Telepath (e.g. CB-SOP-TATSPECREC & CB-SOP-SAMPAUDIT).
- Some samples need to be kept frozen during transit to maintain the integrity of the sample. Bio-freeze transportation containers are used which have been verified to keep samples frozen for up to 36 hours (CB-EVA-BIOFREEZE & SCB-EVA-DPG BIO-FREEZE). Frozen samples are sent via courier service to ensure they arrive at the referral laboratory by 9am the next day.
- Periodic verifications of routine transport are performed to ensure the time frame, temperature interval and handling maintains the integrity of the sample. See SR-VERI-TRANSPORT. There is a periodic audit of routine transport to ensure safety of the carrier, general public and receiving laboratory maintained in the audit module of Q-Pulse.
- Other audits are included at regular intervals in relation to service need such as LM-TEM-TRANSPORT where the service arrangements are reviewed of the movement of pathological specimens, blood, blood products and components to and from Scarborough and York Laboratory services. This particular audit was performed using the template LM-TEM-TRANSPORT (shared learning from template already in use at HUTH).

## 10 References

- Health and Safety at Work Act 1974
- Advisory Committee on Dangerous Pathogens (ACDP): Categorisation of biological agents according to hazard and categories of containment 2000 MISC 208 HSE books.
- The Approved List of biological agents, for the purposes of the Control of Substances Hazardous to Health Regulations 2002 (SI 2002/2677).
- Safe working and the prevention of infection in clinical laboratories and similar facilities HSE Books 2003 ISBN 0 7176 2513 3
- The Control of Substances Hazardous to Health Regulations 2002 (COSHH)
- The Carriage of Dangerous Goods and Use of Transportable Pressure Receptacles Regulations 2009 (CDG Regs)
- The Carriage of Dangerous Goods by Road Regulations 1996
- Approved requirements and test methods for the classification and packaging of dangerous goods for carriage. Carriage of Dangerous Goods (Classification, Packaging and labelling) and Use of Transportable Pressure Receptacles Regulations 1996. Approved requirements. L88
- International Civil Aviation Organisation (ICAO) Interpretation/Guidance Document Regarding diagnostic specimens (12/2002)
- Annex 3. Guidelines for the Safe Transport of Infectious Substances and Diagnostic Specimens WHO/EMC/97.3
- The International Air Transport Association (IATA) Dangerous Goods Regulations 44th Edition. (01/2003).
- <http://www.hse.gov.uk/cdg/pdf/infect-subs.pdf> HSE INFECTIOUS SUBSTANCES, CLINICAL WASTE AND DIAGNOSTIC SPECIMENS
- Safe use of the PTS HSE <https://www.hse.gov.uk/pubns/misc186.pdf>



### 11 Appendix 1: Summary of Transportation Requirements



If the specimen is transported with Dry Ice UN Packaging Instruction 904 must also be observed. This is normally provided by the courier service. See Appendix 2

## 12 Appendix 2: Classification of infectious substances, UN numbers and Packaging

The terms Category A and Category B are limited to classifying samples / microbial cultures being transported to another laboratory.

### Sample Description

Category A samples are known or suspected to contain a microbial agent with the following definition "*an infectious substance which is transported in a form that if exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease to humans or animals*" (see indicative list) The majority are Hazard Group 3 or 4

For practical reasons to allow referral / reference services to continue a limited number of Category A agents have exempted from being transported as Category A. These are Vero-cytotoxin producing Escherichia coli (VTEC), Mycobacterium tuberculosis and Shigella dysenteriae 1

Category B samples are those that do not meet the definitions of Category A

### Packaging Requirement

Assign to UN2814 (Humans) Packaging Instructions PI620 Supporting documentation as per ADR

Transport as category A ADR licensed courier

Assign UN3373 Packaging instruction PI650

Send by courier Royal mail will **NOT** accept

Assign UN3373 Packaging instruction P1650

Post or courier Royal mail WILL accept

### Diagnostic Specimens Definitions(Cat B)

Any human or animal material including, but not limited to, excreta, secretions, blood and its components, tissue and tissue fluids being transported for diagnostic or investigational purposes, but excluding live infected animals. These are category B specimens for transport purposes. Those that pose a low infection risk to humans and/or animals. These constitute the majority of specimens. These include bloods from HIV, Hep B and Hep C positive cases and also bacterial cultures of Category 2 organisms. Assign UN3373 Packaging.

### Infectious Substances definitions (Cat A)

Substances known to contain bacterial, viral, rickettsial, parasitic or fungal agents that are categorised as Category 3 agents by ACDP as described above require a higher level of documentation and labelling and should be assigned UN2814 Packaging.

## UN Classification Guidance

### UN3373

Diagnostic substances, assigned to UN 3373, are human or animal materials that are being transported only for the purpose of diagnosis or investigation. Such materials include excreta, blood and its components, as well as other tissues and fluids. Diagnostic substances do not include live infected animals

### UN2814

If the source (the patient) is known to have a serious disease that can be readily transmitted and for which effective treatment and preventative measures are not usually available, then the substance must be assigned UN 2814

### UN904

Class is a miscellaneous dangerous category which includes the use of dry ice

Some specimens need to be kept frozen during transport.

Where dry ice is used, it should be placed around the secondary receptacle. The outer packaging should permit the release of carbon dioxide because of the risk of explosions.

Dry ice is classed as a dangerous substance so all packages must also carry the hazard label for dry ice

UN packaging instruction 904 must be observed. Packaging is taken care of by the dedicated courier for dry ice samples.

Blood Sciences use the DPG Bio-freeze transport system as a replacement for the use of dry Ice (SCB-EVA-DPG BIO-FREEZE).

## **Packaging Information**

### PI650 for Category B Specimens

The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport

Packaging shall be constructed and closed to prevent any loss of contents that might be caused under normal conditions of transport by vibration or by changes in temperature, humidity or pressure

The packaging shall consist of at least three components:

(a) A primary receptacle surrounded by sufficient absorbent material to absorb the entire specimen in the event of a leakage.

(b) A secondary packaging, usually a transparent plastic transport bag

(c) An outer packaging, usually cardboard

of which either the secondary or the outer packaging shall be rigid

Secondary packaging shall be secured in outer packaging with suitable cushioning material. Several specimens may be placed in secondary container, however, the total contents of the package must NOT exceed 4L for liquids and 4kg for solids, and no single container must be in excess of 500ml or 500g.

The specimen request forms must be placed OUTSIDE the secondary container and inside the outer packaging

Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer packaging.

For transport, the mark illustrated below shall be displayed



The proper shipping name "BIOLOGICAL SUBSTANCE, CATEGORY B" in letters at least 6 mm high shall be marked on the outer packaging adjacent to the diamond-shaped mark.

The completed package shall be capable of successfully passing the drop test in 6.3.5.3 as specified in 6.3.5.2 of these Regulations at a height of 1.2m

#### PI 602 for Category A samples

These specimens will be sent directly to the appropriate reference laboratory by the **DX Category A specialist courier service**.

The packaging instructions 13.3 above apply. The triple packaging system must carry the UN specification that identifies it as suitable for infectious substances; that is, it must have either reference to UN 2814 or to "Class 6.2" or both. This ensures that the secondary receptacle is robust enough to meet the legal requirements that conform to UN Packaging Instruction 602. The secondary plastic receptacle must also be labelled 'A'

If the samples exceed 50ml for liquids or 50g for solids, orientation arrows must be present on opposite sides of the packaging to identify which way up the package must be transported.

The outer packaging must include ALL the following:

The International Infectious Substance Label

The sender's name address and telephone number

The UN designation UN2814

The receiver's name address and telephone number

An orange DX label stating 'Category A Specimen'

An emergency contact information sheet must be placed between the secondary container and the cardboard box. The sheet must include:

An itemised list of contents

The type of pathogen present in the sample E.g. UN2814 infectious substance affecting humans (Ebola virus)

Your senders and full recipient details. These should include hospital/lab/site name and full postal address

An emergency 24 hour contact name and telephone number

Tuck in the lid and affix the security seal where indicated

Complete the Proper Shipping Name label on the box by describing the type of pathogen present E.g. Infectious substance affecting humans (Ebola virus) UN number 2814

A DX Category A booking request form must be completed. This includes a description of the contents and must be securely attached in an A4 plastic pouch to the outside of the packaging.

Always ensure that there is a record (either written or electronic) of the specimen referral

### 13 Appendix 3: Useful DX Addresses

A signing sheet is available for use of samples sent by DX: **LM-TEM-DX SIGN**

SCARBOROUGH HOSPITAL	MICROBIOLOGY SCARBOROUGH 90 YO DX 6281200
SCARBOROUGH HOSPITAL	HAEMATOLOGY SCARBOROUGH 90 YO DX 6281203 (Tel: (24hrs) 01723 368111)
LEEDS PHLS:	LEEDS PHL LEEDS 90 LS DX6280100
MANCHESTER PHLS	MANCHESTER PHL WITHINGTON 90 M 6960400
LGI	MYCOLOGY LEEDS GENERAL INFIRMARY DX 6281504
COLINDALE PHLS	LAB OF ENTERIC PATHOGENS COLINDALE NW DX 6530008
OR	LABORATORY OF HOSPITAL INFECTION COLINDALE NW DX 6530009
LIVERPOOL PHLS	LIVERPOOL PHL WALTON DALE 90 L DX 6960300

#### Haematology Destinations:

Test Referred	Site Name	DX Number	Exchange
CD4	St James Hospital	DX 6281600	Leeds 92 LS
Markers	Leeds General Infirmary (Haematology)	DX 6281508	Leeds 91 LS

For other destinations not shown above refer to the DX online directory [www.dxdelivery.com](http://www.dxdelivery.com)

Each department holds a list of addresses for the referral lab used by them.